

# Palaeographic Analysis of Codices from the Early Christian Period: A Point of Method

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[journals.sagepub.com/home/jnt](https://journals.sagepub.com/home/jnt)**Brent Nongbri**

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**Abstract**

It is often said that palaeographic analysis of Greek literary manuscripts from the Roman era has progressed from an aesthetic judgment to more of a science, thanks largely to increased data (in the form of newly discovered papyri and parchments from Egypt) and to more sophisticated ways of describing similarity and difference in handwriting. This progress is frequently taken to mean that we may now use the analysis of handwriting to assign dates to undated manuscripts with much greater precision and accuracy than was possible a century ago. This article questions this conclusion by focusing on neglected methodological points that specifically relate to the problem of palaeographic dating of codices, namely the size and character of the corpus of securely datable samples to which the handwriting of undated codices is compared. This problem is especially relevant for early Christian books, the surviving examples of which tend to be copied in the codex format.

**Keywords**

Codices, codicology, early Christian manuscripts, methodology, New Testament papyri, palaeography, papyrology

Establishing dates for the earliest Christian manuscripts, and for Greek, Latin and Coptic literary manuscripts in general, is a fraught enterprise. There are a

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relatively small number of manuscripts (copies of ancient literature) from the early Christian period that are roughly datable on somewhat objective grounds. Some manuscripts can be associated with known archives of dated documents, which provide information about the time period the manuscripts were in use, although not necessarily when they were copied. Some manuscripts have been excavated from securely dated archaeological contexts, which fixes a latest possible date (*terminus ante quem*) for the copying of the manuscript. Some manuscripts were copied on the blank reverse sides of dated documentary rolls, which establishes the earliest possible date (*terminus post quem*) that the manuscript was copied. Some manuscripts copied on rolls were reused by copying documents on their blank reverse sides, which provides a *terminus ante quem*. The contents of some manuscripts describe securely dated historical events and thus have a secure *terminus post quem*. And a handful of manuscripts have been subjected to radiocarbon analysis, which provides the range of dates in which plant or animal matter used to make the writing surface (usually papyrus or parchment) ceased living.<sup>1</sup> But these cases are the exceptions. The vast majority of early Christian manuscripts are dated only on the basis of palaeographic comparison with dated documents written in literary hands or with this small corpus of roughly datable literary manuscripts.<sup>2</sup> This method of estimating the age of Greek literary manuscripts of the Roman era is widely acknowledged to be less than ideal, but its application to early codices is especially problematic in ways that have not been openly discussed.<sup>3</sup> This article concentrates on two difficulties

1. For examples of each type of 'datable' manuscript involving Christian literature, see Luijendijk 2010 (on P.Oxy. 2.209 as part of an archive); Parker, Taylor, and Goodacre 2013 (on P.Dura 10, found in a secure archaeological context); Luijendijk 2011: 245-54 (on P.Oxy. 4.654, a copy of the *Gospel of Thomas* written on the reverse of a cursive document); Bagnall 1992 (on P.Oxy. 3.412, a literary text datable by its contents that was later reused for a dated document); Turner 1966 (on P.Bodmer 20, which contains a copy of a martyrdom with a known date); and BeDuhn and Hodgins 2017 (the results of radiocarbon analysis of the Beatty Manichaean codices). One recent study suggests that the analysis of ancient ink may be able to provide a non-destructive means of dating manuscripts, but more data is needed (see the contribution of Goler et al. in this issue). Further discussion of these kinds of 'datable' manuscripts can be found in Nongbri 2018: 47-82.
2. I follow Orsini and Clarysse 2012 in distinguishing between *dated* documents (letters, edicts, etc. that actually contain explicit dates) and relatively *datable* literary manuscripts (manuscripts with a *terminus ante quem* or *terminus post quem* fixed by one of the methods just outlined).
3. For reflections on the tenuous nature of palaeographic dating, see Bagnall 2009. In their recent overview of the dating of papyrus copies of NT texts, Pasquale Orsini and Willy Clarysse also note the particular problems relating to the palaeographic dating of early Christian manuscripts: 'Literary papyri are notoriously difficult to date because they bear no accurate date, and only few of them can be dated thanks to circumstantial evidence ... As a result dates given by editors or other scholars are as a rule based on palaeographical criteria, i.e. a comparison with the handwriting of datable texts written in a similar script ... New

presented by the pool of datable samples of Greek literary writing from the Roman era: its small size and its lack of codices.

## Palaeography and Establishing Dates

Palaeography, broadly speaking, is the study of ancient forms of writing.<sup>4</sup> The academic field of palaeography concerns all aspects of writing and its production. Its practitioners strive to give clear and comprehensive descriptions of writing, to document the social settings in which writing takes place, and to trace possible lines of influence among different types of scripts and even among scripts in different languages.<sup>5</sup> From the perspective of the academic field of palaeography, the use of handwriting analysis to assign dates is really just one part of a much larger enterprise. For most biblical scholars, however, the chief interest of Greek palaeography is in fact its role in the process of trying to establish dates for otherwise undated examples of Jewish and Christian writing.

The usefulness of palaeography for assigning dates to undated samples rests upon a key assumption: graphic similarity generally equates to temporal similarity. Thus, the procedure of palaeographic dating appears quite simple. First, compare a sample of handwriting of unknown date to the relatively small set of more securely dated examples (that is, with explicitly dated documents written in literary hands or with those literary manuscripts that can be dated more objectively using the various methods outlined above). Next, we must assume that close graphic similarity means that the samples were produced at roughly the same

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Testament texts are even more problematic than other literary texts, since they are nearly always written in the form of a codex, so that the script is the same on the two sides and neither the back nor front can be used to provide a *terminus ante* or *post quem*. Gradually, however, an uneasy consensus has been reached among papyrologists, and the result of this is found in the dates put forward by Nestle-Aland' (Orsini and Clarysse 2012: 443-44). We should probably be somewhat cautious in describing the dates in Nestle-Aland as the results of a considered consensus. The baseline for the dating of P1-P76 was established in the early 1960s, when Wilhelm Schubart, Herbert Hunger, Karl Preisendanz, Colin H. Roberts and Theodore C. Skeat systematically back-dated many of these pieces to an earlier period than that which was proposed by the original editors. A comparison with the list of papyrus manuscripts in the 28th edition of Nestle-Aland shows that, in almost all cases, these dates have not been revised in the intervening half century (Aland 1963: 305-308).

4. The most current introductions to the palaeography of Greek literary manuscripts are Edoardo Crisci and Degni 2011 along with Cavallo 2008. A condensed version of the material in Cavallo's book can be found in English in Cavallo 2009. Still very valuable is the introductory discussion in Turner 1987: 1-23.
5. See, however, the cautious comments in Turner 1987: 20: 'For the Roman period my conclusion ... is that several "styles" of writing were simultaneously in use. Contemporary with each other, they cross-fertilize and hybridize easily. Study of these reciprocal influences is rewarding, provided only that the investigator is not trying to prove a derivation of one "style" from another.'

time.<sup>6</sup> Describing the procedure in this way raises several questions. What is meant by ‘graphic similarity’ in this context? How is ‘comparison’ to be carried out? How ‘rough’ are the dates generated by such a process?

Probing each of these questions thoroughly is beyond the scope of the present task. Instead, I will frame my discussion in terms of a broader question: How does palaeographic dating work in practice? A manuscript of unknown date is first usually assigned to one of several generally accepted styles of writing (or its affinities with one or more styles are noted).<sup>7</sup> The earliest and latest securely datable samples of each style will then provide the range within which the sample of unknown date can be placed. While scholars differ on what clusters of writing samples should be gathered together as ‘styles’ and whether or not a particular manuscript might be properly classified as a given ‘style’, there is general agreement among competent palaeographers on this basic approach. Where I would like to focus our attention in this article is the pool of datable samples that serves as the basis for assigning dates to undated manuscripts. Both its size and its character render it problematic for the uses to which it is put, especially when it comes to assigning dates to ancient codices.

## Palaeographic Handbooks

To provide context for understanding the problem, I will need to briefly sketch some of the background of the history of the discipline of palaeography. As Malcolm Choat demonstrates in his contribution to this issue, the modern study of palaeography had its origins in the quest to determine the authenticity of questionable documents. Close study of handwriting was thought to be a good means of authenticating real documents and detecting forgeries. By the late nineteenth and early twentieth century, however, practitioners of palaeography evinced an aesthetic sensibility that sits somewhat awkwardly with such forensic and ‘scientific’ goals. In the literature of that era, it is not uncommon to see Greek

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6. This assumption is the bedrock of the process, but it is not without complications. See Nongbri 2014: 19-20 for a listing of reasons for caution in offering narrow dating ranges on the basis of palaeography: We possess writing exercises demonstrating that copyists could write in different styles that we usually associate with time periods centuries apart; the working lives of writing professionals could be two or three decades or more; modes of writing were passed across generations from teachers to students. To these examples, one might add also the consideration of the materials involved in writing. Is the writing surface absorbent and prone to blots at the beginnings or ends of strokes? How different is the experience of writing on papyrus versus writing on parchment? What about the level of competence of a given copyist? Such factors may account for subtle graphic differences among samples of writing.
  7. For differing classifications of ‘styles’ of Greek writing of the Roman era, see Turner 1987: 20-23 and Cavallo 2008: 58-140. For specific application to NT manuscripts, see Orsini and Clarysse 2012.

and Latin writing described using only or mostly emotive terms like ‘handsome’, ‘beautiful’, ‘pure’ and the like. Reading through Edward Maunde Thompson’s palaeographic handbooks provides ample examples (Thompson 1893 and 1912).<sup>8</sup> In the near total absence of securely dated literary manuscripts to serve as comparanda, assessments of the dates of newly discovered manuscripts could swing wildly from publication to publication. For example, the so-called ‘Hawara Homer’, a papyrus roll containing part of the *Iliad* discovered in 1888, was originally assigned to the fifth century; just eleven years later it was dated to the second century.<sup>9</sup>

Over the course of the twentieth century, however, with the accumulation of more securely dated or datable samples for comparison and the development of photographic technology that allowed wider access to the visual evidence, the assignment of palaeographic dates stabilized somewhat.<sup>10</sup> And at the same time, these sorts of explicit aesthetic judgments became less common. One can detect a growing sense in the writings of palaeographers in the twentieth century that palaeography was progressing from an art to a science.<sup>11</sup> The last century has clearly seen a great deal of progress in amassing a database of datable samples of literary handwriting that can be used for palaeographic comparison. By the 1960s, there also emerged a much more detailed and in some respects more objective way of describing Greek handwriting of the Roman era.<sup>12</sup> When it

8. For a related analysis of later Latin and English palaeography, see Treharne 2011.

9. See Sayce 1889: 24 and Kenyon 1899: 101–103.

10. I say ‘somewhat’ because recognized experts still disagree about the dates of some manuscripts by a matter of not just decades, but centuries. Examples are plentiful. Among early Christian manuscripts, one could point to PSI 1.1, which was assigned by its original editor to the seventh century, by Roberts and Skeat to the third century, by Turner to the third or fourth century, by Cavallo to the fifth or sixth century, and by Orsini and Clarysse to a surprisingly narrow fifty-year window between the years 450 and 500 (see Vitelli 1912: 1–2; Aland 1963: 307, n. 2; Turner 1977: 147; Cavallo 2008: 101–102; Orsini and Clarysse 2012: 470). For a parchment example, consider P.Ant. 1.12, a leaf of a codex containing 2 John that was assigned by its original editor, Roberts, to the third century but was assigned to the fifth century by Cavallo and Maehler (see Roberts 1950: 24, and Cavallo and Maehler 1987: 22). The fifth-century date for P.Ant. 1.12 has been seconded in recent years by Kruger 2012, although part of his argument is based on palaeographic similarity between P.Ant. 1.12 and the equally contested PSI 1.1! Examples of such wide variation in opinions can also be found among non-Christian manuscripts. P.Lit.Lond. 127, two parchment sheets from a codex containing orations of Demosthenes, were assigned by their editor ‘with fair confidence about the 2nd century after Christ’ (Kenyon 1894: 248). This date was accepted by Turner (Turner 1977: 35, 38, and throughout). Yet Cavallo and Maehler assign the codex to the early fourth century. The list could go on.

11. Evaluating whether art or science is the better descriptor of the field of palaeography depends on determining exactly what is meant by the words ‘art’ and ‘science’. See Canart 2006.

12. I say ‘in some respects more objective’ because much of our palaeographic discussion still seems to me to employ a terminology that is less about describing handwriting and more

came to the question of using palaeographic analysis to assign dates to undated manuscripts, there was a growing recognition among at least some papyrologists that the way forward was to focus on using only securely dated or datable samples for comparison. This notion was laid out with admirable clarity by Roberts in the preface to his *Greek Literary Hands*, published in 1956:

If the study of book hands is to be placed on a sound and objective basis, what is required at the start is a list of all those hands for whose date there is some kind of evidence available whatever the difference in the kind and value of the evidence may be ... To give such a list would be beyond the scope of this book; but in selecting the manuscripts to be illustrated none has been included whose date has to be determined simply by analogies between the style of the hand in question and that of other manuscripts ... Such austerity will have its reward if it results in a more objective approach to the subject, since an analysis of those hands for whose date there is some firm evidence provides the only means of placing those far more numerous manuscripts whose age is uncertain. (Roberts 1956: xii-xiii)

Roberts's book contains images and descriptions of 57 manuscripts. Twenty are documents, and the rest can be roughly dated with greater or lesser degrees of precision by contents, reuse or marginalia. Only three of the items in Roberts's album were codices.<sup>13</sup> I shall return to this point in a moment.<sup>14</sup> For now, I only wish to note that Roberts's collection of dated samples represents the strictest application of this kind of exercise in a published handbook of Greek literary manuscripts of the Roman era, and it produced 57 datable manuscripts over a 750-year period.

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about telling a story. It is common to speak of the 'perfection' or 'degeneration' of particular types of writing. Among Italian palaeographers, these expressions are usually in reference to the 'canon', or fixed rules imagined to be determinative for some types of writing ('fase della perfezione del canone', 'decadenza del canone', etc.).

13. The three codices are P.Ryl. 3.463, a leaf from a Greek papyrus codex containing the *Gospel according to Mary*, which Roberts believed could be relatively precisely dated between the middle of the second century and the early third century; PSI 1.22 + 8.988, a rough codex of dated horoscopes from the late fourth century; and the Codex Sinaiticus, which has the marginal apparatus of the Eusebian canons that establishes a date after the early fourth century and small cursive notes that Roberts believed were written 'in a distinctively fourth-century hand', and the system of representing numerals, which set a *terminus post quem* in the late fourth century.
14. This low overall percentage is partly deceptive. The examples in Roberts's handbook span the time period from the fourth century BCE to the fourth century CE. For much of that stretch, the roll was the exclusive means for the transmission of literature. We should not expect to see codices. Nevertheless, even if we limit ourselves to the period in which we know codices existed, say from the second century onward, the disparity in the samples is still impressive: 28 sheets and rolls against the 3 codices.

Subsequently published palaeographic albums have been larger, taking advantage of new discoveries, but they were not as 'austere' in their selection of samples. And in some cases, they did not claim to be. Eric G. Turner's *Greek Manuscripts of the Ancient World*, first published in 1971, was not intended to be a handbook for establishing dates for undated manuscripts, but rather 'to supply the non-specialist classical scholar with a representative body of material illustrating Greek manuscripts written in antiquity' (Turner 1987: vi). Its contents are accordingly arranged by literary genre rather than by the dates of the manuscripts. And it should also come as no surprise that the vast majority of the manuscripts depicted in Turner's book are dated only by means of palaeography. Only 21 of the 79 writing samples in the album are dated by anything other than palaeography. That Turner's handbook is often used as a reference tool for dating undated manuscripts is thus somewhat worrisome, but it should be recalled that such usage was not how Turner envisioned the volume.

The frequently cited album of Cavallo and Maehler, *Greek Bookhands of the Early Byzantine Period A.D.300–800*, is a different matter. In this case, the authors explicitly state that the book's 'principal objective is to put the dating and classification of Greek literary scripts in this period on a more reliable basis' (Cavallo and Maehler 1987: v). Yet, fully two-thirds of the 126 manuscripts in the album are themselves dated only by means of palaeography. So, they offer in fact 42 dated or relatively datable samples over a 500-year range. The degree to which these 42 examples can serve as a basis for identifying temporal progressions of any of the several individual styles of writing in use over that span of time is thus certainly open to question.<sup>15</sup>

## The Pool of Datable Samples

Yet, the main problem I wish to address goes deeper, even beyond the handbooks to the entire corpus of dated and datable samples used to establish the chronologies of Greek handwriting of the Roman and late antique periods. It is true that the corpus of dated or datable samples of literary writing is not as *large* as we might like, but an equally pressing and less noticed problem is the *character* of this corpus. To summarize the difficulty as succinctly as possible: the pool of securely dated or datable samples of literary writing contains almost no codices.

15. The same question can be posed even to detailed studies dedicated to a single 'style' of writing. As Peter Parsons noted in his review of Guglielmo Cavallo's monumental work on the 'Biblical Majuscule', the set of data assembled by Cavallo for the period from the second to the ninth century CE contained some 130 samples, but only 13 were datable by some means other than palaeography, and these datable manuscripts were not spread evenly over the period (so Parsons: 'it must never be forgotten that the decadence of [the Biblical Majuscule] over a period of four centuries is given its structure by only three dated MSS'). See Cavallo 1967 and Parsons 1970.

This point is blindingly obvious. Rolls have a blank side that can be reused. The back of a dated documentary roll can be reused for a literary text, and the back of a literary roll can be reused for a dated document. Codices, with their leaves inscribed on both faces, are not ideal for reuse in this manner.<sup>16</sup>

Why is this lack of codices in the pool of dated comparanda a problem? It is widely acknowledged that before the third century CE rolls rather than codices were the main vehicle for the transmission of literature. Over the course of the third and fourth centuries, the codex overtook the roll as the chief medium for literature. Using the Leuven Database of Ancient Books (LDAB), we can get a rough sense of the change over time.<sup>17</sup> For the first century, codices account for virtually 0% of surviving books. Codices make up about 5% of books assigned to the second century, about 24% of books assigned to the third century, about 79% of books assigned to the fourth century, and about 96% of books assigned to the fifth century. The major shift seems to have occurred over the course of the third and fourth centuries. Why is this important for dating early codices? Two sets of data from Oxyrhynchus can help to illuminate the problem.

Lucio Del Corso has generated a list of all the examples of the ‘severe style’ published in the first 70 volumes of the P.Oxy. series.<sup>18</sup> So we have a group of samples all found (though not necessarily copied) at a single location. Out of this corpus of 248 examples, 16 have either a reasonably secure *terminus post quem* or a *terminus ante quem* established by one of the methods of reuse described above. The earliest of these datable samples was probably copied in the second half of the second century, the latest in the second half of the third century. It is

16. There is a small corpus of codices that were constructed by pasting together the written sides of used documentary rolls to make a double-thick length of blank papyrus and then cutting this thickened papyrus into sheets that were folded for use in codices. For a discussion of these rare books, see Bagnall 2002. On even rarer occasions, codices could be inscribed only on the right-hand pages of each opening, leaving the left-hand pages blank to be inscribed with other literature or documentary text. See Wouters 1979: 61-92.

17. These numbers were calculated by searching the ‘century’ and ‘bookform’ categories of the LDAB in October of 2016. No account is taken of items classified as ‘sheets’. The numbers were checked against the ‘graphing’ feature of the LDAB, which produced different raw numbers (because of the algorithms used to divide the values of individual pieces assigned dates like ‘second century to fourth century’) but nearly identical percentages. The percentages of codices I calculated are somewhat higher than those reported in 1983 by Roberts and Skeat 1983: 36-37: In the first century, codices account for 1%, in the second century 2%, in the third century 17%, in the fourth century 70%, and in the fifth century 89%. We may explain these differences by noting both the updated dataset of the LDAB and the fact that Roberts and Skeat restricted themselves to non-Christian books containing literature (that is, they left out books containing grammatical exercises, etc.).

18. See Del Corso 2006. Other papyri found at Oxyrhynchus (such as the many published in the PSI series) are not part of his survey.



thus not surprising that undated manuscripts written in the 'severe style' are usually assigned to the second or third centuries.<sup>19</sup>

But matters are not quite so simple. Del Corso's database presents an interesting conundrum. The list mostly consists of rolls, but there are at least ten codices (some of the fragments are difficult to positively identify as either roll or codex). The use of the 'severe style' thus spans the transition period from roll to codex (as does the use of other styles, such as the 'Biblical Majuscule'). But the pool of datable samples of the 'severe style' comes exclusively from rolls, and these samples have been used to assign dates even to the codices that also display this type of handwriting. It may be the case that all of these codices were in fact produced in the third century.<sup>20</sup> Yet, it is equally possible that the 'severe style' persisted beyond the second half of the third century, but we simply have no examples *datable* to this later period because the medium of choice had shifted to the codex, which cannot easily either incorporate used dated documents or be itself reused for dated documents. If so, dates assigned to codices on the basis of datable samples obtained from rolls may tend to skew early. And this is not just an issue for the 'severe style' of writing. In fact, the many new datable samples of Greek literary handwriting of all styles of the Roman era that have come to light over the last 120 years are overwhelmingly derived from rolls rather than codices. But it is this database of samples *from rolls* that has been used to assign dates both to rolls *and to codices*. This fact has special importance for the dating of early Christian manuscripts, which tend to be copied in the codex format.<sup>21</sup>

A second, partially overlapping set of data confirms this impression. In 1991, Mariachiara Lama produced an inventory of literary texts copied on the back sides of documentary rolls found at Oxyrhynchus. If the dates assigned to the 182 reused rolls Lama has inventoried are basically correct, the phenomenon of

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19. Of course, not everyone will agree on what properly belongs to the 'severe style'. Del Corso states that he has been 'inclusive' in his determination, but his list names only three papyri containing Christian material. Other equally respected palaeographers have described the writing of many more Christian pieces from Oxyrhynchus as belonging to the 'severe style'. Clarysse and Orsini have described as 'severe style' the following additional NT manuscripts from Oxyrhynchus not in Del Corso's list: P.Oxy. 1.2; P.Oxy. 4.657; P.Oxy. 7.1108 and 7.1009; P.Oxy. 65.4446; P.Oxy. 66.4494; and P.Oxy. 66.4499. Orsini and Clarysse also describe a second group containing five NT papyri from Oxyrhynchus as showing the alternation of thick and thin strokes in addition to the characteristics of the 'severe style' (Orsini and Clarysse 2012: 457).
  20. It has been suggested that the copyist of the roll in Del Corso's list with the latest *terminus post quem* (P.Oxy. 7.1016, a papyrus roll of Plato copied after 235 CE) also copied one of the codices on the list, P.Oxy. 57.3885, a papyrus codex containing Thucydides. See Funghi and Messeri Savorelli 1992.
  21. It is a regularly reported fact that the vast majority of extant early Christian manuscripts, especially those containing what we would identify as 'scriptural' or 'canonical' texts, employ the codex format. See, e.g., Hurtado 2006: 43-93.

reuse of the backs of documentary rolls for literary texts seems to have died out (at least in Oxyrhynchus) during the course of the third century.<sup>22</sup> Thus, using this collection of relatively datable samples to assign palaeographic dates to codices would require the assumption that particular types of handwriting died out along with the roll format (which, as we can clearly see from Del Corso's list, is a false assumption).<sup>23</sup> So, if a codex were copied in the late third or early fourth century using, say, the 'severe style', we would have no way (absent dated documents written in literary hands) of correctly assigning the date by means of palaeography because our pool of datable samples trickles off at the period at which the codex replaced the roll as the primary vehicle for the transmission of literary texts.<sup>24</sup>

## Conclusions

These observations should prompt a reconsideration of how palaeographic evidence is weighed when it comes to assigning dates to codices. It is regularly pointed out that undated literary manuscripts are best compared with datable

22. Of the 182 items in her catalogue, only four pieces are assigned a date as late as 'III/IV'; all the rest are earlier. See the data collected in Lama 1991. This is not to say that there are no exceptions. One can still find documents in reuse in, for example, the archive of Dioscorus in the sixth century (e.g. P.Cair.Masp. 67055).

23. I wish to be clear on this point. The shift from roll to codex was not accompanied by particular palaeographic changes. That is to say, we find the same types of writing in both rolls and codices (one can easily find examples of the 'Biblical Majuscule' or the 'severe style' on both rolls and codices). Indeed, this is the heart of the problem I identify here: The database of datable samples tails off with the rise of the codex in the third century. Further evidence confirming this phenomenon is now available thanks to *The Collaborative Database of Greek Bookhands* recently unveiled by Grant Edwards (<https://www.baylor.edu/classics/index.php?id=958430>). The number of datable literary samples sharply drops after the third century. According to data provided by Edwards, the numbers of datable literary samples are as follows: second century CE: 16, second/third century CE: 14; third century CE: 23; third/fourth century CE: 2; fourth century CE: 5; fifth century CE: 3; fifth/sixth century CE: 1.

24. The problem may become somewhat less serious from the latter part of the fourth century when some forms of literary writing and documentary writing begin to become more easily comparable thanks to what Jean-Luc Fournet has called 'la littérisation des documents' and 'la documentarisation de la littérature' (Fournet 2016: 76-84). Yet, it should be noted that this sentiment seems not to be shared by all palaeographers. According to Cavallo and Maehler, 'From the fourth century onwards, literary and documentary hands seem to develop along different paths and with increasing autonomy. The influence of documentary scripts on the forms of letters and ligatures, and on the general appearance, of contemporary bookhands, becomes far less evident than it had been in the preceding centuries; it can still be found in some formal literary hands but not, as a rule, in the formal and highly stylized scripts of this period' (Cavallo and Maehler 1987: 1).

literary manuscripts.<sup>25</sup> In the case of codices, however, overreliance on the corpus of datable literary manuscripts (i.e., reused rolls) will cause the dates of the codices as a group to skew early. In all likelihood, some codices are properly dated to the second and early third centuries, but just as certainly, some will have been dragged improperly into that period by comparison with a set of data that basically ends during the third century.<sup>26</sup> When working with codices, we should therefore pay special attention to dated documents of the later third and fourth centuries that are written in something approaching literary hands. The usefulness of such documents for establishing dates of undated manuscripts is generally recognized, but they become even more important in light of this observation about the corpus of datable literary manuscripts.<sup>27</sup> Finally, these observations reinforce the conclusion that historical arguments should never depend too heavily upon the dates of manuscripts that have been assigned only by palaeography, especially when such arguments involve codices in the early Christian period.<sup>28</sup>

## References

- Aland, Kurt  
 1963 'Neue neutestamentliche Papyri II', *NTS* 9: 303-16.
- Bagnall, Roger S.  
 1992 'An Owner of Literary Papyri', *CP* 87: 137-40.  
 2002 'Public Administration and the Documentation of Roman Panopolis', in A. Egberts, B.P. Muhs and J. van der Vliet (eds.), *Perspectives on Panopolis: An Egyptian Town from Alexander the Great to the Arab Conquest* (Leiden: Brill): 1-12.  
 2009 *Early Christian Books in Egypt* (Princeton, NJ: Princeton University Press).
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25. So Turner 1987: 19: 'Confidence will be strongest when like is compared with like: a documentary hand with another documentary hand, skilful writing with skilful, fast writing with fast. Comparison of book hands with dated documentary hands will be less reliable. The intention of the scribe is different in the two cases.'
26. Early Christian books, which tend to be copied in the codex format, will be disproportionately affected by this phenomenon, so we should be alert to the fact that, as a group, they may well be dated too early.
27. For this reason, some of the recent work of Stanley Porter seems off target. Porter has objected to the use of dated documents written in book-like hands for the purpose of assigning dates to undated literary papyri, claiming that 'there are characteristics of documentary hands, such as ligature and cursive forms, that distract from comparison'. Porter offers an alternative proposal 'to expand the analytical perspective for using undated manuscripts' to establish dates for other undated manuscripts (Porter 2013: 79). Aside from the nonsensical nature of his positive proposal (using one undated manuscript to date another undated manuscript), his demurring from using dated documents seems quite misguided given the characteristics of the corpus of datable literary manuscripts identified here.
28. This was the basic point of Nongbri 2005.

BeDuhn, Jason D., and Greg Hodgins

- 2017 'The Date of the Manichaean Codices from Medinet Madi, and its Significance', in Samuel N.C. Lieu, Erica Hunter, Enrico Morano and Nils Arne Pedersen (eds.), *Manichaeism East and West* (Turnhout: Brepols): 10-28.

Canart, Paul

- 2006 'La paléographie est-elle un art ou une science?', *Scriptorium* 60: 159-85.

Cavallo, Guglielmo

- 1967 *Ricerche sulla maiuscola biblica* (Florence: Le Monnier).  
 2008 *La scrittura greca e latina dei papiri: Una introduzione* (Pisa: Fabrizio Serra).  
 2009 'Greek and Latin Writing in the Papyri', in Roger S. Bagnall (ed.), *The Oxford Handbook of Papyrology* (New York: Oxford University Press): 101-48.

Cavallo, Guglielmo, and Herwig Maehler

- 1987 *Greek Bookhands of the Early Byzantine Period A.D. 300–800* (London: Institute of Classical Studies).

Choat, Malcolm

- 2019 'Dating Papyri: Familiarity, Instinct and Guesswork', *JSNT* 42.1.

Crisci, Edoardo, and Paola Degni

- 2011 *La scrittura greca dall'antichità all'epoca della stampa: Una introduzione* (Rome: Carocci).

Del Corso, Lucio

- 2006 'Lo "stile severo" nei P.Oxy.: Una lista', *Aegyptus* 86: 81-106.

Edwards, Grant

- 2019 *The Collaborative Database of Greek Bookhands*. <https://www.baylor.edu/classics/index.php?id=958430>

Fournet, Jean-Luc

- 2016 *Ces lambeaux, gardiens de la mémoire des hommes: Papyrus et culture de l'Antiquité tardive* (Paris: Fayard).

Funghi, Maria Serena, and Gabriella Messeri Savorelli

- 1992 'P.Oxy. VII 1016 e P.Oxy. LVII 3885: Uno stesso scriba', *Tyche* 7: 79-83.

Goler, Sarah, David M. Ratzan, Roger Bagnall, Alexis Hagadorn, James McInerney and James T. Yardley

- 2019 'Dating Ancient Egyptian Papyri through Raman Spectroscopy: Concept and Application to the Fragments of the *Gospel of Jesus' Wife* and the Gospel of John', *JSNT* 42.1.

Hurtado, Larry W.

- 2006 *The Earliest Christian Artifacts: Manuscripts and Christian Origins* (Grand Rapids, MI: Eerdmans).

Kenyon, Frederic G.

- 1894 'Two New Mss. in the British Museum', *The Journal of Philology* 22: 238-61.  
 1899 *The Palaeography of Greek Papyri* (Oxford: Clarendon Press).

Kruger, Michael J.

- 2012 'The Date and Content of P.Antinoopolis 12 (0232)', *NTS* 58: 254-71.

Lama, Mariachiara

- 1991 'Aspetti di tecnica libraria ad Ossirinco: Copie letterarie su rotoli documentari', *Aegyptus* 71: 55-120.

Luijendijk, AnneMarie

- 2010 'A New Testament Papyrus and its Documentary Context: An Early Christian Writing Exercise from the Archive of Leonides (P.Oxy. II 209/P10)', *JBL* 129: 575-96.
- 2011 'Reading the *Gospel of Thomas* in the Third Century: Three Oxyrhynchus Papyri and Origen's *Homilies*', in Claire Clivaz and Jean Zumstein (eds.), *Reading New Papyri in Context: Lire les papyrus du Nouveau Testament dans leur contexte* (Leuven: Peeters): 241-67.

Nongbri, Brent

- 2005 'The Use and Abuse of P52: Papyrological Pitfalls in the Dating of the Fourth Gospel', *HTR* 98: 23-48.
- 2014 'The Limits of Palaeographic Dating of Literary Papyri: Some Observations on the Date and Provenance of P.Bodmer II (P66)', *MH* 71: 1-35.
- 2018 *God's Library: The Archaeology of the Earliest Christian Manuscripts* (New Haven, CT: Yale University Press).

Orsini, Pasquale, and Willy Clarysse

- 2012 'Early New Testament Manuscripts and their Dates: A Critique of Theological Palaeography', *ETL* 88: 443-74.

Parker, David C., David G.K. Taylor and Mark S. Goodacre

- 2013 'The Dura-Europos Gospel Harmony', in David G.K. Taylor (ed.), *The Papers of the First Birmingham Colloquium on the Textual Criticism of the New Testament* (repr.; Piscataway, NJ: Gorgias): 192-228.

Parsons, Peter J.

- 1970 'Review of Guglielmo Cavallo, *Ricerche sulla maiuscola biblica*', *Gnomon* 42: 375-80.

Porter, Stanley E.

- 2013 'Recent Efforts to Reconstruct Early Christianity on the Basis of its Papyrological Evidence', in Stanley E. Porter and Andrew W. Pitts (eds.), *Christian Origins and Greco-Roman Culture: Social and Literary Contexts for the New Testament* (Leiden: Brill): 71-84.

Roberts, Colin H.

- 1950 *The Antinoopolis Papyri, Part I* (London: Egypt Exploration Society).
- 1956 *Greek Literary Hands 350 B.C.–A.D. 400* (Oxford: Clarendon Press).

Roberts, Colin H., and Theodore C. Skeat

- 1983 *The Birth of the Codex* (London: The British Academy).

Sayce, Archibald

- 1889 'The Greek Papyri', in W.M. Flinders Petrie (ed.), *Hawara, Biahmu, and Arsinoe* (London: Field & Tuer): 24-37.

Thompson, Edward Maunde

1893 *Handbook of Greek and Latin Palaeography* (New York: D. Appleton).

1912 *An Introduction to Greek and Latin Palaeography* (Oxford: Clarendon Press).

Treharne, Elaine

2011 'The Good, the Bad, the Ugly: Old English Manuscripts and their Physical Description', in Matthew T. Hussey and John D. Niles (eds.), *The Genesis of Books: Studies in the Scribal Culture of Medieval England in Honour of A. N. Doane* (Turnhout: Brepols): 261-84.

Turner, Eric G.

1966 'Review of Victor Martin, *Papyrus Bodmer XX: Apologie de Philéas*', *JEA* 52: 199.

1977 *The Typology of the Early Codex* (Philadelphia: University of Pennsylvania Press).

1987 *Greek Manuscripts of the Ancient World* (2nd edn; London: Institute of Classical Studies).

Vitelli, Girolamo

1912 *Papiri greci e latini, volume primo* (Florence: Enrico Ariani).

Wouters, Alfons

1979 *The Grammatical Papyri from Graeco-Roman Egypt: Contributions to the Study of the 'ars grammatica' in Antiquity* (Brussels: Paleis der Academiën).