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Loss and Circumstances: How Early Modern Europe Discovered the ‘Material Text’

Abstract: This paper discusses early modern European precedents to contemporary debates about the material dimensions of written artefacts. It demonstrates that materiality was a major concern for producers and users of both print and manuscript written artefacts already in the seventeenth and eighteenth century. Several reasons alerted early modern Europeans to the material features of manuscripts and prints. Against a broader survey of these developments, one particular line of thought is explored more in detail. Starting from two texts by Thomas Bartholin (1670) and Franz Ernst Brückmann (1727), the essay highlights especially how experiences of loss by fire contributed to early modern awareness of the materiality of writing.

1 Two texts, two tales

In the summer of 1670, Hagestedgaard, a country estate on the Danish island of Zealand and about 75 kilometres from Copenhagen, burnt down. It belonged to Thomas Bartholin, a well-known Danish professor of Medicine at Copenhagen University. The fire consumed much of Bartholin’s possessions, including a good part of his library. As Bartholin detailed soon after, the ‘loss of his labours’, namely of his allegedly numerous unpublished manuscripts pained him most about this fire.¹ In the immediate aftermath of the conflagration, he sat down and composed a short ‘dissertation’ of 114 octavo pages, entitled *de incendio bibliothecae dissertatio*. Starting from this devastating personal experience, Bartholin engaged in a range of broader considerations, rethinking the relationship between knowledge, writing, and materiality.

Two generations later, in 1727, an otherwise little known German scholar by the name of Franz Ernst Brückmann, member of the Imperial Academy *Leopoldina*, wrote a brief text that reflected upon some experiences the author had recently made with the resilience of material texts.² A few years earlier, in 1724, he had visited the town of Dobsinà in Hungary, where the local asbestos

1 Bartholin, *De Bibliothecae Incendio*.

2 Brückmann, *Historia naturalis*; cf. Büttner 2004, esp. 168–177.

mines had sparked his interest. Triggered by his tour of the mining town, Brückmann published a brief natural history of the mineral asbestos, presenting his readers with a survey of what it was and what it could be used for. The ‘stone’, he explained, was not just inexplicably incombustible. As he had observed himself, this rare mineral could also be turned into paper, transforming the epitome of a fragile medium into one of peculiar resilience. The seemingly contradictory idea of ‘incombustible paper’, although it did not become an everyday reality, had left the realm of mere fiction.

Brückmann’s experiments with asbestos paper provide a valuable counterpoint to Bartholin’s lamentation about the vulnerability of manuscripts. Both texts reflect upon a common topic, the materiality, or, more precisely, the physical vulnerability of traditional writing surfaces. They signal that European scholars and practitioners in the early modern period inhabited a world in which paper may have long been without a serious alternative, but also one that considered its material properties to be deeply problematic. Bartholin’s contemplations about manuscript destruction and Brückmann’s report on asbestos paper illustrate this concern with the materiality of written artefacts, which already originated in the era of parchment, but grew in importance significantly alongside paper’s rise in early modern Europe.³

2 Early modern Europe’s many routes to the ‘material text’

The essays by Bartholin and Brückmann were part of a larger trend. Numerous of their contemporaries discussed material aspects of Europe’s written artefacts from very different angles. By the seventeenth century at the latest, producers and users of written artefacts alike routinely explored the materiality of writing. The discovery of ‘material texts’ took early modern Europeans on many circuitous routes⁴: in addition to growing concerns about manuscript destruction at least four further contexts – namely, antiquarian philology (1), bibliophile

³ Gagné 2017 focusses strongly on the rise of paper as the most important stimulus for intensified considerations of material vulnerability. Without denying that paper – given its fragile nature – proved to be very important, much of the early modern debate reviewed here, in fact, did not distinguish prominently between parchment and paper in terms of vulnerability.

⁴ ‘Material texts’ are defined as ‘all aspects of how texts take material form and circulate in the world’ by the influential ‘Workshop in the History of Material Texts’ at the University of Pennsylvania, see <<https://pennmaterialtexts.org/about/>> (accessed on 9 Nov. 2020).

curiosity (2), discussions of alternative media systems (3), and practical tools for storing information (4) – contributed to conceptualizing materiality.

2.1 Philology

Renaissance humanism created a growing awareness for the material features of manuscripts. Based on medieval precedents, scholars during the so-called Renaissance re-appropriated the philological zeal of classical antiquity. From work on ancient Latin texts, the humanists quickly moved on to medieval ones. As they had done with classical Latinate literature, they worked hard to contextualize these later texts, scrutinizing them to find hints about their origin, purpose, and provenance. Historicizing texts also soon morphed into a larger project, one of historicizing the cultures that once surrounded and produced them. As humanism evolved into antiquarianism, scholars increasingly situated the textual sources they considered within a broader array of material evidence. This also led to a deeper understanding of written artefacts *as* elements of past material cultures.⁵ By the seventeenth century, scholars all over Europe habitually combined the hermeneutic approaches of language and text analysis with a careful investigation into the material features that defined all text-bearing documents. As one eighteenth-century authority noted in a typical statement, handwriting's historical 'variation results partly from the material into which one writes, partly from the shape of individual characters, partly from the style of writing'.⁶ The resulting concept of historical 'sources', as it developed from the late Middle Ages onwards and as it is familiar until today, in principle binds together textual and material features of written artefacts.⁷

2.2 Bibliophily

When buyers began to consider collecting manuscripts to be a distinct social activity, material criteria of the text in question often became the guiding prin-

⁵ Summaries in Turner 2014, Grafton 2007.

⁶ Baring, *Clavis diplomatica*, 5–6: 'Atque haec variatio apparet partim ex materia cui inscriptum est, partim ex ipsis Characteribus, partim ex forma scriptionis; quae fundamenta fere totam rem absolunt in arte discernendi MSt. Ut ita ex materia et Characteribus Codicis MSS. Diplomatum ac Chartarum veterum, maxime de illarum antiquitate, nisi aliunde constet, iudicium ferendum est'. Cf. Haas 2019.

⁷ E.g. Grell 1993, Wallnig 2019, Joassart 2017, Sawilla 2009, Gierl 2012.

ciples of these collectors' acquisition policies. 'Old' books and manuscripts developed into sought-after objects, even though it was not always immediately clear how the boundaries between 'old' and 'new' were drawn and philologists debated the philological value of 'old' manuscripts.⁸ Oldness became a distinctive subset of 'rareness', and most collectors were especially interested in rare written artefacts. In addition to age, other rare material features may have played a role in guiding politics of acquisition: although there is no consensus, if early modern collectors paid particular attention to illuminated manuscripts – often, in fact, early modern catalogues do not even mention such illustrations –, there are also a few signs that at least some collectors *did* occasionally appreciate colourful illuminations.⁹ Furthermore, written artefacts attracted particular attention if they boasted 'valuable' material features such as colourful inks or unusual writing surfaces, such as, for instance, asbestos paper.¹⁰ A good example for the latter is Zacharias Konrad Uffenbach, the well-known Frankfurt collector of rare books. In late 1727, he eagerly acquired a few 'little sheets' of asbestos paper directly from Brückmann.¹¹ Although no unified codicological terminology existed in pre-modern Europe, the abundance of descriptors alluding to features such as material, age or luxury, however vague they may have been, nonetheless clearly shows that scholars and bibliophiles paid increasing attention to such physical aspects.

2.3 Comparing media systems

The materiality of written artefacts also came into sharper focus as observers delved into what could be called 'comparative media studies'. Attention for the mediality and materiality of written artefacts grew as Europeans increasingly realized that there were powerful alternatives to the familiar systems of handwriting on paper (or parchment). They encountered a bewildering variety of alternative writing systems all over America, Africa, and Asia. To come to terms with it, Europeans compared not only different languages and scripts, but also

⁸ McKitterick 2018, esp. 45–50; Vanek 2007, 218, 240 and 247 on the ambivalence of philologists.

⁹ Müller 2020.

¹⁰ Gastgeber 2015, 46.

¹¹ Brückmann to Uffenbach, 20 October 1727, Universitätsbibliothek Johan Christian Senckenberg, Frankfurt, *Epistolici Commercii Uffenbachiani*, vol. 14 (1728), no. 29, fol. 54^{r-v}. I owe this reference to my doctoral student Jacob Schilling, Gotha, who found and transcribed this piece of evidence.

the material dimension of different writing systems with one another.¹² In addition to *different* writing systems, they furthermore encountered the total *absence* of writing systems as a cultural possibility.¹³ Religious controversies among European Christians further alerted observers to questions of mediality, for instance, by triggering new debates about oral versus written forms of transmitting knowledge.¹⁴ The concept of ‘tradition’ as criticized by Protestant polemicists initially carried strong overtones of ‘orality’. As a result, it also gave discussions about oral forms of knowledge transfer a hint of anti-Catholic polemic. By the late eighteenth century, preferences had shifted, however. In an age that rediscovered ‘Ossian’ and Bardic literature, the (invented) oral culture of the Germanic or Celtic Druids and Bards became fashionable. The immateriality of the spoken word, difficulties of philology and researching it notwithstanding, morphed into a marker of distinction. Taken together, these developments inspired a growing awareness for the unique scriptural, but also for the material and the physical properties of Europe’s written artefacts.

Critical examinations of print gave additional strength to this reassessment of Europe’s own indigenous practices of writing and their historical developments. The spread of the printing press triggered heated debates about the relative advantages of different medialities. These debates included considerations of materiality right from the beginning.¹⁵ The printing press and its specific mediality itself became a subject of history, and this process of historicization, again, included a discussion of the technology’s material aspects. The pan-European debate about Bernard von Mallinckrodt’s seminal work *The Birth and Progress of the Art of Printing* serves as a good example. The controversy about this 1639-publication included an in-depth discussion about important technical improvements.¹⁶ In this case, comparative reflections about media systems, again, drew ever more attention to the material dimensions of written artefacts.

¹² See, e.g., Hosne 2014.

¹³ Zedelmaier 2001.

¹⁴ McDowell 2017. Cf. also Lupton 2012.

¹⁵ Gagné 2017.

¹⁶ Von Mallinckrodt, *De ortu ac progressu artis typographicae*; Mentel, *De vera typographiae origine*; Zeltner, *Correctorum in typographiis*. See also Stoker 2005 and Glomski 2001.

2.4 Scholarly practices

The materiality of handwriting could also become an explicit concern for early modern scholars due to their everyday working routines. From the sixteenth century onwards, the practices of producing texts and the routines of knowledge management became more thoroughly conceptualized. Scholars started to explain and discuss their working habits. These self-reflexive debates about the practices of producing texts and knowledge soon engulfed the material dimension of working with paper. Early modern scholars not only *used* innumerable ‘little tools of knowledge’ such as paper slips, needle and thread, or notebooks, they also *talked* about them at great length. Instructions on how to materially produce scholarship proliferated, ranging from books that offered the best practices for organizing notebooks to pamphlets about the construction of filing cabinets.¹⁷ Scholars mused about the use of scissors as well as about the application of glue and they debated the minute details of cross-referencing and indexing.¹⁸ In short: early modern intellectuals conceptualized the inherently material ways of text and knowledge production often as vibrantly as they engaged in philosophical debates about epistemology. Beyond being deeply material in practice, scholars also understood and publicly contemplated this materiality of knowledge production to a degree previously unheard of.

3 Taking note of fragility

Against this broader background, this essay sketches in more detail the traumatic experiences of written artefacts’ destruction and the impact such loss had on early modern debates about textual materiality. As Bartholin and Brückmann illustrate, the loss of writings, or at least the dangers of loss, were issues of great concern. Since Italian humanists of the fourteenth and fifteenth century had conceptualized the major difference that set their own time apart from antiquity to be the loss of writing, predominantly the loss of ancient texts, discussions about destruction of written artefacts proliferated. Talking about the *absence* of documentation, often in a nostalgic mode, emerged as a defining feature of humanist discourse.¹⁹ The destruction of written artefacts as a theme features even more prominently in early modern archival literature. Authors

17 E.g. Yeo 2014, Cevolini 2017, Cevolini 2006, Becker and Clark 2001.

18 Friedrich 2018b, Marten and Piepenbring-Thomas 2015, Vogel 2015. See also Smyth 2018.

19 For a modern assessment of lost written artefacts, see Hays 2016.

from the sixteenth, seventeenth, and eighteenth century often described the past as a dark age of archival history. Carelessness and neglect and the loss and destruction that followed shaped the world of archives, at least as early modern observers described it.²⁰ Libraries fared hardly better, according to early modern writers. Justus Lipsius published a general history of libraries in 1602 that detailed not only the achievements, but highlighted also some of the disasters that characterized the history of libraries.²¹ Thomas Bartholin, too, in his short account of his library fire, briefly surveyed previous conflagrations. Bartholin's account covered many of the well-known *lieux de mémoire* such as the burning of the library of Alexandria.²² Next to the famous, he also included more mundane, familial events such as the fire that diminished his grandfather Thomas Finck's book collection.²³ In doing so, Bartholin's discussion of his personal material losses combined well-established master narratives about the vicissitudes of Europe's long-term cultural development with these more localized descriptions. With ease, it integrated his personal experiences of material vulnerability into broader patterns.

Against this backdrop of omnipresent loss of written artefacts, many early modern writers positioned the printing press as an agent of protection against the destruction of irreplaceable texts. As one typical passage put it:

Many scholars have lamented that the longer the world exists, the less is known about its earliest times. Before printing arrived for the benefit of the public, it was increasingly difficult to find information about very old times and what happened there. This [sc. printing] allowed handing down from generation to generation so many things that would otherwise have passed into oblivion.²⁴

The author in question considered print, and print alone, to be the last resort against 'losses from war, fire, pillaging, and constant moving around'. An argument of numbers supported all assumptions about the power of the printing

20 Friedrich 2018a, Filippov and Sabaté 2017.

21 Baldi 2013, Walker 1991. Much of the literature was later collected in *De bibliothecis atque archivis virorum clarissimorum libelli et commentationes*.

22 Rieger 2003.

23 Bartholin, *De Bibliothecae Incendio*, tr. O'Malley 1961, 12.

24 'lange und von allen gelehrten so vielfältig beklagte Erfahrnuß, daß je länger die Welt gestanden, desto weniger authentische Kundschaftten von uhr-alten Zeiten, und dem, was darin vorgefallen, aufzubringen gewesen, bevor die Druckerey dem gemeinen Weesen zum größten Nutzen erfunden worden; wodurch nachgehends der grosse Schatz vieler Dingen, so sonst in der Vergessenheit ewig stecken geblieben wären, der Nachkommenschaft von Hand zu Hand übertragen worden', Burkart 2001, 3.

press to protect texts against physical destruction: once a manuscript was printed, so people thought, the text existed in so many copies that its survival became much more likely than before. The destruction of an individual copy would not immediately threaten the survival of a text or idea.

Early modern Europeans considered this argument *not* to be universally true, however. By no means, they well knew, had printing secured the general survival of printed text. On the contrary, many print products were exceedingly rare.²⁵ Speaking of ‘rare’ printed books started as early as the late sixteenth century, only a few generations after the new technology had first arrived. By the eighteenth century comprehensive guides to ‘rare books’ like the one published by Bremen bibliographer Johann Vogt began to appear.²⁶ Vogt told his readers that numerous forms of rareness existed, but he defined all of them through material features. Some print products were ‘rare’, he explained, because they had special bindings. Others were hand-coloured, or they had been printed on particularly valuable materials²⁷ – parchment, high quality rag paper, or experimental materials, such as paper from straw or asbestos.²⁸ Material refinement, then, made some prints rare.

The most obvious dimension of ‘rareness’, however, was scarcity through destruction. Often enough, even normal and unrefined prints survived only in very small numbers, as Vogt and his peers noted. So-called *Deductiones* are a case in point. These political or legal position papers circulated among a restricted public, for instance, among courtiers, administrators, and counselors. Because such texts were produced in small print runs only and they rarely reached the book market, they quickly vanished once they had been used. As Christoph Sigmund von Holzschuher, an expert in this field, lamented in 1778, such products were ‘rare’, often produced only in ‘small numbers’, and distributed just ‘locally’. In doing so, von Holzschuher single-handedly contradicted the master narrative about the printing press as an agent of textual permanence.²⁹ Single-leaf prints constituted another genre of such endangered print products: Late seventeenth and early eighteenth century bibliographers agreed that the so-called ‘chartas volantes’ were quickly ‘becoming rare’.³⁰ Books

²⁵ McKitterick 2018.

²⁶ Vogt, *Catalogus historico-criticus*.

²⁷ Vogt, *Catalogus historico-criticus*, no pages (*axiomata generalia*). For ‘external appearances’, see McKitterick 2018, 62–100.

²⁸ Koops, *Historical Account of the Substances* was printed entirely on ‘the first useful paper manufactured sole[l]y from straw’ (title page). Cf. Calhoun 2020.

²⁹ Holzschuher, *Deductions-Bibliothek von Deutschland*, III–VII.

³⁰ *Lebensbeschreibung Herrn Christoph Jacob Imhofs*, 229.

created by marginal groups, often under clandestine conditions and without the support of firmly institutionalized infrastructures of distribution and marketing, were equally vulnerable. Church historians of the eighteenth century, for instance, lamented the scarcity of sources about early Anabaptist history and constantly commented upon the extraordinary scarcity of their printed tracts and treatises. In 1758, Jakob Wilhelm Feuerlein, a well-connected authority in the field, diagnosed the vulnerability of the Anabaptists' early print products in blunt terms:

It is so difficult to find these books printed only 200 years ago nowadays, [which begs the question] how rare and, indeed, invisible they will be a century from now? Public libraries and the prefects [in charge] do not pay any attention to small print products, even though they are extremely important.³¹

None of these texts were protected from disappearing simply by being printed. In fact, when they were preserved, this often hinged on active measures of preservation. A growing number of bibliophiles focused their attention on collecting these delicate items not least because they were considered important historical sources. The abovementioned Christoph Siegmund von Holzschuher, for one, put together (and published) a large body of *Deductiones* that he had brought together, arguing that they would provide historians with unrivalled insights into internal administrative protocols. Christoph Jacob Imhoff, a prominent Nuremberg patrician and bibliophile, meanwhile, purposefully collected single leaf prints (in addition to many other books).³² Other book lovers, including the famous Samuel Pepys, focused on chapbooks, in addition to many other rare items. These cheaply produced collections of vernacular literature for mass consumption initially may have had large print runs, but they often disappeared as quickly as they could be brought to market.³³

As these examples show, early modern sentiments of vulnerability and loss extended well beyond the sphere of handwritten artefacts. They explicitly included many genres of print products as well. *All* paper-based writing, many authors argued, ran an omnipresent danger of being destroyed. According to

³¹ Feuerlein to Krohn, 13 April 1758: 'da nun jetzt schon die vor 200 Jahren gedruckte bücher so schwer zu finden und rar sind, wie rar und fast gar unsichtbar werden sie nach 100 Jahren werden? Bibliothecae publicae und ihre Praefecti achten die kleinen Piecen für zu geringe, ohnerachtet sie höchste nothwendig, und nach 100 oder 200 Jahren viel rarer sind als die grossen werke, welche man alleine pro Bibliothecis publicis zu suchen pflaget'. Staatsbibliothek Hamburg, Mss Theol. 1208, fols 89^r–90^v. For more context, see Friedrich 2020.

³² *Lebensbeschreibung Herrn Christoph Jacob Imhofs*.

³³ Wilson 1957. Cf. Loveman 2015, esp. 189–194.

many early modern observers, the ease with which written artefacts could perish was not exclusive to handwriting, but also included printing. As John Gagné has observed, Europe's 'paper sensibility' contained significant amounts of anxiety about loss and buzzed with constant talk about 'degradation and oblivion'.³⁴ Considerations of physical vulnerability, one could summarize, constituted one of the defining and much-discussed material features of Europe's culture of writing.

4 Fighting against material vulnerability

One way of coping with the material vulnerability of written artefacts consisted in finding practical tools to contain the dangers of destruction and improve artefacts' chances of survival. Archives are one case in point: if anxiety about information overload was one major trigger for Europe's investment in archival infrastructure since the late Middle Ages, then widespread fears of loss and destruction constituted another.³⁵ All over Europe, an emerging archival mentality combined both perspectives, valuing archives as machines for storage and retrieval *as well as* for the protection of written artefacts. With considerable sophistication, archivists and archive owners devised protective measures for paper and parchment documents that ranged from thoughts about proper ventilation to fireproof roofing or biological pest deterrents.³⁶

Librarians, too, paid increasing attention to the physical preservation of individual codices. This attention, for instance, drove protective measures such as the re-binding or strengthening of worn copies. At the Papal Library in Rome, a few sources survived pointing to the existence of planned measures of book-restoration from the late fifteenth century on. By 1607, a 'restaurator' was explicitly ordered to 'maintain [*restaurare*] books by adding pages where they were missing by gluing them' to the remaining sheets. All of this was necessary, because 'Latin and Greek books, due to old age, will be consumed and ruined by time'.³⁷ For similar reasons, heavily used textbooks in some European schools in

³⁴ Gagné 2017.

³⁵ Information overload: Blair 2010; Loss: Keller, Roos and Yale 2018, 16.

³⁶ Friedrich 2018a.

³⁷ Bignami Odier and Ruysschaert 1973, 20–21. Mercati 1937, 131–133: 'Poiche li libri così greci come latini per l'antichità si vanno col tempo consumando, et ruinando dal[le] terme, et quasi mancando le carte intiere. Il Restauratore doveva haver cura di accomodarli et restararli

the later seventeenth century were regularly rebound or carefully repaired in an effort to keep them available for future generations of students.³⁸ In a manuscript manual for librarians from 1748, finally, the Hanoverian scholar Christian Ludwig Scheidt asked his superiors for a range of assistants to help the leading ‘bibliothecarius’, not least by taking over his extensive restauration duties.³⁹ Monitoring the material status of books, both handwritten and printed, became a crucial part of librarianship in the early modern period. Fighting against the dangers of destruction by protecting and repairing inherently fragile written artefacts, thus, became a key concern in early modern Europe.

5 (Unsuccessful) searches for a solution: paper made from asbestos?

Brückmann’s treatise about asbestos suggested yet another option, namely reducing an artefact’s vulnerability by changing its material configuration. Would not paper made from fireproof asbestos solve the problem of material destruction by fire? Brückmann was not alone to suggest this: in late seventeenth and eighteenth century Europe, several scholars experimented with asbestos paper. In 1684, for instance, the English Naturalist Edward Lhuyd sent a brief report to the secretary of the Royal Society, Henry Oldenburg, that described his attempts at creating asbestos paper in Wales.⁴⁰ Lhuyd detailed how he ‘pounded’ the mineral and ‘sifted’ out non-asbestos particles, before dissolving the resulting powder into water at a local paper mill. With that mixture, he ordered the artisans to ‘proceed in their usual method of making paper’. A very similar set of instructions then appeared in 1712 in Johann Hübner’s *Curieuses Natur-Kunst-Gewerk und Handlungs-Lexicon*, perhaps directly translating from Lhuyd’s English instruction.⁴¹ Experiments like these actually produced a few pages of asbestos paper and Brückmann – seeking a proof in content as well as

diligentissimamente aggiungendo la Carta dove mancava, incollandola con colla sottilissima fatta con cose appropriate contro le tarme, in modo che appena si conoscessi’.

³⁸ E.g. Ottermann 2018, 251–254.

³⁹ Christian Ludwig Scheidt, *De Officiis Historiographi & Bibliothecarii* [...], in Niedersächsische Landesbibliothek, mss XLII 1931, no pages (§ 12).

⁴⁰ Lhuyd, ‘An Account of a Sort of Paper’.

⁴¹ Hübner, *Curieuses Natur-Kunst-Gewerk*, col. 121. Cf. Brückmann, *Memorabilia Leutschoviensis*, 5.

in form – had four copies of his booklet printed on paper of this kind. One of these copies still survives in the Herzog-August-Library in Wolfenbüttel.⁴²

These experiments must be placed in their proper context. On the one hand, the late seventeenth and early eighteenth century saw all kinds of experiments with alternative forms of papermaking.⁴³ This was part of a broader reformist agenda of improving traditional technologies. From a cameralist's perspective, rhetorically focused on ways to elevate the common good of early modern (princely) realms, almost every part of European material culture was ripe for such reform.⁴⁴ Moreover, interest in asbestos was not a new development. The material was widely discussed in ancient literature and even practitioners such as Lhuyd or Brückmann started their own publications with an extensive analysis of time-worn literary traditions.⁴⁵ Based on these ancient ideas, naturalists had long discussed its potential uses, focusing especially on the possibility of spinning a durable thread from the material.⁴⁶

And yet, the turn to asbestos *paper* was not just a predictable result of generic cultural trends. Lhuyd's or Brückmann's ideas about making *paper* from stone were without earlier precedents, thus reflecting a very contemporary need.⁴⁷ Dreams about asbestos *paper* clearly responded to growing early modern concerns about the vulnerable materiality of paper-based written artefacts. Even though no mass production of asbestos paper ever occurred and despite the fact that contemporaries agreed that the experiments conducted by Lhuyd or Brückmann were 'more curious than useful', their search for new technologies for papermaking nevertheless demonstrates the urgency with which early modern Europeans looked for different, more durable writing surfaces.⁴⁸

⁴² Kazmeier 1953. The copy in question has the call number HAB: Nf 19. I have not been able to inspect the copy first hand. No other prints on asbestos exist in Munich, Wolfenbüttel, Berlin or Washington DC (Folger), as confirmed by emails from Thorsten Allscher, Volker Bauer, Andreas Wittenberg, and Heather Wolfe in October 2020.

⁴³ See Szalay 2019, Calhoun 2020.

⁴⁴ On the cameralistic context of asbestos paper (as mentioned in Fürstenau, *Gründliche Anleitung*, 146); see Keller 2017; cf. also Szalay 2019.

⁴⁵ Bianchi and Bianchi 2015.

⁴⁶ See, e.g., Ciampini, *De Incombustibili lino*. Cf. Carnevale 2012.

⁴⁷ Büttner 2004, 174 and 229.

⁴⁸ Fürstenau, *Gründliche Anleitung*, 146. Cf. Büttner 2004, 233–234. Rumours about mysterious caches of 'incombustible' papers circulated among the curious, see *Sammlung von Natur- und Medicin- wie auch hierzu gehörigen Kunst- und Literatur-Geschichten* 25 (1723), 336.

6 The benefits of conflagration

Although Thomas Bartholin was devastated by his personal loss, on a more general level he also believed that the fragility of paper-based writings had its advantages. Certain forms of subversive texts deserved intentional destruction. Fire, so to say, was not just a danger to civilization; it could also be a valuable tool to maintain orthodoxy and order. Bartholin and many other authors supported in principle the practice of burning dangerous books by state and church authorities.⁴⁹ Bartholin mentioned numerous examples of books that had rightfully been destroyed, including Pietro Pomponazzi's infamous 1516 book *De immortalitate animae*, which was accused of proposing a materialistic philosophy since it doubted the immortality of the human soul. Burning heretical and dangerous texts, again, affected printed and handwritten artefacts. While it is true that the public execution of written artefacts most prominently concerned printed materials, at least occasionally investigative procedures against seditious and politically 'dangerous' manuscripts did occur as well.⁵⁰ It is well known, for instance, that early modern state authorities at times attempted to control the market for manuscript newsletters.⁵¹ Sometimes, offensive manuscripts ended up burning at the stake, in the same way as and often together with printed books.⁵²

On other occasions, authors associated the burning of books with a kind of quality control. The English writer Ben Jonson, whose library burned a few decades before Bartholin's, and who discussed this experience in a poem, equated manuscript destruction with the weeding out of substandard texts. The fire of Vulcan, he insisted, should and could execute the judgments of 'public fame' about a text's quality.⁵³ Bartholin, too, presented the same thought, although in a slightly different version: the burning of his unfinished manuscripts had evidently proven that they were not worthy of eternal preservation. In addition to protecting state and religion, then, the physical destruction of manuscripts served as a tool of legitimate cultural amnesia. Political and religious censorship, literary criticism, and information management became close neighbours.⁵⁴

⁴⁹ Werner 2007, Cressy 2005, Körte 2012, Hirschi and Spoerhase 2013, Partington and Smyth 2014, Smyth 2014.

⁵⁰ Millstone 2016, 25–26.

⁵¹ De Vivo 2007, 84 and 185–187.

⁵² Millstone 2016, 281.

⁵³ Smyth 2014.

⁵⁴ Loewenstein 1999, 102.

Despite the famous words by Bartholin's contemporary John Milton that 'he who burns a book soon kills a man', early modern Europeans were thus far from simply equating book burning with barbarism. Rather than lamenting the violent destruction of manuscripts as such, the *indiscriminate* burning of manuscripts and books by fate or a force of nature offended Bartholin and his peers as premature, chaotic, and culturally disastrous. They calibrated their attitudes towards the termination of manuscripts in relation to the manuscripts' (negative) cultural impact.

7 Beyond materiality

As Bartholin would have known, physical destruction did not necessarily mean absolute disappearance of books and ideas. Complete destruction of entire print runs was difficult to achieve and at least isolated copies of persecuted works often survived only to reappear decades later. Even more importantly, there existed a complex dialectic between books, ideas, and memories of both. While the flames may destroy *books*, they cannot easily destroy either the expressed ideas or all memories about the books. In early modern Europe, ideas and texts usually circulated widely before ever reaching print. They had been discussed over dinner, copied by amanuenses, read in social gatherings or mentioned in letters, and, thus, would not necessarily vanish so easily. Due to the rallying cry that could result from destruction, destroyed and persecuted books even had the chance of becoming *lieux de mémoire* that provided a point of departure for future activities. Sometimes, remembering burnt books was a provocative act of resistance. In the early eighteenth century, for instance, Johann Heinrich Heubel, at one time professor of law at the University of Kiel, compiled a 'Bibliothèque de Vulcain'.⁵⁵ Heubel's 'library of Vulcan' was a list of more than 160 works that different authorities had condemned to be burnt as heretical. His bibliography of destruction was a (desperate) attempt at counteracting the disappearance of physical books. Early modern Europeans had to acknowledge that material destruction did not necessarily amount to the absolute disappearance of (dangerous and exciting) ideas and texts.

Bartholin believed in the power of memorizing destroyed manuscripts as well, although with less seditious ideas in mind. In a book from 1662, he reconstructed the archive or 'chest' (*Cista*) of the Medical Faculty of Copenhagen

⁵⁵ Mulsow 1994.

University, which had been partly destroyed by a fire in 1641.⁵⁶ Writing about destroyed books and manuscripts rescued them from total oblivion. Hence, he also provided a list of manuscripts burnt in his library in his *Dissertation*. Broadcasting his lost works, Bartholin claimed, ensured that these now lost books and papers continue to ‘live in the mouths of men, they live in my remembrance, they live in the desires of the learned.’⁵⁷ The act of physical destruction was tragic, but it might have the potential to grace a work that would remain unwritten with a special aura, giving a non-existent work a lease of life. Written artefacts were material objects, and early modern Europeans were well aware of the implications of textual materiality. Nevertheless, the same authors also appreciated that texts and ideas could not be reduced entirely to this materiality.

8 Conclusion

Brückmann and Bartholin, the intellectual and disciplinary differences between them notwithstanding, illustrate a broader feature of early modern European print and manuscript cultures: an acute concern with the destruction of written artefacts. As much as they might have been looking for improvements, early modern Europeans had to cope with the ‘evanescence’ (John Gagné) of manuscript and printed written artefacts. Such considerations of textual and cultural loss provided some of the most important incentives for early modern Europeans to reckon with and address the materiality of writing. As these authors illustrate, recent scholarly excitement about textual materiality actually continues a rich, albeit often underappreciated, tradition of European thought and research, tracing back to the Renaissance and beyond.

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⁵⁶ Bartholin, *Cista medica Hafniensis*, no pages (‘ad lectorem medicam’). On the fire, cf. Bruun 2015, 38.

⁵⁷ Bartholin, *On the Burning of his library*, tr. O’Malley, 20.

References

Primary sources

- Baring, Daniel Eberhard, *Clavis diplomatica*, Hannover: Sumptibus Haeredum B. Nic. Försteri et filii, 1737.
- Bartholin, Thomas, *De Bibliothecae Incendio Dissertatio Ad Filios*, Copenhagen: Typis Matthiae Godicchenii, sumptibus Petri Haubold, 1670. English translation: Thomas Bartholin, *On the Burning of his library and On medical Travel*, tr. Charles D. O'Malley, Lawrence: Univ. of Kansas Libraries, 1961.
- Bartholin, Thomas, *Cista medica Hafniensis*, Copenhagen: Typis Matthiae Godicchenii, impensis Petri Hauboldi, 1662.
- Brückmann, Franz Ernst, *Historia naturalis curiosa lapidis τοῦ ἀσβέστου*, Braunschweig: s.n., 1727.
- Brückmann, Franz Ernst, *Memorabilia Leutschoviensia et Dobschinensia*, Wolfenbüttel: s.n., 1740.
- Burkart, Martin (ed.) (2001), *Das Bickesheimer Wallfahrtsbuch von 1747*, Durmersheim: s.n.
- Ciampini, Giovanni Giustino, *De Incombustibili lino, sive lapide amianto, deque illius filandi modo epistolaris dissertatio*, Rome: Typis Reverendae Camerae Apostolicae, 1691.
- De bibliothecis atque archivis virorum clarissimorum libelli et commentationes*, antehac edidit Joachim Johann Mader, secundam editionem curavit J[ohann] A. S[chmidt], Helmstedt: Georg Wolfgang Hamm, 1702.
- Fürstenau, Johann Hermann, *Gründliche Anleitung zu der Haushaltungs-Kunst*, Lemgo: Johann Heinrich Meyer, 1736.
- Holzschuher, Christoph Siegmund von, *Deductions-Bibliothek von Deutschland: nebst dazu gehörigen Nachrichten*, Frankfurt and Leipzig: s.n., 1778.
- Hübner, Johann, *Curieuses Natur-Kunst-Gewerk und Handlungs-Lexicon*, Leipzig: Gleditsch, 1712.
- Koops, Michael, *Historical Account of the Substances which Have Been Used to Describe Events and to Convey Ideas, from the Earliest Date to the Invention of Paper*, London: T. Burton, 1800.
- 'Lebens-Beschreibung Herrn Christoph Jacob Imhofs / von und auf der Weyden-Mühl', *Fränckische Acta erudita et curiosa*, 4 (1726): 228–239.
- Lhuyd, Edward, 'An Account of a Sort of Paper Made of Linum Asbestinum Found in Wales [...]', *Philosophical Transactions of the Royal Society*, 14 (1684): 823–824.
- Mentel, Jacques, *De vera typographiae origine Paraenesis*, Paris: Robert Ballard, 1650.
- Vogt, Johann, *Catalogus historico-criticus librorum rariorum, jam curis tertiis recognitus*, Hamburg: Christian Herold, 1747.
- von Mallinckrodt, Bernhard, *De ortu ac progressu artis typographicae dissertatio historica*, Köln: Knichen, 1640.
- Zeltner, Johann Conrad, *Correctorum in typographiis eruditorum centuria*, Nürnberg: FelBecker, 1717.

Secondary literature

- Baldi, Diego (2013), 'De *Bibliothecis Syntagma* by Justus Lipsius. Innovations and confirmations for the history of libraries', *Bibliothecae.it*, 2: 15–94. <doi.org/10.6092/issn.2283-9364/5614>.
- Becker, Peter and William Clark (eds.) (2001), *Little Tools of Knowledge. Historical Essays on Academic and Bureaucratic Practices*, Ann Arbor: University of Michigan Press.
- Bianchi, Claudio and Tommaso Bianchi, 'Asbestos between science and myth. A 6000-year story', *La Medicina del Lavoro*, 106: 83–90.
- Bignami Odier, Jeanne and José Ruysschaert (1973), *La bibliothèque Vaticane de Sixte IV à Pie XI. Recherches sur l'histoire des collections de manuscrits*, Vatican City: Biblioteca Apostolica Vaticana.
- Blair, Ann (2010), *Too much to know. Managing scholarly information before the modern age*, New Haven: Yale University Press.
- Blair, Ann (2017), 'Humanism and Printing in the Work of Conrad Gessner', *Renaissance Quarterly*, 70: 1–43.
- Bruun, Niels W. (ed.) (2015), Thomas Bartholin, *The Anatomy house in Copenhagen, briefly described*, Copenhagen: Museum Tusculanum Forlag.
- Büttner, Jan Ulrich (2004), *Asbest in der Vormoderne. Vom Mythos zur Wissenschaft*, Münster: Waxmann.
- Calhoun, Joshua (2020), *The nature of the page. Poetry, paper, and the ecology of media in Renaissance England*, Philadelphia: University of Pennsylvania Press.
- Carnevale, Francesco (2012), 'L'amianto in epoca preindustriale: da meraviglia della natura ad oggetto di approfondimento scientifico', *La Medicina del Lavoro*, 103: 3–16.
- Cevolini, Alberto (2006), *De arte excerptendi. Imparare a dimenticare nella modernità*, Florence: L. S. Olschki.
- Cevolini, Alberto (ed.) (2017), *The Ark of Studies (Thomas Harrison)*, Turnhout: Brepols.
- Cressy, David (2005), 'Book Burning in Tudor and Stuart England', *The Sixteenth Century Journal*, 36: 359–374.
- Filippov, Igor and Flocel Sabaté (eds) (2017), *Identity and loss of historical memory. The destruction of archives*, Bern: Peter Lang.
- Friedrich, Markus (2018a), *The Birth of the Archive. A History of Knowledge*, Ann Arbor: University of Michigan Press [Original German: *Die Geburt des Archivs: eine Wissensgeschichte*, Munich: Oldenburg, 2013].
- Friedrich, Markus (2018b), 'How to Make an Archival Inventory in Early Modern Europe: Carrying Documents, Gluing Paper and Transforming Archival Chaos into Well-ordered Knowledge', *manuscript cultures*, 10: 160–173.
- Friedrich, Markus (2020), 'Reformation History between Accident, Ambition, and Anguish. Barthold Nicolaus Krohn (1722–1795) and his Project for a General History of Anabaptism', *Archiv für Reformationsgeschichte*, 111: 394–421.
- Gagné, John (2017), 'Paper World. The Materiality of Loss in the Pre-Modern Age', in Martyn Lyons (ed.), *Approaches to the history of written culture. A world inscribed*, Cham: Palgrave Macmillan, 57–72.

- Gastgeber, Christian (2015), 'Die Auseinandersetzung mit dem schriftlichen Erbe. Der Beginn des Wissenschaftlichen Handschriftenkatalogs und der Paläographie', in Christian Gastgeber and Elisabeth Klecker (eds), *Geschichte der Buchkultur*, VII: *Barock*, Graz: Akademische Druck- und Verlags-Anstalt, 43–73.
- Gierl, Martin (2012), *Geschichte als präzisierte Wissenschaft. Johann Christoph Gatterer und die Historiographie des 18. Jahrhunderts im ganzen Umfang*, Stuttgart: Frommann / Bad Cannstatt: Holzboog.
- Glomski, Jacqueline (2001), 'Incunabula Typographiae: Seventeenth-Century Views on Early Printing', *The Library*, 2: 336–348.
- Grell, Chantal (1993), *L'histoire entre érudition et philosophie. Étude sur la connaissance historique à l'âge des Lumières*, Paris: Presses Univ. de France.
- Haas, Philip (2019), 'Entschlüsselung der Urkunde – Erschließung der Diplomatik. Die *Clavis diplomatica* (1737/1754) des Daniel Eberhard Baring', *Archiv für Diplomatik*, 65: 135–164.
- Haye, Thomas (2016), *Verlorenes Mittelalter. Ursachen und Muster der Nichtüberlieferung mittellateinischer Literatur*, Leiden: Brill.
- Hirschi, Caspar and Carlos Spoerhase (2013), 'Kommerzielle Bücherzerstörung als ökonomische Praxis und literarisches Motiv: Ein vergleichender Blick auf das vorindustrielle und digitale Zeitalter', *Kodex*, 3: 1–23.
- Hosne, Ana Carolina (2014), 'Assessing indigenous forms of writing. José de Acosta's view of Andean Quipus in Contrast with Chinese "Letters"', *Journal of Jesuit Studies*, 1: 177–191.
- Joassart, Bernard (2017), *Les Bollandistes: Un regard critique sur la sainteté du XVII^e siècle à nos jours*, Brussels: Société des Bollandistes.
- Kazmeier, August Wilhelm (1953), 'Ein Druck auf Asbestpapier über Asbestpapier', *Gutenberg Jahrbuch*, 28: 25–29.
- Keller, Vera (2017), 'Perfecting the State. Alchemy and Oeconomy as Academic Forms of Knowledge in Early-Modern German-Speaking Lands', in Mary Lindemann and Jared Poley (eds), *Money in the German-speaking lands*, New York: Berghahn Books, 26–42.
- Keller, Vera, Anna Marie Roos and Elizabeth Yale (2018), 'Introduction', in Vera Keller, Anna Marie Roos and Elizabeth Yale (eds), *Archival afterlives. Life, death, and knowledge-making in early modern British scientific and medical archives*, Leiden: Brill, 1–17.
- Körte, Mona (2012), *Essbare Lettern, brennendes Buch. Schriftvernichtung in der Literatur der Neuzeit*, Munich: W. Fink.
- Loewenstein, Joseph (1999), 'Personal Material. Jonson and Book-Burning', in Martin Butler (ed.), *Re-presenting Ben Jonson. Text, history, performance*, Basingstoke (Hampshire): Macmillan, 93–113.
- Loveman, Kate (2015), *Samuel Pepys and his books. Reading, newsgathering, and sociability, 1660-1703*, Oxford: Oxford University Press.
- Lupton, Christina (2012), *Knowing books. The consciousness of mediation in eighteenth-century Britain*, Philadelphia: University of Pennsylvania Press.
- McDowell, Paula (2017), *The Invention of the Oral. Print Commerce and Fugitive Voices in Eighteenth-Century Britain*, Chicago: University of Chicago Press.
- McKitterick, David (2018), *The invention of rare books. Private interest and public memory, 1600-1840*, Cambridge: Cambridge University Press.
- Marten, Maria and Carola Piepenbring-Thomas (2015), *Fogels Ordnungen. Aus der Werkstatt des Hamburger Mediziners Martin Fogel (1634-1675)*, Frankfurt am Main: Vittorio Klostermann.

- Mercati, Giovanni (1937), 'Cenni di A. del Monte e G. Lascaris sulle perdite della Biblioteca Vaticana nel sacco del 1527', in Giovanni Mercati, *Opere Minore*, III, Vatican City: Bibliotheca Apostolica Vaticana, 130–153.
- Millstone, Noah (2016), *Manuscript circulation and the invention of politics in early Stuart England*, Cambridge: Cambridge University Press.
- Müller, Monika E. (2020), '"Vortrefflich nützliche Bilderbücher [...]?" Die Codices picturati des Zacharias Konrad von Uffenbach', in Markus Friedrich and Monika E. Müller (eds), *Zacharias Konrad von Uffenbach. Büchersammler und Polyhistor in der Gelehrtenkultur um 1700*, Berlin: De Gruyter, 231–264.
- Mulsow, Martin (1994), 'Bibliotheca vulcani. Das Projekt einer Geschichte der verbrannten Bücher bei Johann Lorenz Mosheim und Johann Heinrich Heubel', *Das achtzehnte Jahrhundert*, 18: 56–71.
- Ottermann, Annelen (2018), *Die Mainzer Karmelitenbibliothek. Spurensuche - Spurensicherung - Spurendeutung*, 2nd rev. edn, Berlin: Logos.
- Partington, Gil and Adam Smyth (eds) (2014), *Book destruction from the medieval to the contemporary*, Basingstoke: Palgrave Macmillan.
- Rieger, Dietmar (2003), 'Wer war der Täter? Zur Konkurrenz der "Geschichten" um die Zerstörung der Bibliothek von Alexandrien', *Romanistische Zeitschrift für Literaturgeschichte*, 27: 371–398.
- Sawilla, Jan Marco (2009), *Antiquarianismus, Hagiographie und Historie im 17. Jahrhundert. Zum Werk der Bollandisten. Ein wissenschaftshistorischer Versuch*, Tübingen: Niemeyer.
- Smyth, Adam (2014), 'Burning to Read. Ben Jonson's Library Fire of 1623', in Partington and Smyth (eds.) 2014, 34–55.
- Smyth, Adam (2018), *Material texts in early modern England*, Cambridge: Cambridge University Press.
- Stoker, David (2005), 'Francis Burges's Observations on Printing, 1701: A Reconstruction of the Text', *The Library*, 6: 161–177.
- Szalay, Gabriella (2019), 'Paper Trials, Multiple Masculinities, and the Oeconomy of Honor', in Carla Bittel, Elaine Yuen Tien Leong and Christine von Oertzen (eds) (2019), *Working with paper. Gendered practices in the history of knowledge*, Pittsburgh: University of Pittsburgh Press, 60–75.
- Turner, James (2014), *Philology. The forgotten origins of the modern humanities*, Princeton: Princeton University Press.
- Vanek, Klara (2007), *'Ars corrigendi' in der frühen Neuzeit. Studien zur Geschichte der Textkritik*, Berlin: De Gruyter.
- Vivo, Filippo de (2007), *Information and communication in Venice. Rethinking early modern politics*, Oxford: Oxford University Press.
- Vogel, Marie Isabelle (2015), *Die Klebebände der Fürstlich Waldeckschen Hofbibliothek Arolsen. Wissenstransfer und -transformation in der Frühen Neuzeit*, Frankfurt am Main: Peter Lang.
- Walker, Thomas D. (1991), 'Justus Lipsius and the Historiography of Libraries', *Libraries & Culture*, 26: 49–65.
- Wallnig, Thomas (2019), *Critical Monks. The German Benedictines, 1680-1740*, Boston: Brill.
- Werner, Thomas (2007), *Den Irrtum liquidieren. Bücherverbrennungen im Mittelalter*, Göttingen: Vandenhoeck & Ruprecht.
- Wilson, Edward M. (1957), 'Samuel Pepys' Spanish Chap-Books. Part I', *Transactions of the Cambridge Bibliographical Society*, 2: 127–154.

Yeo, Richard (2014), *Notebooks, English Virtuosi, and Early Modern Science*, Chicago: University of Chicago Press.

Zedelmaier, Helmut (2001), 'Der Ursprung der Schrift als Problem der frühen Neuzeit. Die These schriftloser Überlieferung bei Johann Heinrich Ursinus (1608-1667)', in Ralph Häfner (ed.), *Philologie und Erkenntnis. Beiträge zu Begriff und Problem frühneuzeitlicher "Philologie"*, Tübingen: Niemeyer, 207–223.