Material Cultures of Archiving

Studies in Manuscript Cultures

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Volume 47

Material Cultures of Archiving

An Introduction to a Global and Historical Practice

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DE GRUYTER

The publication of this volume was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2176 'Understanding Written Artefacts: Material, Interaction and Transmission in Manuscript Cultures' – project no. 390893796.

ISBN 978-3-11-165547-5
e-ISBN (PDF) 978-3-11-165601-4
e-ISBN (EPUB) 978-3-11-165719-6
ISSN 2365-9696
DOI https://doi.org/10.1515/9783111656014

A CIP catalog record for this book has been applied for at the Library of Congress.

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.dnb.de.

Printing and binding: CPI books GmbH, Leck

www.degruyterbrill.com
Questions about General Product Safety Regulation:
productsafety@degruyterbrill.com

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Why Materiality Matters in Archival History: An Introduction

It may be a truism, but it is an important one: written artefacts are three-dimensional objects – a basic fact that crucially determines what humans can do with them and how they interact with human societies. 'Documents, too, are things', write Sue Breakell and Wendy Russell; they continue, 'Documents and archival records have an object life as well as a text life'.[1] Managing writings, therefore, means managing objects. This insight is particularly relevant when it comes to practices of storing, preserving, organising, and maintaining larger bodies of artefacts, a complex of activities here summarised for convenience by the term 'archiving'. Put differently, archives are heavy, bulky, and unwieldy, and archiving is a pointedly physical activity. Working with archived artefacts implies dirt, sweat, and physical labour. The specific materiality of archived artefacts varies greatly across time and space, ranging from enormous and robust objects to tiny and fragile ones, from carefully managed individual pieces to carelessly dumped masses of writings. Yet, no matter the local variations, archiving always means working cleverly with the specific affordances offered by distinct writing materials, as well as considering the distinctive challenges and difficulties that each form of handwriting posed. This book explores how archive builders and archive users across time and space have accommodated the material features of their respective manuscript cultures in world history.

1 Materiality overlooked (no longer)

Like many other material dimensions of human life, the physical features of archiving as a social practice have been easy to overlook. Apart from practising archivists, whose profession requires long hours spent walking along miles of documents in archival storage facilities, and conservators, who earn a living through repairing and preserving archival objects, the bulkiness of archives, even the smallest ones, has all too often been considered unimportant or irrelevant.[2] Many of the influential innovations in archival studies since World War II have

1 Breakell and Russell (eds) 2023, 4, 5.

2 Hughes and Heckman 2012; Rekrut 2014.

https://doi.org/10.1515/9783111656014-001

primarily focused on epistemic characteristics of 'the archive', including the contributions of Michel Foucault, Jacques Derrida, and Ann Laura Stoler.[3] Archives have been linked to 'knowledge' or 'episteme' – notions which themselves have all too long been considered without sustained reference to material factors.[4] As a consequence, archives have been unduly reduced to immaterial or idealistic bodies of information.[5] When scholars have included considerations of materiality at all, they have frequently focused on the emotional effects of architectural and other structures, exploring the aura or atmosphere of archival spaces.[6] Hardly, however, have actual physical conditions received attention or the material conditions of usage been investigated in detail.

This disregard for material features in archival histories may unconsciously have been furthered by new trends ushered in by digitisation and digital-born media. On the one hand, widely used interfaces of human–machine interaction continue to be organised – rather anachronistically, one is tempted to say – with reference to paper-based archives, dealing metaphorically in 'files' and 'folders', 'desktops' and 'recycle bins'. On the other hand, recent large-scale campaigns to digitise archives have furthered the dematerialisation of archives, as most material features of digitised documents are either not recorded at all in the digital copies, or are available only in abstract, non-tactile form.[7]

Several trends in scholarship have recently helped to overcome this idealistic simplification, developing a fuller perspective on archival items by reinterpreting them as physical things and material objects. Archival studies have become intimately entangled with the growing historiographical focus on 'practices' as primary objects of study. Human life in general, including all activities related to writing and managing writings, is nowadays studied as a series of habitualised behavioural routines, often enacted unconsciously or semi-consciously; these routines are understood as being intrinsically shaped by the material environment of a human-shaped physical world. In this context, scholars now frequently ask how writing practices were used to do things. Pioneering new approaches have emerged in the study of administration and bureaucracy, focusing on the

3 See e.g. Csendes 2004.

4 Completely free of any considerations of archival materialities is, for instance, Richards 1993.

5 A similar diagnosis, though from a very different perspective, is found in Breakell and Russell (eds) 2023, e.g. 3.

6 Prominently, Mbembe 2002. Quoted e.g. in Schulz-Dornburg and Zimmermann 2020, 23–34. A key text exploring the material and spatial vectors of archival atmospheres is Farge 1989.

7 This is sometimes considered a severe loss by historians; see e.g. Elliott 2012, 15. Some of these broader points are alluded to in e.g. Story et al. 2020, even though the focus of this 'roundtable' is on digital-born archives.

'little tools of knowledge' required by all governing agencies.[8] Delphine Gardey, Lisa Gitelman, and others have focused on the 'paper technologies' used by everyone intending to employ writing for any purpose.[9] Architectural historians have recently brought new vigour to the study of the architectural frameworks necessary to facilitate paper-based social exchange.[10] Several contributions have explicitly included archives as part of this practice-oriented re-evaluation of human life, preferring now to speak of 'archiving' or 'archival practices' rather than of 'archives'.[11] Recently, design theorists and cultural critics have also started to explore the archive's materiality, often with a strong focus on artists and art production.[12] *Pace* Foucault or Derrida, 'the archive' is no longer reduced to an abstract, dematerialised idea; written artefacts come in various material and physical forms, and these very forms guide and determine human interaction with them, not least in the context of archival practices.

This insight has been deepened by approaches and concepts from material culture studies.[13] One crucial development here is that the correlation between human agency and the role of the material objects that surround humans has become conceptualised in newly complex and ambivalent ways. No longer are things, be they natural or artificial, simply seen as passive and subject to human agency; scholars now investigate how the object world surrounding us also greatly influences our possibilities for expressing ourselves. A 'history of things', understood as a study of the varying ways in which humans bring things forth and in turn adapt to the things that surround them, has become possible.[14] This has also affected the ways in which scholars understand the interaction of humans and written artefacts. Book history – and ultimately also its first cousin, manuscript studies – has benefitted enormously from these approaches. Material culture studies have alerted scholars to the fact that the interaction of humans and written objects is conditioned by the objects' material features and their social valuation. This has created attention for many previously overlooked or marginalised types of interacting. When seen as part of a broader material world, written artefacts acquire a much richer texture of social possibilities. Scholars have become aware of the fact that material choices significantly affect what can, and

8 Becker and Clark (eds) 2001.

9 Gardey 2008; Gitelman 2014.

10 Bernasconi and Nellen (eds) 2019; van der Maele 2016.

11 For instance, El-Leithy 2011; Friedrich 2015; Hirschler 2016.

12 Breakell and Russell (eds) 2023 provide a range of interesting perspectives along these lines.

13 Thorstad 2020.

14 Trentmann 2016.

cannot, be done with writings, including storage and retrieval. The ways in which writing is conducted materially affords certain ways of keeping and managing documents, while precluding others. The question of 'how to do things with books', which might have sounded meaningless only two decades ago, has now become a leading concern.[15] In the field of archival history, for instance a 'material history of lordship' has become possible, adding a material dimension of lordship – including but not limited to archives – to more established perspectives.[16] Taking such considerations into account, research has recently begun to open up new perspectives on the history of archival practices, significantly enriching our understanding of what archiving has meant and how it was done in various times and places.

2 Why materiality matters for archival history

Rooted in a broad conceptual reorientation of the humanities in general and cultural history in particular, this new appreciation of the materiality of written artefacts has opened up exciting new perspectives for the study of archives and archiving. On a basic level, such an approach can highlight how the technology of writing and its product, countless writings, have an impact on society not only for the information they contain, but also through their existence as objects. In the sense that recent sociology has called for an awareness of objects' agency in general, written artefacts, as objects, should likewise be studied for their agency regardless of content.[17] In the context of archival history, this highlights the fact that storing and potentially also retrieving written artefacts implies reckoning with important material features. Writing materials and writing technologies, of which there are many, all result in the production of objects with specific affordances and challenges as to how they can be stored and potentially retrieved. Put simply, storing papers means something different from storing palm leaves, and storing a few personal documents is different from storing routinely mass-produced bureaucratic paperwork.

In general, a stronger focus on materiality restores two considerations to the study of written artefacts. On the one hand, it highlights the (varying degrees of) fragility of writing. Non-destruction changes from being unremarkable or 'nor-

15 Price 2012.

16 Friedrich 2013; Thorstad 2020.

17 See Kohs and Kienitz 2022, 5–6.

mal' to being a surprise.[18] As a material-studies approach to archiving highlights the fact that most written artefacts are not very durable per se, culturally specific approaches to the long-term preservation and safekeeping of written artefacts come into sharper relief than ever before. The long-term survival of written artefacts is turned into an explanandum, requiring the careful historical reconstruction of culturally specific life-prolonging practices: 'The storage of material culture is an essential part of the biography of an object and one that we should not overlook because the purposeful guardianship of objects is a statement in itself.'[19] On the other hand, a focus on materiality draws our attention to the cumbersomeness of engaging with documents, records, and literary writings. Writings were often not easy to handle: touching, carrying, opening, and placing them required manual skill and, often enough, a certain amount of physical exertion. Many basic archival activities, all too long reduced only to epistemic processes, were inherently physical, often exhausting not just minds, but also bodies.[20] Dust and dirt are rightly considered key material elements in all archival histories.[21]

The twin points of 'fragility' and 'cumbersomeness' may be developed further into a series of more specific topics that have been moved to centre stage in many of the newer histories of archiving. First, the recent attention to materiality in archival studies highlights the practical difficulties and limits of managing archived documents. If recent scholarship has highlighted the unintended and counterproductive epistemic consequences of increased archiving,[22] the frequently self-defeating nature of archiving is further highlighted through a focus on materiality. Archival history is not only about 'too much to know', but also about too much to carry and too much to store.[23] In the late twentieth and early twenty-first century, Western countries have destroyed upwards of 90 per cent of public documents purely due to their material bulk. The impossibility of continuing to store all documents produced by public administrations has triggered one of the most complex international debates in archival studies: the discussion about how to prune archives and how to destroy 'unnecessary' documents.[24]

A focus on materiality furthermore illuminates the key category of document mobility. In everyday life, written artefacts remain much more mobile than the

18 Apellániz Ruiz de Galarreta 2020.
19 Thorstad 2020, 194.
20 Friedrich 2018b.
21 Steedman 2002.
22 Blair 2003.
23 This references Blair 2010.
24 For instance, Wettmann (ed.) 1994.

static notion of institutionally stable 'archives' seems to indicate. Stored written artefacts, despite being 'archival', continue to be on the move. Documents and records can be mobilised in culture, politics, or religion only by actually moving, transitioning at least from storage to reading facilities, but often also from one location to another. Scholars working on administrations of various kinds point to the frequently decentralised character of record-keeping, speaking of networks of repositories, even in cases where supposedly strongly centralised institutions exist.[25] Retrieving knowledge, in an archival context, means moving objects, hence the analytical focus on archival materialities makes it more urgent to ask what is stored where, and why. Highlighting materiality thus means mapping landscapes of archival locales.[26] Scholars of the Ottoman Empire, for instance, are now discovering the 'mobility of early modern archival practices'.[27]

Lastly, studying the material environment of specific archival practices facilitates new insights into culturally specific attitudes towards archiving. The willingness to invest in a document's or a collection's longevity – for instance, by paying for more durable writing materials or protective covers, including boxes or roofs – depends on assumptions about a document's ideal lifespan. If written artefacts are produced for quick consumption, there will be no great investment either in the initial writing materials or any protective measures. Thus, material and physical arrangements are implicit indications, and often also explicit articulations, of cultural attitudes towards writings. Even the happenstance and seemingly random positioning of written items 'here and there' may be presumed to follow internalised cultural preferences. Such preferences may be rendered more fully and systematically in cases where archival contraptions and spaces for managing documents were created in more explicit fashion. In all cases, however, the materialities of archiving may be considered palatable reflections of prevailing 'graphic ideologies'.[28] Certainly, the forms that the material guardianship of records takes, and the resources employed to preserve written artefacts over longer periods of time, are powerful symbols and 'physical manifestations' of power.[29]

The indicatory potential of physical and material aspects of archiving for scholars is made especially evident *ex negativo*. From many places and times

25 For the Middle East, see e.g. Michel 2012. For a European case study, see Friedrich 2010.

26 'Paesaggio delle fonti', quoted from Cammarosano 1995, 9. I have tried to elaborate this further for archives in Friedrich 2018a, 48–51.

27 Burak, Rothman and Ferguson 2022, 548.

28 The term – without reference either to archiving or to the materialities of archives – is taken from Hull 2012, 14.

29 Thorstad 2020, 199.

survive texts that use descriptions of archival neglect in polemical ways. Whenever someone wished to call attention to what they perceived as administrative shortcomings, they usually included horrified descriptions of the documents' allegedly dismal physical storage arrangements. Descriptions of archival *chaos*, in which materiality always plays a crucial role, are often narrative proxies for diagnoses of broader societal problems. 'Lying on the floor', having 'rotted', and being stored in a location that is 'dark and damp' – such are the typical tropes used to describe scandalous current archival practices.[30] Similar expressions of outrage over material archival conditions are on record from various places, including Abbasid Baghdad and nineteenth-century Cairo; in each case, they have an accusatory ring to them and legitimise the authors' alternative agenda.[31] Not least in colonial contexts, accusations of physical neglect – made plausible by stark descriptions of material depravation – authorised the seemingly benevolent taking of antiquities. Physical and material disarray, as perceived subjectively by the observer, indicated neglect or disregard, and often sanctioned intervention. This volume is an attempt to establish similarly close connections between materiality and archiving also in a positive fashion, highlighting how a closer look at material technologies allows scholars to investigate the purposes, forms of usage, and man-made affordances of any given archival collection.

3 Analysing materiality

Three general categories are helpful in analysing the material features of archival cultures in greater depth: functions, social status, and local specifics.[32]

Functions: The material features of archiving are often designed with certain functions in mind, including most prominently physical protection against ecological dangers as well as questions of security, access, and epistemic order.

Among the most basic factors impinging on the design of material archival structures were ecological ones. Written artefacts exist in a complex ecology, as

30 The quotes come from a report from 1790 about important Sicilian fiscal state archives; see Silvestri 2021, 190.

31 See various quotes in van Berkel 2014. For manuscript hunters in late-nineteenth-century Cairo, and their taking of uncounted Hebrew, Aramaic, Arabic, and other manuscripts, see now – with ample quotations – Jefferson 2022.

32 These are freely adopted from a textbook on the history of furniture; see Lucie-Smith 1979, 8–12.

they consume nature – and are, in turn, consumed by nature.[33] Breaking this cycle, namely by protecting written artefacts against at least some forces of nature, is often a basic consideration in choosing or designing archival locales. Primarily, this implies protection against the elements, but also against animals, plants, and fungi. The material fragility (albeit to various degrees) of most written artefacts was well known to their users, and on many occasions available technologies were used, and improved, in order to combat the environmental dangers specific to preferred writing materials. A focus on the materiality of archiving, therefore, will highlight the importance of protective layers or second skins for the safekeeping of written artefacts. As we will see, this includes everything from book covers to architectural structures.

The security concerns are at least twofold: protecting stored written artefacts from human vandalism or destruction, and from the illicit manipulation of content. Wilful physical destruction of archived artefacts, often with a high degree of intentionality and as a result of careful planning, is a timeless threat to the survival of written artefacts.[34] Numerous material strategies exist to prevent or limit the possibility of destruction, some of them with highly counterproductive implications – documents buried in the ground or walled in, for instance, are withdrawn from inspection by definition, even by legitimate users. In addition to outright destruction or vandalism, material structures are also put in place to prevent and minimise unauthorised access, safeguarding the documents' content from manipulation or undue disclosure. Locks and doors prevent entry into archival rooms or the opening of boxes, while the choice of solid and first-rate materials often makes breaking the protective barriers at least more difficult and easier to detect.[35]

Moreover, the material structures surrounding the written artefacts are often designed to help users navigate a collection's epistemic substructure. Same is filed with same; related documents are put in related places. Distinctions between document types are materialised by distributing distinct documents in distinct locations. Perhaps the underlying criteria for what is put where are even made explicit, for instance by having key words written on furniture or walls. Alternatively, catalogues or inventories are crucial for unpacking the physical manifesta-

33 The power of an 'ecological' approach to the history of writing is explored in the book by Calhoun 2020.

34 Filippov and Sabaté (eds) 2017; and Kühne-Wespi, Oschema and Quack (eds) 2019.

35 There is ample evidence for highly sophisticated locking mechanisms, often relying on multiple keys, involved in archival security; see e.g. Huynh 2019, 14 and Friedrich 2018a, 118–119.

tions of epistemic orders, indicating, for instance, that certain documents are stored in one (and only one) armoire or room.

A strong focus on the materiality of record-keeping will, above all, help scholars to nuance a standard assumption in the field, namely that document retrieval was the primary purpose of document storage. A closer look at the materialities of record collections demonstrates that physical archival arrangements were by no means always made primarily with frequent and everyday usability in mind. Quite to the contrary, modernist assumptions about many readers perusing numerous writings on a casual and everyday basis, and archival structures being designed to facilitate such usage, must be abandoned in many cases. The Jewish genizot (and related) phenomena drive this point home, if in a uniquely extreme way: documents were intentionally sheltered (thus preserved, not destroyed), yet in ways at odds with any idea of using them. The widespread presence of such phenomena in the Jewish world, including the numerous genizot in Central and Eastern Europe and beyond, should alert us to the importance of arrangements for physical preservation with no intention of use.[36] In fact, numerous caches of written artefacts have survived in non-Jewish Europe in what were de facto similar, genizah-like forms. If genizot were habitually in synagogues' attics, the attics of office buildings were also a stereotypical place where numerous early modern archivists claimed (with much terror) to have found long-missing caches of administrative documents. A closer look at material features will help scholars to ask – and not simply take for granted – whether, and in which ways, the everyday use of archived artefacts was a concern at all in different times and places.

Social status: The material arrangements made for preserving and storing written artefacts help express their owner's or archiver's social status. As the following chapters will illustrate, every aspect of document preservation bore the potential to be transformed into displays of splendour, luxury, and wealth. More than a few archival structures were artistically embellished, sometimes in lavish ways; individual book covers or file containers featured artistic covers or luxurious materials, thereby reflecting their owners' prestige or their contents' social importance.[37] Moreover, archival materialities are also indicative of cultural preferences about what to do with available resources. Archiving costs money (if only, most basically, because it requires space), and the necessary resources could always also be spent on alternative projects, from warfare to welfare. Choosing to invest in archival infrastructure thus reflects not only the availability of necessary

36 There is a debate about Islamic parallels, one key contribution being Sadan 1986. For Jewish genizot beyond the Cairo Genizah, see Denz et al. (eds) 2015–2023 and Lehnardt 2016.

37 For a few counterintuitive cases, see Huynh 2019, 13.

funds, but also preferences on how to spend them. At least in some of the archival contexts discussed in this volume, owning (and showcasing) sophisticated (and expensive) archival arrangements became a marker of social status and self-fashioning in itself.

Local specifics: While certain material arrangements in the name of document preservation may have been prevalent or typical in certain regions and times, it must be pointed out that most arrangements were also highly individual in nature, reflecting local preferences and possibilities. Archiving written artefacts was – and is – an inherently local affair, situated in specific spaces and done by individuals with specific agendas, experiences, and visions. Hence, despite similarities and parallels, the history of archival materialities remains tied to the study of specific instances. The following chapters will present numerous examples of highly unique archival arrangements that defy easy attempts to impose generic typologies. In addition to idiosyncratic preferences in technical, artistic, or spatial arrangements, the local nature of individual depots of written artefacts and their material structures is also reflected in the complex and unique aura that surrounded some of them. Often, local sacred spaces were used to deposit written artefacts. Such locales were often imbued with additional layers of protection; stories about snakes, dragons, or spirits protecting certain documents are prominent, having been encountered and recorded, for instance, by European intruders into Middle Eastern Jewish genizot.[38]

By way of a final note concerning the material features of archives, it is important to understand that it is often next to impossible to implement ideal solutions on all levels at the same time. Protecting written artefacts, for instance, frequently impinges upon everyday functionality. Limits of space prevent ideal spatial arrangements, requiring compromise, for instance, in implementing epistemic orders. Put differently, archival practices and their materialities are deeply shaped by local negotiations, which in turn reflect specific local hierarchies of the above-mentioned dimensions. If modern archive buildings, for instance, are located in certain outlying neighbourhoods for symbolic purposes, this may diminish their functionality or at least their accessibility. Inversely, using highly auratic 'old buildings' to store 'old documents', which may be considered symbolically appropriate for institutions dedicated to musealising the past, results in relatively uncomfortable working conditions and less-than-ideal technical arrangements. In other words: relying on, as well as consciously designing, archival infrastructures always carries relatively high opportunity costs. Thus, the material processes of archiving were arenas for competing interests, allowing for a wide variety of

38 Jefferson 2022.

different combinations of protective, functional, and symbolic considerations. No wonder, then, that the actual archival materialities that came into existence in different contexts often varied significantly, even in close spatial and chronological proximity. This makes the study of archival materialities a revelatory indicator of local expectations projected onto writing and written artefacts. It would therefore be difficult to transfer one local archival arrangement unaltered to other locations, and it is even more naïve to suppose there existed only one 'true' form of archival trajectory.[39]

4 Materiality and globality

Material arrangements of archiving are culturally specific, and yet they may help in comparing archival practices across time and space.[40] 'Materiality is a connective tissue' between seemingly distinct and distant practices.[41] As the individual chapters of the volume will illustrate, archivers across time and space sometimes relied on comparatively similar solutions to the challenges of storing, transporting, and accessing bulky writing materials. Analytical descriptions of these material arrangements provide a starting point for comparing archival practices.[42] If

39 It is for good reason, then, that Randolph C. Head included the materialities of writing and a society's material culture at large prominently in his concept of culturally specific 'archivalities', see Head 2017.

40 In a way, this volume, thus, expands preliminary ideas first voiced in Friedrich 2018c.

41 Breakell and Russell (eds) 2023, 6. The authors use this formula not to argue for a global perspective, but for integrating various art forms and their performance of materiality. The phrase, nevertheless, merits broader application.

42 Burak, Rothman and Ferguson 2022 have recently spoken out against any comparative approach to archival history. They point out, and very rightly so, that there is a potential danger in comparing archival cultures, as this may lead not only to essentialising practices, but also to prioritising one culture's archival arrangement and turning this into the yardstick of others. They lament specifically, and very correctly, that far too long modernist Western assumptions of what an archive is have been used to evaluate or, rather, denigrate other archival cultures. This danger is real, and needs to be confronted. Yet, they offer few alternatives for bringing experts of Middle Eastern and European archival practices into meaningful conversations. Their fascinating case study of archival entanglement in the Ottoman–Habsburg borderlands can be considered as a template only for tiny fractions of both the Habsburgs' and the Ottomans' archival activities, as only minuscule parts of these vast archives reflect such entanglements. How could the large parts of both archives not pertaining to borderlands become part of an integrated history, other than by comparison? For a recent, and highly productive, comparative study of various Middle Eastern archival cultures, see Apellániz Ruiz de Galarreta 2020.

the boxes or pouches used for the storage and transport of written objects share certain basic features – which is where a comparison may start – these material similarities may be a point of departure from which to develop insights into what storing and moving documents may have meant in different contexts. Similar conflicts about where to store administrative documents – in public archives or private homes? – may, for example, connect early modern Ottoman and French secretaries more closely than one might assume.[43] And parallel descriptions of how lowly peasants stored their documents from nineteenth-century Tyrol and twentieth-century Tibet may provide a point of departure for exploring similarities and differences in archival practices related to landholding regimes.[44] In short, the study of archival materialities provides the opportunity to relate instances of record-keeping across time and space without immediately taking recourse to highly abstract and over-conceptualised notions of 'archive', 'power', and 'state', among others. Rather, as the current research stands, it allows for, and often encourages, the opening up of a basic empirical bottom-up description – hitherto underdeveloped – of what was stored where, for how long, in which ways, and by whom. A focus on the material cultures of archiving will help us shine a spotlight on individual acts and instances of the careful handling of written artefacts, all of these in necessarily fine-grained empirical analysis. These can form the basis for comparative studies of how, and why, bodies of written artefacts were made to survive – and for how long – in different manuscript cultures across the globe. The relative comparability of some of the physical tools used to manage vastly different forms of handwritings provides a potential starting point for exploring commonalities and distinctions between different cultures of record-keeping.

5 Studying and presenting archival materialities: About this book

Investigating the material culture of archival practices can be a complex and often somewhat frustrating affair. Frequently, the original archival structures have vanished, even if the documents they once preserved have survived. While hundreds of thousands of cuneiform tablets have come down to us largely intact, their erstwhile shelters have not fared so well. Much evidence has simply disappeared,

43 Ferguson 2020.

44 Compare Oberhofer 2017, with Schuh 2016.

not least in moments of alleged archival modernisation. The implementation of new material arrangements has led to the destruction of previous ones, often without documentation. While periods of refurbishing archival materialities have occurred in all eras, the nineteenth and twentieth centuries are surely eras of special importance in this regard. As the so-called modernisation and professionalisation of record-keeping occurred throughout the world – often as a brutal export of colonial-era European practices that went hand in hand with the eradication of well-established archival practices on the ground – much traditional archival knowledge and evidence of traditional material cultures of archiving have been destroyed. In addition to the destruction of physical evidence, the relative neglect of materiality in archival history so far has often led to imprecise descriptions or loose translations of key terms. No standard vocabulary exists to describe historical archival technologies, and certainly not in a comparative way.

Yet despite these challenges, and by drawing on a plethora of evidence ranging from extant objects to various kinds of textual and visual representations, this book attempts to highlight the bewildering complexity and astonishing sophistication – as well as the occasional beauty – of material arrangements made in the name of record-keeping. In order to overcome the severe shortage of evidence, analogies from parallel phenomena are occasionally drawn. In particular, descriptions of what, in strictly modernist language, would be called 'libraries' have helped us overcome the relative dearth of information on (again, in strictly modernist terms) 'archives'. We consider such analogies, when drawn with care and with limited purview, legitimate for the following reason: while multiple differences between the storing of literature and that of everyday administrative documents can be observed in various times and places, conceptual divisions between 'libraries' and 'archives' were much weaker in the pre-modern world, even in places where they existed at all. In a world where most people owned much fewer written artefacts of whatever kind than they do today, there was much less need for clear-cut distinctions between 'library' and 'archive'. While not all written artefacts were created and stored equally, we should not impose modernist degrees of conceptual distinction among various types of writings on pre-modern times.

The following chapters present their evidence on the material culture of archiving in a series of steps that move from small to big, from the question of how individual artefacts were prepared with the intention of keeping them for longer periods of time to whether and how entire architectural structures or even specialised buildings were erected to house such documents. Chapter 1, by Peera Panarut, starts by looking at individual items and their proto-archival characteristics, including questions of standardisation in terms of material features and the

application of writing to the writing surface. This is followed by an essay from Benedikt Reier, who discusses what is perhaps the smallest form of archive and certainly a very distinctive archival practice: the usage of larger book objects, especially codices, as containers for external information and pieces of writing. The larger written artefact here serves as a protective structure for smaller, singular ones. Moving from individual pieces of writing to secondary external containers, in Chapter 3, Cécile Michel presents a fascinating survey of different storage receptacles, including (but not limited to) cases, boxes, pouches, and other vessels. From containers, Chapter 4 by Markus Friedrich moves on to bigger pieces of furniture, often (though by no means always) of a room-filling nature. Finally, Chapter 5 moves from archival rooms to archival buildings. Archival rooms and archival buildings are in evidence from surprisingly early times; Philippe Depreux's essay presents numerous examples of these.

While we strove to avoid too much overlap between individual chapters, they are not meant to be entirely discrete units. Rather, grey zones of convergence exist between most chapters, and individual pieces of evidence might have fit more than one chapter. We opted not to divide the evidence or our discussion according to pre-defined categorical distinctions; rather, these overlaps give readers a sense of how we conceive of the material culture of archiving: namely as a seamless whole, where large and small technologies – those focusing on the preparation of individual written artefacts and those dedicated to preparing and perfecting storage spaces – are not to be kept apart, but rather seen as mutually influencing each other. The design of shelves influences the design of future archival documents, while the shape of furniture is determined by the shape of the documents to be stored. In addition to overlaps between chapters, frequent cross-references also make evident how each chapter builds on previous evidence or leads to questions discussed only later.

While each chapter is written by an individual author, the volume as a whole reflects the cooperation and joint expertise of a large group of scholars dedicated to the study of archival practices and technologies across the globe and through time. Collecting the evidence presented below, and orienting ourselves in such a wide range of archivalities, was a joint enterprise conducted by several dozen participants over five years of exchange and discussion at the Centre for the Study of Manuscript Cultures at Universität Hamburg. Despite the fact that each chapter's lead author started from their individual area of expertise and crafted their essay's structure and focus as s/he saw fit, all sections nevertheless share the centre's crucial global perspective.

Acknowledgements

The research for this book was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2176 'Understanding Written Artefacts: Material, Interaction and Transmission in Manuscript Cultures', project no. 390893796. The research was conducted within the scope of the Centre for the Study of Manuscript Cultures (CSMC) at Universität Hamburg. Philip Saunders corrected and improved the language, while Francesca Panini did an outstanding job in typsetting this heavily illustrated volume.

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Peera Panarut

Chapter 1: Archival Artefacts: From Sheets and Files to Digital Documents

Abstract: The chapter explores the diversity of archival artefacts from different cultures around the globe through their forms, functions, and cultural meanings. Oriented by forms and shapes, the archival artefacts range from the conventional ones (e.g. tablets, rolls, sheets, files, codices) to the unconventional ones such as pottery from ancient Mediterranean, the *khipu* knots of the Inca, as well as the digital documents of the contemporary modern world. This diversity of archival artefacts points out the adaption of different materials in order to serve record-making and -keeping practices in different places and times throughout the long history of archival practices.

1 Introduction: Archives and written records

The term 'archive' in English has different dimensions of meaning related to record-making and -keeping. According to Laura A. Millar,[1] archive can refer to documentary materials or written records preserved by a public or private entity for further use, the institution responsible for acquiring and preserving the archival materials, and the building in which the archival materials are stored. Archival artefacts discussed in the chapter concern the first meaning of archives given by Millar, and can be perceived as the smallest unit of the material dimensions of archiving where the information is stored. They appear in a large variety of forms, functions and cultural meanings in different regions and periods throughout human history, therefore, constituting a large topic for the history of archiving practices of the globe.

It should be noted that not every single piece of written records or documentary materials is simply considered an archival artefact, as the term archive connotes the meaning of assemblages or collections of records.[2] Therefore, archival artefacts include only written artefacts which can be stored and preserved for further use or consultation, covering those of administrative, private and religious content. Various writing supports have been used in different cultures as archival

1 Millar 2017, 4.

2 Walsham, Peters and Corens 2018, 14–15; Yeo 2022, xi.

https://doi.org/10.1515/9783111656014-002

artefacts, such as clay, papyrus, parchment and paper, which are generically alluded to in the subtitle of the chapter as 'sheets and files'. Looking at the materials of archival artefacts from different cultures, one can see how physical features of different materials have been adapted or applied to suit the archiving practices.

Though encompassing various materials for writing supports, this chapter does not include materials which were used for recording but not for archiving, such as human skin. Human skin, though not often considered a conventional material for written artefacts, has long been used to receive writings through tattooing for many purposes. Apart from talismanic and ritual purposes,[3] other forms of tattooing were arguably a part of record-making practices. Slavery registers in Mesopotamia were tattooed on slaves' skin.[4] A similar practice can be found in the administration of premodern Thailand,[5] in which the category and affiliation of all adult freemen and redeemable slaves were tattooed on their wrists until the late nineteenth century. This writing on (living) human skin was a tool to check the identity and affiliation of the freemen and slaves, as tattooed writing was rather permanent and could not be easily removed. Furthermore, according to Herodotus's *Historiae* Book V,[6] a secret message for a revolt against the Persian Empire in Ionia around the beginning of the fifth century BCE was tattooed on the shaved scalp of a slave before letting his hair grow back to conceal the message. The slave had then been sent to the revolt ally without anyone noticing the hidden tattooed writing, before the slave's head was shaved again at the right place and time to reveal the message.

These cases demonstrate how human skin can be a writing support for such important records and very involved with the record-making practices in different cultures from different periods. However, written human skin cannot be easily collected and later consulted like the other kinds of archival artefacts. Even though letters have often been collected together by individuals or institutions and frequently constituted a large part of archives in different cultures, the practice of collecting human skin as an assemblage of records has never been attested. Thus, human skin is properly considered an important material for written records, not as a kind of archival artefact.

3 Yeo 2022, 18.

4 Charpin 2010, 75. Correspondingly, in the Nazi concentration camps during World War II, prisoners' registration numbers were tattooed on their arms (Mrázek 2020, 286–287; Sofsky 1997, 82).

5 Wales 1965, 95

6 Rawlinson 1859, 242–244.

2 Oral and written archives

Even though the term archives is often associated with written records, the evidence on the so-called 'oral archives',[7] in which certain information has been stored and transmitted through memory among a group of specific people, is, nevertheless, attested from many cases. A group of communal remembrancers in ancient Greece, for example, called 'memory men' (*mnemones*) functioned as an exclusively mental recorder of business affairs transacted in the remembrancer's presence,[8] before such information was written down in the later period. Communal historians and genealogists in sub-Saharan Africa known as griots were responsible for safeguarding and transmitting local history, myths, legal proverbs and legal precedents through their memory.[9] The particulars memorised by the *mnemon* and griot can be perceived as an assemblage of oral documents or pieces of information considered necessary to be preserved for further use, thus, labelled by scholars with a paradoxical term such as oral archives. These cases have proved that archival practices can exist without any writing, physical artefact or materiality, but oral archives have not left much direct evidence, unlike the written ones.

Oral archives such as *mnemon* and griot belong to oral tradition, of which many cases demonstrate that the collective memory in a community can preserve astonishingly long texts and bodies of sophisticated knowledge despite the absence of writing. Monks in the Theravada Buddhist tradition, for example, had memorised the texts of *Tipiṭaka* (the Buddhist Canon) by heart[10] for several hundred years after the death of Buddha in the sixth century BCE, before the texts were written down in Pali around the first century BCE. In addition, Polynesian peoples also transmitted their advanced knowledge of navigation and became the master voyagers of the vast Pacific Ocean without any use of writing at all. They transferred their famous 'wayfinding' techniques from generation to generation with collective memorisations, songs and other mnemonic devices, mastering how to observe the stars, read the winds, waves and clouds, and even estimate their distance to their destination from fish and birds,[11] in order to survive on the ocean.

7 Delsalle 2018, 44.
8 Posner 1972, 94; Sickinger 1999, 37.
9 Delsalle 2018, 45.
10 See more in Bhikkhu Anālayo 2022.
11 Crowe 2018, 80–93.

The oral transmission of the early Buddhist Canon and the Polynesians' navigation techniques might not directly concern archival practices in the sense of record-keeping, but these examples showcase the efficiency of orality in transmitting knowledge in specific communities. Nevertheless, oral transmission can become fragile if the remembrancers of that particular information die out. The condition is believed to be the main reason underlying the writing down of the Buddhist Canon in the first century BCE.[12] By contrast, without eventual transformation into writing, a lot of the original wayfinding knowledge of Polynesians has been lost to us.[13] Information can be preserved in a form that lasts a long time throughout history with the help of writing and writing supports and can be accumulated together, forming an archive proper. The archival artefacts discussed here in this chapter are based mainly on the written archival evidence in order to highlight the material dimensions of archiving.

3 Archival artefacts

Some traces of archiving can, perhaps, be found predating the invention of writing. The history of archival practice, according to some scholars, starts with cave or rock paintings all over the globe, as they pinpoint the earliest attempt of humans to transfer information with the help of durable material.[14] A cave wall, thereby, might have been one of the earliest archival materials for 'recording' information. Writing, which allows information to be stored and transmitted on a certain material, had been developed in Mesopotamia circa 3400–3300 BCE,[15] in Egypt around 3100–3000 BCE and in China in the second half of the second millennium BCE.[16] The reasons for the emergence of these early writings were mainly political, economic and religious.[17] Some cases of early writings were mainly used to keep records of information for administrations, as in the case of protocuneiform writings from Uruk (dated 3300–2900 BCE).[18] A number of stone inscriptions also arguably perform archival functions. So, archiving in the pre-printing period does not necessarily cover the use of manuscripts alone. Material dimensions of

12 Bechert 1992, 52.
13 Crowe 2018, 85.
14 Delsalle 2018, 1.
15 Michalowski 1996, 33; Michalowski 2021, 67–68; Michel 2021, 90.
16 Davies 1990, 82; Boltz 1996, 191.
17 Ong 2012, 85.
18 Charpin 2010, 19.

archiving in the Modern Period have become more diverse, ranging from photographs to cassettes. Despite its evanescent feature, sound became a recordable entity from the late nineteenth century, while motion pictures can be captured and recorded through film. These new media have continuously been selected to be stored in modern archival institutions. Now, in the twenty-first century, archival documents are made available and presented in an intangible form through digital platforms. Materials of archival writing supports have a long history spanning millennia, encompassing traditional media such as manuscripts and inscriptions along with modern digital media.

This chapter is oriented by the form and shape of archival writing supports (referred to here as archival artefacts, i.e. tablets, sheets and rolls) rather than the materials themselves (e.g. paper, leather, metal). Still, several forms suggest some certain material (e.g. bamboo or wooden slips), while many other forms can be produced from different materials. This chapter attempts to encompass as many different significant types of forms and materials as possible in order to appreciate the diversity of archival material dimensions around the globe. Thereby, in some aspects, the chapter might overlap with the history of writing supports and of communication, but only written artefacts in relation to archival practice will be included.

3.1 Walls

Paul Delsalle[19] begins his history of archival practice by mentioning the examples of cave art dated back 40,000 years from around the world (i.e. Scandinavia, France, Spain, Sudan, China, Brazil, Australia). These cases of drawings and paintings might have been associated with magical acts, yet, some scholars interpret them as early humans' attempt to transmit information and, thus, have considered this early cave art as a milestone for the history of archives, though not without controversy.[20] Regardless of how we interpret this cave art, cave walls provide a large, free space for drawings, paintings and, later, writings, and might have been one of the most convenient materials available for early humans. Subsequently, writings from Antiquity have also been found on walls of different places, from caves and city walls to private buildings. Their surfaces were often prepared for being used as a writing support. Though often performing other functions (i.e. ritual) than record-keeping, some striking examples of the adminis-

19 Delsalle 2018, 1–2.

20 Yeo 2022, 5–6.

trative records on the walls can be found. A short passage on the cave wall of the Sudama cave (in Bihar, India), for example, recording King Aśoka's dedication of the cave to the Ajīvakas, a sect of Indian philosophers, in the third century BCE,[21] can be interpreted as a grant of authority over the cave given by the king. Furthermore, the Egyptian counterpart of the famous peace treaty between Hattusili III of Hittite and Ramses II of Egypt (dated 1259 BCE) was engraved in hieroglyphs on a wall of two temples of Ramses II in Thebes[22] (Fig. 1).

Stone walls in the city of Gortyn (Crete) also preserved a collection of legal texts, commonly known as the Gortyn Code (Fig. 2), dated to around the middle of the fifth century BCE.[23] The Gortyn Code was discovered on a circular stone wall which supports the structure of a theatre built in the first century BCE. However, the wall must have formed a part of an earlier building, possibly a law court. The inscriptions cover twelve columns of legal texts. Each column is cut upon four layers of stone and about 1.5 m high. The length of the whole inscription is about 10 m.[24] The Gortyn Code provides an outstanding case for a collection of early legal texts inscribed on a wall. These written texts on the wall were supposedly originally accessible for a wider literate audience, even though they were publicly displayed as a monument of the ruler's authority[25] rather than an administrative document or an archive proper.

These records on the walls, however, can be considered a kind of archival artefact due to their administrative purpose and durability. Walls as parts of larger structures cannot be moved, giving the texts more permanence than any movable object. Even though a building wall could sometimes be 'reused' for a rebuild or renovation, the writing possibly remains inscribed on the same wall, despite its new surroundings and context, as in the case of the Gortyn Code, making an extensive legal text become a part of a theatre structure. Unmovable written supports, such as walls, were undoubtedly not the earliest artefact used to keep an administrative record, but walls count among the earliest surviving archival evidence that we have, while other movable artefacts contemporary to them have been lost.

21 Sircar 1957, 62.

22 Its Hittite counterpart of the treaty inscribed (in cuneiform) on a silver plate has been lost. Only its bronze tablet copy has survived to us (Charpin 2010, 168).

23 Thomas 1992, 67.

24 Willetts 1967, 3–4.

25 Thomas 1992, 145.

Fig. 1: Egyptian version of the Hattusili–Ramses peace treaty in Thebes (dated 1259 BCE); photo: Olaf Tausch; CC BY 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Karnak_%C3%84gyptisch-Hethitischer_Friedensvertrag_06.jpg> (accessed on 13 June 2025).

Fig. 2: The Gortyn Code, Crete; photo: Disdero; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Gortyn_Code.jpg> (accessed on 13 June 2025).

3.2 Slabs and pillars

Slabs and pillars in different cultures are, in many cases, considered a form of archiving technology,[26] serving as 'a long-term archival storage medium'.[27] Legal texts, treaties and grants, for instance, have been engraved on stone slabs to be used as a reference for legal and administrative purposes in different cultures. The ancient Greeks, for example, inscribed many kinds of official records on marble slabs,[28] including treaties and legal documents. As mentioned by Thucydides, copies of certain treaties between city states in ancient Greece were carved into stones erected at Olympia, Delphi, Athens, the Isthmus and the sanctuary of Apollo at Amyklai, south of Sparta.[29] Furthermore, Athens in the fifth century BCE had the remarkable tradition of inscribing legal texts into the public sphere. Their usage as the 'stone archives' of the administration of Athens has long been debated.[30] The inscription texts existed along with their counterparts in other document forms (e.g. papyrus), which were stored in the city archives and more obviously employed in administration.[31] Though often perceived by modern scholars as

26 Ketelaar 2020, 254b.
27 Delsalle 2018, 38.
28 Posner 1972, 96.
29 Thomas 1992, 136.
30 Posner 1972, 97–99.
31 Thomas 1992, 135.

monuments of symbolic value, these legal inscriptions were used as a legal reference.[32] The actual inscriptions were consulted, cited with frequency and constituted the chief administrative documents of Athens.[33]

Furthermore, in the Hellenistic Period (the third century BCE), a group of inscriptions of Ephebate, the training school of Athenian elite youths, can be considered as a record of the school community. The so-called Ephebic inscriptions, apart from glorifying the institution and its students, contain, for instance, a list of the graduates as a record of the school year. Stone slabs, in this case, perform a record-keeping function among the Athenian community. The tradition continued to the Roman Period in the first centuries of the Common Era.[34]

The use of stone slabs and freestanding pillars as legal and administrative documents can also be found in India and South East Asia. Some of King Aśoka's inscriptions on pillars from third-century BCE India record the legal edict prohibiting schisms promulgated by the king,[35] while others function as a grant over lands and objects (e.g. the Rummindei Pillar),[36] the same function found in King Aśoka's inscription from the Sudama cave mentioned above. Grant inscriptions bestowing authority over lands and objects are also found in the form of stone slabs throughout India in the later period. Stone slabs have been used for recording monastic endowments in Thailand and Laos, in mainland South East Asia, constituting an epigraphic genre known in Thai as *kanlapana*.[37] Placed in the territory belonging to a particular Buddhist monastery, the stone inscriptions of monastic endowments gave these monasteries full control over their properties and slaves, therefore, functioning as an administrative record and symbol of authority. Legal text on stone, in addition, is also found in Thailand, including a stone inscription recording laws on theft and robbery found from the upper part of central Thailand dated in the fifteenth century.[38]

Furthermore, treaties between neighbouring kingdoms were also inscribed on stone slabs to be placed in public areas, such as Buddhist monasteries. In 1563 CE, for instance, a peace treaty was made between the Siamese king of Ayutthaya kingdom and the Lao king of Lan Xang kingdom with a stone inscription placed at Wat Phra That Si Sòng Rak monastery on the border between the two kingdoms,

32 Posner 1972, 93–94.
33 Sickinger 1999, 65.
34 De Lisle 2020.
35 Salomon 1998, 139.
36 Sircar 1957, 66.
37 See more in Raviwan Pharkphrot 1982.
38 See Griswold and ṇa Nagara 1969.

the place where the peace agreement was made. This Siamese–Lao peace treaty on stone (Figs 3a–b) resembles the Hattusili–Ramses treaty two millennia earlier. But instead of having different artefacts for two copies of the treaty, the Siamese–Lao peace treaty was inscribed on two sides of one stone slab. One side bears the Siamese text in Khòm script, the other the Lao text in Dhamma script. Unfortunately, the original inscription was seriously damaged.

a b

Figs 3a–b: Rubbings of the Siamese–Lao treaty inscription of Wat Phra That Si Sòng Rak monastery (Loei, Thailand) dated 1563, bearing Thai text (Khòm script) on one side (a) and its Lao counterpart (Dhamma script) on the other (b); © Inscriptions in Thailand Database, The Princess Maha Chakri Sirindhorn Anthropology Center <https://db.sac.or.th/inscriptions/inscribe/detail/2433> (accessed on 13 June 2025).

Writing on stone materials, whether on walls, pillars or slabs, is most often considered as inscriptions, a term with few intrinsic associations with archives. Stone inscriptions are not commonly accepted by modern archivists as archives proper as they were not to be accumulated and stored together in any archival building for any further consultation. However, some examples have shown that a number of stone inscriptions also perform record-keeping and administrative functions. Some of them were employed as a grant over the donated objects or lands, the same function performed by the official documents.

3.3 Tablets, boards and plates

The category of tablets, boards and plates provides one of the earliest clear and widely accepted forms for storing information on a larger scale in archival form. Clay tablets are often light in weights and can be held by hand, unlike stone slabs. Their portability allows tablets (and boards or plates) to be collected together,

more easily classified and even catalogued, forming a large domain of tablet archives, as in the case of cuneiform clay tablets from ancient Mesopotamia. All tablets, boards and plates seem to appear in a relatively rectangular shape, are three-dimensional objects and provide a hard writing surface, compared to what is called sheets and leaves discussed further below.

3.3.1 Clay tablets

Clay tablets constitute the greatest part of ancient Mesopotamian archival artefacts from the third to the first millennia BCE. Clay was an inexpensive material available in abundance throughout the region.[39] The key characteristic of the clay used to form tablets is plasticity with the help of water.[40] The shape of the tablets is formed when the clay is still damp. Writing cuneiform on its surface needs to be done when the clay is still damp as well. As the term cuneiform suggests, the writing consists of wedge shapes impressed into the clay surface by a triangular-shaped calamus made of reed or bone. As a result, cuneiform writing is a three dimensional script.[41] Light and shadow, therefore, plays an important role in reading cuneiform tablets. Readers are expected to peruse a tablet with the light from their left-hand side.[42] Corrections can also be made by filling in the writing errors with wet clay. A tablet can be reused, erased or reinscribed by either reshaping and merging the clay into new tablets or levigating into sediment.[43] If it is dried, a clay tablet becomes solid. But when it is baked, as is mainly the case with library tablets, it will be even more durable, but can easily crack if stored in an improper condition. In the latter condition, whenever an archive building was burnt, the building structure and all the furniture would be damaged by fire, but the clay tablets in the building would be baked and become even more durable.

Clay tablets in the early period were made in a square shape with rounded corners. They later become more rectangular. The obverse was generally almost flat and the reverse more curved. The thickness of a tablet ranged from 1 to 5 cm, depending on its width and length, which can vary greatly from about 2 × 2 to 30 × 40 cm, in order not to be fragile.[44] The writing most often runs parallel to the short side of

39 Posner 1972, 50.
40 Rice 1987 cited in Taylor 2020, 5.
41 Michel 2023, 11.
42 Charpin 2010, 7.
43 Taylor 2020, 21.
44 Posner 1972, 50.

the tablet. Hence, most clay tablets appear in portrait format, though the oblong or landscape format is also found, especially during the Neo-Babylonian Period (between the end of seventh and the early fifth century BCE). If the text is written on both sides of the tablet, the reader has to flip it bottom to top (not right to left).[45] It is noteworthy that the writing can also be placed on the edge of the tablet as well.

The archives of ancient Mesopotamia – whether palace, temple or family archives – housed a large number of clay tablets, including prominently correspondence, private letters between individuals, business and diplomatic letters. The size and format of a letter depended on the length of the text. The use of very small tablets around 'two fingers long' for an extremely short letter has been attested.[46] On the other hand, long letter tablets are also found. In the Assyrian archives of the nineteenth century BCE, when the text does not end on one tablet, an additional smaller tablet, often of oval shape, will be used. Both of them will be sent within the same envelope.[47] However, in the case that the additional tablet is misplaced from its original main tablet and envelope, it is difficult to identify its counterpart.[48] Marriage contracts are another group of documents stored in the clay archives. The contract was normally recorded on a clay tablet made by the bride and the groom, including the penalty for breaking the contract. The contract was usually sealed in an envelope and stored in an archive, until the marriage came to end and the married couple needed to consult the agreement they had made earlier. Among many marriage contracts found in city archives, a number of them are unbroken and well-protected by their sealed envelopes, suggesting long-lasting marriages, such as in the case of a marriage contract tablet found in Kanesh (Turkey) dated from the nineteenth century BCE (Fig. 4).[49]

45 Charpin 2010, 76.
46 Michel 2018, 52–53.
47 Charpin 2010, 122.
48 Michel 2018, 53.
49 Beyer 2016.

Fig. 4: Example of a marriage contract tablet from Kanesh (Anatolia, Turkey) dated from the nineteenth century BCE. Published in Beyer 2016; © Kültepe Archaeological Mission; photo: Cécile Michel.

In the cases of longer scholarly texts, a complete copy employs a series of tablets. A collection of astrological omens, for example, spans over seventy tablets, while the canonical form of the famous *Gilgamesh* epic consists of twelve.[50] These tablets are not physically bound, but connected with each other by numeration included in the colophon of each tablet. Along with tablet numeration, some colophons even capture the incipit or the beginning line of the following tablet to navigate readers.[51] This technique has been known since the third millennium BCE, predating the earliest pagination found in Europe by several thousand years.

When multiple tablets with related content were collected together in a basket, a small tablet was used as a tag or docket, which appears with a double hole, supposedly for binding with string or thread, as in the case of a square tag for a basket of tablets with accounts dated to the twenty-first century BCE.[52] The strings for these holed tablets have not survived. These tablets offer one of the earliest traces of binding clay tablets with thread or string in order to classify the records and help the readers when using them. This vestige of the ancient archival practices, therefore, can still be seen from the surviving, albeit partial, materials, such as these stringless holes.

Clay tablets were also used as archival materials elsewhere outside Mesopotamia. A group of clay tablets, for example, written in Linear B has been found in Knossos (Crete), dated between 1400 and 1200 BCE. Some of them are identified as administrative records and business documents.[53] Therefore, clay had its place in other archival cultures than that of Mesopotamia.

3.3.2 Wood and wax tablets

Even though clay tablets have constituted the predominant corpus of sources from ancient Mesopotamia, wooden and waxed wooden tablets were used along with clay. The administrative documents between the Middle Assyrian and the Neo-Babylonian Periods are believed to have been written on wood tablets.[54] However, their actual evidence does not survive, due to the perishability of wooden material. Some scholars argue that wood tablets were used among the Sumeri-

50 Michel 2023, 19–20.
51 Michel 2023, 20.
52 Michel 2023, 13–14.
53 Yeo 2022, 66–67.
54 Charpin 2010, 75.

ans even before the advent of clay tablets.[55] Furthermore, sixteen ivory-wooden boards originally constituted a polyptych,[56] to which further leaves could be added, which was considered the 'deluxe' edition of the text presented to the king for very special purposes.[57] Waxed wooden tablets, on which writing can be easily erased, were also used in Mesopotamia, for example, for recording business transactions and administration.[58]

Waxed wooden tablets continued to be in use in Greece and Rome. They are thin rectangular boards of wood, which are chiselled out and filled with wax. A raised frame is made around the wax surface so as to protect it from being rubbed when many tablets are stacked on top of one another.[59] The tablets are usually packed in sets of two or more. Holes are made on one of the long sides to fasten the boards together, forming what is called a twofold or multifold booklet. Writing on wax can be easily erased by smoothing the wax surface with the flattened back of the stylus. Therefore, wooden wax tablets are convenient for ephemeral uses. Apart from recording accounts and business transaction, evidence points out that Greek letters in a few cases appear in the form of waxed wooden tablets. However, it seems that waxed wooden tablets were not a common letter material in the Greek and Roman world, but seemed to be only a substitute when the more proper letter material (i.e. papyrus) was not available.[60] In addition, the use of waxed wooden tablets is still apparent in medieval Europe for taking notes and drafts, not for writing letters.[61]

Without being waxed, wooden tablets have been used as a material for writing letters, as in the case of the famous Vindolanda tablets, which represent the best-known Latin letters on wood dated between 90 and 120 CE from the northern frontier of Roman Britain. Among the group of more than one thousand Vindolanda tablets, the majority[62] appear in the form of thin leaf-tablets (1–3 mm thick) in a size often described as a modern 'postcard'[63] (16–20 cm × 6–9 cm), whose writing is marked on the wooden surface with black ink.[64] Despite being a thin sheet and even foldable, the Vindolanda letters are most often referred to by

55 Posner 1972, 19–22.
56 See more in Michel 2023, 16–19.
57 Posner 1972, 19–20.
58 Michalowski 2021, 79–80; Posner 1972, 20.
59 Sarri 2018, 79–81.
60 Sarri 2018, 79–81.
61 Clanchy 2013, 120–121.
62 The other group of the Vindolanda letters is on waxed wooden tablets.
63 Delsalle 2018, 26.
64 Sarri 2018, 83.

modern scholars as wooden tablets. The content of these tablets ranged from military documents to accounts and private letters.[65] Many of the letters have notches on the right and left sides to secure the string tied around the folded letters.[66] In this case, wooden tablets were made from alder or birch which grew locally, thus, becoming one of the most convenient and cheapest materials for writing letters.

3.3.3 Ostraca

Ostraca, or substantial pieces of broken pottery,[67] are found as one of the common writing media in the ancient world, though not always associated with archival practices. Taking a random shape of a broken piece, an ostracon provides a hard writing surface and was easy to find around the Mediterranean and the Middle East. The same term also refers to flakes of stone.[68] Even though broken pottery cannot be recycled like glass or metal once it has been broken, it is easy to reuse,[69] thus, convenient for ephemeral writing, such as taking notes and drafts.[70] Toll receipts also appear in the form of ostraca. However, some of the letters in the Greco-Roman world appear in the form of ostraca, especially in the areas in which papyri were not available and ostraca were much easier to find. Yet, it was considered a bad substitute for papyrus. Ostraca were cheap and ready-to-use, but offer a limited space for writing, thus, were only fit for short texts. Furthermore, ostraca cannot be folded, but always remain open, unlike letters on papyrus. This condition made ostraca less suitable for letters or contracts which needed to be kept confidential.[71] Ostraca were frequently found kept together by their owners, which were individuals, families and businesses, and offer modern scholars a source for reconstructing a number of archives in Antiquity.[72] The cases of ostraca archives exemplify the adaptation of artefacts of everyday life, such as pottery, to serve the archiving purposes.

65 See more in Bowman, Thomas and Tomlin 2010.
66 Sarri 2018, 83.
67 Delsalle 2018, 26.
68 Sarri 2018, 77.
69 Bülow-Jacobsen 2009, 14.
70 Delsalle 2018, 8, 26.
71 Sarri 2018, 79.
72 Maltomini 2012–2013, 37.

3.3.4 Metal plates

Metal provides a durable hard-surfaced material for significant administrative documents. Often appearing in the shape of a thin rectangular sheet, metal plates, in many cases, resemble the shape of sheets and leaves. The value of the metals, including gold, silver or bronze, means a higher cost of production, but it signifies the authority and affluence of the creators and holders of the documents. Its durability also ensures that the artefacts will last for generations.[73] As its production was undeniably costly, metal has been used only for some significant documents, especially those produced by the courts. The Hittites, for example, engraved certain international documents on metal plates. A copy of the thirteenth-century BCE treaty between the Hittite King Tudhaliya IV and Kurunta of Tarhuntassa (a Hittite prince and the king's cousin) was inscribed on a bronze plate of a large dimension, weighting over 5 kg.[74]

Gold has been employed in many different cultures to bear significant documents, such as royal orders.[75] Rectangular golden plates in an oblong format resembling palm leaves have been used as administrative records of the royal authority in mainland South East Asia. Golden plates were used in documents bestowing royal titles to senior noblemen and senior monks and form an epigraphic tradition of the Thai royal court called *suphannabat*,[76] which started in the fifteenth century and has continued to the present day. These golden plates record the newly bestowed titles by engraving with a stylus, but not filled with any ink, making the writing hardly legible without a proper reflection of light. The process of engraving had to be conducted in a certain consecrated ritual. The documents were then given to the people selected in a ceremony as a reference to the rite of passage. The size, weight and quality of gold vary, depending on the different ranks of the person bestowed.[77]

Apart from the golden plates for the titles, a group of golden plates produced in the royal court of mainland South East Asia is used as symbolic diplomatic letters which the sovereigns there sent to foreign superpowers. The Thai kings of Bangkok, for example, sent a number of golden diplomatic letters to Chinese em-

73 Salomon 1998, 115.

74 Charpin 2010, 168. Its original Hittite treatise was believed to have been inscribed on a silver plate.

75 For example, in ancient India (Sircar 1965, 77–78).

76 Pali: *suvaṇṇa-paṭṭa*; Sanskrit: *suvarṇa-pattra*.

77 Panarut and Grabowsky 2023

perors in Beijing.[78] Later, golden letters of this kind were sent from Bangkok to Queen Victoria of Great Britain and to the French Emperor Napoleon III in 1861 CE. Correspondingly, the Burmese king Alaungpaya also sent a long golden plate (55 × 12 cm) decorated with rubies to King George II of Britain in 1756 as a diplomatic letter (Figs 5a–c).[79] These golden diplomatic letters are engraved in vernacular Thai and Burmese languages and scripts, which were hardly intelligible for their recipients. But they were sent to the recipients as a symbolic gift, their golden material signifying the wealth and power of both the recipients and the senders. Due to the delivery process through the diplomatic mission, as well as their longer size, the diplomatic golden plates were often folded before being stored in decorated containers, for example, a hollowed-out and decorated tusk of a Myanmar elephant.[80]

Silver plates might have been more frequent than golden plates in mainland South East Asia. In Thailand, for example, the silver plates (*hiranyabat*) have been used for appointing noblemen and senior monks to certain lesser titles. Titles granted with the silver plates were more often bestowed throughout the years, but fewer silver plates have been collected and published. Furthermore, silver plate has also been used for royal decrees, including one example granted by the queen of Chiang Mai in 1587 CE[81] exempting the inhabitants of a cluster of five villages in a district south of Chiang Mai (northern Thailand) from their feudal labour in recognition of their taking care of a Buddhist monastery, even though the case is rather rare.

a

78 For an example of a surviving golden diplomatic letter from the Siamese king to the Chinese emperor in the early nineteenth century, see Panarut 2022.

79 This golden diplomatic letter is nowadays kept at the Gottfried Wilhelm Leibniz Bibliothek – Niedersächsische Landesbibliothek in Hanover, the former official seat of King George's House of Hanover before ascending to the throne of England (see more in Ruppelt and Leider 2014).

80 Ruppelt and Leider 2014, 24.

81 Grabowsky 2004, 165–166.

b

c

Figs 5a–c: Diplomatic letter in form of golden plate from King Alaungpaya of Burma to King George II in 1756. The golden plate was originally rolled and stored in an ivory container; © Digital collection, Gottfried Wilhelm Leibniz Bibliothek – Niedersächsische Landesbibliothek in Hanover: <https://digitale-sammlungen.gwlb.de/resolve?id=00056452> (accessed on 16 May 2024).

Copper plates constitute a specific genre of written artefacts in India, commonly known as *tāmra-paṭṭa* (literally 'copper plate'), with the earliest evidence dated from the mid fourteenth century CE.[82] They are also known as copper-plate grants due to their function granting authority over lands and properties. Two main types of format[83] can be distinguished among the copper plates found from India. In South India, copper plates appear in an oblong format. The writing runs on several plates, which were joined by a ring passing through a hole of each plate and soldered with a seal. In North India, on the other hand, the copper-plate grant often consists only of one plate with a seal attached. In addition, the copper plates as royal grants and charters have also been found in the Persian culture since the twelfth century.[84]

Early evidence from South India suggests that the format imitates the shape of palm leaves. Early writing on copper plates is believed to have been produced by cutting with a chisel, while in the later period, the writing was engraved on the plate in the molten condition.[85] The use of copper instead of perishable writing materials, which would have been less costly, reflects an attempt to establish the document as a permanent record.[86] The copper plates from earlier periods were usually produced by royal chanceries with the royal seals signifying the royal authority granted to the owners of the plates, as well as their descendants. In later times, copper-plate grants were also used for more private purposes to grant rights among individuals without any association to the royal authority. Even though the copper-plate grants from India functioned as legal documents, they were not meant, in the first place, to be read, except when received by their owners or in case of legal disputes.[87] Therefore, Emmanuel Francis (2018) points out that copper-plate grants are not archives proper, because they were not meant to be stored and consulted, but, instead, they constitute their own uniqueness with overlapping features between manuscripts, inscriptions and legal documents.

Yet another metal which concerns archival practices is lead, which is a by-product of the extraction of silver.[88] Lead is durable, soft and malleable, thus, providing a suitable writing surface. Most of the lead-plate inscriptions in the Greek and Roman world are curse texts or magic spells.[89] Though the association

82 Salomon 1998, 114.
83 Francis 2018, 398.
84 Sohoni 2016, 95.
85 Natarajan and Kasinathan 1992, 70, cited in Francis 2018, 390.
86 Salomon 1998, 115.
87 Francis 2018, 392.
88 Sarri 2018, 72.
89 Turner 1968, 6.

between the curse texts and the lead is not clear, lead has been thought to be 'appropriate for messages to the underworld'.[90] Various cases of Greek letters from archaic and classical periods appear in the form of lead plates. Some scholars claim that this specific material was used for letters which required urgency, though not all scholars agree. The cases of two archaeological finds excavated at Keramikos and Athens (Agora) dating to the second half of the fourth century BCE, consisting of hundreds of lead strips recording the name of the owner of a horse, its breed, colour and price, are considered by modern scholars to be 'cavalry archives',[91] as these lead plates were presumably used for the record of ownership and evaluation of horses of the Athenian cavalrymen. After the classical Greek Period, lead is, nevertheless, scarcely found as a writing material.

3.3.5 Tortoiseshell

Inscriptions on tortoiseshell are among the earliest written records of the early Chinese language dated to the period around 1200 BCE (Shang dynasty).[92] As the tortoiseshell inscriptions are closely associated with divination, they are widely known among modern scholars as oracle bone inscriptions. The pieces of tortoiseshell, which was used for divination and inscription, are taken from the plastrons or the lower scapular of the tortoise, not from carapaces or the upper part of the shells.[93] After the divination had been performed by making a crack on the shell surface, the results of the divination were inscribed on the shells. Thus, the writing was probably made after the divination had been finished.[94] The written texts on the shells are either the results of the divination or the narratives on the king and his divination rituals.[95] Though the tortoiseshell does not have a flat or rectangular shape, as it is the case for tablets, boards and plates, the tortoiseshell plates offer a hard writing surface. Their thickness also prevents them from being

90 Sarri 2018, 72–73.

91 Sarri 2018, 73.

92 Even though there are vessel inscriptions dated earlier than the tortoiseshell inscriptions, the writing on the early ceramic inscriptions contain mostly a single character and more probably performs ritual and honorific functions rather than being a record proper. On the other hand, the tortoiseshell inscriptions contain proper Chinese sentences with a wide range of word choices, indicating their purpose as written records on divination and, at the same time, offering a source for studying the early phase of the Chinese written language (Gu 2009, 105–106).

93 Shaughnessy 2023.

94 Yeo 2022, 70.

95 Gu 2009, 107.

folded. Therefore, tortoiseshell inscriptions from ancient China are categorised here along with clay tablets, wooden tablets and boards, as well as metal plates.

The tortoiseshell inscriptions were kept to be further consulted in the divination rituals,[96] therefore, modern scholars consider them as a part of archival practices and record-making. Furthermore, some archaeological excavations found significant numbers of these tortoiseshell together in a pit,[97] implying the practice of accumulating these shells in a specific space for further consultations. Therefore, the tortoiseshell inscriptions might have been collected together and constituted 'divination archives' in ancient China.[98]

3.4 Slips

The other form of writing materials which represents the proper archives of ancient China were slips (sometimes also named 'strips') made from bamboo and wood, called in Chinese *jiance* or *jiandu*. The Chinese character for the word archive (*ce*) has also contained the pictograph of bamboo since the early period, implying its significance in the archival practices in ancient China. One slip, often around 22–23 cm long,[99] provides one vertical line. Writing was made by brush with indelible ink. If any characters were written incorrectly, they were scraped off with a knife.[100] A number of slips are bound together with a string, either at their top, middle or bottom, creating a wooden roll in order to provide enough writing space for longer texts. The binding strings were produced from either bast fibre plants or silk. The most common plants used for binding are hemp (*Cannabis sativa*) and ramie (*Boehmeria nivea*), while the production of silk is expected to involve higher costs.[101] These bound slips are common from the period around 1000 BCE to the third or fourth century CE.[102] Some scholars have considered these slips as 'the earliest true book form' in China before the advent of paper.[103] Texts found made from slips cover literary tales, administrative documents, chronicles

96 Yeo 2022, 70.

97 Shaughnessy 2023.

98 Note that other perishable writing materials (e.g. bamboo and silk), which might have existed during the Shang dynasty have not survived to our time.

99 Gu 2009, 124.

100 Gu 2009, 125.

101 Staack 2023, 49–50.

102 Tsien 1962, 91; Gu 2009, 104.

103 Edgren 2009, 97.

and legal texts. Bamboo slips are more common than wooden slips,[104] especially in places where bamboo grew in abundance.

One obvious shortcoming when using bamboo or wooden slips as writing materials is that the cords or strings which bound them can be lost, removed or broken, leading to the disarrangement of the slips. Modern scholars of Chinese philology have spent a lot of time rearranging the bamboo or wooden slips found in archaeological sites into their proper order,[105] as the binding strings had already decomposed.[106] Furthermore, a set of bound bamboo or wooden slips can be rather heavy and inconvenient to carry or even to flip through. The Chinese emperor of Qin had to read more than a hundred pounds of bound bamboo or wooden slips every day.[107] Thus, bamboo and wooden slips were surpassed by a lighter material, such as paper, in the following centuries.

3.5 Sheets

The category of sheets here refers to thin and rectangular materials which provide soft writing surfaces. It encompasses a variety of materials from papyrus, parchment, paper, textile and bark, becoming the largest group of archival materials found across the globe. These materials are light in weight and convenient for using and storing. However, they are also often more perishable than other writing supports, leading in modern times frequently to measures of restauration or the application of secondary supporting materials. A classic case would be little glass plates attached to fragile papyri on both sides – an effective form of protection that, nonetheless, becomes almost a part of the original archival artefact (see Case Study 1.1).

3.5.1 Papyrus

Papyrus was once a dominant writing material across the Mediterranean in the ancient and medieval periods. The papyrus plant (*Cyperus papyrus*) grew only in the marshes along the Nile River in Egypt in Antiquity.[108] The plant, therefore,

104 Yet the use of wooden slips was also attested in the archives of ancient China (for example, see Fölster 2018, 218).
105 For example, see Staack 2016.
106 Gu 2009, 125.
107 Gu 2009, 126.
108 Sarri 2018, 74.

became a symbol of Lower Egypt itself.[109] Apart from being a writing material, papyrus was utilised by the Egyptians as fuel, food, medicine, clothes, rugs, sails and ropes. Manufacturing a writing support from papyrus plants was a complicated process.[110] After being properly prepared, the resulting sheet of papyrus is light in colour, strong and flexible. One side of a papyrus sheet, in which the fibres run horizontally, provides a smoother surface than the other rougher side, whose fibres run vertically. As the smoother side was often the one written on first, it is called *recto*. The other rougher side, *verso*, was less used for writing and more often left blank. The width of a sheet usually ranged around 25 cm, which corresponds to the length of the individual strips of papyrus used.[111]

The earliest surviving Egyptian papyri dated to the mid third millennium BCE (the fourth and fifth dynasties of the Old Kingdom), but hieroglyphic representation of the papyrus roll suggests its use for writing since 3100 BCE. Archives in ancient Egypt constitute a huge corpus of papyri.[112] The traditional Egyptian way of writing on papyri is to use a reed brush.[113] The oldest preserved papyrus outside Egypt is a Hebrew scroll from the period around 750 BCE.[114] Papyrus rolls found in Greece were presumably imported from the Phoenician port city of Byblos. Writing on papyrus was intended to be permanent,[115] unlike waxed wooden tablets which can be reused. The practice of erasing and rewriting, though documented in several cases, does not seem to have been common. Papyri were an important archival material in the Greco-Roman world, covering legal documents, administrative records and letters. Papyrus was also used for administrative records in the caliphal offices in Cairo, after the Arab conquest of the city in 641 CE.[116] In addition, multiple sheets of papyrus can form a larger unit, such as rolls and codices, the forms which will be further discussed below.

Papyrus remained one of the most common writing and archival materials before the decline of its use when parchment, the other archival material, started to play an important role in the archival cultures of Antiquity since the first century CE.[117] However, papyrus was still in use in some specific contexts in medieval

109 Turner 1968, 3.
110 See more in Bülow-Jacobsen 2009, 5–8.
111 Sarri 2018, 75.
112 See more in Hagen and Soliman 2018.
113 Sarri 2018, 76.
114 Bloom 2001, 21.
115 Roemer 2009, 85.
116 Bloom 2001, 48.
117 Reynolds and Wilson 2013, 3.

Europe, including the papal chancery, where it was still present until the eleventh century.[118]

3.5.2 Parchment and leather

Parchment is a writing support produced from animal skins, such as those from goat, sheep or calf, as well as other animals, including rabbits and squirrels,[119] through a special preparation process.[120] The best quality parchment is made of calfskin, called vellum, which offers both strength and thinness.[121] The term parchment is often interchanged with the term leather. However, according to Ronald Reed,[122] the main difference between parchment and leather is that the former is prepared from the pelt (wet, unhaired and limed skin) by drying under tension on a wooden frame (known as a stretching frame), while with leather, the wet pelt was not dried under tension, resulting in different fibre bundles.[123] In addition, leather was tanned and, thus, became more resistant to water. Both terms, parchment and leather, are often used imprecisely in many scholarly works. Some modern scholars use both terms generically to describe strips of leather prepared to receive writing, without any precision about the process of preparation. This generic use of both terms is also applied here in this chapter.

The use of animal skins as a writing material is attested in Mesopotamia, but the use of parchment and leather in the early Near East was probably not very widespread. The best quality parchment in the Greco-Roman world came from Pergamon, a city on the western coast of Asia Minor. The term parchment itself derives from the name of this city.[124] Unlike papyrus, which was native only to Egypt, parchment can be produced from livestock, becoming a common writing material across the Mediterranean since the first century CE. Parchment became one of the most important archival materials in medieval Europe. It was used for administrative records, charters and letters. Corresponding to papyrus in the earlier periods, it was common for medieval monastic authors to write on waxed tablets and then have a fair copy made on parchment.[125] Parchment was also used

118 Turner 1968, 16.
119 Clanchy 2013, 122.
120 See more in Reed 1975, 25–40.
121 Sarri 2018, 84.
122 Reed 1972.
123 Reed 1972, 119–121; Reed 1975, 46.
124 Reynolds and Wilson 2013, 3.
125 Clanchy 2013, 121.

in medieval Russia for political treaties, business contracts, depositions and grants.[126] It provides a large and smooth area, which is more suitable for drawing and painting than papyrus. As a result, a number of medieval and early modern European maps appear on parchment.[127]

The cost of parchment depended a lot on the availability of the livestock from which it was produced.[128] After paper, a much cheaper material, had been introduced into Europe between the twelfth and thirteenth centuries, the dominant role of parchment in European archival practice started to decline. After printing technology employed paper as its main material and resulted in the widespread use of paper, parchment continued to be used mainly for legal purposes. The sheer quantity of animals required for parchment production has been considered one of the reasons for the decline in its use for printed material.[129] However, parchment still served as a material for the refined and official document copy in the late eighteenth century, for example, the original and official copies of the Declaration of Independence and the United States Constitution,[130] and even in the twentieth century, for instance, the abdication documents of the queens of the Netherlands in 1948 and 1980.[131]

3.5.3 Paper

Paper is undeniably the main and possibly the most important writing support worldwide during the past centuries. Its dominance was challenged only by the dawn of digital technology in the late twentieth century. With its long history over two thousand years, paper appears in various types in different regions and periods, as a result of different production techniques.[132] Despite its diversity, sheets of paper offer an appropriate writing space at much cheaper costs compared to papyrus and parchment. Paper is also the only material among the archival artefacts in the category of sheets (i.e. papyrus, parchment, paper) which has been appropriated for printing, presumably due to its cheaper cost.[133] The industrialisation of paper production, which included the technology to produce paper from

126 Dekker 2018, 12.
127 See Holsinger 2022, 83–88.
128 Clanchy 2013, 124.
129 Forde and Rhys-Lewis 2013, 11–12.
130 Bloom 2001, 27.
131 Ketelaar 2020, 265b–266a.
132 See more in Hunter 1947.
133 Bloom 2001, 11.

the cheaper trees and wood available, reduced its cost even more,[134] and, at the same time, enhanced paper's potential to be used to print texts as well as colourful images and graphics.[135] Photographs appear in the form of a small glossy paper sheet, while certificates of modern universities are usually printed on decorative quality paper before being signed by the university's authorities. Both kinds of records made of paper often found their way into modern archival institutions. Archives of paper, especially in the Modern Period, are, therefore, often not restricted to archives of writing alone. Nevertheless, cheaper industrial paper is often fragile, due to its acid-based condition, a result of a modern technique that shortened the manufacturing process. Modern paper, thereby, is subject to quick self-destruction, one of the main preservation problems for modern archival institutions.[136]

The invention of paper in Chinese tradition was attributed to Cai Lun, an eunuch in the period of the Han dynasty, in 105 CE.[137] However, archaeologists found a specimen of hemp paper from the desert in the western part of modern China dated to the second century BCE, several centuries prior to the time of Cai Lun.[138] Modern scholars conclude that paper must have been used for writing for some time already before Cai Lun, who may have perfected it for the use of writing.[139] Paper has been considered a common writing support in China at least from the second and third centuries CE. It is noteworthy that, apart from being a writing support, paper also served other daily purposes, being used for ropes, cups, kites, wrapping sheets and banknotes, inter alia.[140] Chinese paper was introduced to the Arabs during the eighth century CE. It is believed that the Arabs learnt the methods of paper production from Chinese war captives in 751 CE, who happened to be paper makers. A papermill was later established in Baghdad in 794–795 CE.[141] Paper then became the most influential writing support for the Arabs. With paper abundantly available, different branches of knowledge and various administrative records were written down and circulated in the Arabic world in the form of paper.[142] Paper must have been known in Europe through contacts with the Arabs

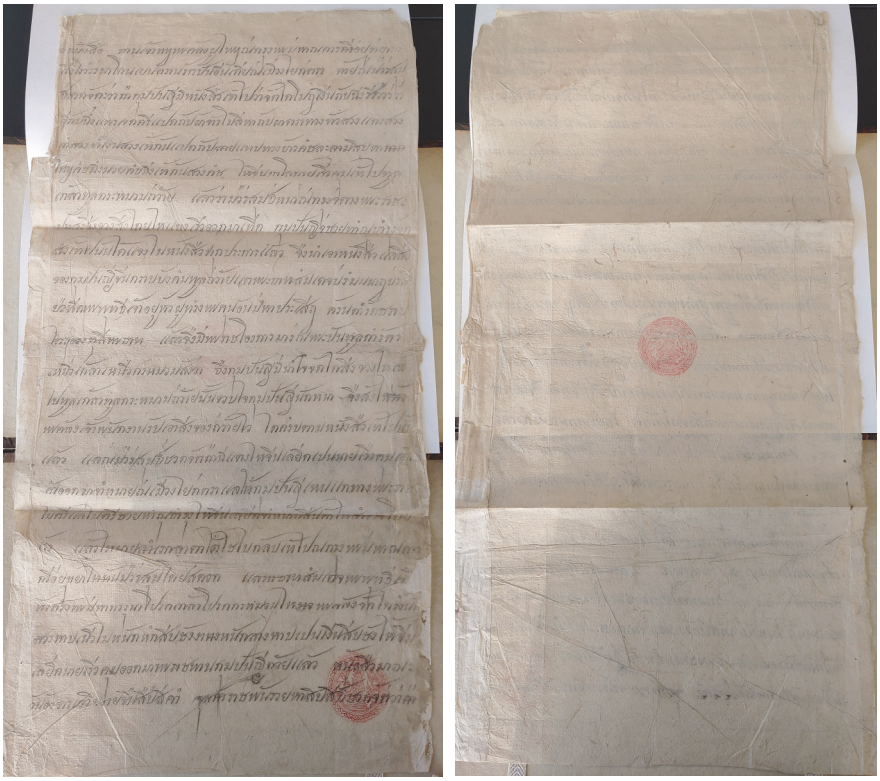
134 Hunter 1947, 376–378.
135 Banham 2009, 274.
136 Forde and Rhys-Lewis 2013, 9.
137 Gu 2009, 124.
138 Bloom 2001, 32–33.
139 Kurlansky 2016, 30–31.
140 Kurlansky 2016, 34–35.
141 Bloom 2001, 42, 48.
142 Kurlansky 2016, 59–62.

sometime before the twelfth century.[143] The first record on papermaking in Europe dates from 1264 CE.[144] Then the demands for paper called for more papermills in different areas of Europe. Therefore, paper was a part of archival practices in western Europe only after the thirteenth century. Paper was scarcely known in England before 1307 CE.[145] However, in early modern Europe, paper was the main material for writing records and letters, both the administrative and private ones, in the sixteenth and seventeenth centuries. Watermarks, which signify the paper maker, were commonly found on paper made in Europe, helping modern scholars identify the provenance of the paper.[146]

Probably influenced by the Arabs, paper was introduced into the northern part of India in the tenth century CE.[147] But paper from northern India did not seem to influence its use in South East Asia. In the latter, paper is made from the bark of either the *sa* tree (*Broussonetia papyrifera*), which is more common in northern and north-eastern Thailand, Laos, and some parts of Burma, or the *khòi* tree (*Streblus asper*) from central and southern Thailand, and Cambodia.[148] The quality of these two types of paper is relatively similar, but the *sa* paper provides a softer and more flexible surface for writing.[149] Though the origins of the production of *khòi* and *sa* paper are unclear, they appear at least as early as the beginning of the seventeenth century and continued to be produced in Thailand and Laos until the twentieth century. A thicker, longer sheet of *khòi* paper can be folded to form a leporello or accordion book, while a thinner, shorter sheet of the same paper (specifically called *phlao* paper) is used for administrative letters and records (e.g. treaties) in Thai and Lao royal courts and administrative systems. If the text is longer than what one piece of paper can bear, two pieces (or more) of paper can be glued together to provide a larger writing space. In this case, the authorising stamp will be impressed on the verso side, exactly over the seam between two pieces, to verify that the two pieces of paper originally belonged together. One example of the stamp over the paper seam can be seen on a Siamese–Dutch trade treaty dated 1792 CE (Figs 6a–b). These official letters and records on *phlao* paper were often folded into smaller rectangular pieces for storage and delivery. The tradition is also found in the royal

143 Bland 2013, 24.
144 Kurlansky 2016, 78–79.
145 Clanchy 2013, 122.
146 Daybell 2012, 32–33.
147 Premchand 1995, 78.
148 Helman-Ważny et al. 2020, 137.
149 Helman-Ważny et al. 2020, 137.

letters from Laos in the eighteenth and nineteenth centuries.[150] *Khòi* paper is very sensitive to water, as it can diffuse the coating substance and the writing. A colophon of a Thai manuscript from the early eighteenth century notes that this *khòi*-paper manuscript was coated with a waterproof substance to prevent the writing from being damaged.[151]



a b

Figs 6a–b: A Siamese–Dutch treaty dated 1792 CE on which an authorising stamp can be found over the paper seam of the verso side (b). The pigment of the stamp can also be seen from the recto side on the middle of the page (a). Dimensions: 66.7 × 34.0 cm. Leiden, Universiteit Leiden, Universiteitsbibliotheek, Special Collections, Or. 2236b.

150 See Phimphan Phaibunwangcharoen 2013.

151 Panarut 2019, 141. A scientific investigation has never been done to prove the case.

Sheets of paper accumulated together form a pile, which can be sorted following the category of the content and function. Bundling sheets of paper into categories was a common archival practice in early modern Europe, along with the technique of binding them as a file or a codex (discussed below). Sorting sheets of paper into bundles was evidently a common practice in sixteenth-century England[152] for servants of a principle secretary and was often applied for the paper without any holes, which was common for private archives. To form a tied bundle, loose sheets of paper are sometimes folded in the same formats and then bound with a string or thread. The same folding patterns and formats would make sure that the sheets are tightly tied and will not easily fall out of the bundle. In some cases in sixteenth-century England, letters, which had been folded to suit their original envelopes, were unfolded and then refolded in the other format, in order to be collected in a bundle, which could then be tied together with string, laces with points, linen tape, parchment strips or leather cords.

Furthermore, sheets of paper in many cultures can be collected and preserved together without being tied, sewn or stitched, but kept within a protective cover, a wrapper or an envelope. 'Loose-leaf manuscripts', for example, have survived from the period before the middle of the twentieth century in West Africa.[153] Sheets of paper from these loose-leaf manuscripts are organised by catchwords written in the left corner of the lower margin of the verso of each folio, informing readers of the beginning of the following sheets. These catchwords keep the sheets in a correct order, thus, perceived by modern scholars as a kind of 'virtual binding without stitching'.[154]

Paper was the main support for the wood-block prints introduced into China in the ninth century CE (Tang dynasty),[155] but its use in archival practice was not apparent. Paper in Europe has been transformed from being a support for handwriting to a common support for printing since the time of Johannes Gutenberg. Gutenberg's moveable types are convenient for printing longer texts, becoming influential throughout Europe. Some archival records of Europe from the sixteenth century onwards combine print and handwriting. Different types of paper were designed to suit the reproduction of photographs, the technology which became known in the early nineteenth century. Some types of paper, in addition, are specifically designed to serve the archiving purpose. Carbon copy paper, for

152 Wolfe and Stallybrass 2018, 192–195.
153 Bondarev 2023, 285–292.
154 Bondarev 2023, 285.
155 Gu 2009, 151.

example, which reproduces a copy after being written on, has been in use since 1806 CE.[156] The use of carbon copy paper for receipts or bills is still common today.

3.5.4 Bark

The inner bark of a tree can be processed to become a writing support in the form of a thin sheet. Two types of plants are used in India: the Himalayan birch tree (*Betula utilis*) in the north-west and the aloe (*Aquilaria agollocha*) in the north-east.[157] Long sheets of birch bark can be folded, such as the fragments of Buddhist texts, which stand among the earliest birchbark manuscripts, dating from the first century BCE to the third century CE. However, it is believed that sheets of birch bark were used in northern India for some time before the invasion of Alexander the Great in 326 CE. The use of birch bark in Kashmir continued into the seventeenth century and into the twelfth century in Nepal.[158] Birch bark manuscripts have also been found in the Assamese manuscript culture in north-eastern India,[159] as well as in the Batak manuscript culture of Sumatra island.[160] Furthermore, excavations in Novgorod (Russia) have uncovered a group of birch bark documents dated between the early eleventh and fifteenth centuries. These birch bark writings bear written records which 'were not worth the expense of parchment', for example, matters of everyday life, topics connected to the family or household affairs and estate management.[161] These birch bark documents from Novgorod are often labelled as 'birch bark letters', but only a few of them can be proved to be actual correspondence letters.

3.6 Rolls

The terms roll or scroll refer to a longer sheet of soft and flexible writing material which is stored by being rolled into a cylindrical shape. Rolls were a standard form of archival records back in Antiquity. Keeping the written records in the form of rolls and scrolls might be helpful to keep the content of the records confidential, to store and transport, as well as to protect the writing from any scratch

156 Ketelaar 2020, 269b.
157 Gaur 1979, 15.
158 Shaw 2009, 128.
159 Gaur 1979, 16.
160 For examples of Batak birch bark manuscripts, see Zollo 2020.
161 Dekker 2018, 5–6.

or possible damage.[162] The use of papyrus rolls is very well attested in ancient Egypt.[163] Sheets of papyrus were glued together on the long side to form a roll or scroll in the Greco-Roman world. Each papyrus sheet (called *kollema* in Greek) was attached with an overlap of 1 or 2 cm.[164] Each attached sheet forms one column. Archival records in ancient Greece have been attested to be in this form of papyrus rolls.[165]

A special type of papyrus roll called *tomoi sunkollēsimoi* was employed in Greco-Roman Egypt for archiving purposes, as it contains multiple originally independent papyrus sheets which have been pasted together from left to right to form a roll.[166] In a *tomos sunkollēsimos*, the pasted documents were aligned at the bottom, and the upper, uneven margin was usually left uneven, depending the height of each original documents. This type of roll, found from the Ptolemaic era to the middle of the fourth century CE, was convenient to preserve documents in a permanent and secure order,[167] reflecting the adaptation of materials to serve archiving purposes.

Later rolls or scrolls were also made of parchment and paper. Parchment sheets were sewn to form a Torah scroll in the Hebraic culture.[168] In order to read these papyrus and parchment rolls, one has to move the roll to turn to the following column until the end. Furthermore, one has to 'rewind' or 'unroll' the roll to its beginning, so that the other readers can start reading texts properly from its beginning.[169] As the directions of reading between Greek and Hebrew scripts are different, the direction of unrolling the rolls or scrolls is also different between the two cultures. For the Greek, one reads from left to right. So, the rolls are unfolded horizontally to the right, where the writing of each line begins. For the Hebrew scrolls, the direction is opposite.[170] One of the disadvantages of this form is that it is difficult to identify the location of texts in a roll.

Rolls then became a common form of records in European archives, especially those made of parchment.[171] A number of them are to be unrolled vertically. However, after the codex had become the dominant book form in European writ-

162 Sarri 2018, 79.
163 See more in Hagen and Soliman 2018.
164 Turner 1968, 5.
165 Posner 1972, 97–99.
166 Maltomini 2023, 233–235.
167 Maltomini 2023, 234.
168 Bloom 2001, 24.
169 Reynolds and Wilson 2013, 2–3.
170 Turner 1968, 8.
171 Clanchy 2013, 140.

ing cultures from the fourth century CE,[172] rolls no longer served as a material for lengthy texts, as was the case in Antiquity. Administrative scrolls (e.g. edicts, royal decrees) of medieval Europe appear in a much shorter length. Seals were often attached to the rolls to authenticate the documents, being hung with threads or strings. Rolls in China, the form specifically known as *juanzhouzhuang*,[173] have long been a common form of administrative record before being spread to Korea, Japan and Vietnam. A roll or scroll can be made of paper or cloth. Writing was sometimes made on a sheet of paper before being attached to a roll of silk, as is the case for the Chinese royal decrees.

3.7 Files

A number of individual records (e.g. sheets) can constitute a larger codicological unit by being placed loosely together as a pile or tied as a bundle (discussed above), by being placed together in a container-like folder, or by binding with threads or strings as a file. The term 'file', derived from *filum* ('a thread or piece of string' in Latin), refers to multiple sheets of documents attached, bound or sewn together with a string or thread. As loose sheets of paper are often vulnerable, and liable to become 'waste paper', filing was widely practiced in early modern Europe and is even considered 'the first stage of records management'.[174] Yeo points out that 'a file, in recent Western societies, connoted a physical mechanism – such as folder or jacket – for holding together records that would otherwise be discrete',[175] but a limited number of equivalent mechanisms from the ancient world have survived to our time. The modern concept of files in assembling and arranging written records in Europe can be traced back to the thirteenth century.[176] Nevertheless, the practice of putting two related letters of clay tablets together in a clay envelope is arguably an early practice of filing,[177] while the strings that bind two tablets together can be considered an early filing mechanism.[178]

Binding multiple sheets together with a string appears to be a practice widely found in various cultures. Filing was commonplace at the institutions, such as the exchequer and chancery, in early modern Europe. Evidence from late-seventeenth-

172 Brown 2009, 179.
173 Edgren 2009, 99.
174 Wolfe and Stallybrass 2018, 180.
175 Yeo 2022, 178.
176 Hochedlinger 2009, 23
177 Yeo 2022, 178.
178 See more in Michel 2023.

century England points out that filing is the preferred method to store letters rather than folding, because filed letters can be easily consulted without having to unfold or refold, and can be conveniently portable when the file is backed with a protective wrapper.[179] In the archival system of early modern Germany, an official called a *Registrator* was responsible for keeping files in which all the documents were sorted in chronological order and sewn or fasten together to form a booklet within a strong cover made of parchment or cardboard.[180] When intended to be used for further storage in files, paper was sometimes prepared by piercing or punching holes before being used for writing. However, filing was not only limited to handwritten records, but also applied to printed materials as well. An English exchequer receipt, for example, printed in 1620 CE has one spindle hole originally punched, which was intended for filing purpose.[181] Undeniably, ephemeral printed materials, such as receipts or tax forms, can hardly have survived to the present day without being stored properly in a file.

In addition, filing was also practiced in the Middle East. A careful consideration of holes made for stringing often allows scholars today to connect individual documents to larger files, as is frequently necessary in the medieval Arabic Middle East (see Case Study 1.2). Modern inventions, such as paper clips and staples since the late nineteenth century,[182] offering the more secured fastening of archival documents, are still common in the modern practices of filing paper archives nowadays.

3.8 Codices

Around the first and the second centuries CE, the new form of 'books', later known as codices (singular: codex), was introduced to Antiquity. This has become the conventional form of books we know today. A codex is made of multiple sheets of papyrus, parchment or paper, bound by stacking the pages and securing one set of edges. Pairs of sheets or leaves are folded into gatherings or quires before being bound to form a codex.[183] Covers, back and front, also protect the content from any damages from outside. This new format, the codex, has benefits over rolls or scrolls, which had been widespread in Antiquity for many centuries, in many

179 Wolfe and Stallybrass 2018, 187–188.
180 Delsalle 2018, 154.
181 Wolfe and Stallybrass 2018, 191.
182 Ward 2014, 1–6, 242.
183 Sawyer 2019, 139.

aspects. It is more durable due to its binding, handier, more capacious and easier to consult. In addition, one codex, providing more writing space in one codicological unit, can hold the contents of several rolls.[184] The codex was common in various cultures, and evolved into different binding techniques and decorations.[185] In the Islamic world, for instance, the codex was introduced soon after the Prophet's death in the seventh century.[186]

The codex form was first used in medieval Europe in administration for cartularies, before being employed for other administrative and legal records.[187] Codices, functioning as 'notebooks', offered a convenient writing space for archiving documents. Letters in early modern England, for example, were copied into codices called 'letter-books' for both private and administrative purposes.[188] Some letter-books were even written on pre-prepared books; codex notebooks prepared with ruling lines were rather easy to acquire from the stationary market in the early seventeenth century.

Page numbers, though having their root in the Mesopotamian cuneiform tablets, have been developed as a widespread navigating tool for codices. As each sheet bound in a codex can be flipped, reference was made easier by numbering the pages on their margin. Different techniques of page numbers have been employed and evolved since Late Antiquity:[189] signature (the signs indicating the leaves' place within gatherings, or gatherings' place within a codex), catchwords (the words matching with those from the following page assigned to the margin of the gathering's final leaf or each page), foliation (numeration of leaves or pairs of pages) and paginations (numeration of pages). These complicated techniques have been applied in order to secure the continuation of texts and help identify the text's location within a codex systematically. Parallel to the page numbering of codices, pagination has also been applied to the process of archiving letters in early modern England, as the original pagination of the letters were sometimes carefully noted when copying the letter texts into a codex ('letter-books').[190] Printing technology standardised both foliation and pagination for printed codices,

184 Reynolds and Wilson 2013, 35.

185 Kwakkel 2018, 75–79; see Scheper 2023 for the bookbinding techniques of codices in the Islamic culture; Dal Sasso 2023 for those in the Ethiopic culture; Boudalis 2023 for the Byzantine culture of Eastern Mediterranean; for the case of the Chinese codex, see Edgren 2009.

186 Albin 2009, 166.

187 Ketelaar 2020, 259a.

188 Daybell 2012, 177–182.

189 Sawyer 2019, 140–148.

190 Daybell 2012, 183.

before the latter became the most common system of page numbering after the late sixteenth century.

The codex subsequently became the most common format for printed books and notebooks, due to its advantages over other forms, ever since the dawn of printing. The dominant role of the codex form from Antiquity has been labelled by modern scholars as 'the triumph of the codex'.[191]

3.9 Leporello

The other form of book which is common in Europe and Asia is referred to here as leporello[192] or books folded in the accordion or concertina fashion. A leporello is made of a long sheet of paper, which is sometimes made of multiple sheets pasted together, folded in an accordion or concertina fashion. This form of folded book or document is called *jingzhezhuang* in Chinese, and is believed to have been used since the period of the Tang dynasty (618–907 CE), inspired by the oblong format of the Buddhist manuscripts from India.[193] When turning the pages of a leporello manuscript, one has to begin from the first recto folded page and continue to the end of the recto side, before turning the manuscript to flip to the verso. When unfolded, a leporello provides a large surface for writing, drawing and painting. But when folded, it can be convenient to transport. In China, this form of book served as material for note-taking, philosophical texts, registers and other administrative records. This form of Chinese folded books is also known in East and South East Asia.[194]

Khòi and *sa* paper from mainland South East Asia was commonly used to form leporello manuscripts, the main writing support for longer secular texts and administrative purposes. As the manuscript is made of a long piece of folded paper, each folio is connected to the other and cannot be misplaced. However, it is also difficult to find the location of a particular written text from a South East Asian leporello manuscript, as pagination was not common. Two types of leporello were known in Thailand, Burma and Cambodia: the blackened type, in which the background was painted with a black substance, and the greyish type with a light greyish background. The preference and differentiation in terms of usage

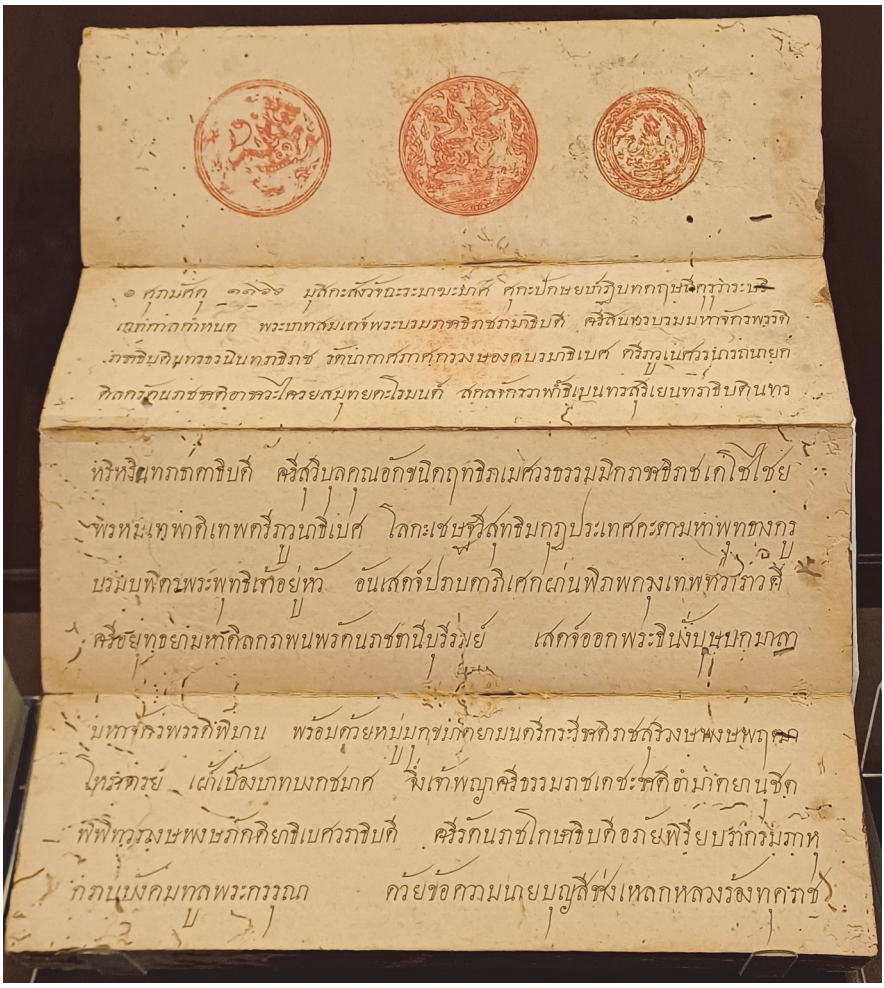
191 Brown 2009.

192 The term derives from the servant Leporello in Mozart's opera *Don Giovanni* (premiered in 1787), as Leporello's list of ladies who had been won over by his master, Don Giovanni, became so long that he had to fold and refold it (Schulz 2019, 15).

193 Edgren 2009, 99.

194 For an example of Batak leporello manuscripts, see Zollo 2020.

between the greyish and blackened types of *khòi*-paper manuscripts are sometimes unclear. The court officials of premodern Thailand, for example, used both of them for record-keeping. But the greyish type was also employed for a certain genre, such as juristic codes *Kotmai Tra Sam Duang* ('Three Seals Law'). The royal manuscript copies of the legal codes are all of the greyish type (Figs 7a–b). Perhaps the texts on the greyish paper cannot be erased or amended without leaving visible traces. The royal copies of the legal texts were also stamped with three official seals on their first recto page, to verify their status as royal official copies which were valid in the juristic courts and administration.



a

b

Figs 7a–b: A royal manuscript copy of the Siamese juristic codes from the late eighteenth century appears with the three authorising seals on its beginning page (a). Its title is written on the side edges of the manuscript (b). Bangkok, National Library of Thailand, Kotmai Section, Ms no. 41; exhibited at the National Museum of Thailand (July 2024); photo: Peera Panarut and Thanachot Keatnapat.

3.10 Palm leaves

Palm leaves, appearing in an oblong format, constituted the corpus of written records in South and South East Asia for many centuries. Leaves from palm trees, either talipat palm (*Corypha umbraculifera*), palmyra palm (*Borassus flabellifer*) or lontar palm (*Corypha utan*),[195] were prepared to provide a writing surface in the oblong rectangular format, known as *pothi*.[196] Leaves or folios in this form provide a writing surface on both sides (recto and verso). After reading the recto side of each leaf, it is expected to be flipped upward to the verso. Palm leaves provide a rougher surface compared to paper and parchment. Writing on palm-leaf surfaces is usually done by incising or engraving script with a stylus and then filling in the engraved traces with a black substance made of soot. However, palm-leaf manuscripts written

195 Gaur 1979, 14.
196 Ciotti and Balbir 2022, 3.

using a brush have also been found. Palm leaves are a common writing material in South India and South East Asia, areas in which palm leaves were native. Even though the use of palm leaves as writing materials can be attested in these regions for centuries, the surviving evidence of palm-leaf manuscripts date back only to the seventeenth century in the cases of Tamil (Tamil Nadu, India)[197] and Siamese manuscripts (central and southern Thailand)[198] due to the climate.

Multiple leaves bound together with a string through a hole(s) on each leaf usually form a larger unit. In Thailand and Laos, a palm-leaf manuscript fascicle (*phuk*) most commonly consists of twenty-four leaves with an additional leaf as the cover page.[199] Several fascicles form a larger unit of a bundle (*mat*). However, a fascicle of palm-leaf manuscripts from Tamil Nadu can contain more than one hundred leaves.[200] Holes pierced through the leaf seem to be one significant feature of palm-leaf manuscripts, as they are used for binding the leaves together with string or thread. Palm-leaf manuscripts from Tamil Nadu and mainland South East Asia often contain either one hole (in the middle or a corner) or two holes in the case of larger leaves (on the middle-left and right). Those from Indonesia, however, can consist of three (on the left and right margins and in the middle).[201] The location of the hole(s) affects the layout of the writing, as scribes would have to avoid writing on the space around the holes. Furthermore, the space on the left and right margin of each leaves is often left blank. Headings, additional notes and foliations are usually located on the left margin.

Palm-leaf manuscripts in mainland South East Asia are strongly associated with the Buddhist monastic context, as palm leaves are the main writing support for the Buddhist canonical texts. Though functioning as the carrier of Buddhist texts rather than that of the administrative records, they represent collections of monastic documents and scriptures are, therefore, considered 'Buddhist archives'.[202] However, administrative records of the Lao royal court can appear in the form of palm leaves as well, as is the case for two royal decrees found at Vat Saen Sukharam monastery in Luang Prabang (Laos) dated 1857 and 1864.[203] One

197 Wilden 2014, 15–16.

198 Kongkaew Weeraprachak 2010, 38. It is noteworthy that the earliest palm-leaf manuscript ever found in Thailand is from the Lan Na manuscript culture (northern Thailand) dated 1471 CE (von Hinüber 1996, 35). However, palm-leaf manuscripts dated in the fifteenth century, apart from this earliest one, have scarcely been found in South East Asia.

199 Kongkaew Weeraprachak 2010, 36.

200 See Ciotti 2023, 158, 164–165.

201 Ciotti 2023, 160.

202 Berger and Grabowsky (eds) 2015.

203 Grabowsky 2021, 680–687.

palm-leaf royal decree manuscript dated 1864 consists of five folios written in Old Lao script. The other decree dated 1857 contains only one folio. Both palm-leaf manuscripts bear a royal seal on the left margin of the first recto leaf.[204] Though not often found, these cases indicate that materials which are strongly related to the Buddhist context, such as palm leaves, can be employed for archival practices as well.

3.11 Rods

The other significant wooden material for record-making is a wooden rod or stick called a tally, which is scored across with notches and then split into halves. Tallies were used for contracts, in which each party kept half of the rod. Functioning as a biparty record, the two halves of tallies had to match with each other to validate the message inscribed or scored on them. Therefore, the history of archival practices sometimes also includes the tally as a part of archival artefacts.[205] The practices of using tallies for written records can be traced back to ancient Mesopotamia and ancient China.[206] Tallies in Europe were used as receipts for money and records of obligations to make payments. Millions of wooden tallies were produced from the medieval up to the Early Modern Period, but only a few parts of them have survived.[207] Note that apart from wood, tallies in other cultures can be made of various materials, such as bone,[208] but the term is more associated with the wood.

3.12 Knots

The term *khipu* (sometimes as *quipu*), literally meaning 'knots', signifies the knotted cords used to store information which functioned as records, though not written. The use of knotted cords in this sense has been found in different cultures. Legend has it in China, for example, that before the invention of writing, humans stored information in the form of knotted cords.[209] However, the term *khipu* is mostly associated with the tradition of the Inca culture, the context from which the term is derived.

204 Grabowsky 2021, 683.
205 Ketelaar 2020, 254b.
206 Yeo 2022, 17, 69.
207 Clanchy 2013, 125–126.
208 Yeo 2022, 10.
209 Bloom 2001, 29.

Writing in pre-Columbian America took shapes which are very different from those of the so-called 'Old World' continents.[210] The Inca people in the territories of present-day Peru and Chile employed no writing system which represents the spoken speech. Instead, they developed the system of the *khipu* knotted cords. Each individual *khipu* was a bundle of multicoloured cords around 60 cm long, with individual cords hanging in groups from the main cord.[211] Different knotting methods and patterns signified different messages, ranging from agricultural goods to numbers. Evidence has confirmed that *khipu*s were used to record censuses, assessments, assignments of labour tribute, and measurements of land and resources.[212] The Spanish accounts mention the Inca officials who made these *khipu* knotted records and the building where they were stored.[213] The war between the Spanish and the Inca resulted in the fall of the Inca empire, and the decline of the knowledge about *khipu*. Many artefacts were destroyed, while the knowledge of how to interpret the knots became extinct along with those who learnt it from oral tradition through generations. Nowadays, only a few hundreds of *khipu* artefacts have survived, while our knowledge to interpret the *khipu* seems to be merely a small part of the entire scholarship which once existed.[214]

3.13 Digital documents

According to the *Dictionary of Archives Terminology* by the Society of American Archivists, a digital document is 'information created on nonelectronic media, typically text or images on paper or film, and converted to an electronic format that can be stored and manipulated by a computer'.[215] When being stored in a digital form, documents have been transformed from material records to non-material ones. Still, digital documents encompass those originally created in the digital format as well, becoming a huge category of documents and records that can be stored for further use.

In contrast to other archival materials, digitally stored data have 'lost their sensory solidity', and, thus, require technical devices to read or write them.[216] Digital forms of archives were introduced in Europe and the United States of

210 Boone 1994, 20.
211 Delsalle 2018, 59.
212 Yeo 2022, 80.
213 Delsalle 2018, 60–61.
214 Yeo 2022, 81.
215 Society of American Archivists 2005–2025.
216 Assmann 2012, 64–65.

America in the late twentieth century and have become a significant trend in archival studies today. Electronic mail is undeniably one of the main communication methods in the early twenty-first century. Sounds once recorded on films and collected together in a cassette form are now stored as electronic files. Some of the three-dimensional written artefacts are now available online through both two- and three-dimensional formats. The latter was a result of the three-dimensional scanning technology developed over decades, allowing the artefact to be investigated from different angles.[217] However, three-dimensional scanned artefacts, similar to other types of digital documents, are intangible. Their non-materiality can be considered a great advantage, as they are weightless and unbulky in the material sense. However, digital documents need a material computer server to store and maintain them. In addition, with their non-materiality, digital documents depend greatly on software to process and present them, which often requires updates to make digital documents legible and usable.[218]

Although digital documents do not appear in any conventional material forms, terms for digital documents often make references to the material world. The material terms, such as files, folders, cut and paste, email, cc (carbon copy) and desktop, have their origin associated with writing materials and practices, but all make sense when applied to the computer context. Therefore, it is remarkable that even non-material archives, such as digital documents, still interplay with the material ones.

4 Conclusion: From sheets and files to digital documents

Starting with non-material orality, this chapter has surveyed archival materials from the earliest extant material to the very contemporary, non-material form of digital documents. The diversity of archival artefacts is impressive, covering different materials including some unconventional ones, such as stone slabs, metal plates, tortoiseshell, wooden rods and knots. The *khipu* knots can be considered records even without any writing or, according to Elizabeth Hill Boone and Walter Mignolo, 'records without words'.[219] Therefore, the study of archival materials in some cultural fields does not have to be paper- or codex-centric, but can encompass unconventional forms and materials of archiving.

217 For instance, see Michel 2021.
218 Ketelaar 2020, 266b.
219 Boone and Mignolo (eds) 1994, viii.

Even though this chapter cannot simply cover every single form of archival materials throughout the long history of archival practices, the cases mentioned above, from sheets and files to digital documents, point out not only the variety of archival artefacts from different places and times, but also the attempts to adapt materials in many different ways in order to serve record-making and -keeping practices. Clay was formed into tablets in different shapes and sizes to suit different writing purposes. Pottery, when broken, was reused as a convenient writing support. Strings or threads were applied for binding or sewing sheets of archival materials, such as papyrus, parchment and paper, to form larger units as files, rolls or books, which secure the preservation of the sheets. Information can become a record only with the help of these applied materials, and records can, in turn, become archives which last for centuries. Archival technologies have, thereby, become very involved with these material dimensions.

Acknowledgements

The research for this paper was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2176 'Understanding Written Artefacts: Material, Interaction and Transmission in Manuscript Cultures', project no. 390893796. The research was conducted within the scope of the Centre for the Study of Manuscript Cultures (CSMC) at Universität Hamburg.

Furthermore, I would like to express my thankfulness to my professors, colleagues, and friends who kindly shared with me their expertise and helpful suggestions, namely, Stefan Thiemann, Konrad Hirschler, Volker Grabowsky, Cécile Michel, Markus Friedrich, Emmanuel Francis, Giovanni Ciotti, Wiebke Beyer, Xiaomeng He, Jan Trosien, and Sutheera Satayaphan.

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Case Study 1.1: Archiving Ancient Papyrus in Modern Times

Jakob Wigand

Ancient Egyptian papyri are among the oldest written artefacts of organic material that have survived over the centuries. When large amounts of papyrus were discovered and unearthed in the late nineteenth and throughout the twentieth century, their state of preservation differed greatly, ranging from carbonised fragments to extremely large and well-preserved rolls, such as the 20 m-long Ebers Papyrus. However, all of these finds have in common that due to the fragile and delicate nature of the material, they needed special care and treatment. One of the most common material supports that enables the archiving of ancient papyrus in modern times is the use of glass plates. After the flattening, cleaning, joining of loose fragments and other conservation works, papyri are frequently mounted under a frame between glass plates. Binding tape is used to attach the plates to one another. It is desirable for a little air to flow between the plates, therefore, airtight material is avoided or, alternatively, airholes for ventilation are included.

The result of this method is a glass-mounted archival unit that fulfils a number of archival functions. First of all, thanks to the sturdiness of the glass, the fragile papyrus fragments become tangible objects that can be handled, studied and exhibited with more ease and without further damaging the object; papyri that are often used by researchers, included in exhibitions or otherwise accessed especially require the support of a glass frame. Glass plates have the advantage that text on both sides of the papyrus can be accessed easily without the fear of breaking the papyrus into further pieces. At the same time, the plates help to preserve the papyrus by keeping it safe from environmental influences, such as dust; the ventilation between the plates prevents the growth of microorganisms. Beyond preservation, glass plates also help to restore the artefact by allowing for several fragments of the same papyrus to be placed next to one another. In addition, inventory and plate numbers, and other relevant information can be placed permanently under the glass along with the papyrus without leaving any traces on the object itself. Hence glass plates enable the restoration, preservation, handling and ordering of ancient papyrus.

https://doi.org/10.1515/9783111656014-003

Fig. 1: The papyrus collection of the Universitätsbibliothek Leipzig prior to 2010. The photo features the cabinet containing the glass plates, loose fragments in a cardboard box, and a tin box, that was used for the transportation of the papyri from Egypt to Germany. Since the photo was taken, all papyri in the Leipzig collection have been successfully mounted under glass plates and digitised thanks to numerous projects; © Universitätsbibliothek Leipzig.

Case Study 1.2: Material Traces of Piercing and Bundling in the Ḥaram al-Sharīf Corpus

Anna Steffen

The material traces of bundling records, such as the holes for strings found in the Ḥaram al-Sharīf documents, offer insight into how written artefacts were physically grouped in the medieval Arabic Middle East. Piercing and stringing documents together served multiple archival functions: safeguarding materials for storage, consolidating dossiers of thematically or procedurally linked records, keeping sequences orderly, or creating filing structures that allowed for additional items to be added over time.

The Ḥaram al-Sharīf corpus, a collection of over nine hundred administrative and judicial records primarily from fourteenth-century Jerusalem, provides extensive evidence of these archival practices. Filing documents in strung groups was fundamental to systematic preservation. Archival holes found throughout the corpus serve as physical remnants of past bundling configurations. By matching their patterns we can reconstruct dissolved bundles, identify serial files, and better understand the logic of smaller archival units within the Ḥaram subcorpora.

The documentary subcorpus in the Ḥaram al-Sharīf corpus linked to the financial officer Muḥammad al-Khillāʿī provides a particularly instructive example of how material traces allow us to reconstruct how paperwork was physically grouped for preservation. Al-Khillāʿī served as a financial officer for several administrative bodies in fourteenth-century Jerusalem, including the treasury, inheritance office, and postal service. In this capacity, he appears to have employed a systematic method of document preservation. He grouped records thematically and chronologically, pierced them with up to seven archival holes for stringing, and aggregated them into separate bundles. Four documents originating from his office (nos 770.1, 770.2, 770.6, 770.7) each feature four matching holes, arranged in a trapezoidal pattern. These perforations are remnants of a bundling technique that involved folding the paper multiple times and piercing once through the folded stack to bind items together. Issued within days of one another in September 1391, the four documents relate to income and expenditure from estate liquidations and seems to have been strung together as a single preserved unit. They functioned as receipts substantiating three near-identical accounting records covering the same month (no. 059, no. 374, and no. 535), which were also produced by al-Khillāʿī's office.[1] The accounting records were not bundled with the receipts. Two, one likely a draft of the other, were strung together, whereas the third bears a different perforation pattern and was preserved separately. In this case, the archival holes indicate how a financial officer in fourteenth-century Jerusalem differentiated between record types, preserving receipts covering one month's revenue and expenditure in a coherent bundle, while filing the corresponding accounting records separately. This contrast provides material evidence that distinct bundles were maintained in parallel, with records deliberately separated by documentary function. Reconstructing document clusters through bundling traces enables us to understand how archival cohesion was materially enacted and maintained.

1 Müller 2013, 446.

https://doi.org/10.1515/9783111656014-004

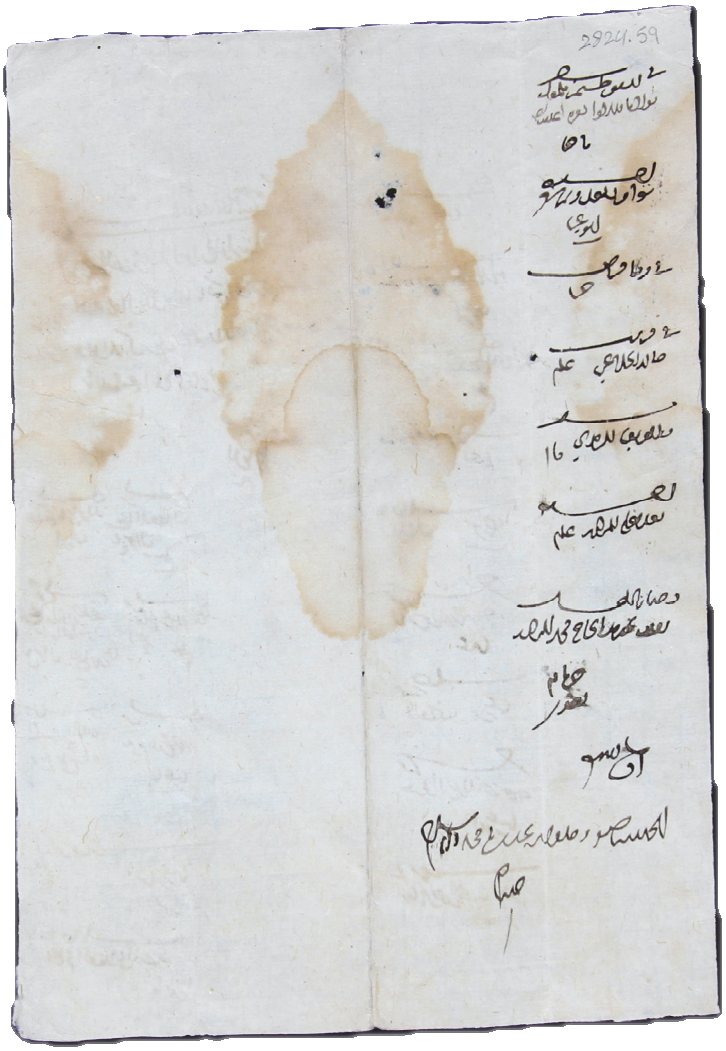

Fig. 1: This accounting record from Shawwāl/September 1391 CE displays two archival holes to the left and right of the central fold in the upper third of the document; Jerusalem, Islamic Museum, Ḥaram al-Sharīf Document, no. 059 (verso); © Mohammad H. Ghosheh.

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Benedikt Reier

Chapter 2: Books as Archives

Abstract: Various cultures have utilised the protective, organising, and mobile properties of the codex to preserve various forms of paperwork. The resulting books provide various perspectives on the materiality of archiving outside the confines of bricks-and-mortar archives. This chapter provides an overview of books that served an archival function for various individuals as well as organisations. To come to grips with this phenomenon, it furthermore proposes two large categories of these books, multiple-document manuscripts and composite-document manuscripts. While the former preserve initial paperwork and was thus meant to function as archive by design, the latter preserve later reproductions of documentary material.

1 Introduction

When you close your eyes and imagine an archive, chances are that you picture a room. This room is probably furnished with a customised armoire, a simple shelf, a mobile shelf system, other storage infrastructure holding boxes or various containers storing archival artefacts. Perhaps you picture a filing cabinet, open shelf filing or stacks of tied up papers. While such physical configurations have a prominent place in the past and present archival landscape – as the following chapters of this volume show – the material dimension of archiving has been more diverse. Scholars from different fields and archivists from various parts of the globe have questioned a narrow and particularly early modern European understanding of what constitutes an archive in recent decades. Consequently, the net is now cast wider. Triggered by the increasing number of documents born digitally and the concomitant fundamental changes relating to the materiality of archiving, the discussion about what constitutes an archive is far from over. The field of archival studies is now at a point where the archive is not defined strictly based on its form, i.e. its material configuration in mostly bricks-and-mortar buildings, maintained by a central organisation, but based on its function.[1]

When dealing with the materiality of archives, however, form is the crucial object of analysis. One medium particularly appropriate to exercise an archival

1 Millar 2017, 4.

https://doi.org/10.1515/9783111656014-005

function is the codex. This chapter will investigate largely overlooked yet crucial archival practices of using codices – whether newly created ones or pre-existing copies – as repositories for paperwork. Books have been a go-to material configuration to preserve written texts in different parts of the world. While the use of protective materials, such as wood, leather and cloth, to shield assembled paperwork and the use of strings to bind them together predates the codex,[2] we will focus in this chapter on archives in the form of a codex, bound gatherings of inscribable material (including prominently, but by no means limited to, paper), often furnished with a protective cover. To be sure, codices were not the first material configurations of written media in which we can find archived paperwork. Governmental offices and private households in Graeco-Roman Egypt, for example, pasted single papyri sheets together to eventually form rolls to preserve documents.[3] Similarly, as can be seen in Chapter 1, Thai manuscript culture has produced documents written in leporello manuscripts. There are, thus, a number of tied and bound documents that appear in material manifestations similar to books, sometimes with a needle and a thread through pre-folded sheets of paper. Though this practice of bundle archives is similar to the archive in book form, these examples are covered in Chapter 1 of this volume and are, thus, not included in the present chapter. Furthermore, materials other than paper or parchment were similarly bound to form archival books, such as bound bamboo slips in China or *amate* in Mesoamerica.[4]

The role of books in archives goes beyond that of a storing medium for records. Firstly, they are a go-to device designed to navigate archival collections. Finding aids, such as catalogues, indices or accession lists, often come bound as books and these form a crucially important tool to navigate archival collections. Secondly, literary books may enter archives as part of a private collection, i.e. they may enter the archive as an item.[5] However, it is important to emphasise that not every book in an archive is an archival book in itself. We will focus in this chapter exclusively on books that themselves constitute archives.

What is an archival book? Put simply, a book that preserves the paperwork emanating from the conduct of affairs of organisations and individuals. As we will see below, at times, this meant the preservation of the initial written artefact, the document itself. More often, a surrogate of the initial document was produced

2 See Chapter 3 of this volume by Cécile Michel for the different containers used to store and protect archival materials.

3 Maltomini 2023.

4 Staack 2020; Gómez Tejada 2022.

5 Brown 2018.

with an archival purpose. Yet, other times, archival books preserve records resulting from the everyday work of organisations and individuals, records that can take the form of brief notes or be long entries. What we will encounter in this chapter are, thus, a great variety of books produced in different written cultures over the last two millennia. These books have not, so far, been treated as forming one category. In this chapter, I approach these books, nevertheless, as one specific type of book, united by their archival function.

Though books have been used to store much more than that, this chapter focuses exclusively on written paperwork that historical actors preserved in book form.[6] If the preservation of the paperwork and, thus, the archival function was the main intention of its respective producer or commissioner, is of secondary relevance. Similar to other books, archival books can have multiple functions for their producers, their commissioners and their readers. Secretarial handbooks, to give just one example, may contain reproduced documents to show aspiring secretaries an exemplar of how certain documents ought to be written. This exemplar might very well be a faithful reproduction of an archival document. However, more than preserving sample documents, the handbooks arguably had an educational and normative function for the professional group of secretaries – their most likely readers. The book might also have had the function for the producer or commissioner to establish a personal reputation or foster a certain secretarial tradition. Still, for later readers, these exemplary documents could constitute an accidental archive, preserving a selection of certain records produced in that particular secretarial tradition. At times, such books are indeed used by historians as archives.[7] The borders of what constitutes an archival book and what does not are, thus, fluid. How far a book can be seen as serving an archival function or not is often a matter of contention.

In terms of content, there is virtually no boundary of what archival books may contain. We can find paperwork archived in books relating to the administration of governmental, religious, and other social and cultural organisations, commercial activities of merchants and private individuals, education, judicial procedures, personal matters, such as correspondences, and more. The storage place of archival books today and in the past oscillates between archives and libraries. The conceptual distinction between these two institutions has not always been a clean-cut case, and we find documents in libraries and books in ar-

6 For different objects preserved in books, see Hidalgo 2022, 374, n. 3.

7 For the use of a secretarial handbook as an archive, see, for example, Holt 1995; for a comparison between the initial document and transmediated documents in the very same secretarial handbook, see Potthast 2021.

chives in different cultures and different periods of history, especially in private settings where spatial circumstances did not allow two strictly separate compartments for the storage of written material.[8]

The reasons why different actors throughout history archived paperwork in books are various and not always clear. We can assume that, firstly, documents collected in books were considered more permanently secured than those loose and uncovered.[9] Being mostly made of paper, they were certainly susceptible to the dangers of water, fire, paper-relishing bugs and more.[10] Secondly, once bound in a particular order, the documents tend to remain in that very sequence and this prevents the second ever-lurking danger of clutter. Bound together, papers are less likely to disassemble the given order and become lost. Thirdly, the security caused by binding allows greater mobility and easier handling of larger numbers of records.[11] This not only helps the archivist to manage the ever-increasing holdings but also the initial creator of the archival book to take it along and produce records on the spot. The physical form of a codex, thus, had an intrinsic archival lure which certainly facilitated its spread through various cultures.

This chapter argues for linking two separate, yet overlapping, fields of research: book history and archival studies. Crossing the boundaries between these two fields by investigating the role books have played in various archival traditions will reveal similarities and disparities which can only enrich both fields. This cross-pollination will enable a more comprehensive look at how books have been utilised in contexts other than the more thoroughly studied, mostly literary world of libraries. More detailed in-depth studies by experts in different fields and regions are needed to better understand this archival practice with all its intricacies. In turn, this chapter integrates a range of distinct (and usually separately treated) phenomena, showing how ubiquitous the utilisation of books as archival storage devices was.

8 For the ancient Near East, see Pedersén 1998, 2–3; for Rome, see Neudecker 2013; for sixteenth-century England, see Grafton 2017; for Ethiopian history, see Bausi 2014, 74; also see various contributions in Bausi et al. (eds) 2018.

9 Wolfe and Stallybrass 2018.

10 For security as the reason for the production of cartularies, see Clanchy 2013, 103–104; Ramsay 2008, 427–428; Bouchard 2002, 24, 31–32; for *tǔngnok*, see Wang 2019, 267.

11 Bouchard 2015, 35.

2 Multiple-document and composite-document manuscripts

The diversity of archival books in various manuscript cultures throughout history exacerbates a clear presentation. In order to give the phenomenon a specific outline, the following presentation will be framed by two main categories of archival books. The first category, multiple-document manuscripts, denotes archival books containing paperwork that was from the outset meant to be preserved in the physical form of a book. The term multiple-document manuscript adopts the concept of 'multiple-text manuscript' to more proper archival contexts. Multiple-text manuscripts are customarily defined as manuscripts 'made up of more than one text and [which] have been planned and realised for a single project with one consistent intention; as a result, they are usually made of a single production unit'.[12] Similarly, multiple-document manuscripts consist of more than one document, are planned and realised as books with the aim to preserve paperwork, and are usually made of a single production unit (though they may exist in series). The most important point here is that the paperwork in multiple-document manuscripts was meant to be archived in these books, the decision to place it there was prior to the paperwork being brought into life, it was destined to be preserved in that very book. Although a lot of emphasis here is put on the book as the point of origin, this is not to say that the documents in these books are, by definition, the initial documents nor the only copies ever produced. Prior or subsequent copies of the paperwork preserved in multiple-document manuscripts may have existed. The versions we find in multiple-document manuscripts may, in some cases, be transmediated (see below). The preservation of the paperwork in book form, however, was the designated trajectory of these documents.

Composite-document manuscripts, on the other hand, designate books containing paperwork that has initially been written on independent physical objects and was brought together in a book only at a later stage. The eventual preservation in book form was not a forgone matter but a later decision. Again, the term composite-document manuscript refers to the better-known composite manuscript understood as 'a codicological unit [...] made up of formerly independent units'.[13] The most important defining feature here is, thus, that the paperwork in composite-document manuscripts had a prior material life outside the book. It consequently stands in contrast to the content of multiple-document manuscripts,

12 Bausi, Friedrich and Maniaci (eds) 2019, vii.

13 Friedrich and Schwarke 2016, 16.

which, in most cases, was born into the book. The process of how the paperwork – that is, mostly the textual or informational content, not the physical initial document – ended up in composite-document manuscripts at a later stage is not fully captured in the ill-defined concept of copying.[14] It is, thus, necessary to look at and define this pivotal practice more thoroughly.

Randolph Head has recently introduced the concept of 'transmediation',[15] which, in contrast to 'copying', is not – at least not yet – overloaded with meaning. The transmediation of documents in books is, as we will see in the following, an archival practice of global reach. It is important to realise that a document transmediated into a new context may be endowed with new meanings:

> [R]eproduction changes records' communicative context, since the documentary surroundings of a record (materially, visually, and in who possessed it) were, and are, often as important as the actual text for shaping a record's meaning.[16]

The initial documentary text was often abbreviated[17] or sometimes supplemented in its new physical support. In rare cases, the result was a longer text than the initial record, but generally, one of the main ideas was producing a more compact, more to-the-point version to prevent the ever-lurking danger of archives – excess of the archive's holding capacity. Transmediation did not often entail what is nowadays called a 'faithful reproduction' of the initial record. The concomitant changes in the documentary text were seen as tampering only in rare cases – more often the abbreviation of a document to its essentials was executed deliberately and systematically. In the following, we will use Head's terminology when referring to documents which had a life prior to being incorporated into an archival book, regardless of whether it is a multiple or a composite-document manuscript.

The categorisation of the broad variety of archival books into multiple- and composite-document manuscripts is not without caveats, two of which I will briefly address here. Firstly, a crucial yardstick in the categorisation of archival books proposed above is the intention to archive, i.e. to preserve paperwork with an eye to retrievability. Gauging the intention of historical actors or organisations is quite frankly not an exact science but a matter of interpretation and assumption. The second issue arising from the classification above is that the complexity of the

14 For a review of the concept of 'copying', see Brita et al. (eds) 2020; the archival profession is also struggling with the concept of a copy, see Kahn 2018.

15 Head 2019.

16 Head 2019, 12.

17 For the medieval European writerly technique of *abbreviatio*, see Bertrand 2019, 136–142.

phenomenon of archival books is not reducible to two categories.[18] There are several phenomena related to documents-in-books that do not fall neatly into the categories above. I will look at some fringe cases in the concluding part of this chapter which show the open boarders of the two categories proposed.

The following presentation is limited in time from the invention of the codex until the early twentieth century CE. In space, the discussion aims for global reach, though I will discuss most detailed examples from Eurasia, predominantly Islamic West Asia and North Africa. This part of the world was not only rich in documents but many of these survive thanks to being bound in or transmediated into books.[19]

3 Multiple-document manuscripts

The first major category of archival books comprises all those designed from the outset to preserve documents. Books produced with an archival focus from the beginning were highly popular in various manuscript cultures and we can see different organisations and individuals throughout history producing and maintaining them. The issuing body of the paperwork or a recipient was generally responsible for producing multiple-document manuscripts. The creation of these books usually stretched over a period in which the documents were consecutively written down, resulting in a chronological order.

Prime examples are books subsumed under the catch-all term 'register'. What exactly has been understood under that term varies quite a bit in form, function and content throughout time and place. Two features, however, seem essential. Firstly, register books were used to record either issued or received items. There is virtually no limit as to which items were registered. There are registers of births, circumcisions, salaries, taxes, correspondences, orders, members, shiploads, produce, deaths and much more. The second essential characteristic of register books is that the registration was mostly conducted in a serial manner, most often chronologically and in a more or less consistent form. It is important to note here that not all register books preserve initial documentation. As some contain exclusively transmediated documentation, we will encounter register books in this category of archival books and further below amongst the composite-document manuscripts. However, in many cases, a register substituted the pro-

18 The same goes for multiple-text manuscripts which may be further subdivided, see Brita and Karolewski 2021.

19 Paul 2018, 348.

duction of an archival copy of the recorded document and, thus, constituted the archival copy. When chanceries in the European Middle Ages, for example, issued charters or letters, they often did not retain a single-sheet copy but registered their outgoing paperwork, that is, they noted down a transmediated form, mostly condensed to the essentials of the text's content. The preservation of single-sheet documents was often up to the recipient. Registers were, thus, a practical tool to avoid paper jam in archives by either acting as proxies for single-sheet copies or dispensing the need to produce single-sheet documents in the first place.[20]

Governmental officials, tax collectors, secretaries, notaries, municipalities, heads of guilds, merchants and private individuals maintained various forms of registers. In the history of Britain, for example, several registers survive from the paperwork of the crown, the church, landowners, the gentry and traders. These British registers were initially written on rolls, but rolls were superseded by bound books around the fourteenth century.[21] Register books vary in terms of format. One form that was particularly popular for different sorts of registers were narrow rectangular, oblong-shaped books. They were used, for example, in Parisian registers of dues and rents, but also in other regions and for various purposes. Paul Bertrand ascribes practical considerations to the popularity of this format as such codices fitted neatly into saddle bags or pouches for tradesmen or administrators travelling about.[22] The same reasons may explain the same format's popularity in West Asia and North Africa. Here, registers were mostly known as *daftar* in Arabic or *defter* in Turkish and used by, among others, market traders in twelfth/thirteenth-century Damascus, the tax registers (*tahrir defterleri*) of the Ottoman administration and Franciscan monasteries in Ottoman Bosnia. The format was so closely connected to the functional aspect of registers that the term *daftar*/*defter* came to denote both the physical object of registers and their format and layout.[23]

One specific kind of register with far-reaching popularity was the account book. These books follow a similar logic to register books in that they contain either the in- or the outgoings of financial assets in a serial, consecutive manner.[24] The household accounts of the duke of Burgundy from the late fifteenth century, for example, consisted of several quires which were mostly bound.[25] Material evidence from late me-

20 Evergates 1985, 159–160.

21 Ramsay 2008.

22 Bertrand 2019, 148–152; for more on that format, also see Durand-Guédy and Paul 2023, 19–23.

23 Lewis 1991; Burak 2016; Burak 2019; Coşgel 2004; Aljoumani and Hirschler 2021; Sekulić 2022.

24 For medieval and early modern Europe, see the various contributions in Gleba and Petersen (eds) 2015; Arlinghaus 2006; Keitel and Keyler (eds) 2005; for a twelfth- or thirteenth-century Syrian trader's ledger, see Aljoumani and Hirschler 2021.

25 Nosova 2020, 173–174.

dieval Sicilian financial books show how such codices came into being, going through different life cycles before ending up in bound volumes. The archival books in question are the outcome of a new administrative office called the *conservator generalis regii patrimonii*, installed by the Crown of Aragon to enable long-distance government over the newly conquered Mediterranean island. The *conservator* was charged with the control of royal patrimony, and with this new office came a new method of record keeping. The office preserved records for one administrative year in thematically confined volumes called *libri*. In material terms, the surviving books show a conspicuous hole in the upper-left parts of each folio. These holes were pierced by the clerks even before the paper was used to record documents and they were made to hold the documents together – yet unbound – by enabling stacking on specifically designated pegs. In a second step, at the end of the administrative year, small units of documents were kept together by quire tackets, small, knotted ribbons perforating the folia near the spine. While holding them together, the loose knotting still allowed easy additions to the existing units. In a third step, a number of units were bound by a technique called 'primary stitching', i.e. by stitching a thread through the book block and a parchment cover (see Fig. 1). Most volumes today have gone through a fourth step, 'oversewing', a binding procedure by which gathered pages previously held together by the primary stitching were now permanently preserved bound as books.[26] This case is, thus, one where initial documents were collected to be bound later into multiple-document manuscripts.

Another concept related to registers are the *pinkasim*, logbooks from Jewish communities in early modern Europe. The communities were autonomous in certain matters, and they used books to record protocols of various important matters regarding their internal organisation. These books were endowed with an official status, their content regarded as legally binding, and even endowed with mystical powers in some Eastern European communities. The earliest surviving *pinkasim* are from early-sixteenth-century Germany and Italy and contain matters such as appointments within the communities, regulations, and pledges from non-Jewish authorities. There were, furthermore, more specialised register books belonging to a particular function or organisation within the community with the title *pinkas*, such as *pinkase mohel* (registers of the circumciser), *pinkase ḥesh-bonot* (cash books) and *pinkase bet ha-kneset* (synagogue seating arrangement books).[27]

26 Gialdini and Silvestri 2019; Silvestri 2016.

27 Litt 2008, 7–11, 92–113; Litt (ed.) 2021, 7–15.

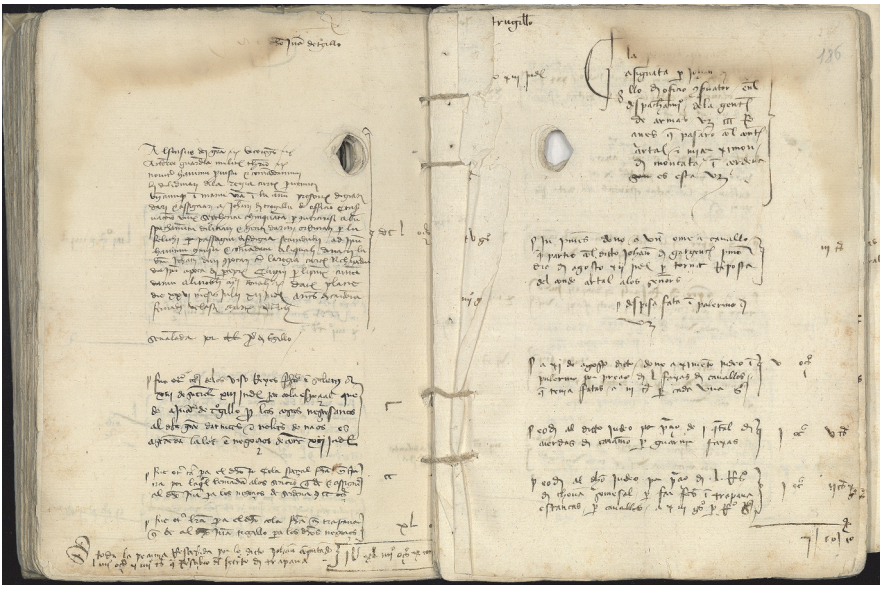

Fig. 1: Archivio di Stato di Palermo, Conservatoria di registro, no. 841, fols 185v–186r; © Soprintendenza Archivistica per la Sicilia – Archivio di Stato di Palermo.

One particular type of archival book evolved in the Ottoman Empire in connection with one specific institution, the Islamic Sharia courts. From the fourteenth to the twentieth century, the paperwork of the Islamic courts from the centre to the peripheries of the Ottoman world were written in books called *sijillāt*.[28] Court scribes recorded each case brought before the qadi in these registers. The entries in these books are not exclusively limited to judiciary matters as the role of Islamic courts entailed notary functions. We can find entries on a wide range of everyday life in the Ottoman lands, including such things as marriages and divorces, estate inventories, endowment registrations, acknowledgments, demands for payment and purchase contracts. Each entry was signed by a number of witnesses (*shuhūd al-ḥāl*). The *sijillāt* constituted the archive of Muslim judges who, in the Ottoman Period (1299–1922), as far as we know, did not maintain additional single sheet paperwork. Litigants, in turn, could request a single-sheet copy for a fee.

Though studies focusing on the material make-up of the multiple-document manuscripts described above are so far missing, it can be assumed that, in some cases, ready-made books served as the scaffolding of the respective books. There are,

28 Müller 2018, 378–380; Okawara 2015; Akgündüz 2009.

however, other ways in which such books could be assembled, for example, by using pre-folded but unbound paper. We can see such an example in action in Fig. 2. Jan Gossaert's 'Portrait of a Merchant' shows Jan Snoeck (*c.* 1510–1585) in Gorinchem in the Netherlands at work. Snoeck served in different positions throughout his life, but here, he is most likely portrayed as a collector of river tolls. He is sitting in his office, surrounded by various tools and raw materials required to manage his paperwork.

We see him in this painting writing on a single bifolium lying on pre-folded but unbound quires which, in turn, appear to lie in a bound booklet. This booklet, in turn, lies on top of another booklet which appears to be bound as well.[29] Whether Snoeck is copying here or starting a new page is not relevant. What is most interesting regarding our discussion is that he apparently used prepared fascicles to conduct his paperwork which were later bound into booklets. This way of working suggests a certain amount of prior reflection and planning.

While the pictorial evidence in the case of Jan Gossaert's painting does not allow for far-reaching conclusions, there are a number of techniques which help to preserve initial single-sheet documents in prepared books. To what extent an archival book was prepared priorly varied. Some were made up of elaborate and specialised receptacles meant to hold documents by pursing or gluing. One technique that evolved in the nineteenth century, for example, are books with adhesive stubs in their spine onto which documents could be glued. Some American government agencies in the 1820s and later and railroad operators used these prepared storage volumes, mainly to preserve their incoming correspondence.[30] A volume of 173 documents from early-twentieth-century Afghanistan consists of initial stand-alone documents simply glued onto thick paper frames, bound into a book.[31] A similar phenomenon can be seen in the late-fifteenth-century album of letters, the *majmūʿa-yi murāsalāt* made by ʿAlī Shīr Navāʾī, the addressee of most of the letters. Navāʾī glued 594 predominantly Persian letters he had collected into an album which originally consisted of 46 sheets, on each of which he glued multiple signed autograph letters in horizontal and vertical alignment.[32] Here, however, there is no particular order discernible (to the modern reader) and the question of retrievability, thus, remains an open question. Gluing single-sheet documents onto pages was also one of the different ways in which solicited legal opinions (*fatāwā*) were preserved in the Ottoman Period.[33]

29 Wolfe and Stallybrass 2018; Colenbrander 2010; Ainsworth 2010.

30 Yates 1989, 32.

31 Shokhumorov 2009, 117.

32 Gross and Urunbaev 2002, 57–63. For a facsimile reproduction, see appendix in Gross and Urunbaev 2002.

33 Heyd 1969; Burak 2021.

Fig. 2: Jan Gossaert, *Portrait of a Man, possibly Jan Snoeck*, *c.* 1530; courtesy of the National Gallery of Art, Washington DC, 1967.4.1.

It is not easy to ascertain in cases where documents are preserved through these book techniques whether these were the predestined archival practices or if a later actor decided that one of these was the apt way to store documents. In some cases, such as the American government agencies, we can assume that they became the norm, at least for some time. In the case of the volume of 173 documents from Afghanistan mentioned above, the intention is not as easily ascertained and the preservation in this album-like form may be an outlier. It is, however, likely that this volume followed a practice established by the amir of Afghanistan, ʿAbd al-Raḥmān Khān (r. 1880–1901), who changed record-keeping practices of state agencies and his own court to the extent that they were to be transmediated into registers.[34] With practices such as gluing documents into pre-existing books, filing them in folders or sticking them into designated albums, we are coming to the realm of transmediation, a practice we will encounter in more detail now.

4 Composite-document manuscripts

Composite-document manuscripts are archival books containing transmediated paperwork, reproductions of records that had existed previously on (mostly) a single sheet, materially independent from their eventual archiving in a book. In this category, we can find books that contain exclusively transmediated documents and others that contain transmediated documents next to other, non-documentary material. Composite-document manuscripts were produced retrospectively, often to safeguard documents from decay when, through inappropriate storage conditions or other natural and human forces, the initial single-sheet documents ceased to exist or if they had to be actively deaccessioned. The process of transmediating paperwork into books often involved reappraisal of the archival stock. To reassess the retention value of the given material – copying an entire archive is not only cumbersome (or impossible) but often deemed unnecessary – a selection had to be made. Books in this category are, thus, often one or a series of bound volumes containing a part of what was originally found in an earlier bricks-and-mortar archive. This often highly subjective filtering procedure has been rightfully emphasised in recent decades and the producers of these books have been analysed as authors in their own right, working with their own, often obscure, agenda. Furthermore, later copyists of these archival books may add yet another subjective layer to the preserved material by changing, omitting or add-

34 Shokhumorov 2009, 116–117.

ing content.[35] The agency of producers of composite-document manuscripts is certainly a major caveat to keep in mind when approaching these books as a window into the past. At any rate, it is important not to over-emphasise the agency of the compilers of archival books in contrast to a bricks-and-mortar archivist, who, in this line of scholarship, are often implicitly seen as more neutral and less agenda-ridden. In reality, most archives are highly selective. The National Archive of the United States, for example, preserves only between 2 and 5 per cent of the government's total records.[36]

The most prominent example in this category of archival books from European history are certainly cartularies.[37] In these books, produced across medieval Europe from around the ninth century onwards, monasteries, rulers or noble houses transmediated a variety of documents from their conduct of affairs into parchment and, later, paper books (see Case Study 2.1). At times, we find draft versions and sometimes also multiple versions in these codices.[38] While earlier research has often treated these books as unproblematic representations of their respective organisation's vanished archive, since the 1990s, cartularies have been critically revaluated. Authorial interventions undertaken by the cartularists are now appreciated as active and conscious acts, decisively influencing what can be found in these books.[39] The transmediated charters concerned mostly transfers of land and title deeds and often appear void of any easily discernible organising principle (at least in their handwritten form; modern editions often obscure this). The purpose for which cartularies have been produced, on the one hand, and to which they have been put to use, on the other, has to be researched individually and often cannot be pinpointed to exclusively one function. Scholarship so far has attributed mainly administrative and memorial functions to cartularies, while in some exceptional cases, cartularies have also been used in legal contexts.[40]

King Manuel of Portugal (r. 1494–1521) initiated the production of a series of archival books with similarities to cartularies in the early sixteenth century. This archival project built on an earlier, more modest attempt by one of his predecessors, Afonso V (r. 1438–1481). Starting in 1459, Afonso's chancery began to preserve past and recent royal acts in *chancelarias,* bound volumes of chancery documents. Under Manuel, the most important royal deeds were transmediated into the so-

35 Geary 1994; Geary 2006; also see Bouchard 2015.

36 Yale 2015, 332.

37 For a recent survey on cartulary studies, see Tucker 2020, 4–33.

38 Hummer 2013, 190–191; Bouchard 2015, 23–24.

39 Geary 1994.

40 Tucker 2020, 14–25; Bouchard 2015, 31–34.

called Leitura Nova ('New Reading'). The result was a sixty-one volume series produced between 1504 and 1552. The Leitura Nova included the most important privileges guaranteeing, on the one hand, the wealth of the landed elite and, on the other hand, the role of the crown as the central mediator.[41] This new archival entity was not merely seen as copybooks but

> many indications suggest that for its creators, the collection constituted an *archivum* in itself, a treasury of authentic records attested by notarial signatures and by the visual royal presence on the illuminated frontispieces. Whereas sixteenth-century theory and practice elsewhere had begun differentiating the *archivum* of original charters from the books kept in chancelleries, and eventually from information management registries, the Lisbon chancellery chose to create an *archivum*-in-codices to record and guarantee the monarchy's acts.[42]

Korea during the Chosŏn Period (1392–1910) knew various archival books. In fact, the archival landscape here seems to have been characterised by the rather short life cycles of the initial documents. Instead of keeping the paperwork in single-sheet form, predominantly state actors engaged in a lively culture of transmediating them into bound volumes and this was the default mode of long-term preservation.[43] One example is the genre of *tŭngnok*, compilations of transmediated records from different governmental offices. We can find in *tŭngnok*, for example, royal commands sent to prefectures and their responses or diplomatic records with neighbouring empires. These books served as the main references for different administrative agencies looking for precedence.[44] *Euigwe* were books of records produced for the planning of state rites, such as royal birthdays, weddings or funerals. Up to six copies of these records in bound books were usually produced to be kept in different offices, most probably to serve as a guide for future events of a similar nature.[45] The most famous example of archival books in Korean history are the so-called *sillok* ('veritable records'), official annals covering the reign of a king after his death, compiled from different documentary sources. The compilation of these histories – 1893 volumes in total[46] – often entailed the subsequent destruction of the initial documents: what was chosen to be archived were the compilations, not the initial records from which they were compiled.[47]

41 Head 2019, 72–93.
42 Head 2019, 87.
43 Vermeersch 2019; Kim 2019, 192.
44 Vermeersch 2019, 216; Wang 2019.
45 Sŏng-mi 2008.
46 Youn 2013, 25.
47 Vermeersch 2019, 207–208; for a broader perspective of the transformation of Korean archives, also see Reynolds 2019.

The archival tradition in Korea was influenced by China, which knew a very similar tradition to the *sillok*, the *shilu* ('veritable records'). These books were compilations from official court diarists, including archival material which remained legally binding as long as the dynasty that created them was in power.[48] The Chinese Huangce ('Yellow Registers') from the period of the Ming dynasty (1368–1644) was an archive located at the Houhu Lake in Nanjing. By the end of the Ming dynasty, this gigantic archive is said to have held a staggering number of 1.7 million volumes of population surveys conducted to assist taxation and labour service obligations. Each volume consisted of household and population data as well as the land and taxation records of villages of 110 household units. Local headmen were responsible for forwarding the data to the county. Here, a registrar checked the data and produced four certified copies: one for the household, one for the county record office, one for the prefectural government and one for the Ming national archive in Nanjing. While the volumes in the archive were formerly outfitted with yellow silk covers, glued onto the cover with flour starch, from 1490 onwards heavy paper and thick cotton threads were mandatory to minimise the nuisances from rodents and insects attracted by the starch used formerly.[49]

Muslim jurisconsults in Central Asia produced what are known as juristic miscellanies (*jung*) mostly between the sixteenth and nineteenth century. Besides heterogenous content, such as personal notes, quotes from authoritative books on legal issues and poetry, these books often contain a large number of initial but also transmediated documents. Jürgen Paul recently classified two of them particularly which he studied in detail as notebooks and doubted their function as archives.[50] It is still telling that some of these books contain more than hundred glued-in documents, mostly solicited legal opinions (*riwāyāt*). It is probably not too far-fetched to assume that for at least some producers of these manuscripts, they did serve as a personal repository for paperwork of their profession, produced by either themselves or other actors in their field. The fact that muftis got criticised for using *jung*s in their work at least shows that these books were not only maintained for strictly personal reasons but indeed utilised in actual legal work.[51]

While the previous examples arise from an organisational context, the following example from the world of Muslim learning was a highly personal and, to a

48 Twitchett 1992, 119–159; Fitzgerald 2020, 74–75.

49 Zhang 2008; von Glahn 2012, 45; Fitzgerald and Nappi 2021, 49; tax records in Qing China (1644–1912) were similarly preserved in books called 'copied archives' (*chao dang*), see Guo 2022, 88.

50 Paul 2023, 391–392; Mukhammadaminov 2017; Bhalloo and Husyani Ishkawari 2025.

51 Sartori 2016, 220.

certain degree, idiosyncratic tradition of archival books. Scholars preserved transmediated forms of audition certificates, documents that gave them permission to transmit certain books collecting the words and deeds of the Prophet Muhammad (*ḥadīth*), in books variously called *thabat*s or *fihrists*/*barnāmaj*. While *ḥadīth* collections were transmitted orally in face-to-face sessions, the transmission was recorded in so-called audition certificates (*samāʿāt*) on a manuscript of the transmitted text.[52] The certificates vary in detail but most basically contained the name of the transmitter, his or her unbroken chain-of-transmission back to the compiler of the *ḥadīth* collection, the names of attendees, which at times exceeded one hundred, the name of the writer of the certificate, and the date and location of the session. This certificate was issued once only on a manuscript copy of the transmitted book and the individual attendee did not receive a take-home certificate.

Muslim scholars devised personal archival books in which they diligently transmediated the initial audition certificates for each session they attended. We can find this personalised form of record-keeping from the eleventh century onwards.[53] They recorded the sessions they attended, providing the information extracted from the audition certificates, in chronological order: the title of the transmitted text, name of the transmitter, his or her chain back to the compiler of the text, time and location. The names of the other attendees were omitted as the idea was to register your very own scholarly achievements, not those of others. We can find two sample pages from the *thabat* of a certain Muḥammad al-Nadrūmī (d. *c*. 1380), an otherwise unknown scholar living in Jerusalem, in Fig. 3.[54] He added the title of the transmitted *ḥadīth* collections in the margins next to each entry, which helped him to quickly find the transmediated audition certificate for which he was looking. In some entries, al-Nadrūmī, as well as other scholars maintaining such a *thabat*, made sure to have the transmediated certificate signed by the authority presiding over the respective transmission session. A case in point is the entry on the right side, which was validated and signed by the scholar who acted as the transmitter.[55]

52 Davidson 2020; focusing more on the intricacies of these documents, also see Aljoumani 2021; and Aljoumani and Reier 2024.

53 The most comprehensive survey to date is al-Marʿashlī 2002; for a history of the genre, see Davidson 2020, 254–274; ʿAbd al-Qādir 2007.

54 Manuscript Riyadh, King Saud University Library, Majmūʿ Qāf 1:34, fols 18b–19a; al-Zabadānī 2017.

55 See Reier 2022 for a more detailed analysis of how audition certificates were transmediated into *thabats* and other archival books.

Fig. 3: *Thabat* of al-Nadrūmī, manuscript Riyadh, King Saud University Library, Majmūʿ Qāf 1:34, fols 18b–19a; © King Saud University.

The case of the signed transmediated certificates in *thabat*s immediately raises the question regarding how far these books could serve as proofs in cases of doubt. Although an entry in such a book was not the initial document, the signature, nevertheless, endowed it with an official approval. While today we may deem transmediated paperwork as not 'original', it is far from certain that people such as al-Nadrūmī and the scholarly community of which he was part saw them as less of a proof then the initial certificate. The same will certainly also ring true for other composite-document manuscripts from other manuscript cultures. Not only the concept of an archive but also what different societies understood as 'documents', 'originals' or 'proofs' has been contingent.

5 Beyond multiple- and composite-document manuscripts

The two major categories of archival books sketched out above cover many examples of archival books throughout time and space but cannot capture all the

phenomena of documents in books. In the remainder of this chapter, I will present some more examples of books that, to some degree, fulfilled an archival purpose but which do not fall into one of the categories above. We will find archival books here with a substantial amount of initial or transmediated documents in which, however, the preservation of documents is but one of many functions.

Practices of secondary repurposing of books or documents for additional archival purposes were often facilitated by the layout of the underlying books or documents. The production of books, it should be remembered, was for most of the last two millennia an expensive endeavour. This economic factor accidentally facilitated the book-as-archive phenomenon. The utilisation of free spaces in preexisting books to preserve documentary texts, for example, can be found in many manuscript cultures. These materials may relate to various fields of activities. One pertinent aspect are notes related to family issues, such as births and deaths. Given that books are made of durable material and were likely to be kept in the same family, matters of importance were often scribbled on the margins.[56]

The phenomenon of preserving documents in the margins and on flyleaves of books is well attested in Ethiopian history, so much so that recently the call has been made that the term

> '[a]rchives' [...] should replace older terms used in Ethiopian studies, such as 'marginalia' or 'addenda,' which reduce a document to the way it has been copied in the margin of, or the appendix to, the principal text.[57]

The most famous example of this phenomenon is the Golden Gospel of Dabra Libānos za-Ham, a parchment manuscript housed today in the Dabra Libānos monastery in the Eritrean village of Ham. This book is a collection of different texts, brought together in different points in time. The core text comprises the four gospels. Different archival materials were added to this core, mostly related to land donations and grants received by the monastery. These were not added at one time, but probably spread over a long period.[58] This is not the only manuscript from Christian Ethiopia/Eritrea which functions as a container for documents, and the field of Ethiopian studies is discussing extensively how to deal with and define these documents (see Case Study 2.2).[59]

The, at times, big spacing between the lines of some chancery documents from the Cairo sultanate (1250–1516) gave authors a cheap alternative to buying

56 Parker and Maxton 2022; Davidson 2022, 461; Wollina 2019, 5–9; Clanchy 2013, 157.

57 Wion and Bertrand 2011, x.

58 See most recently Valieva and Liuzzo 2021. Table 4 lists the different documentary texts.

59 Bausi 2014; Kropp 2005, esp. 138–139; Heldman and Devens 2005.

blank paper for their notebooks. Regarding North Africa, this phenomenon is best researched for the Egyptian historian al-Maqrīzī (d. 1442), whose notebook contains numerous reused folia originally emanating from the chancery. The same phenomenon can be seen in the notebook of his teacher, Ibn Ḥajar al-ʿAsqalānī (d. 1449). Similarly, the high-quality paper used for governmental documents in China under the Song dynasty (960–1279) caused some of them to be sold and their backsides reused in printed private books. In these cases, however, the reasons why the documents ended up in books was most certainly not archival: the reused (and cut up) documents were not meant to be retrievable. The same logic applied to another, largely underexplored feature of documents in books, those reused to produce cardboard for book covers. While the reuse in these examples probably also had an economic aspect to them, the phenomenon goes beyond cost-cutting measures. In at least one case from twelfth-century Damascus, a scholar recycled the back of his parents' marriage contract to write an important book for his career. Here, it has been argued that this was a conscious act of merging a scholarly pedigree with a family genealogy.[60]

The examples presented in this chapter show how different societies since the advent of the codex used this very medium to archive their paperwork. Firstly, books were used to preserve initial documents. Secondly, various actors transmediated paperwork into books to secure their preservation. Thirdly, records proceeding from the everyday conduct of affairs were written into books instead of onto single sheets, again, to have a handy way of archiving. The intricacies of these archival books, their physical properties, various functions and changing cultural meanings await dedicated research.

Acknowledgements

The research for this chapter was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2176 'Understanding Written Artefacts: Material, Interaction and Transmission in Manuscript Cultures', project no. 390893796. The research was conducted within the scope of the Centre for the Study of Manuscript Cultures (CSMC) at Universität Hamburg.

60 For al-Maqrīzī, see Bauden 2004; for Ibn Ḥajar, see manuscript Istanbul, Süleymaniye, Murad Molla 609; for Song China, see Zhang 2004, 30; for documents in book covers, see Liebrenz 2020; Hirschler 2017.

I am grateful to my colleagues from Research Field E, Archiving Artefacts, at the Centre for the Study of Manuscript Cultures at Universität Hamburg for their feedback on this chapter.

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Case Study 2.1: A Medieval Cartulary: The Codex Eberhardi

Till Hennings

From the moment of its foundation, a medieval monastery accumulated charters, which were written proof of the donations and privileges that the institution received from its many benefactors. These charters could easily – and quickly – number in the thousands, which tended to strain the rather basic medieval archival capabilities. One obvious way to facilitate access to the numerous charters, and a way on which hundreds of institutions converged, was to produce a well-ordered master copy of a significant portion of the charters, so as to have them all at hand at one time. Apart from the aspect of retrievability, concerns of conservation also played a role in producing such master copies. The latter were called cartularies. They could be structured along many guiding principles; the copied charters could be arranged, for example, in regional or chronological order or according to importance. Cartularies most often contained only copies of the charters' texts, but, in some cases, they also contained more elaborate copies, which imitated the different scripts, signatures and monograms of the charters.

This is the case with the famous Codex Eberhardi. It was produced in the 1150s by the monk Eberhard at the monastery of Fulda, at this date already an ancient institution, founded in the eighth century and one of the most important monasteries of the Early Middle Ages. By Eberhard's time, however, the glory days were long gone and the possessions in disarray. Eberhard was given the task of collecting and copying old charters, which he did in two sizable volumes, drawing on originals as well as older cartularies. He rarely copied a charter verbatim, often fiddling with the style. There are even quite a few outright fabrications in his cartulary, mostly in the section of most important charters. The Codex Eberhardi is especially notable for its reproduction (or imagination) of the graphic elements of the charters, most notably the monograms (stylised signatures) and last lines (*Signumszeile*) in different script and ink, as if an impression of authenticity was aspired to. The sumptuous initials (first letters) in the form of popes, emperors and kings, as well as other illuminations, are one of a kind. The Codex Eberhardi is easily one of the most prestigious cartularies ever produced in the Middle Ages.

https://doi.org/10.1515/9783111656014-006

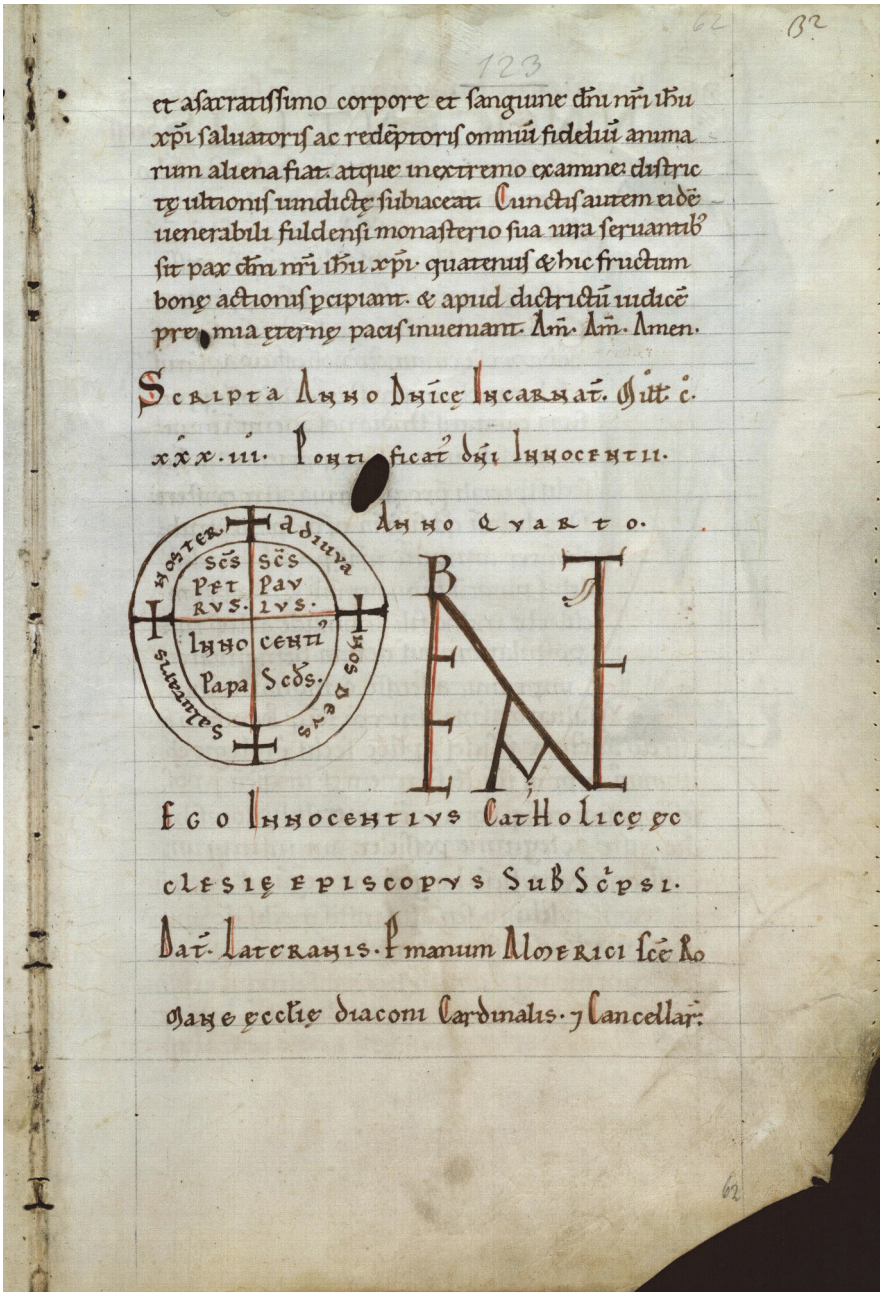


Fig. 1: Hessisches Staatsarchiv Marburg (HStAM), Best. K, Nr. 425, Bd. 1, fol. 62r / p. 123; © Hessisches Staatsarchiv Marburg.

Case Study 2.2: The Golden Gospel of Dabra Libānos, at Ham, Eritrea

Alessandro Bausi

Until the seventeenth century, when a two-storey building for hosting the royal archive is attested for the first time, according to tradition, in the capital town of Gondar (the construction of the archive is attributed to King Yoḥannəs I, 1667–1682 CE), the status of Ethiopian royal archives, probably existing for centuries and already since antiquity, is nebulous, although likely, and positive evidence is missing. Under these circumstances, literary manuscripts in codex form often acquired archival functions. Especially codices of special importance and significance hosted, in addition to their main texts, copies of royal documents in blanks and/or additional leaves or even quires added on purpose, thereby, allowing easy access to otherwise inaccessible archival documents. This process implies the neutralisation of a clear material and functional distinction between library and archive, at least as far as the Middle Ages and Early Modern Period are concerned.

This archival function was often accorded to so-called Golden Gospels (Gəʿəz *Wangela warq*, lit. 'Gospel of gold / golden Gospel', with corresponding expressions attested in modern languages). These gospel manuscripts often have a gold-like or metal cover, but the 'golden Gospel' term seems to indicate specifically the gospel codex in this specific archival and repository function, regardless of the material appearance. One of the most notable Golden Gospels, containing the earliest authentic documents, is from the monastery of Dabra Libānos, at Ham, Eritrea, at the southern border with Ethiopia (Fig. 1), probably dating from the twelfth century. The Golden Gospel of Dabra Libānos hosts a double set of documents recorded on additional leaves eventually bound in the codex before the Gospel, with one bundle hosting the early copies of the documents, and another hosting copies carried out several centuries later, so that several documents appear twice. The documents were assembled and collected in the course of time, starting from the earliest documents (an authentic copy for the local institution) issued by King Lālibalā, dated to 5 Təḫśāś of the Year of Grace 389 (= 29 November 1204 CE; Fig. 2) and to 3 Miyāzyā 409 of the Year of Grace (= 29 March 1225 CE).

https://doi.org/10.1515/9783111656014-007

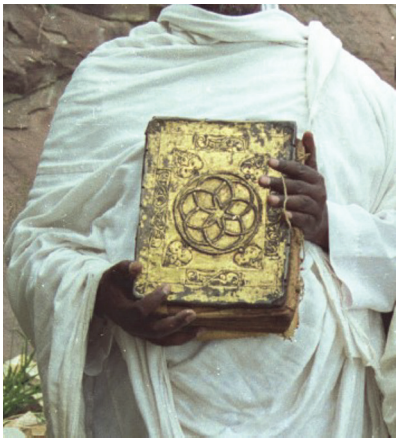


Fig. 1: Eritrea, ʾAkkala Guzāy, Šəmazānā, monastery at Dabra Libānos at Ham, no shelfmark; 260 × 195 mm; *c.* 1200 CE: Golden Gospel with metal cover, held by the abbot of the monastery; photo: Alessandro Bausi 1993 for the Missione Italiana in Eritrea (MIE), 1992–1994, funded by Consiglio Nazionale delle Ricerche and Alma Mater Studiorum Università di Bologna, and directed by Irma Taddia.

Fig. 2: Eritrea, ʾAkkala Guzāy, Šəmazānā, monastery at Dabra Libānos at Ham, no shelfmark; 260 × 195 mm; *c.* 1200 CE: Golden Gospel; donation of King Lālibālā, dated 5 Təḫśāś of the Year of Grace 389 (= 29 November 1204 CE); photo: Alessandro Bausi 1993 for the Missione Italiana in Eritrea (MIE), 1992–1994, funded by Consiglio Nazionale delle Ricerche and Alma Mater Studiorum Università di Bologna, and directed by Irma Taddia.

Cécile Michel

Chapter 3: Containers: From Wrapped Textiles and Jars to Hard Disks

Abstract: This chapter explores the diverse range of containers used throughout history to store and preserve written and non-written artefacts, from ancient manuscripts to modern digital data. It highlights the varying materials – such as threads, textiles, leather, reeds, clay, wood, and cardboard – used for archival storage, as well as the different shapes and sizes of containers, including bags, boxes, baskets and jars. It discusses how these containers were adapted to the specific needs of the artefacts they held, and the challenges involved in preserving them. It also examines the historical and geographical diversity of archival storage, the evolution of archival terminology, and the way in which these containers were arranged, transported, and preserved. The chapter is organised by material type and chronological period, offering a comprehensive overview of archival storage practices across time and cultures

1 Introduction

Bamboo strips, palm leaves, birch bark and paper manuscripts have been randomly preserved according to the way in which they were deposited, generally without a specific container. The Cairo Genizah represents an assemblage of 400,000 manuscripts, that were taken from multiple sites in Cairo and beyond, found in a cache in the Ben Ezra Synagogue of Fusṭāt, slowly withering away.[1] When preserved in containers, these manuscripts were often removed from their original place and sometimes emptied, the dossiers in which they were contained being thrown away. Therefore, their use as archival storage is lost. In other places, such as for the administrative organisation of the Byzantine or Abbasid Empire, there is no material evidence concerning archives, even though texts give some information on storage.[2] This is also the case for many other ancient archives.

1 Jefferson 2022. The same practice is evident from the Damascus Qubbat al-khazna, see D'Ottone Rambach, Hirschler and Vollandt (eds) 2020. This chapter focuses on archive containers, but also takes into account those used for other collections of written artefacts when this can shed light on the subject.

2 See Grünbart 2018 for the Byzantine Empire and van Berkel 2014 for the Abbasid Empire.

https://doi.org/10.1515/9783111656014-008

The widespread use of paper, invented during the late first millennium BCE in China, the use of which having increased around the world since about 1000 CE, has changed archival practices fundamentally. Archives made of paper are arranged and preserved in a great variety of containers: for example, envelopes, folders, cardboard and archive boxes.

Archives in today's digital world are arranged within folders on computers, hard disks, CD-ROMs, USB sticks and the cloud, composed of series of servers; both the digital data and their containers are highly ephemeral.

Whatever the period, geographical area or language, the terminology of archival containers has given rise to a large number of translations that are far from uniform. Understanding this vocabulary is particularly complex. The terms used in ancient texts to identify the materiality of the containers are not always helpful either. Cuneiform texts from the early second millennium BCE feature, for example, the terms *tamalakkum* and *ṣiliānum* for tablet containers. If they are traditionally translated as 'box' and 'jar', respectively, we have no clue about the materials from which they were made (e.g. wood, reed, clay) or their shape.[3] The word *qimaṭr* denotes a container of documents or books in the Arabic literary sources from the ninth century on. Unfortunately, this word was used to refer to a great variety of containers: a box or bag, a bookcase or even a bound register.[4]

It is a real challenge to identify and analyse the containers used to store archives and dossiers from the invention of writing to the digital data of today. Depending on the time period and area concerned, some containers made from organic materials have not survived. This is the case, for example, for the ancient Near East, where artefacts made of textiles, reeds or wood have mainly disappeared. However, in some instances, the imprint they left on clay tablets and tags suggest their use.

Furthermore, the actual conservation of written artefacts, though again dependent on their medium and the climatic conditions of the areas concerned, provide clues about containers. Clay cuneiform tablets from Mesopotamia have survived time, while papyrus and leather manuscripts have disappeared. Almost two-third of the population in Egypt lived in the Nile Delta, an area not favourable for the preservation of organic materials;[5] papyri from Alexandria library have burnt. However, those deposited in tombs in the desert during the Pharaonic

3 Such translations are contradicted by the data gathered in some texts. A *ṣiliānu* container, for example, could be made of rush (Kt n/k 1460:24–26), and we learn that three *tamalakkum* could be placed into a *ṣiliānum*.

4 Hallaq 1998.

5 Hagen 2018, 74–75.

Period have been exceptionally well preserved. Unfortunately, a majority of these have been discovered during illicit excavations and there is no record of their original context, including the containers in which they were preserved. Most of the ostraca found during the excavations were discarded in Antiquity and, thus, not archived – accordingly, little information about storage facilities is available. The remains found in the rubbish dumps at Oxyrhynchos, the capital city of the nineteenth Nome in Egypt, contained large quantities of papyri kept in some seven hundred boxes.[6] The same applies to ancient China, where most of the documents which have been discovered were presumably discarded in Antiquity. As for the manuscripts found in tombs, the reason for their presence is still much debated, and they seem to have been mainly copies written for this specific purpose.[7] The magistrates' archives deposited in the *archeion* in ancient Greece and Rome from the second century BCE on, partly written on wood, *axon*, have disappeared, as well as the containers and furniture testifying to the organisation of the archives.[8]

However, even for the earliest historical periods, archaeological discoveries, though admittedly random in nature, provide some glimpses into the storage technologies. The function of these containers is to store, protect and preserve textual and non-textual documentary artefacts. Their storage capacity depends on their size. Inside them, the documents may be filed or not, influencing how they can be retrieved, if necessary. Containers with their manuscripts can be removed and transported, sometimes for long distances, for example, boxes and baskets of clay tablets transported on donkeys in ancient Mesopotamia, documents transported from the provinces to the political centre in the Abbasid Empire[9] or mail bags transported by cargo aircraft today. Occasionally, dedicated backpacks were used to move files and archived written artefacts (Case Study 3.1).

This chapter deals with a great variety of 'containers' made from different materials and taking various shapes: for example, textiles, leather sheets and reed mats used as wrappings, bags, leather pouches, jars, other types of ceramics, baskets, boxes, leather bookcases and cardboard folders. These containers were more or less adapted to the material, shape and size of the written artefacts stored inside: clay tablets, leather and papyrus rolls, ostraca, palm and copper leaves, birch bark manuscripts, codex, concertina, sound, video or digital data. Thus, clay tablets were, for

6 Rustow 2020, 23–25 and 455, n. 4.

7 Fölster 2018, 223. Moreover, the written artefacts discovered in the tombs in China are considered to be libraries and not archives.

8 Coqueugniot 2013, 3.

9 Van Berkel 2014.

example, stored in boxes made of wood or reeds, while papyrus rolls were placed in high jars. Their own shape and size also depended on the place in which they were deposited: on the ground, on shelves, in niches, chests, cupboards, and many others.[10]

This chapter surveys the various types of archival containers used around the world from Early Antiquity to today. It is divided into sections according to the materiality of these containers and includes thread bindings and wrappings with textiles and other flexible materials, such as leather, various types of bags and sacks whatever their material, baskets, jars, boxes, whether of wood or other materials, and a special section is dedicated to containers for photographic, sound, video and digital data. Each of these sections is organised chronologically and geographically, and focuses on some examples to illustrate the use that was made of the containers.

2 Bindings with threads, wrappings with textiles, reed mats and leather

Various materials were regularly used to tie and wrap single documents or groups of written artefacts since the earliest historical periods. Clay tablets, labels and envelopes from Mesopotamia sometimes show imprints of the textiles in which they were wrapped before being completely dry.[11] Nineteenth-century BCE letters exchanged between Assyrian merchants mention the careful wrapping of cuneiform clay tablets in textiles, reed mats or leather to protect them during their transport: 'All these tablets and their copies, on the day Laliya arrives, wrap them, pack them solidly in a *maškūnum* textile of good quality and entrust them to a trustful trader.'[12]

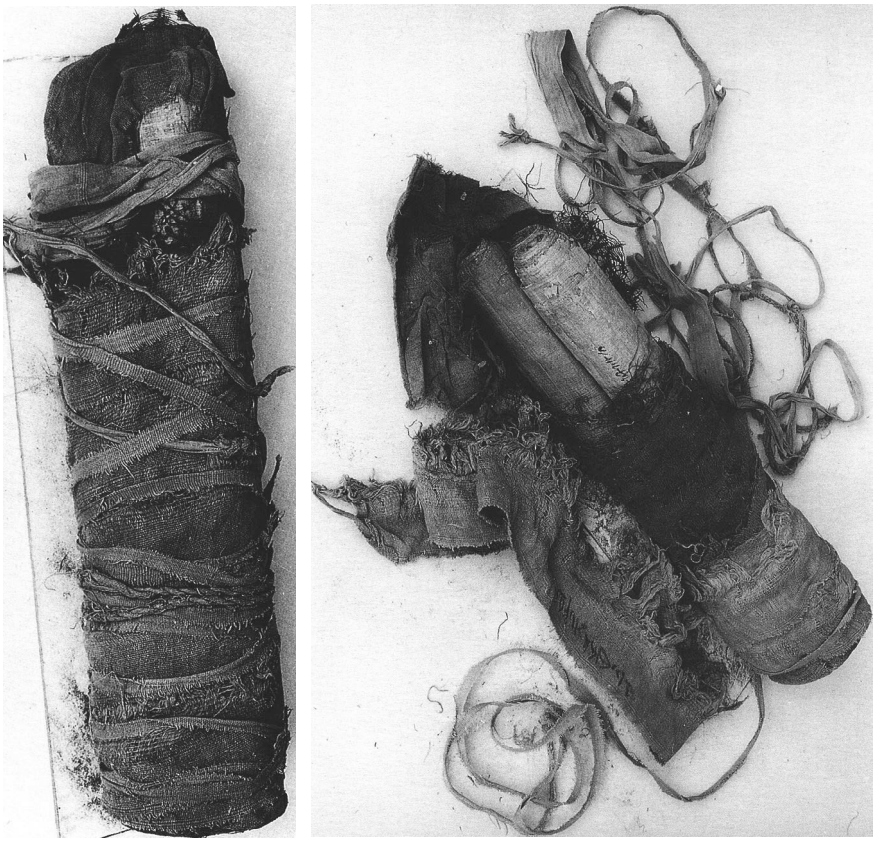
Several cases of written artefacts still wrapped in such ways in textiles survive to this day from ancient Egypt. Among these, three packets of papyri belonging to the archive of Teos and Thabis were acquired by the Egyptian department of the Royal Museums of Art and History in Brussels in 1972.[13] The wrapping was made of linen, with straps to tightly attach the textile piece. The largest of these packages contained three well-preserved papyri, each being longer than three metres and dealing with the sale of a house in Thebes, dated to between 327 and 311 BCE (Figs 1a–b).

10 Paul 2018, 353, 356, and see Chapter 4 of this book on furniture by Markus Friedrich.

11 Michel 2016; Andersson Strand, Breniquet and Michel 2017.

12 Michel 2023, 32; Bilgiç and Günbattı 1995, no. 82:21–27, *mì-ma ṭup-pé-e a-ni-ú-tim, ú me-eh-ri-šu-nu* : *i-na* ^{d}utu^{ši}, *ša Lá-li-a* : *e-ra-ba-ni, qí-ša-šu-nu* : *da-ni-na-šu-nu-ma, i-na maš-kà-nim* sig$_5$: *šu-uk-na-ma, a-na* dumu *um-mì-a-nim, ke-nim* : *pí-iq-da-šu-nu-ma.*

13 Depauw 2000, 3.



a b

Figs 1a–b: Scrolls from the archive of Teos wrapped in linen (a) and partially unwrapped (b); from Depauw 2000, plates 1–2.

The practice of wrapping manuscripts from (private) archives in textile continued in rural Egypt for centuries. A group of fifty family documents written on parchment and paper from the Fatimid Period (eleventh century) was unearthed in domestic buildings in the Naqlūn monastery, in the eastern part of the Fayyūm region, in 1997.[14] It contained legal and commercial documents as well as letters written in Arabic, and belonged to the archive of the Banū Bifām, a Christian landowning family. The legal deeds written on parchment were rolled and stored

14 Gaubert and Mouton 2014; Hirschler 2016, 5, and the website dedicated to the study of these documents: <http://naqlun-archivesbanubifam.uw.edu.pl/> (accessed on 15 September 2022).

within a leather pouch. The tax receipts, business letters and remaining legal documents that were written on paper were folded in four bundles, each wrapped in a strip of linen.

Documents produced by government officials in Egypt during the Fatimid Period (tenth to twelfth centuries), as well as Arabic documents from the Mamluk Period (thirteenth to early sixteenth centuries) in Egypt and Syria, or those from Al-Haram al-Sharīf in Jerusalem written in the context of local administrative and legal proceedings, were bundled with strings through holes in the paper.[15] Similar practices are attested in late medieval and early modern Europe, where the filing of documents consisted of tying them together with a string through a hole in the paper, the resulting groups of documents often being hung on the wall.[16]

Tens of thousands of manuscripts dating from the fifth to the tenth centuries CE were discovered in a cave at Dunhuang, in Gansu province in China. They were rolled in paper, called sutra-wrappers (*zhi*). Some of these scrolls were held together by string.[17]

The *pothi* manuscripts, made from palm-leaf strips or paper, in Central, South and South East Asia are 'made of a stack of folios in landscape format that are flipped upward rather than sideward'.[18] The folios, usually tied together with a thread in bundles, were covered by textiles. Buddhist texts are wrapped in cotton or silk textiles specially woven for them, and there can be several layers of textiles protecting these priceless texts.[19] This practice is also regularly documented, especially in North and East Africa or Asia, for other types of precious manuscripts, which are wrapped in fine textiles. The choice of wrapping materials, thus, clearly reflects the users' attitudes towards and valuation of the documents and their contents.

The tradition of tying together with a satin ribbon letters received from a beloved one goes back several centuries in western Europe and was still used by our parents or grandparents.[20] These letters were then stored in a secret drawer or case, and discovered there by descendants. The purpose of gathering letters with a ribbon is not to protect them or store them in a container; it represents another form of 'container' whose purpose is to keep together letters sent by the same and

15 Hirschler 2016, 4; Rustow 2020, 341–342.

16 Papritz 1983, 6; Wolfe and Stallybrass 2018, 181–183, describing the famous *Portrait of a Merchant* by Jan Gossaert, *c.* 1530.

17 Drège 2014.

18 Ciotti 2023, 155.

19 Ciotti 2023, 177–181.

20 This practice is also attested for other types of documents, for example, acquittances tied with a string from the early seventeenth century, see Wolfe and Stallybrass 2018, 193, fig. 8.5.

unique sender, and the choice of satin for the ribbon expresses the importance given to these heartfelt letters. This practice was not limited to love letters, but extended to all correspondence according to some manuals explaining how to order letters for an easy retrieval. Advice is given to bind letters received during a month or sent from the same place in a bundle together, writing on their back the date they arrived.[21]

3 Bags, leather pouches and waterskins

When not simply wrapped in soft materials, written artefacts could be inserted in a bag made of textile or leather, just as the legal deeds of the Banū Bifām family, which were found in a leather pouch. Even though such materials have rarely been found in Near Eastern archaeological sites, both clay labels that were applied to such containers and cuneiform texts document the use of textile and leather bags. Thousands of cuneiform administrative tablets have been found at Puzriš-Dagan (modern Drehem), which was the great royal breeding centre of the third dynasty of Ur (Ur III, twenty-first century BCE) for a wide variety of animals.[22] According to a reconstitution made by Christina Tsouparopoulou, in a first stage, the tablets were deposited, perhaps on shelves, during a few weeks to a month.[23] In a second stage, tablets linked to running accounts were deposited in a leather bag ($^{kuš}du_{10}$-gan), the contents of which were checked by an official. The bag was then closed with a spherical clay label (e_2-tum) on which the official imprinted his seal. The bag had to be big enough to hold some eighty small tablets.

Papyrus and leather scrolls discovered in Egypt or in the Judean Desert were also regularly wrapped in linen textiles or in bundles with a piece of cloth or reeds that were tied with strings and straps in order to preserve them. A cache with papyrus fragments from the Roman Empire was discovered in Nahal Hever (Israel) in the early 1960s; it was later referred to as the 'Cave of Letters'.[24] Two archives were hidden in this cave. The first one, belonging to survivors of the Bar Kochba revolt in 132 CE, was found in a niche full of skulls. There, a bundle of

21 Manual quoted by Daybell 2012, 220. My grandmother used to do this for her correspondence in the second half of the twentieth century. When we were tidying up the house, we found bundles of string-bound letters received from my father and other members of the family; on each envelope she had noted the date the letter had arrived.

22 Pouches for tablets are also attested in early-second-millennium cuneiform texts (*zurzum*).

23 Tsouparopoulou 2017, 622, 625.

24 Cuvigny 2009, 49–50.

fourteen papyrus letters, together with folded wooden leaf tablets, were preserved in a waterskin. The second archive consisted of thirty-five documents dating from 92 to 132 CE and belonging to a twice widowed woman. They were kept in a leather pouch which was wrapped in linen, maintained by a tied string, and itself preserved in a waterskin: thus, a triple protection is documented for this little archive.

Bags represent one of the three main forms of archive containers in ancient China. After the unification of the Qin dynasty (221–206 BCE) and during the Han dynasty (206 BCE–220 CE), the increasingly centralised bureaucratic system produced a flow of official documents that had to be organised. Archives were sealed or temporarily stored in textile bags, opened at one end or at both ends, and bamboo containers.[25] Bags opened at one end were used for the easy transportation of several documents, those opened at both ends were better used as envelopes for unique documents, with the left and right sides wrapped and folded, then sealed. Bags and sacks were made of textiles, sometimes silk, whose colours used to indicate the urgency or importance of the document enclosed.

Some of France's royal archives have been stored in sacks since the late Middle Ages. The Trésor des Chartes represents the central archive of the royal family from the time of Philippe Auguste (1180–1223) onwards. It was housed in an annex of the Sainte-Chapelle du Palais from the second half of the thirteenth century, where it remained until 1783. Charters and letters were kept in boxes or chests (*layettes*). However, a number of documents were also kept in sacks (*sacs*), either because they had been removed from the chests and never stored back, or had been placed there temporarily.[26] The inventory drawn up in the seventeenth century did not consider the *sacs*, whose number continued to increase. The *sacs* were then referred to as *supplements* and kept separately. At the time of the French Revolution, they were divided into two groups, following the model of the *layettes*: the *gouvernements*, which concerned the various provinces of the kingdom, and the *mélanges*, which included files relating to France's internal and external policies. The *sacs* still have a distinctive inventory number in the Archives Nationales today.

Bags were also a container of choice in the judicial field during the Ancien Régime (1589–1791). Made of jute or hemp – cheap materials of very ordinary quality – or leather, bags were used to store all the documents relating to a trial. These *sacs à procès* (trial bags) were sealed and hung from a hook in the wall or from a beam in the lawyer's chambers or court registries. This kept the bags safe

25 Wang 2022.
26 Delaborde 1909.

from rodents. At the hearing, the lawyer would unhook the bag and extract all the documents it would contain for the trial.[27]

Such a practice is very well illustrated in the *Village Lawyer* (1621), a painting by Pieter Brueghel the Younger (1564–1638). The walls in the painting are covered by bags hanging on nails and identified with a paper label (Fig. 2).

Fig. 2: Pieter Brueghel the Younger (1564–1638), painting: *Village Lawyer* or *Dorpsadvocaat* (1621), Museum of Fine Arts Ghent, Inv. 1952-G; public domain, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Pieter_Brueghel_the_Younger_-_Village_Lawyer_-_WGA3633.jpg> (accessed on 12 December 2022).

The use of such small bags for records have given birth to the name of the Petty Bag Office in England, which existed since the fourteenth century and dealt with ordinary law issues in the Court of Chancery. Typically, the office's record-keeping practices, including presumably their dominant reliance on bags, was considered increasingly as inefficient and came under heavy attacks in the seventeenth century.[28]

27 Blanquie 2001; Michel 2021.
28 Busch 1982.

Bags made from leather or canvas were also widespread in early modern England (sixteenth and seventeenth centuries CE), as noted by Heather Wolfe and Peter Stallybrass:[29]

> Thousands of these kinds of pouch have been preserved in the National Archives at Kew, primarily in the records of the Exchequer [...], in various sizes designed to hold various shapes of documents, from vellum rolls to single folded sheets to stacks of documents with seals.[30]

The use of leather bags and satchels to keep documents is also known in other parts of the world. A fourteenth-century Ilhanid Persian archival list indicates that documents were routinely stored in a bag, probably made of leather: 'List of Deeds of the Fourth Bag, the White Bag'.[31] It is also the case in Ethiopia and Eritrea, where leather bags represent a typical feature of the local manuscript culture, and more generally in North Africa. They are either hung on the wall as a storage device or used to carry the manuscripts (Case Study 3.2).

Letters have been transported in postal bags made in a variety of materials for centuries.[32] Today, paper bags, sometimes recycled, and plastic pockets are regularly used to archive documents.

Textile bags are generally considered to be temporary or intermediate containers; archives are placed in them until they are transferred to a more permanent container, such as a box or piece of furniture. In some cases, the bag and its contents are stored in a larger or more solid container. It is not uncommon to wrap manuscripts in several layers of the same or different materials (e.g. textile, leather) for better protection.

4 Baskets and reed boxes

Baskets and reed boxes could be used in the same contexts as leather or textile bags. The Ur III administrative archive of Puzriš-Dagan also mentions the existence of reed and wooden baskets (respectively ^{gi}pisan and ^{giš}pisan) to store tablets.

29 Wolfe and Stallybrass 2018, 196–198.

30 Wolfe and Stallybrass 2018, 196–197.

31 Aljoumani, Bhalloo and Hirschler 2024, 106.

32 A seventeenth-century postmasters' trunk counting 26,000 undelivered letters sent from France was found in The Hague; the letters had been transported in bags; many of these letters had a Dutch stamp explaining that they could not be delivered for various purposes, see Ahrendt and van der Linden 2017.

At the end of the year presumably, the clearing of accounts went together with the clearing of the archive. The tablets were removed from the leather bags into larger containers made of reeds.[33] These large basket-like containers could include some five hundred tablets, thus, the content of some six leather bags, including their six tags. An unsealed tablet-shaped label perforated on its edge was then attached to the large basket indicating its contents. These tablet-shaped labels were designated by the expression '*pisan dub-ba*', which literally means 'basket of tablets'; they are attested already during the middle of the third millennium BCE. This administrative procedure, involving a repackaging of written artefacts, suggests that different containers represented the different phases of archival conservation.

Ur III texts found at Umma document the making of reed baskets for tablets. Such a basket measuring some 50 cm in height would be made in two days from ten bundles of reeds of a little more of 2 kg each (i.e. 20–25 kg), and about a litre of bitumen. Bitumen was normally used to make the basket water-resistant and durable, meaning that these containers were intended to last a long time.[34] As a matter of comparison, a complete basket found in Egypt and dating to the late sixteenth century BCE made of palm leaves is 45 cm in height (Fig. 3).

Baskets for clay tablets were common throughout the use of cuneiform until the late first millennium BCE.[35] They were usually made of reeds, some of them doubled and covered with leather. Wooden tablets coated with wax could also have been stored in a reed basket or box. A clay cuneiform tablet gives the inventory of more than twenty different types of administrative writing boards that were stored in reed boxes in the archive of the Eanna temple at Uruk under the reign of Nebuchadnezzar (604–562).[36]

During the Roman Empire, scrolls were regularly stored in cylindrical baskets (*cista* or *capsa*), which could be used for other purposes as well (Fig. 4). These are represented, for example, in the frescoes visible on the walls of the house of Marcus Lucretius in Pompeii. A painting in the triclinium room represents a basket of open scrolls at the feet of a seated poet.[37]

33 Tsouparopoulou 2017, 625–626.

34 Waetzoldt 1992, 128.

35 An Old Assyrian text from the nineteenth century BCE mentions a *ṣiliānum* made of rushes (*ša ašlātim*) in which memoranda have been placed (Özgüç and Tunca 2001, 347). Contemporary Old Babylonian family archives were also kept in baskets during the Old Babylonian Period according to Jacquet 2013, 81.

36 Nielsen and Kozuh 2021.

37 Balch 2008, 223; for a reproduction of the frescoes, see Istituto della Enciclopedia Italiana 1999, 230, no. 133. The word *capsa* may also refer to a cylindrical box made of other materials (see below, Section 3.5).

Fig. 3: Basket from the tomb of Meritamun, Thebes, Deir el-Bahri, reign of Amenhotep I; New York City, NY, The Metropolitan Museum of Art, 30.3.16a, b; Rogers Fund, 1930, <https://www.metmuseum.org/art/collection/search/544843> (accessed on 15 March 2023, public domain).

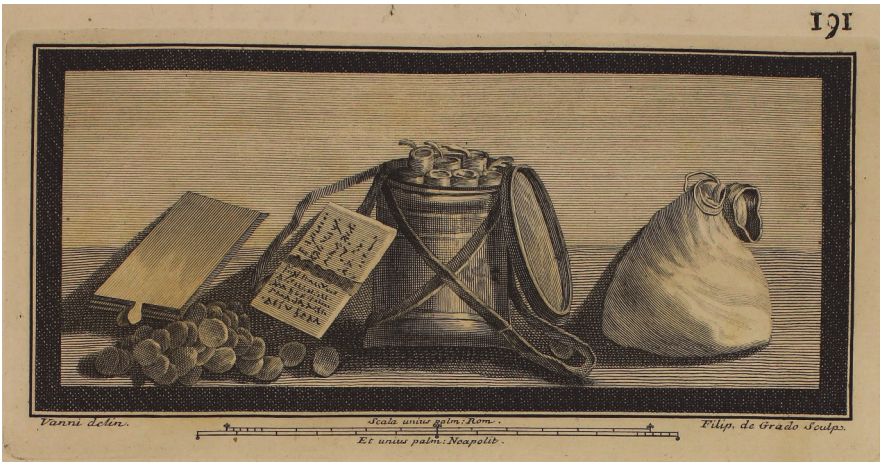


Fig. 4: Engraving of a *capsa* reproducing a fresco from Herculaneum; CC BY 2.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/Category:Museo_Archeologico_(Naples)_in_art_-_Frescos#/media/File:Delle_antichit%C3%A0_di_Ercolano,_1757-1779_(T._I-VII)_20216_(23748391135).jpg>; the colour painting can be viewed here: <https://www.ucm.es/quidestliber/capsa> (accessed on 12 December 2022).

Baskets were also used to store documents during the Middle Ages in Europe. Documents were sometimes organised and filed in several baskets.[38] According to the diary of Nicolaus Kindlinger (1749–1819), a German Catholic priest, baskets were still employed to store charters at the end of the eighteenth century.[39]

Baskets woven from bamboo gabions were regularly used to store archives, especially official documents, in ancient China.[40] The basket (*si* 笥) made of plaited bamboo, had multiple functions, among which was the storage of written artefacts. It was firmly closed with a string running around it several times, and a wooden label and clay sealing.[41] Baskets were still in use to store family archives in Tibet in the twentieth century CE. Such baskets were abandoned in houses by the last members of ancient families of lamas. Poor care was taken regarding these, and the new house owner would have simply thrown them away when renovating the building.[42]

Nowadays, archives continue to use oval-shaped bamboo hampers in some countries of Central Asia, for example, Tibet.[43]

5 Jars, other types of vessels and objects

Jars and other clay vessels were regularly used to store archives in ancient Mesopotamia and surrounding areas. Groups of tablets were found kept in such clay vessels in several sites from the second millennium BCE. The nineteenth-century archives of the Assyrian merchants settled in the lower town of Kültepe, ancient Kaneš, in central Anatolia, were often kept in jars or open vessels (Fig. 5).

38 Papritz 1983, 3.

39 Nikolaus Kindlinger was reorganising the archives of the von Plettenberg-Wittem family in the castle of Nordkirchen when he 'discovered important documents in a basket in the library': 'Ich entdeckte in einem Korbe auf der Bibliothek wichtige Urkunden, wovon die Familie von Plettenberg, als Besitzer des Hauses, und ihre Hausadvocaten nichts wußten' (Stadt- und Landesbibliothek Dortmund, Hds 126, *Tagebuch Nicolaus Kindlinger*, fol. 76^{v} and fol. 76^{r} respectively); personal communication of Ann-Sophie Hellmich-Schwan.

40 Wang 2021.

41 He 2021, 48–49.

42 This is, for example, the case of a basket of archives of the Lama Osal Dorje's family according to Ramble 2018, 34–35.

43 Helman-Ważny and Ramble 2017, 268, fig. 3.

Fig. 5: Part of the private archive of the Assyrian merchant Šalim-Aššur found in a house of Kültepe lower town in central Anatolia, Turkey, nineteenth century BCE; © Kültepe Archaeological Archives.

Similar to baskets, these containers could be labelled with a clay tag, or the name of its owner was inscribed directly on the ceramic itself. The neck of a big broken jar found at Kültepe in 1992 had the name of the merchant Amurru-bāni engraved on it.[44]

Preserving clay tablets in a ceramic pot is a common feature all through the history of Mesopotamia. Recent excavations in the north of Iraqi Kurdistan have revealed several buildings at Kemune, ancient Zakhiku.[45] One room in the palace contained five earthenware jars containing cuneiform tablets from the beginning of the Assyrian occupation of the region (late fifteenth–beginning of the fourteenth century BCE), including letters still preserved in their clay envelopes. A total of more than a hundred cuneiform tablets were discovered, some in very poor condition. These jars were sealed and hidden away by their owner before leaving the place, with the hope of returning. Middle Babylonian tablets kept in large clay pots were discovered in some of the private houses of the Merkes quarter, also in

44 Kulakoğlu and Kangal 2010, 344, no. 448.

45 See <https://kommunikation.uni-freiburg.de/pm-en/press-releases-2022/a-3400-year-old-city-emerges-from-the-tigris-river> (accessed on 12 June 2022).

Babylon.[46] Other groups of rural administrative tablets dating to the thirteenth century BCE were found in pots at Tell Imlihiye, along the Diyala River.[47]

According to the Book of Jeremiah, the second of the Latter Prophets in the Hebrew Bible, written accounts of business transactions could be secured, hidden in clay jars, after the impending Babylonian occupation of Judea: 'the Lord had said: "Take both copies of this bill of sale, one sealed shut and the other open, and put them in a clay jar so they will last a long time."'[48]

Leather scrolls were also regularly preserved in high jars, this is, for example, the case for papyrus and leather scrolls discovered in the Judean Desert. A Bedouin shepherd found seven scrolls in a cave located on the West Bank north of the Dead Sea in 1947. During the excavations which followed (until 1956, and 2017, 2021) no less than twelve caves at Qumran were explored. They contained almost a thousand manuscripts, written mainly on papyrus, but also on leather and forming a library with an archival component. The manuscripts, written predominantly in Hebrew, but also in Aramaic and Greek, date from the third century BCE to the second century CE. The scrolls found at Qumran were rolled tightly and some were fastened by thongs or strings which were fixed at the beginning of the scroll by a reinforcing tab or through a hole.[49] Certain scrolls were wrapped in linen. Some of them were kept in high cylinder jars often preserved with their lid; such a container helped the preservation of the scrolls (Fig. 6). Others were simply placed on wooden shelves fixed to the wall.

Ancient Egypt from the Pharaonic Period on provides many examples of papyrus or leather scrolls kept in jars.[50] The Demotic archive of Totoes found at Deir el-Medina and dating to the second century BCE was kept in two sealed jars in the wall of a building north of the Hathor temple. It consisted of fifty-three papyri either wrapped in covers also made from papyrus or in linen strips.[51] The use of *pithoi* and other ceramics continues to be one of the preferred ways of storing and preserving documents in ancient Greece. This use is the most well documented because it is one of the best preserved examples from Antiquity.[52]

46 Pedérsen 2005, 72, fig. 28, and 101, fig. 49.

47 Paulus 2013, 89.

48 Jeremiah 32:14, translation <https://www.biblegateway.com/passage/?search=Jeremiah%2032&version=CEV> (accessed on 9 September 2022).

49 Tov 2017, 37–38.

50 Hagen 2018, 155 mentions, for example, legal documents kept together – including the Papyrus Ambras – in a couple of jars and dating presumably to the eleventh century BCE.

51 See <https://www.trismegistos.org/arch/archives/pdf/248.pdf> (accessed on 9 September 2022).

52 Coqueugniot 2013, 50.

Fig. 6: Dead Sea Scroll jar and lid, second century BCE, Qumran; New York City, NY, The Metropolitan Museum of Art, 64.26a, b; Gift of Hashemite Kingdom of Jordan, 1964, <https://www.metmuseum.org/art/collection/search/325659> (accessed on 12 June 2022, public domain).

The archive of Flavius Dioscorus (525–573/585) was found by Gustave Lefebvre in a three-room house at Kôm Ishqaw in 1905, at the location of ancient Aphrodito in Egypt.[53] In one of the rooms, a 90 cm high jar with a broken neck was full of papyri. It contained 150 rolls, written mainly in Greek but also Coptic; among these were legal, business and personal records, as well as original poetry.

The Gandhāran Buddhist birch bark scrolls form the oldest collection of Buddhist manuscripts dating from the first century BCE to the third century CE. They were found in the north-west of Pakistan and east of Afghanistan, and kept in clay jars buried in ancient monasteries.[54]

As a general observation, it seems that the clay jars, which stood the test of time, helped to preserve the manuscripts stored in them, whether clay tablets, papyri or birch bark scrolls.

Specific vessels could be diverted from their normal use as camouflage to store secret archives. This is the case of milk cans which were used in the Warsaw Ghetto by the secret organisation Oneg Shabbat for the Jewish archives. Public records, posters, flyers, invitations, press clippings, personal correspondence, journals and diaries, as well as Nazi propaganda, were stored in milk cans and metal boxes. This Ringelblum Archive, named after its inventor in 1941, was buried in various places before the liquidation of the ghetto. Two of the three caches were unearthed after the war by the very few survivors of Oneg Shabbat.[55]

In the Buddhist tradition, in China, Japan, Korea and India, a very peculiar type of 'container' for religious texts is represented by statues: texts are hidden inside for religious veneration.[56] Statues are, thus, not used for storage, as containers usually are, but the insertion of these written artefacts have the effect of empowering the statuary.

53 Cuvigny 2009, 49.

54 Salomon 2018. These manuscripts, written in the Gāndhārī language, used the Kharoṣṭhī script, thus, they are also referred to as the Kharoṣṭhī manuscripts, see also Strauch 2014.

55 Kassow 2007; <https://www.jhi.pl/en/research/the-ringelblum-archive-and-the-oneg-shabbat-group/about-the-ringelblum-archive> (accessed on 12 December 2022).

56 Robson 2012.

6 Boxes, leather bookcases, cardboard folders

The words 'box', *boîte* and *Büchse* derive from the Greek term *pyxis*, which originally corresponded to a little box made of boxwood, and later on to a great variety of containers. The *capsa* in Latin (Fig. 7), referred to a round box containing all sorts of documents,[57] while the *scrinium*, which had the same shape, was divided into compartments. This term was replaced during the fifteenth century by *layette*, which initially corresponded to a box of small dimensions with a lid, and later on to the pull-out drawer of a cupboard.[58]

Much more common, however, were boxes of a cuboid shape. Their size may vary significantly, from small boxes containing only a few documents to very large ones, almost the size of a chest or trunk. Most boxes had multiple uses, and were not specifically made for documents. Some, originally intended for the conservation of foodstuffs or other products, may have been reused for storing documents. They can be made of wood, but also, for example, of reed, leather, metal and cardboard. Occasionally, materials can be mixed or added one on top of the other. Plant-based containers' archival capabilities could be further improved, for instance, by laminating them with additional sturdy materials, including leather (Case Study 3.3).

The boxes are easy to store in a dedicated space: they can be placed on shelves, piled in the corner of a room or stored inside a cabinet. Boxes may be divided into compartments, for a better internal organisation of the written artefacts. They can have a tag describing their contents, or bear an inscription on the exterior or interior.

The presumably earliest surviving boxes containing written artefacts were found in tombs, both in Egypt and China. In Gebelein, on the Nile, about 40 km south of Thebes, archaeologists found in a tomb of the fourth dynasty (about 2500 BCE), perhaps belonging to a scribe, a wooden box measuring 55 × 26.5 × 8 cm containing twelve papyrus scrolls together with writing equipment: reed pens, red and black ink cakes, and a scribe's mortar (Figs 8a–b).[59] The inside of the box cover was used as a writing board showing painted traces of a washed name list and grain account, as well as tentative signs which would correspond

57 For the *capsa* as a basket, see Section 3.3.

58 <https://archivadm.hypotheses.org/layette> (accessed on 15 March 2023); for furniture, see Chapter 4 of this book.

59 Posener-Kriéger 1994; Hagen 2018, 77. This last author mentions another example of a preserved wooden box with papyri together with other artefacts found at Thebes (1820 BCE) and presumably belonging to a priest or ritual practitioner (Hagen 2018, 116).

to the testing of a scribe's reed pen. The scrolls themselves are accounts and personnel lists.

Fig. 7: Portrait of Virgilio with a *capsa* on his left, from *Vergilius Romanus*, Vatican City, Biblioteca Apostolica Vaticana, Vat. lat. 3867, fol. 3^{v} (detail); fifth century CE; public domain, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Vergilius_Romanus_c._500_Manuscript_(Vat._lat._3867)_Biblioteca_Apostolica,_Vatican.jpg> (accessed on 23 November 2023).

Later on, during the Achaemenid Egypt, documents were still kept in wooden boxes. This is the case, for example, of nine documents linked to private property and hereditary rights of a family and rolled together into a box in Elephantine.[60]

Such boxes have not survived in less favourable climates, such as in the Near and Middle East. However, the disposition of cuneiform clay tablets found during excavations on some sites clearly indicated that they were preserved originally in a cuboid-shaped box made of organic material, probably wood or reed. This is the case, for example, in the house of Ur-utu found at Tell ed-Dêr, ancient Sippar of Annunītum, between the Tigris and the Euphrates in southern Mesopotamia. No less than 2500 tablets were found in this house belonging to the chief-lamentator priest[61] of the goddess clergy during the reign of Ammiṣaduqa (1646–1626 BCE). Archaeologists unearthed piles of tablets in one room of the house (no. 22). These tablets were previously kept in containers made of organic materials which had disappeared. Even though no trace of carbonised wood has been found, Michel Tanret, considering the clear alignment of tablets, suggested that they were kept originally in a box presumably made of reeds (Figs 9a–b).[62] This box containing 207 tablets arranged in four layers, with a total of about 23 kg of clay, would have measured 26 × 24 × 20 cm. According to a detailed study of the contents of the box, the bottom layer consisted of old family documents, manuscripts moved from the first house of their owner, dossiers concerning real estate acquisitions, and it was completed on top by later documents added at the time the archive was rearranged.[63]

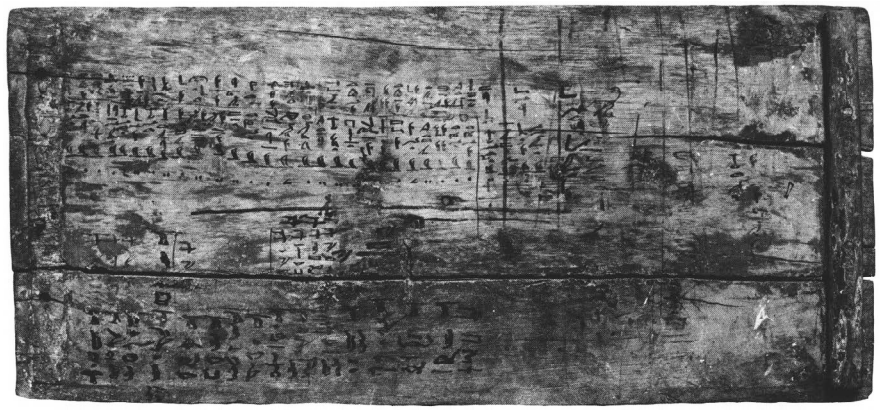
60 Kottsieper 2013, 179, n. 14.

61 The lamentator-priest had the task of appeasing the heart of offended divinities with elaborate songs accompanied by percussion instruments in order to ward off the misfortunes that divine wrath could bring.

62 Tanret 2008, 134–135.

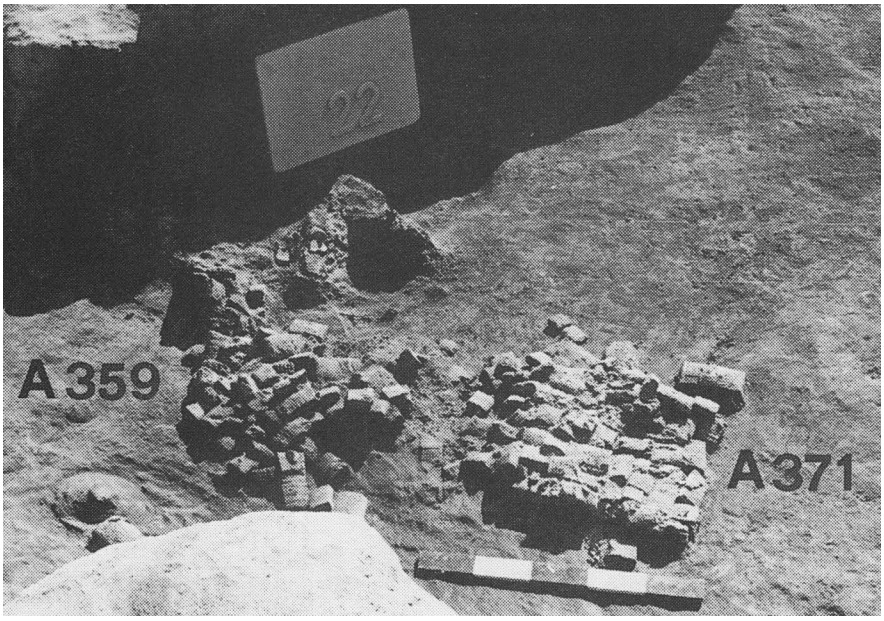
63 Tanret 2008, 145–146.

a

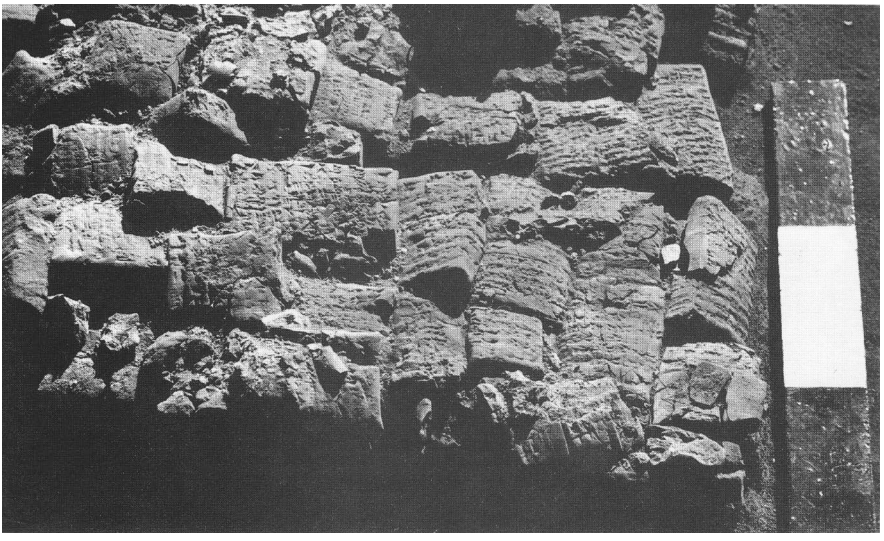


b

Figs 8a–b: (a) Wooden box from a tomb at Gebelein. (b) Inscriptions on the lid of the box used as a notebook. From Posener-Kriéger 1994, 318–319, figs 1 and 5.



a



b

Figs 9a–b: (a) Groups of tablets (A. 359 and A. 371) found in the house of Ur-utu, room 22. (b) Focus on the group of tablets A. 371. The shape taken by the heap of tablets suggests that they were kept in a box. From Gasche 1989, plate 14, figs 2–3.

In addition to the small number of archaeological remains, cuneiform texts provide a great deal of information concerning tablet boxes, even though there is no hint about the material from which they were made. This is the case, for example, regarding the *tamalakkum* in the Old Assyrian texts from the nineteenth century BCE.[64] These containers were presumably boxes made of wood or reed; some archives could contain more than twelve such containers that could be stacked one on top of the other in a room.[65] They existed in at least two different sizes, the larger containing twenty-seven tablets or more, while the smaller had space for less than ten. They could have a leather cover (Kt 93/k 69:18–27) and separated compartments inside. These containers were regularly transported with their tablets inside, sometimes over long distances, and, thus, must have been strong enough and not too heavy.

Iconography from antique Greece shows wooden boxes and chests in which to keep manuscripts. While these have not been preserved, other boxes made from clay or carved out of stone blocks have been discovered, together with jars, in Argos.[66]

Both bamboo and wood boxes, called 'baskets' (*si* 笥), were used for administrative archives in China.[67] Wood boxes could occasionally be decorated and lacquered in order to preserve important books. A surviving lacquer box in one of the Han graves at Huchang, in Jiangsu province, is divided into two layers and five compartments; it contained some well-preserved silk books dealing with philosophy, the military, astronomy and geography, as well as some medical notes (Fig. 10).[68] Such lacquerware containers were popular among the upper classes. Ordinary bamboo boxes and suitcases, whether round (*dan*) or square (*su*), were more widely used to keep archives, also by the state.[69] Archaeological evidence attests to the two types of boxes for storing writings, often referred to as *si*. Prominent examples here were found in the Mawangdui tomb nos 1 and 3 (present day Hunan Province, dating *c.* 175–145 and 168 BCE). Importantly, these boxes were very diverse in design, from luxury cases to simple containers for everyday usage by officials.[70]

64 Veenhof 2013, 31, 56.

65 Stephens 1944, no. 220.

66 Coqueugniot 2013, 18.

67 In China, wooden boxes were more valuable versions than bamboo woven baskets.

68 Wang 2021.

69 Wang 2022.

70 Hunan sheng bowuguan and Hunan sheng wenwu kaogu yanjiusuo 2004. One example is available at <http://61.187.53.122/collection.aspx?id=1316&lang=zh-CN> (accessed on 23 March 2023).

Fig. 10: Lacquered bamboo container from the Han tomb no. 1 at Huchang, Xihu Township, Yangzhou in the Jiangsu province, from Wang 2022, 126, fig. 8.

At the turn of the first millennium CE in Europe, the Latin word *archiv(i)um*, probably derived from the Greek *archeion*, was increasingly used. This term denotes both the documents themselves and the structures where they are preserved, which need to be protected from water, fire, war and thieves.[71] This might explain why, from the thirteenth century on, French kings used to travel carrying with them their most important documents and chancery records packed in boxes and coffers and transported in a separate carriage.[72]

Administrative documents started to be systematically collected, and are deposited in the Palais-Royal from 1231 on. At the beginning of the fourteenth century, chancery registers made up of charters of royal acts sealed with wax (Trésor des Chartes) were deposited in the sacristy of the Sainte-Chapelle, in the *layettes*, hand-assembled, wooden, drawer cabinets in the form of small pieces of furniture or chests of drawers.

Studies on the Early Modern Period have demonstrated that bags and pouches were used for immediate reference, but these were placed in a box, chest, cof-

71 Friedrich 2018a, 79–80.
72 Friedrich 2018a, 31.

fer or cabinet for long-term storage.[73] The size of the boxes could vary a lot, and documents were not necessarily filed in such boxes or other containers. During this period, archives were also transported by boat in chests and barrels, wrapped in oilcloth and locked. This was the case for the evacuation of the archive of the Imperial Chamber Court in Speyer in 1681 when the city was threatened by the French troops of Ludwig XIV; the containers were transported via boat to Frankfurt.[74]

The limited size of cases and small coffers eased their transportation, including, for instance, the late medieval print cases now preserved at the Musée de Cluny in Paris, whose largest dimensions are no more than 45 cm. These wood, metal and leather containers, sometimes richly decorated and sculpted, with a painting on the inside of the lid, were used to store documents and all kinds of small objects in a safe place, as well as to facilitate their transport.[75]

Some boxes were quite small, adapted to contain a limited number of manuscripts. This is the case of the oval-shaped chipboard boxes which were commonly used for documents during the Middle Ages and into the nineteenth century. They could be painted, and their small sizes implied that the documents had to be folded to fit inside.[76] The Rathaus in Lüneburg, Germany, had a full collection of such chipboard boxes remaining from the fifteenth and sixteenth centuries.[77]

Messengers in medieval Europe carried letters placed in a small box hung over their shoulder by a rope or attached to their belt.[78] At first, it was round, in the shape of a barrel, as shown in a manuscript by Petrus de Ebulo dating to the late twelfth century (Fig. 11a).

During the thirteenth century, the messenger box, hanging from the belt and resting on the hip, became shield-shaped, and could be decorated (Fig. 11b). It contained only one, or very few, letters. Over time, this letter container also became a social marker, bearing coats of arms indicating the high rank of the person employing the messenger.[79] From the sixteenth century on, it was no longer used,

73 Wolfe and Stallybrass 2018, 199.

74 Friedrich 2018a, 136–137.

75 Huynh 2019. See, for example, the various such decorated containers presented at an exhibition in the Musée de Cluny in 2020: <https://www.musee-moyenage.fr/media/documents-pdf/dossiers-de-presse/dp-mysterieux-coffrets.pdf> (accessed on 23 March 2023).

76 Papritz 1983, 4.

77 See a photo of one of these at <https://nbn-resolving.de/urn:nbn:de:0238-di100g019k0030403> (accessed on 12 May 2023).

78 Weber 1966.

79 Weber 1966, 90. For another example, see the messenger box with the arms of Jean d'Argies dated to the end of the thirteenth century CE, Paris, Musée du Louvre, OA 6282, <https://collections.louvre.fr/en/ark:/53355/cl010099204> (accessed on 15 February 2023).

only the badge remained on the breast of the messenger who carried the letters, presumably in a simple bag.

Fig. 11a: Letter-carrying messengers with messenger-boxes *c.* 1195; manuscript of Petrus de Ebulo, Bern, Burgerbibliothek, Cod. 120.II, fol. 106^{r}; public domain, via e-codices: <https://www.e-codices.unifr.ch/en/list/one/bbb/0120-2> (accessed on 15 February 2023).

Fig. 11b: Shield shaped gilt copper messenger-box with the coat of arms of John the Fearless, duke of Burgundy. Early fifteenth century CE. Paris, Musée de Cluny, Musée national du Moyen Âge, Ancienne collection Victor Gay, Cl.17707; <https://www.musee-moyenage.fr/collection/oeuvre/boite-a-messager.html> (accessed on 15 February 2023).

Large boxes and cases can hold a great number of documents. When they were not compartmentalised, it was seldom possible for the documents to be filed inside. In addition, these boxes were generally multi-purpose. Indeed, boxes containing documents were not always specifically designed for this purpose. The recycling of boxes, created for other purposes, and reused for groups of manuscripts, is widely attested in world history. In some instances, boxes used to store consumables or other products have been reused to store documents. A wooden box, for example, inscribed with advertisements for Colman's products was recycled as a box for paper index cards cataloguing Sanskrit manuscripts preserved in

the Cambridge University Library.[80] The box has two compartments which allows a different organisation of the file cards. Boxes in modern Ethiopia and Eritrea may also be shaped from any kind of recycled objects, either in metal or wood, and can be used to keep manuscripts (Fig. 12).[81]

Fig. 12: Metal box used to contain manuscripts. Eritrea, Ḥamāsen, Libān, monastery of ʾƎndā ʾAbuna Takla Haymānot Wagariqo; photo: Alessandro Bausi 1994 for the Missione Italiana in Eritrea (MIE), 1992–1994, funded by Consiglio Nazionale delle Ricerche and Alma Mater Studiorum Università di Bologna, and directed by Irma Taddia.

Conversely, boxes have sometimes been made-to-measure for important manuscripts. In some Asian countries, decorated manuscript cases in rectangular shapes made of wood or metal were donated to Buddhist monasteries along with palm-leaf and paper manuscripts.[82] These kinds of boxes are distinguished by their heavy decorations with an aesthetic and symbolic value. Such boxes were even sometimes de-

80 Formigatti 2017, 24–26.

81 Personal communication from Alessandro Bausi.

82 Personal communication by Peera Panarut. As an example, a black and gold-lacquered manuscript case dating to the nineteenth century is now preserved at the Chester Beatty Library in Dublin, <https://viewer.cbl.ie/viewer/image/Thi_1364/1/LOG_0000/> (accessed on 3 April 2023).

signed to contain a single very important document. Cases were made specifically for the Torah scroll, the Qur'an, or (parts of) the Bible. Qur'ans in West Africa, for example, are kept in embellished leather boxes (Case Study 3.4).[83] Presentation boxes of this kind have also been made to hold other types of unique documents, such as treaties or important legal documents. The outside decoration and the stored document's content occasionally directly reference each other (Case Study 3.5).

A Siamese diplomatic letter written on gold plate and sent to the emperor of China in 1822 was carried in a golden bag itself placed in an octagonal lacquered container.[84] Nowadays, certificates of prestigious prizes or diplomas such as honorary doctorate degrees awarded by universities to personalities are presented to the recipient in a cardboard tube, often painted with the coat of arms and the name of the university in golden letters (Fig. 13).

Fig. 13: Two cardboard tubes for certificates of honorary doctorate degrees awarded from the universities of Louvain (1976) and Copenhagen (2017); photo: Cécile Michel.

Similar cylinder-shaped containers made of wood or metal may also be full of ordinary documents, such as Thai and Lao twentieth-century administrative documents and letters. Bamboo tubes also had a similar use in Southern Thailand at the beginning of the twentieth century, but they have not survived.[85]

Filing boxes have been preferred and used in Europe since the late Middle Ages. First made of wood and then of cardboard, they contain documents stored vertically (Fig. 14). They are often open on one side for direct access to documents, with the opposite side plain for labelling.[86] Alternative uses, however, continue to occur.

83 Scheper 2023, 145–149.

84 See Chapter 1 in this book and Panarut 2022.

85 Examples of wooden and lead tubes from the nineteenth and twentieth centuries are on exhibition at the National Library of Thailand in Bangkok; personal communication by Peera Panarut.

86 For a wooden file-holder from the nineteenth century, see, for example, <https://web.archive.org/web/20221105195008/http://www.officemuseum.com/IMagesWWW/1884_1889_Woodruffs_Improved_File_Holder_1_OM.jpg> (accessed on 14 January 2023).

Fig. 14: Pre-unification fund of the Municipality of Piombino, Registers of the Councils of the resolutions of the Elders, 1494–1575; photograph by Veronica Muoio; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Foto_filze_fondo_preunitario_Archivio_Comune_di_Piombino.jpg> (accessed on 8 December 2022).

During the nineteenth century in North America, wooden letter boxes implied flat filing, with the choice of an alphabetical order for the incoming correspondence. Such a box had a cover opening, like a book, and were not very thick; they contained the letters received during a specific period.[87] They were replaced by flat files for a cabinet at the end of the century, and by the early twentieth century, by vertical file drawers which held many more than the horizontal boxes, and eased the retrieval of documents.[88]

A special type of wooden box with a hinged lid is used for card files. The size of the box is perfectly adjusted so that the cards are arranged vertically, separated by dividers if necessary. Such boxes for card files were in use for several centuries before the arrival of computers in, for example, libraries and banks.

Cardboard files or boxes are preferred more than any other container in today's archives. Indeed, the packaging of manuscripts is an essential factor in their preservation; thermal and hygrometric values or conditions have to be controlled mechanically or chemically, and boxes can provide protection in this respect.

87 Yates 1993, 33.
88 Yates 1993, 57.

International standards have been published for the packaging of archival documents on paper and parchment. ISO 16245:2009,[89] for example, set out the requirements (components, number of layers in a box, whether or not to use folders) for boxes and folders made of paper and paperboard (cellulose materials) used for the long-term preservation of documents. In addition, these packaging materials must have a stable, markable, colourless resin coating and be shaped to fit the document. The porosity of the cardboard allows the passage of air and the release of acidic fumes associated with oxidation. The superimposition of corrugated cardboard layers allows a better resistance to both fire and water.

7 Containers for sound, photographic, video and digital data

So far, we have considered the archiving containers for written texts and drawn images on two- or three-dimensional media. However, other media were used for texts and images, including microfilms and photographs. Both were born in the nineteenth century: The first time an image was fixed on a metal plate was in 1827, while the first miniaturised documents were obtained in 1839 using the daguerreotype process.

The first photographs were taken on glass plates, which were relatively bulky, heavy and fragile, and required packaging adapted to their size, often in a cardboard box. Celluloid film for photography was invented in 1884;[90] the film was rolled and placed in a cardboard box, and later on in a metal cylinder, arranged in a cylindrical plastic box, itself placed in a cuboid cardboard box. The film was thus stored in three different containers, nested inside each other like Russian dolls.

Microfilms were used in the 1960s in North America to acquire copies of rare books and manuscripts from foreign libraries.[91] They were subsequently widely used for the preservation of journal collections, and for books appendices with long indexes and drawings. Theses have been intensively microfilmed and are preserved under this format in the Bibliothèque nationale de France. Two large boxes, for example, contain microfilms of theses in theology, philosophy, law, surgery, anato-

89 <https://www.iso.org/standard/45988.html> (accessed on 8 December 2022).

90 Amar 1993.

91 A safe repository for microfilms of manuscripts from Benedictine libraries from across Europe was already envisaged by Father Colman Barry in 1964; the operation started the next year under the direction of Father Oliver Kapsner. In the 1970s, manuscripts from Malta and Ethiopia were also included, and it became the Hill Museum & Manuscript Library (HMML), located at Collegeville, MN, in 1975. In 2020, the collection contained about 300,000 imaged manuscripts, many available nowadays in a digital format, see <https://hmml.org/about/history/> (accessed on 12 August 2023).

my and pharmacy written between 1622 and 1790.[92] PhD dissertations defended during the last decades of the twentieth century have also been deposited in a microfilm form in cardboard boxes in the Bibliothèque nationale de France.

The microfilm format has been chosen to preserve the cultural heritage from man-made or natural disaster in Germany since 1975. The Barbarastollen underground archive contains 32,000 km of microfilms kept in sealed, steel barrels (Fig. 15).[93]

Fig. 15: Storage chamber of the Barbarastollen in 2016; © Bundesamt für Bevölkerungsschutz und Katastrophenhilfe; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Barbarastollen_Lagerungskammer.jpg> (accessed on 14 January 2023).

92 *Thèses & autres écrits académiques, identification et localisation* (Bibliothèque nationale de France, 2005), 54, accessible at <http://grebib.bnf.fr/pdf/guide_theses.pdf> (accessed on 7 June 2023).

93 See <https://www.dw.com/en/underground-archive-treasures-of-the-past/video-60826172> (accessed on 2 May 2023). The Memory of Mankind Foundation in Hallstatt, Austria, has chosen clay as its medium since 2012, echoing the cuneiform tablets, some of which have survived for more than five thousand years. It is possible to store, in analogue form, a book of two thousand pages on a ceramic microfilm tablet. These tablets are buried about 2,000 m into the oldest salt mine in the world, at Hallstatt, a UNESCO World Heritage Site. Pictographic indications should enable future discoverers of these tablets to decipher them; <https://www.memory-of-mankind.com/1000books/> (accessed on 10 September 2023).

Sound or video archives also have a very specific production process, and the same applies to their conservation and archiving process. Such film-based materials made of nitrate- or acetate-based cellulose present the risk of spontaneous combustion or a chemical degradation; they, thus, need very specific storage conditions.[94]

Sound archives contain 'information recorded in the form of sound which, because of the method of recording used and the medium, can only be known by means of an acoustic machine allowing its reproduction'.[95] The very first recording of a voice was made by Edouard-Léon Scotte de Martinville in 1860, but it was Thomas Edison's invention of the phonograph in 1877 that made it possible to record sounds on a cylinder covered with tin foil. Ten years later, these cylinders were made of cardboard covered with beeswax, then carnauba and, finally, celluloid. These cylinders were individually stored in cylindrical cases made of leather, metal or cardboard. The reproduction of an identical cylinder became possible at the very beginning of the twentieth century by moulding, before the disc replaced the cylinder from 1906 onwards. The 78-rpm disc covered with black shellac and played with a gramophone has two advantages over the cylinder: easy reproduction by pressing and, above all, less space required for archiving, with the use of simple paper sleeves. Fritz Pfleumer developed the magnetic tape to record sound in 1928; firstly, made of steel, it was made of plastic in the 1940s. The information is read by measuring the magnetisation of magnetic particles (iron oxide) deposited on a thin strip of flexible plastic film. It is considered to be the most efficient sound recording, both for analogue and digital techniques, and has also been used to record moving images.

Audio-visual archives have a wider meaning as they include all documents consisting of still or moving images and sound recordings on any medium.[96] According to the *Institut national de l'Audiovisuel*, these include inter alia:[97]

- television or radio programmes (or programmes produced for webcast) and associated rushes;
- audio-visual content that has not been broadcast and/or has not been seen before: for example, recordings of shows, readings or lectures, collections of testimonies;
- works of art on audio-visual media (e.g. video art), in conjunction with museums or institutions in charge of this heritage.

94 <https://www.ifla.org/wp-content/uploads/2019/05/assets/pac/ipi/ipi1-en.pdf> (accessed on 24 March 2023).

95 Osborne 2012, 38.

96 Defrance 1989, 10. See also Delmas 1987.

97 <https://www.ina.fr/offres-et-services/archivage-audiovisuel> (accessed on 22 December 2022).

Tapes and films were individually stored in round metal (aluminium) boxes adapted to their size (Fig. 16).

Fig. 16: Dorothy Whitaker works in the National Oceanographic Data Center (NDOC) magnetic tape library, 1960s–1970s, NDOC; public domain, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:NDOC_magnetic_tape_library.tiff> (accessed on 8 December 2022).

Audio or video documents can only be consulted in real time, unlike written documents, which can be leafed through, so their identification must be very precise.

Magnetic tapes are packaged in various ways (cores, reels, cassettes, cartridges) and these fragile archives should be kept away from light, heat and humidity. When the temperature is too high, the substrates become deformed, too dry air causes the substrates to dry out, while too much humidity leads to the development of mould. Exposure to polluted air can lead to the oxidation of the substrate.

Therefore, films, similar to slides, should be stored in a cold room to preserve their colouring and in anodised aluminium boxes.[98]

The preservation of audio-visual archives has been made very complicated by the quickly growing variety of technologies involved, all of which have resulted in different types of media to be stored. The various regional or national archive sites intend to preserve all recordings on, for example, audio cassette, microcassette, DAT, minidisc, CD, super 8, 16 mm, 35 mm, 1 inch tape, VCR, Umatic, BVU, Betacam, Betacam SP, Dvcam, DVCpor, Hi8, V8, D8, VHS, DVD and Betanum. The obsolescence of formats and reading media make this conservation even more difficult.[99] Magnetic tapes, for example, have a lifespan of twenty to thirty years and reading tools do not exceed half a century, a lifespan that is continually decreasing with the increasingly rapid technological development. This implies a complex management of transfers and migrations. These media were stored in a wide variety of suitable containers, often made of paper, cardboard or plastic.

The same is true for archives that have been digitised or are digitally born. We have witnessed a very rapid evolution since the second half of the twentieth century of not only the containers in which these data are stored, successively floppy disks, CD-ROMs, zips, DVDs, USB sticks, hard disks and servers, but also the software that enables the data to be read. Various types of boxes and cases have been designed to match these different media, often of plastic, but also of metal. Today, the storage of digital data in the cloud have introduced a new dimension into archival culture, that is to say, a lack of materiality.

8 Conclusion

There is a huge variety of containers that have been used to store various types of textual and non-textual documentary artefacts, such as written documents, photos, sound tapes and films. Their functions are manifold: to store, organise, protect, preserve, give access to the documents and even transport them. These containers are often identified by labels, and arranged in furniture or rooms in the most compact way possible.

98 <https://aedaa.fr/2015/01/la-conservation-des-archives-audiovisuelles/> (accessed on 12 December 2022).

99 A variety of 'museums of obsolete technology' exist nowadays, see, for example, <https://unequivocable.wordpress.com/> (accessed on 31 August 2023).

Such containers have been either made for another purpose and recycled to hold dossiers, or shaped to be used for specific types of files. Several factors have influenced the material and shape of these latter containers. Firstly, the ecological and climatological environments have determined the materials used. These must be easily accessible locally, but also adapted to the conservation and protection of the archives' media. In the ancient Near East, for example, baskets made from reeds or clay jars were used for clay tablets and papyri scrolls, in Asia, textiles and bamboo boxes were adapted for palm-leaf manuscripts, while in Europe and America, wooden boxes were nicely fitted for paper documents.

The nature of the documents to be preserved also influences the shape and size of the container. Leather or textile bags, for example, during the Roman Empire, could have a narrow, elongated shape, making it easy to store scrolls or papyri folded once lengthwise.[100] Jars full of papyri scrolls were high and narrow, while clay vessels for clay tablets were wider than they were high. Conversely, there is a permanence of certain box shapes and sizes which are attested in far-flung locations and at very different times.[101]

When we work on the past, the original organisation of written artefacts often no longer exists. Archives may have been removed from their original place, and containers that once used to store dossiers have been emptied, therefore, their use as archival storage is lost. The containers have usually changed over time. The reconfiguration of archives, which resulted in a high rate of lost containers, has been especially important during the nineteenth and twentieth centuries. Many surviving containers have been also reused for other purposes.

Such changes could have a massive impact on certain archives. As an example, in the early 1930s, for both political reasons and the reform of script – from an Arabic alphabet to one derived from Latin and adapted to the Turkish language – over a million documents from the archives of the Ottoman Empire, originally kept in Istanbul, are now held in the St Cyril and Methodius National Library of Sofia in Bulgaria. They were sold for the price of scrap paper to a Bulgarian paper mill. The original containers were lost as hundreds of cases of records were sold from the Finance Archive in Istanbul and transported in bales by train abroad.[102]

Where the original containers have been preserved, we observe that the practical aspects are often privileged. Thus, boxes have many advantages: they are easy to build, easily mobile, easy to store in piles and multi-purpose. The bags can be hung on the wall, taking up no floor space. Furthermore, in the case of trial

100 Papritz 1983, 4–5.
101 Friedrich 2018b, 431.
102 Altay 2017.

bags, they facilitate dossier access, as all the documents relating to a case are collected in a single bag.

Other types of container have been specially chosen to hide written artefacts, such as clay or metal vessels, either because it is the natural container for the documents, or alternatively, because it is a container not normally used for this purpose, such as the milk cans in the Warsaw Ghetto.

Some containers may also have been custom-made specifically for a document of value, whether symbolic, religious or otherwise. In such instances, the material, sometimes precious, from which it was made has been carefully selected, itself having a symbolic value, and the exterior decorated, displaying luxury and aesthetic addendum to the written artefact. A wooden box, for example, covered with metal and precious stones, gives important information about the emotional value of the document it contains. Some particularly precious or fragile written artefacts may be wrapped in a silk or velvet textile and stored in a box, which is itself enclosed in a larger box. Negative films, because of their fragility, are rolled up in a metal box, placed in a plastic box, itself packaged in a cardboard box for marketing. Indeed, conservations and protections are important factors for the choice of a container.

Container capacity is necessarily limited. Depending on their shape and size, containers may or may not allow written artefacts to be organised internally. Small boxes allow documents to be classified internally, whereas large boxes, when not compartmentalised, do not. They are filled up until they are full, and written artefacts are then stored without any real logic. There is a tension between the capacity limit of a container and what needs to be placed in it as a unit.

Mobility, accessibility and retrievability of documents are also important factors for the choice of containers. However, these actions also depend on where the containers are stored, whether on shelves, in dedicated furniture or specific spaces or rooms. These aspects are developed in the following chapters.

Acknowledgements

The research for this chapter was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2176 'Understanding Written Artefacts: Material, Interaction and Transmission in Manuscript Cultures', project no. 390893796. The research was conducted within the scope of the Centre for the Study of Manuscript Cultures (CSMC) at Universität Hamburg.

I would like to thank all the colleagues of the research field 'Archiving Artefacts' who shared with me examples from their fields of research and provided

me with the bibliographical references needed to document this chapter. In particular, I would like to warmly thank the authors of the various chapters of this book and especially its editor Markus Friedrich, as well as Damien Agut, Alessandro Bausi, Evelyne Brunet-Prioux, Eliana Dal Sasso, Michael Friedrich, Ann-Sophie Hellmich-Schwan, Konrad Hirschler, Sören Krömer, Sebastian Schirrmeister, Thies Staack, and all the colleagues from the Excellence Cluster with whom I have been able to exchange ideas.

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Case Study 3.1: An Archival Backpack from Gotha

Ann-Sophie Hellmich-Schwan

This archival 'backpack' may seem like an incidental leftover of the past. Unadorned, simply functional and with no mention in the sources. Yet, it does serve as an excellent example of what archival daily work might have looked like. While this type of back carrier was a common tool in many aspects of everyday life throughout the Early Modern Period up until the early twentieth century, its accommodation to bureaucratic and archival practices is not widely attested. The piece is made of wooden boards installed at right angles to each other. Two boards with round edges on each side prevent documents from sliding off when in motion. The dimensions are W 40 cm × H 68 cm × D 31 cm. Two textile straps allow the device to be carried on the back. A pouch allowed for some sort of padding to support the back. Empty, it weighs 4.3 kg.

To appreciate the necessity for such a carrying device in an archival context, it is important to understand the workflow that took place between the archive, the administration, its records offices and external institutions. Before a document ended up registered in the archive vault, it was produced, revised, sent, consulted and copied – all of which happened in different locations. Even after its active use, it might still be important evidence for a case and, therefore, taken out of the archive again.

The castle of Friedenstein in Gotha, where the archive and the administration of the principality could be found under one roof from the middle of the seventeenth century onwards, was compact and well organised – and yet, files still needed to move between rooms and parts of the building. The main archive and its office were located in the north-western corner of the castle. Next to it, a stairwell led to the first floor where the different government offices could be found. From the corridor connecting them, a staircase led to the stables underneath. Each letter that arrived by horse or carriage had to pass through this network of pathways, each document that left the castle as well. Furthermore, several sources illustrate that archival material was often transported to the private quarters of the prince or the households of administrative staff. In all these processes, the archival backpack was a useful tool to facilitate the daily work routine of transporting (archival) documents.

https://doi.org/10.1515/9783111656014-009

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Figs 1a–b: ‘Rucksack’ from Stiftung Friedenstein; photo: Ann-Sophie Hellmich-Schwan.

Case Study 3.2: Archival Bags in Ethiopia

Alessandro Bausi

In the library of the monastery of ʾƎndā ʾAbbā Garimā, a monastic foundation going back to Aksumite times illustrates nicely how manuscripts are stored according to Ethiopian tradition. The room where the manuscripts are preserved (sometimes a well-protected building also inside a rock-hewn cave) hosts other kinds of artefacts, not necessarily written, and is generally known as *ʿəqā bet* (Amharic, lit. 'objects house, repository'). The *ʿəqā bet* is a room or even a building, that can be locked, where all kinds of precious objects pertaining to monastic and church activities are preserved (bells, candles, incense and incense burners and other liturgical vessels, carpets, textiles, vestments, and books as well), under the strict responsibility of someone, as a rule, distinct from the abbot and mainly in charge of this delicate task. There is no ordering device and the *ʿəqā bet* is not provided with any kind of facility to carry out library and archive work, including writing and copying, even though consultation may take place in it.

In the *ʿəqā bet*, larger manuscripts may be placed on pieces of furniture provided with shelves or in wooden or metal chests, particularly if disarranged. Smaller manuscripts can be placed in leather bags provided with straps, hanging on pegs inserted into the walls, as is still current practice at the monastery of ʾƎndā ʾAbbā Garimā (Fig. 1). Very often, however, books simply lie on the ground, usually on carpets. Similar ways of storing manuscripts are also described in Robert Curzon's travel report from 1837 for the monastery of Dayr as-Suryān (Fig. 2), which housed a library of some fifty books:

> A wooden shelf was carried in the Egyptian style round the walls, at the height of the top of the door, and on this shelf stood sundry platters, bottles, and dishes for the use of the community. Underneath the shelf various long wooden pegs projected from the wall; they were each about a foot and a half long, and on them hung the Abyssinian manuscripts, of which this curious library was entirely composed.[1]

Leather bags and satchels have the function of making the books easily portable and manageable, but more or less precious (also silk) textiles, often of foreign provenance, wrapped around the covers of the bindings add to their protection and connote the books as luxury objects.

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1 Curzon 1865, 106; about Curzon's voyages see Emmel 2023.

https://doi.org/10.1515/9783111656014-010

Fig. 1: Təgrāy, monastery of ʾƎndā ʾAbbā Garimā (Ethiopia); museum from the local *ʾəqā bet*; photo: Marco Di Bella 2016.

Fig. 2: Monastery of Dayr al-Suryān (Egypt); library ('Abyssinian library') of the local Ethiopian monastic community ('Abyssinian college'); woodcut from Curzon 1865, 105 (see also Nosnitsin and Reule 2021, xvii–xviii).

Case Study 3.3: Leather-laminated Boxes from Ethiopia

Dirbwork Bitsu Kassa

Monasteries, churches, royal palace archives and private archives have had a long-standing tradition in Ethiopia of storing or keeping manuscripts, archival documents and other essential goods in a *sānduq* ('box'). The design and pattern may differ, but it was an object widely used to store manuscripts and historical documents. The raw material that was used was wood, leather or metal. Predominantly wooden boxes are familiar in the monasteries and private archives. The material and type of boxes manifest the status of the archival centre in which the manuscripts are kept, with leather-laminated boxes indicating the royal family or a high class of person in the community.

This leather-laminated box is to be found in the archival centre of the Gondar Dabra Ṣaḥāy Qʷəsqʷām Māryām church archive. It is as old as the church and the archival building, which were built by *ʾEtege* Məntəwwāb in 1743. The box is made from sawn bamboo and laminated with leather. The lamination is stitched using a strong string. It is rectangular and similar in shape to storage boxes of other monastic archives. The dimension of the box is 60 cm in length, 40 cm in width and 40 cm in height. The peculiarity of this box compared to other manuscript storage boxes is that the lamination and the raw material of which it is made – bamboo – is not popularly used in Ethiopia to prepare such boxes. Perhaps it was prepared subsequent to a special order of *ʾEtege* Məntəwwāb for the church. In addition to this manuscript storage box in the archival centre, there are other circular-shaped, leather-laminated, bamboo and wood boxes that were used to store clothes and crowns of *ʾEtege* Məntəwwāb, *ʾatəronəs* ('traditional reading table') and several traditional paintings. The remaining manuscripts, including the land charter of Gondar (Qʷəsqʷām Māryām church), are currently kept on the newly prepared wood and glass shelves. These boxes are kept beside the manuscripts on the shelf.

https://doi.org/10.1515/9783111656014-011

Fig. 1: Leather-laminated bamboo box from Dabra Ṣaḥāy Qʷəsqʷām Māryām church which was established in the eighteenth century in Gondar.

Case Study 3.4: An Early Modern Coptic Slipcase from Cairo, Egypt

Eliana Dal Sasso

The slipcase, characterised by its rectangular shape and open edge, has been a conventional book container since ancient times. It can be manufactured using various materials, ranging from simple cardboard to precious metals adorned with gems. Additionally, depending on the material and the size of the book it holds, the slipcase is highly portable. It offers additional protection for the book, but its function goes beyond mere practicality. Slipcases, through their materiality, can convey specific messages. The materials used to make them reflect the preciousness of the contents, the owner's social status and the production context. Furthermore, slipcases may be adorned with inscriptions which offer additional information, such as the date of production, the name of the craftsman or the institution to which it belonged.

The slipcase being presented here (340 × 240 mm) is composed of a sturdy wooden frame, covered with iron plates, which have been nailed to the surface to hold them in place. Despite the oxidised state of the iron plates, one can discern that they are embellished with a design printed on both sides, depicting a cross and a Coptic inscription bearing the verses of a widely used hymn, the Trisagion. The hymn has been used continuously in Eastern and Western Christianity since the beginning of the fifth century and, thus, represents a monument to faith and spirituality. Furthermore, the vertical orientation of the casket, with the opening at the top, would have allowed the decoration on both sides to be visible and facilitate the identification of the book. Unfortunately, despite the protection provided by the case, nothing remains of the book that was contained within. It may have been a Gospel, as they were among the books most commonly used, often preceded in the Egyptian liturgy by the recitation of the Trisagion.

The slipcase is from a Coptic Christian monastery in Cairo, Egypt, and dates back to the fifteenth–sixteenth century, during the Mamluk sultanate era. The period was characterised by the decline of the Coptic Christian minority in the face of the Muslim majority. Copts were often viewed with suspicion, and, despite their presence in the administration, their status was often ambivalent. Executions and church burnings were common, thus, many Copts converted to Islam to limit discrimination and retain their jobs. The historical context reflects in the modest yet robust materials used in the construction of the case, which draw a fitting parallel to the defensive position of the Coptic community at that time.

https://doi.org/10.1515/9783111656014-012

a b

Figs 1a–b: Iron-covered wooden slipcase for a book, London, British Museum, 1867,0709.10; © The Trustees of the British Museum. Shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence.

Case Study 3.5: A Decorated Charter Ark from Xanten, 1460

Ann-Sophie Hellmich-Schwan

This small wooden box, which is now on display in the Stiftsmuseum Xanten, can be considered a very special filing device, as it was constructed exclusively for the storage of one specific document. It has contained a charter of high importance for the abbey for over five hundred years.

Medieval European charters belong to the group of most valued and well-protected documents one can find. Their production was subject to specific regulations to make them legally valid and authentic. This did not only relate to their content but especially also to their materiality.[1] In this case, the elaborately decorated ark contains a rather unadorned charter. The document testifies to the prayer brotherhood between the Cistercians of the monastery of Kamp and the canons of the city of Xanten (north-western Germany). Both sides assure each other to pray for their living and dead members and benefactors. These kinds of agreements were a common practice during the European Middle Ages.

The ark itself is made of oak wood and is a rather small size (H 37.9 cm × W 33.2 cm × D 3.2 cm). It is outfitted with a hook at the top to be hung on the wall. The lid opens to the front and is richly painted. The topic of the painting relates to the content of the charter kept inside. Bernard of Clairvaux is depicted in the centre. He was the most important co-founder of the Cistercian order. Canons of Xanten pray in their choir dress on the left-hand side and, to the right, we see Cistercian monks in their habits.

The charter and ark, in this case, form a unit. The document contains the text, but its significance is expressed by the ark. This further provides the appropriate space for the charter. Without it, it would have to be kept similar to any regular document, which would mean that its special feature would be lost.

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1 Stieldorf 2019, 2.

https://doi.org/10.1515/9783111656014-013

Fig. 1: Stiftsmuseum Xanten; image from Grote 1998, 162; public domain, via Wikimedia Commons: <http://commons.wikimedia.org/wiki/File:Xanten_verbruederung_kamp.jpg> (accessed on 30 June 2025).

Markus Friedrich

Chapter 4: Furniture

Abstract: This chapter aims to provide a comprehensive examination of the evolution and societal significance of archival furniture, delineating its dual role in storing and facilitating the use of manuscripts throughout history. It emphasises the importance of contextualising the emergence of purpose-built archival pieces within broader historical narratives by highlighting the development of different archival systems and furniture designs from early periods to modern times. Beginning with an overview of basic storage tools and practices for protecting written artefacts, the paper transitions to a nuanced analysis of artificially created structures designed to equip large storage spaces, also discussing the production processes and aesthetic design of archival furniture. Valuable insights into the envisionment of the presence of written artefacts are provided drawing on a range of sources, including surviving artefacts, archaeological findings and textual/graphical descriptions. The exploration of the evolution of archival furniture over time and the profound effects it has had on both archival methodologies and societal attitudes towards written artefacts across different historical periods, therefore, also offers conclusions on how people ordered their lives, based on their daily handling of documents and manuscripts.

1 Introduction

Building on the previous chapter which described the basic storage tools used to protect and group written artefacts, this chapter studies (artificially created) objects and structures that were designed to equip large, confined spaces[1] for the purpose of storing and retrieving manuscripts. These objects and structures are here collectively called 'archival furniture'.[2] A basic axiom of the historical analy-

1 My understanding of 'archival spaces' encompasses both natural sites used for the storage of writings, such as caves, as well as man-made architecture.

2 Standard definitions of 'furniture' include 'Movable articles, whether useful or ornamental, in a dwelling-house, place of business, or public building' (*Oxford English Dictionary*, used online at <www.oed.com> [accessed on 17 August 2023]) or 'things such as chairs, tables, beds, cupboards, etc. that are put into a house or other building to make it suitable and comfortable for living or working in' (*Cambridge Dictionary*, used online at <https://dictionary.cambridge.org> [accessed on 17 August 2023]).

https://doi.org/10.1515/9783111656014-014

sis of furniture holds that 'a study of furniture, or an attempt to reconstruct an actual interior, can provide us with many details' concerning 'the way people lived from day to day, how they ordered their lives, and the kinds of expectations they had of one another'.[3] This also applies to the special case of furniture used in archival storage and document retrieval. Archival furniture materialises, quite literally, how individuals, institutions and social groups envision written artefacts' presence in and impact on human life. They embody and shape 'graphic ideologies'.[4] This chapter, therefore, assumes that the study of archival furniture is more than an ephemeral aspect of the study of archives and archival history; rather, archival furniture must be seen as key evidence from which to draw conclusions about the ways people related to manuscripts from day to day, how they ordered their lives around documents and vice versa, and about the kinds of expectations they had of the use of manuscripts. Recent work on the history of schooling and learning has demonstrated that furniture was a defining factor in shaping economies of attention, directing individual focus and influencing the actual practices of engagement with ideas, texts and written artefacts.[5] Similarly, furniture used for storing and handling archival materials significantly shaped the ways in which people interacted with archived manuscripts, or, as Henry Petroski has written for a parallel case: 'Books and bookshelves are a technological system, each component of which influences how we view the other. Since we interact with books and bookshelves, we too become part of the system'[6] – the same could easily be said for archives and archived written artefacts.

Important as the role of furniture for archival practices is, it should not be taken as self-evident or unavoidable. The first two subsections, therefore, put the role of archival furniture in context. The first part of this chapter highlights that practices of stacking and piling written artefacts *outside* of furniture – in fact, often contradicting furniture's basic stated intention of containing and controlling materials – must be considered to be of utmost importance. Heaping, stacking and piling are basic features of human interaction with writings, and they are never confined, though often shaped, by pieces of furniture. Armoires or shelves, thus, have no unidirectional impact on archival practices but, instead, intersect in numerous and contradictory ways with daily forms of handling documents. A second subsection of this chapter highlights briefly an extreme alternative to storage

3 Lucie-Smith 1979, 12–13.

4 For the term, see Hull 2012.

5 Schrire 2020, 38–50.

6 Petroski 1999, 3.

in properly archival containers and pieces of furniture, thereby nuancing our understanding of what archival spaces should look like.

Only with these basic caveats in mind does the following survey then distinguish two key types of archival furniture, dividing it into pieces used for 'storing' and those dedicated to 'using' archival materials. While this distinction seems clear enough in many cases, it is necessary to keep in mind that individual pieces of furniture may very often fulfil many primary and secondary, as well as intended and unintended, functions simultaneously: tables, primarily designed as support structures for writing and reading manuscripts, may additionally be used as (temporary) storage contraptions, while shelves, primarily intended as supporting structures for the storage of written artefacts, may be appropriated as miniature tables on some occasions.

The basic typology is followed by a section commenting briefly on the production process and aesthetic design of furniture used archivally. Generally speaking, only a little information is available about the details of work on individual pieces of furniture, and what we know is often incomplete. Based on the current state of knowledge, production processes sometimes led to extraordinarily intricate pieces of furniture, which were luxuriously decorated and/or exquisitely crafted. In numerous cases, however, the limits of documentation seem to mirror the fact that a lot of furniture used for archival purposes was often not primarily produced with aesthetic considerations in mind, but of a rather moderate, function-oriented type. While libraries were often created as spaces of conspicuous luxury, intended for socialising and displaying wealth, this was rarely the case in archival contexts.

The final section of this chapter turns to the more recent past of archival history. The design and production of archival furniture since the nineteenth century, roughly speaking, has entered a new period, both in terms of the materials used and specialisation. Now, in fact, *only* now, has the idea become widespread that archives, and administrative spaces at large, should be furnished with dedicated pieces of furniture, purpose-designed for the management and storage of paperwork. Indeed, contemporary perspectives on furniture now assume that office- and administration-related furniture, presumably including furniture specifically designed for archives, constitute a distinct subcategory.[7] While the final subsection of this chapter discusses key episodes of this trend towards purpose-built archival equipment, this chapter at large highlights that specifically archival or administrative types of furniture are by no means self-evident. A lot of furniture used in an archival context has been generic in nature and only appro-

7 Smardzewski 2016, esp. 49–50.

priated on the spot for archival functions. In many cases, 'archival' furniture is simply repurposed 'normal' furniture. Purpose-made archival equipment, by contrast, has appeared only in relatively few contexts, and often only after long histories of record-keeping that made do with more generic types of furniture. It is, therefore, important to historicise the appearance of specifically archival pieces of furniture.

The study of archival furniture can rely on a range of sources. Original pieces of storage tools still survive from some eras and areas, and are occasionally still even in use. Yet, this is relatively rare for early periods of archival history. A lot of furniture has been made from perishable organic materials, particularly wood, therefore, it is prone to decay. Archival furniture is not usually considered to be an end in itself, but more as a tool serving the purpose of protecting its contents, thus, it has only rarely been the object of dedicated acts of preservation or protection. The gradual wear and tear of furniture was acceptable as a trade-off with the protection of documents. Nevertheless, at least a few ancient pieces have come to light through archaeological finds, making it possible to trace the history of archival furniture back several millennia. The study of extant furniture is further supplemented by indirect evidence provided by architectural details, such as holes in walls or floors, indicating where now-decayed furniture may have been positioned. Finally, depictions and descriptions of archival furniture in textual and graphical sources of various kinds exist, ranging from passing comments about individual archival arrangements to a few, and mostly modern, extensive conceptual discussions of how archival furniture might best be constructed.

2 Heaps and piles

Simply putting written artefacts somewhere, preferably on top of each other, may be the most basic, almost self-evident way of storing manuscripts. Writings may have acquired 'their place' in any human spatial environment simply by having been put to rest somewhere and remaining untouched in their accidentally chosen location. Perhaps spots where written artefacts had started to aggregate – simply by associating same with same – attracted a certain pull effect, with new writings being deposited next to other, previously deposited ones. As a rule, historians have found – at least in premodern Europe – a tendency for 'storing like with like', which makes things 'easier to find, but also reflects the organizers'

conceptualization of the world'.[8] A specific corner of a room or an otherwise unused space may, thus, have developed habitually into a place for storing written artefacts, which, gradually, piled up.

Even though piles of written artefacts might initially have acquired their location in seemingly haphazard and accidental ways, in retrospect, their placing may, nevertheless, indicate an individual's or society's greater attitude towards writings. Locations selected for putting things may express cultural valuation. Spaces are never neutral, but reflect their inhabitants' mindsets – a point historians may fruitfully exploit to discover attitudes towards writing in different contexts. The location of piles of artefacts often indicates that people considered them to be part of their inner sanctum. Individuals in ancient Assur may keep some important deeds next to their bed, just like early modern German princes occasionally had dedicated armoires full of records in their private chambers, thus, surrounding these corpora with a special kind of secret and intimate aura.[9] Frances, countess of Essex, in 1599, preserved some of her favourite pieces of correspondence under her bed (in a casket) – presumably hiding them efficiently and still keeping them close at hand.[10] Storage locations sometimes indicate a close analogy between writings and other treasures. Small or mid-sized private archives – perhaps consisting only of a few legal documents, several letters or a scattering of other memorabilia – were often stored, for instance, by people in rural areas, together with other possessions in armoires or other containers within their living quarters.[11]

Piling and heaping, though widespread, unavoidable and continuously popular, has a bad reputation. Simple stacks of writing materials are often considered signs of depravation or a lack of archival care. Throughout the ages, authors intent on criticising archival arrangements that they encountered took recourse to the trope of piles of documents 'on the floor' in seemingly uncurated ways. One French administrator in 1725, working in what is usually considered a rather sophisticated archival institution, the Parliament de Paris, described that institution's reality:

> for some time now newer registers have been stored on the floor, in stacks of thirty or forty volumes. Only a few narrow paths lead across the completely cluttered floor.[12]

This was meant as a strong criticism. References to heaps and piles sitting on the ground are often short-cuts for diagnoses of 'under-developed', 'neglected' or

8 French 2021, 113.

9 For Assyria, see Postgate 2013, 84.

10 Daybell 2016, 210–223, esp. 211.

11 For one such case, beautifully analysed, see Chatterjee 2020, 30.

12 Quoted in Friedrich 2018b, 111.

'insufficient' archival arrangements. In such contexts, archival furniture is often presented as a token of archival order and a positive valuation of records and writing. The existence of (specialised) dedicated furniture is made into a symbol of archival advancement.

Yet, there is no simple progress from piles to files. Piling and heaping continue to be important practices even in contexts where sophisticated furniture and other equipment are available. Instead of strict alternatives or consecutive episodes of archival history, piles and furniture coexist in complex ways. Even in self-consciously archival modern bureaucracies, for instance, storage continues to happen *outside of* well-furnished spatial arrangements. Manuscripts were often kept *around* furniture, not on or in it, often on a long-term and effectively semi-permanent basis. This is beautifully captured in some of Jan Banning's recent photographs of bureaucrats from around the world (Fig. 1).

Fig. 1: Jan Banning, *India, Bureaucracy, Bihar*, in the artist's project 'Bureaucratics'; © Jan Banning 2004; <https://janbanning.com/2022/07/01/bureaucratics/> (accessed on 4 July 2025).

Despite the existence of complex archival furniture, heaping papers into large stacks remains popular. This may happen for a number of reasons. External piling often occurs when the space inside the dedicated armoire is full – such phenomena would then have to be considered, quite literally, as consequences of information 'overflow'.[13] Alternatively, extra-furniture piling is a temporary phase (which may, of course, turn semi-permanent when never undone), for instance, when manuscripts currently being processed are placed intermittently on tables, mobile trays or simply rest next to a user's working place. Piling was an often-unavoidable phase in the process of creating order. Many projects of distributing documents into containers or pieces of furniture, inventorying or indexing, and (re-)organising archival fonds necessarily involved acts of piling.[14] Creating piles, the activity of piling, was often a process of meaning-making, full of active decisions about what belongs and, thus, is to be placed where.

Piles or heaps of documents are not only coexistent with archival furniture, they may also be considered a consequence of the destruction of previously extant physical archival structures. Clay tablets appear in archaeological excavations as piles not because they had been stored in unordered or haphazard ways, but because their wooden support structures have vanished over time. Once orderly stacked and bound palm leaves may be encountered by (modern) readers as chaotic piles only because their bindings or threads have been lost. And the formless mass of written artefacts that late-nineteenth-century European manuscript-hunters described so colourfully for the genizot of Cairo and other Middle Eastern Jewish synagogues as well as for numerous Arab Christian monasteries, had entered their state of existence as formless piles only after periods of well-ordered archival conservation which will often have included storage in pieces of furniture.[15] Piles and heaps, in other words, should be considered less as alternatives tout court compared to furniture-based storage, but rather as potentially temporary periods in the longer life cycle of a written artefact's archival afterlife. Spatial arrangements lead from piles to files, and back from files to piles.

13 Blair 2010.

14 Friedrich 2018a.

15 A plethora of European descriptions of Egyptian and Middle Eastern 'chaotic' manuscript repositories in genizot and monasteries is available in the excellent monograph by Jefferson 2022. Recent scholarship has spent a lot of energy reconstructing the 'lost archives', whose well-ordered structures have disappeared once the manuscripts were deposited in the (Cairo) Genizah; in exemplary fashion, see Rustow 2020.

3 Interring written artefacts

Manuscripts were sometimes intentionally stored outside of (dedicated) furniture for the purpose of hiding them. Indeed, burying manuscripts is more than only a perennial trope of record- and writing-related storytelling.[16] Actual cases of hiding written artefacts in the ground or in architectural features of buildings are a recurrent feature of archival history. Several papyri were hidden in ancient Karanis, Egypt, by a manager of a modest *grapheion* under the threshold of a building (Fig. 2).[17]

Fig. 2: Hidden papyri in Karanis, Egypt, courtesy of the Kelsey Museum of Archaeology, Ann Arbor, MI.

Amalia Zomeño has documented several cases from southern Spain, where, during the Christian conquest in the fifteenth century, Muslim individuals hid caches of writings in the walls of their homes, thus, temporarily substituting a hole in the wall for a spot on the shelf. A fourteenth-century Ming prince hid a manuscript in the altar of a temple in his home city (the Leitan of Daning), thereby, providing it

16 Ancient Mediterranean sources are full of stories about miraculous 'finding' of books in and on the ground, in addition to finding them in 'libraries' or 'archives'; see Speyer 1970.
17 Claytor 2014, 161–164.

with exceptional protection when the city was burned in an episode of civil war around 1400.[18] Similarly, late-eighteenth-century Jesuits in Coimbra (Portugal) hid important documents in a church altar shortly before their order's suppression to make them inaccessible to readers other than themselves.[19] A private letter from the early 1600s came to light in 1836 from under a floorboard in an Oxford college.[20] On a much larger scale, some German firms in Saxony buried part of their archives in the ground to save them from incoming Soviet troops in 1945.[21] All of these cases, which happened in contexts where sophisticated storage technologies, including pieces of furniture, existed, demonstrate, if in strikingly extreme fashion, how individual acts of record-keeping happened not just 'outside' of furniture but in ways that intentionally disregarded the archival logic traditionally associated with furniture, i.e. the logic of accessibility, retrievability and availability.

4 Furniture for storing

Despite its continuing relevance, the practicability of piling up written artefacts without additional supportive spatial structures has narrow limits. Non-flat materials, including scrolls or irregularly shaped writing surfaces, such as clay tablets, are generally difficult to pile in principle. And even flat objects, whether individual pages or large codices, can only be piled up to certain height without a further supporting structure, not least, for reasons of instability. Moreover, piles of artefacts are complicated to browse through and use, as finding and taking out items near the bottom of the pile is difficult. For all of these reasons, archival practices in many contexts relied on additional artificial spatial structures to store records which are meant to increase the convenience of handling as well as improve protection in various ways. Furthermore, pieces of furniture were built and used to increase the storage space available: vertical extension of unsupported piles is often limited, therefore, the full height of spaces available in theory can hardly be used to the maximum extent without additional structures. Boxes or chests alone are insufficient to maximise the usage of extant space, as they, too, cannot simply be piled endlessly on top of each other without severely curtailing usability. If boxes can be stacked at all, such piles of archival boxes eventually require additional structures to guarantee handling. They have the advantage, however, of being moveable, allowing for relatively swift evacuation of archives in cases of emergency (see Case Study 4.1).

18 Wang 2012. This was the 'Thunder Altar'.

19 <https://jesuits.eu/news/416-historical-pieces-found-in-coimbra> (accessed on 28 May 2024).

20 Daybell 2016, 212.

21 This is what 'likely' happened; see Sichel 2021, 19.

Fig. 3: View into a modern archive, piles of boxes; © Hessisches Landesarchiv; photo: Nasser Amini, Hessisches Staatsarchiv Darmstadt.

Modern archives, for instance, often consist of rows of shelving upon which standardised special cardboard boxes (of which many types exist, see previous chapter) are piled – usually two to four pieces high – which hold several files each (Fig. 3).

4.1 Storing non-flat writings: Pigeonholes

Importantly, the physical shape of written artefacts determines significantly what kind of spatial structures will be optimal to enhance piling and placing options. Different types of written artefacts require different spatial structures for storage. This is particularly obvious historically in the case of round types of writing, especially rolls. Scrolls are not easily placed on flat surfaces. Instead, so-called pigeonholes have often been the preferred storage form for them. This practice is well-documented from Antiquity.

Specialised storage structures designed to accommodate the physical features of scrolls have existed, for instance, in Dura Europos (Syria). In this large palace, the Hellenistic state registry office sported a (unique) system of at least one hundred diamond-shaped compartments ('pigeonholes'), built into three of the four

walls of the archive room, and distributed in four rows (Fig. 4).[22] These compartments may have been created with rolls in mind, as their limited size – roughly 35 cm breadth – would have allowed storage of only a restricted number of (related?) roles in one place. Next to the compartments, brief indications of their contents were etched into the wall.[23] Based on the assumption that Greek archives would have also housed only scrolls, similar arrangements have been (speculatively) claimed for the Athenian Metroon of the Hellenistic era.[24]

A somewhat different option for storing rolls is depicted in a relief from Nijmegen from the time of Constantine the Great – now lost, but preserved in a seventeenth-century illustration – that shows a similar, yet larger and rectangular structure (Fig. 5).[25] Storing rolls also led to specific furniture in premodern Europe.[26] While many scrolls were simply stored in cupboards, early modern European archival furniture sometimes used purpose-built small compartments or drawers, effectively laying scrolls side by side, not on top of each other.[27]

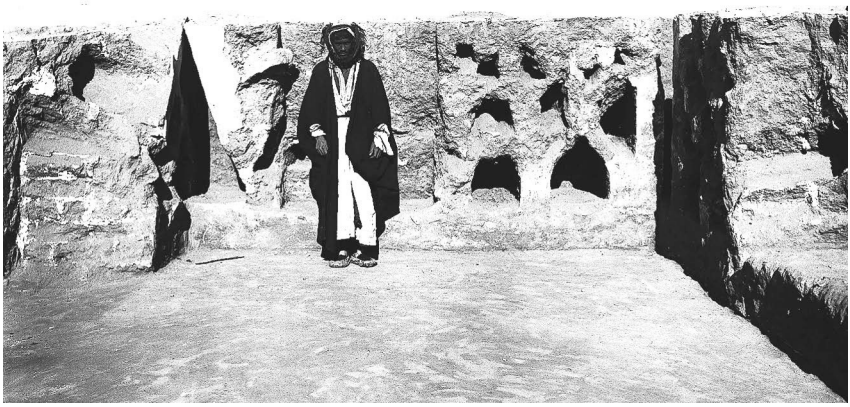


Fig. 4: Pigeonholes, House of Scribes from the South, photograph, Dura e-63; © Yale University Art Gallery, Dura-Europos Collection.

22 See Posner 1972, 130, citing verbatim the archaeological excavation report from 1944. Also see an updated description in Coqueugniot 2012, 97. Further important considerations based on literary sources are in Clark 1901, 33.

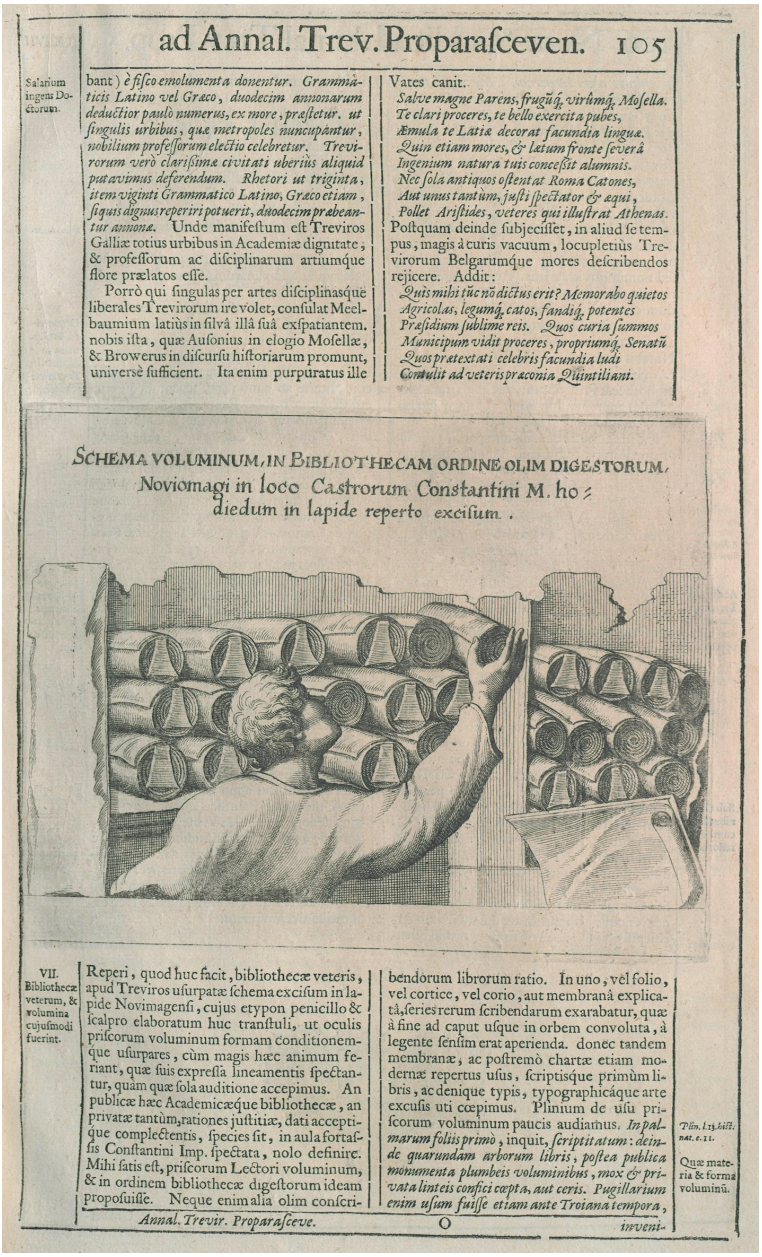
23 Coqueugniot 2012, 98.

24 Vanavanis 2002, 221–256.

25 According to Clark 1901, 35, all excavated pieces from Nijmegen have been destroyed.

26 On difficulties related to storing rolls, see Shirota, Holz and Peltzer (eds) 2020, 278.

27 On scrolls in cupboards, see Aston 2004, 242.



ad Annal. Trev. Proparaſceven. 105

Salarium ingens Doctorum.

bant) è fiſco emolumenta donentur. Grammaticis Latino vel Græco, duodecim annonarum deductior paulò numerus, ex more, præſtetur. ut ſingulis urbibus, quæ metropoles nuncupantur, nobilium profeſſorum electio celebretur. Trevirorum verò clariſſimæ civitati uberiùs aliquid putavimus deferendum. Rhetori ut triginta, item viginti Grammatico Latino, Græco etiam, ſiquis dignus reperiri potuerit, duodecim præbeantur annonæ. Unde manifeſtum eſt Treviros Galliæ totius urbibus in Academiæ dignitate, & profeſſorum ac diſciplinarum artiumque flore prælatos eſſe.

Porrò qui ſingulas per artes diſciplinasque liberales Trevirorum ire volet, conſulat Meelbaumium latiùs in ſylvâ illâ ſuâ exſpatiantem. nobis iſta, quæ Auſonius in elogio Moſellæ, & Browerus in diſcurſu hiſtoriarum promunt, universè ſufficient. Ita enim purpuratus ille Vates canit.

Salve magne Parens, frugũm, virũmq; Moſella.
Te clari proceres, te bello exercita pubes,
Æmula te Latiæ decorat facundia linguæ.
Quin etiam mores, & lætum fronte ſeverâ
Ingenium natura tuis conceſſit alumnis.
Nec ſola antiquos oſtentat Roma Catones,
Aut unus tantùm, juſti ſpectator & æqui,
Pollet Ariſtides, veteres qui illuſtrat Athenas.

Poſtquam deinde ſubjeciſſet, in aliud ſe tempus, magis à curis vacuum, locupletiùs Trevirorum Belgarumque mores deſcribendos rejicere. Addit:

Quis mihi tũc nõ dictus erit? Memorabo quietos
Agricolas, legumq; catos, fandiq; potentes
Præſidium ſublime reis. Quos curia ſummos
Municipum vidit proceres, propriumq; Senatũ
Quos prætexta tori celebris facundia ludi
Contulit ad veteris præconia Quintiliani.

SCHEMA VOLUMINUM, IN BIBLIOTHECAM ORDINE OLIM DIGESTORUM, Noviomagi in loco Castrorum Constantini M. hoc diedum in lapide reperto excisum.

VII. Bibliothecæ veterum, & volumina cujuſmodi fuerint.

Reperi, quod huc facit, bibliothecæ veteris, apud Treviros uſurpatæ ſchema excisum in lapide Novimagenſi, cujus etypon penicillo & ſcalpro elaboratum huc tranſtuli, ut oculis priſcorum voluminum formam conditionemque uſurpares, cùm magis hæc animum feriant, quæ ſuis expreſſa lineamentis ſpectantur, quàm quæ ſola auditione accepimus. An publicæ hæc Academicæque bibliothecæ, an privatæ tantùm, rationes juſtitiæ, dati acceptique complectentis, ſpecies ſit, in aula fortaſſis Conſtantini Imp. ſpectata, nolo definire. Mihi ſatis eſt, priſcorum Lectori voluminum, & in ordinem bibliothecæ digeſtorum ideam propoſuiſſe. Neque enim alia olim conſcribendorum librorum ratio. In uno, vel folio, vel cortice, vel corio, aut membranâ explicatâ, ſeries rerum ſcribendarum exarabatur, quæ à fine ad caput uſque in orbem convoluta, à legente ſenſim erat aperienda. donec tandem membranæ, ac poſtremò chartæ etiam modernæ repertus uſus, ſcriptiſque primùm libris, ac denique typis, typographicâque arte excuſis uti cœpimus. Plinium de uſu priſcorum voluminum paucis audiamus. *In palmarum foliis primò*, inquit, *ſcriptitatum: deinde quarundam arborum libris, poſtea publica monumenta plumbeis voluminibus, mox & privata linteis confici cœpta, aut ceris. Pugillarium enim uſum fuiſſe etiam ante Troiana tempora,* inveni-

Plin. l. 13. hiſt. nat. c. 11.

Quæ materia & forma voluminũ.

Fig. 5: Pigeonholes, Brower and Masen 1670, vol. 1, 105; public domain via Freiburger historische Bestände – digital, Albert-Ludwigs-Universität Freiburg, <http://dl.ub.uni-freiburg.de/diglit/brouwer1670-1/0141> (accessed on 26 September 2025).

Scrolls required special spatial arrangements not only because they are difficult to pile, but also in order to avoid flattening them, whereby their primary form of usage, i.e. unrolling them section by section, would become much more inconvenient or even impossible. The result of flattening scrolls can be seen in numerous examples from fourteenth-century Persian and Arab documents, now housed in the Ḥaram al-sharīf in Jerusalem. Originally rolled up, they were pressed flat at some point, a process still visible today due to the increasingly wider spaced horizontal fold-lines resulting. While it is unclear whether these scrolls were flattened intentionally (e.g. to allow storage in a codex- or file-related secondary arrangement, thus, accepting the reduced usability as a necessary trade-off) or unintentionally (e.g. as a result of careless storage), they, nevertheless, demonstrate, *ex negativo*, the importance of proper scroll-specific storage arrangements if the original material form was to be safeguarded. This may sometimes have been an acceptable option or, at least, have been tolerated (or maybe people just did not care).

Highly specific forms of storing at least one particular type of scroll shape Jewish manuscript cultures. Here, storing facilities were created in order to express the particular importance of the Torah scrolls. A dedicated piece of furniture, the so-called Ark of the Scrolls, became a key element of Jewish liturgical spaces. Evidence from early on suggests that Arks of the Scrolls were often designed as 'chests or an ark', either closed or not.[28] Early modern examples from Europe, for instance, an impressive ark from Modena from 1472, in fact, roughly resembled (archival) armoires used elsewhere for storing less sacred, but equally well-protected written artefacts.[29] That the ark is attributed to the artist Christoforo Canozzi da Lendinara (*c.* 1420–before 1490), who also worked on the *studioli* (cabinets) for the rulers of Modena, may explain the design parallels with other storage and study interiors. Sophisticated artistic traditions in the production of what could be described as particularly elaborate sacral furniture for storing written artefacts also developed elsewhere in Jewish Europe (Fig. 6).[30]

28 Hachlili 2000, 159.

29 The piece is today found in the Musée d'art et d'histoire du Judaisme, Paris. A detailed description (including images) with additional information – which also form the basis of all comments here – is available at <https://www.mahj.org/en/decouvrir-collections-oeuvres-clefs/torah-ark-aron-kodesh> (accessed on 17 August 2023).

30 For example, Yaniv 2017.

Fig. 6: Holy ark (*Aron ha-Kodesh*), Modena, 1472; carved and inlaid wood, 265 × 130 × 78 cm, Musée d'Art et d'Histoire du Judaïsme, Paris, on long-term loan from the Musée national du Moyen-Age, Paris © Grand-PalaisRmn (Musée de Cluny – musée national du Moyen-Âge) / Christian Jean, Gérard Blot.

4.2 Shelves

In contrast to rolled writings and scrolls, the most basic type of storage furniture for written artefacts that could lie flat or stand up is the shelf, whether attached retroactively to walls or as a preconceived element of walls. Shelves came into usage around the world (see Case Study 4.2). Some residences in ancient Assyrian cities had niches built into their walls which served as a kind of built-in shelves.[31] Wallis Budge, after having excavated Assyrian structures in Derr, confidently explained that in one room, many 'tablets were kept on shelves [...] we saw the tablets lying in situ on slate shelves'.[32] Elsewhere in the ancient Mediterranean niches, often created in a sequence, also played an important role as storage facilities.[33]

Wooden structures were attached to walls. Archaeologists have found evidence in ancient Ebla (modern day Syria), for instance, of shelves supported by wooden pillars anchored to the floor and attached to mud-brick walls as storage facilities for clay tablets, 'mostly arranged next to each other with their faces parallel to the wall, so as to form series'.[34] Such a way of storage would have made browsing tablets – and finding specific items – much more convenient than storage in closed containers. Ancient Greek archives also often used wooden shelves, whose planks were held together by nails.[35] Physical remains of such shelves were still visible in Herculaneum in the mid eighteenth century as results of their having been transformed into coal during Vesuvius's eruption in 79 CE. A famous German traveller, Johann Joachim Winckelmann, described vividly what he saw in 1762:

> Inside the wall, there was scaffolding [sic, 'shelves'] at the height of a man such as commonly seen in archives, and in the middle of the room there was another scaffolding similar or a table to hold writings. The wood of this structure was transformed into charcoal.[36]

31 Postgate 2013, 281. For a (private) Chinese eight-century parallel (though referring more to 'books' than to 'archives'), see Drège 1991, 164.

32 Clark 1901, 4, quoting a private letter by Wallis Budge to John Clark. Budge explicitly mentions that these tablets concerned archival material ('commercial documents relating to the local temple', Clark 1901, 4), not 'literary tablets', Clark 1901, 4.

33 Faraguna and Boffo 2021, 45.

34 Matthiae 1977, 251. More evidence of a similar kind is reviewed in Yeo 2021, 103–106.

35 Coqueugniot 2013.

36 'Tutto all'intorno del muro vi erano degli scaffali quali si vedono ordinariamente negli archivi ad altezza d'uomo, e nel mezzo della stanza v'era un altro scaffale simile o tavola per tenervi scritture, e tale da potervi girare intorno. Il legno di questa tavola era ridotto a carboni', quoted from Clark 1901, 25.

In order to maximise space, shelves were often stacked upon each other, creating the multilayered storage arrangements familiar to modern users. Such arrangements, meant to maximise storage spaces, can be found in many contexts, including the Muslim world. In one tenth-century Baghdad archive, 'the documents [...] almost reached the ceiling', perhaps by being placed on shelves (rather than simply being piled up).[37] Arrays of shelves also served as furniture for storing written artefacts in private homes, as becomes obvious from the illustrations in a Paris-manuscript of al-Hariri's *Maqamat* (see Case Study 4.3). In this case, the set-up of the shelves was designed to facilitate customary 'horizontal stacking' of writings.[38] The Ming dynasty also stored their famous Yellow Registers in a large archival facility, where every storage room was equipped with four rows of shelves, each row three shelves high.[39] Each row of shelves was protected by a 'wooden panel' placed on top, to protect documents from the elements – in addition to the building's roof, i.e. effectively adding a second protective layer. Shelf-like scaffolding structures meant to hold archival documents had also become a standard feature in premodern Europe. A typical example is the famous Spanish Crown Archive of Simancas, established gradually in the reigns of Carlos V and Philipp II in the sixteenth century. The work of several carpenters from 1586 to 1589, charged with installing many shelves along the walls of several archival rooms, including above the doors, is well documented.[40]

4.3 Cupboards, armoires and closed pieces of furniture

The shelves upon which written artefacts rested were often covered with doors, creating the closed cabinet or armoire. The Ancient Greeks called such closed containers *kibotós*, while in Latin such a piece of furniture was called an *armarium*, terms later sometimes used metonymically for 'archives'.[41] One such armoire is clearly visible on a relief from a sarcophagus dating roughly from the fourth century CE (Fig. 7).[42] After Antiquity, armoires reappear in European locations from the High Middle Ages onwards, at the latest, as storage facilities for records and manuscripts. Some fourteenth-century illustrations depict simple cupboards with two folding doors. Significantly, manuscripts in the form of codi-

37 Van Berkel 2014, 13.

38 Quote and discussion from Hirschler 2016, 70.

39 Wenxian Zhang 2008, 164.

40 Details in Grebe 2012, 170, n. 371.

41 On the Greek words, and their metonymic usage, see Faraguna and Boffo 2021, 769.

42 <https://www.metmuseum.org/art/collection/search/468268> (accessed on 29 May 2025). Further examples of late antique book-armoires are discussed and reproduced in Ramirez 2009.

ces were stored in these receptacles lying flat, not just standing upright. In effect, such storage arrangements were not entirely dissimilar from the storage of codices in a box or chest, also on display in the same image (Fig. 8).

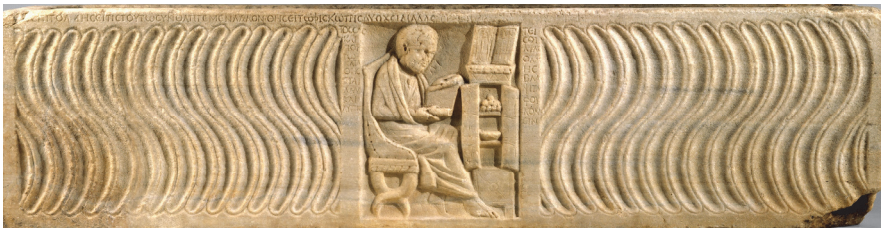


Fig. 7: Sarcophagus with a Greek Physician, early 300s, made in Ostia, Rome, marble, 21¾ × 23¼ × 84⅞ in. (55.2 × 59.1 × 215.6 cm), New York, NY Metropolitan Museum of Art, inv. 48.76.1; public domain: <https://www.metmuseum.org/art/collection/search/468268> (accessed on 4 July 2025).

Fig. 8: Johannes Andreae, Novella super Sextum, northern Italy, *c.* 1340–1350, miniature attributed to Maestro della Crocifissione D, active in Bologna *c.* 1325–1340, Cambrai, Bibliothèque municipale, ms. 0620 (0572), fol. 1r (detail); © Institut de recherche et d'histoire des textes – Centre national de la recherche scientifique.

While initially, perhaps, being used primarily for administrative records rather than legally important muniments, the latter still being deposited primarily in strongboxes, shelves, armoires and cupboards became dominant for all kinds of records by the early sixteenth century, at the latest.[43] Their rise in Europe clearly mirrors the growing presence of armoires in other types of collections, including the nascent *Wunderkammern* and other museum-style arrangements.[44] Extant examples of early modern archival armoires can be found in the city archive of Lüneburg (Fig. 9), with built-in armoires from the middle of the fifteenth century, or at the castle of Ronneburg (Fig. 10), where an archive armoire from around 1520 composited of drawers earlier used for a different archive is exhibited.

Fig. 9: Archival armoire, Hansestadt Lüneburg, Rathaus, Altes Archiv, Stadtarchiv Lüneburg, BS, II-b-4-17-a.

43 Chronology according to Aston 2004, 242.

44 Spenlé 2011, 69–84; Te Heesen (ed.) 2007. For a very impressive depiction of armoires in natural collections, see Mercati 1717. Many thanks to John Dillon for the reference.

Fig. 10: Archival armoire, Burg Ronneburg; public domain; photo: Cherubino, CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Burg_Ronneburg_Schreibstube_Archivsschrank.JPG> (accessed on 26 September 2025).

Armoires also became popular for storing written artefacts outside of Europe. A special archival repository in Qing-era China, dedicated to the preservation of the regularly updated imperial genealogies (Jade Registers; *Yudie* 玉牒), also came to consist of more or less uniform armoires. While the massive tomes of genealogical charts, which grew in size from update to update, were initially stored in boxes or chests, the genealogies came to be stored in cabinets from the eighteenth century onwards for reasons of weight and size. According to the division of the imperial genealogy in red and yellow sections, covering the close and more distant lineages respectively, two sets of armoires were also produced, one painted in red, the other in yellow. Judging from an eighteenth-century report, the armoires were massive, each seven feet high, five feet wide and a little over three feet deep.[45]

45 Illustrations appear in Guojia dang'an ju zhongyang dang'an guan 國家檔案局中央檔案館 2016, 58–61. See also an illustration at <http://axjlzp.com/newn179.html> (accessed on 29 May 2024).

Fig. 11: An example of a manuscript cabinet dated 1777 now exhibited in the manuscript reading room of the National Library of Thailand, Bangkok, dimension: height 171 / width 113 cm; photo: Peera Panarut.

Fig. 12: Detail of Fig. 11.

Thai manuscripts were also frequently stored in closed cupboards, often with two doors. Hundreds of examples from the eighteenth and nineteenth century survive, and they routinely feature elaborate and highly sophisticated decorative embellishment. In at least one instance, it is documented that such a massive armoire was paid for and donated by a private individual to a (unidentified) monastery for the purpose of merit fulfilment (Figs 11 and 12).[46] While no original examples survive from outside monastic provenance, it is, nevertheless, clear from catalogues and other written sources that roughly comparable armoires would also have been at use in the Royal Grand Palace of Bangkok, storing written artefacts similarly in an administrative and governmental context.[47]

46 Kongkaew Weeraprachak (ก่องแก้ว วีระประจักษ์) 2007.
47 Panarut 2022.

4.4 Archival furniture and the spatialisation of epistemic orders

An armoire is much more than simply a very large, upright standing box.[48] Differing from boxes, armoires open to the front, not the top. Moreover, armoires usually contain shelves (of various heights) or any combination of shelves, compartments, drawers and other substructures, thus, allowing for the customised distribution of storage spaces (see Case Study 4.4). Such complex internal substructuring of spaces was not common in chests, even the largest ones. An armoire's internal compartments were sometimes called *capsae* or *locellus*.[49] In fact, early modern European archival thinkers discussed extensively the advantages and disadvantages of certain internal designs of archival armoires.[50] Complex internal segmentation of archival furniture came to be considered a crucial tool of manuscript management. Early modern secretaries, for instance, were

> to have a closet, with Cubbardes of drawing boxes and shelves, therin and upon to place in dew order, all letters received from the Kinges Majestie, from the Lords of the privy counsell, and from other Noble men.[51]

Compartmentalised furniture shaped archival practices not only in state bureaucracies, but also in private businesses. A famous depiction from 1517 of the globally active Fugger firm's administrative head office, for instance, shows this clearly: it features an archival armoire with numerous drawers, each dedicated to paperwork concerning one city in which the firm was active (Fig. 13). Structures of business operations were mirrored in structures of paperwork, which, in turn, manifested themselves materially and spatially in the structure of this early purpose-built piece of administrative furniture.

48 While boxes may have been occasionally produced in Europe so as to be stackable, including opening to the front, by no means all types of chests or boxes where capable of this. Moreover, boxes used for storing written artefacts in numerous manuscript cultures were not rectangular at all, for instance, in Thai and Lao contexts, where the bottom of boxes was usually smaller in size than the top, giving these containers an inverted pyramidical form. Stacking such containers would have been difficult or impossible.

49 Aston 2004, 243.

50 Friedrich 2018b.

51 Quotation from Richard Braithwaite's secretarial manual, quoted in Daybell 2012, 219.

Fig. 13: Office of Jacob Fugger; with his main accountant Matthäus Schwarz, 1517; © Herzog Anton Ulrich-Museum, Braunschweig; photo: Claus Cordes.

The Fugger case is famous, but no exception. Archival armoires, if purpose-built, were intentionally also created with several independently accessible compartments to enhance their organisational capacities elsewhere.[52] The more fine-grained the spatial compartmentalisation was, the more necessary were the external references to what they contained. As is evident for the Fugger cabinet, short summaries of what individual drawers contained were externally attached to guarantee quick access. In medieval Florence, for instance, the city's record-keeper was 'to attach a note telling what is in each compartment above each compartment' from 1289 onward.[53]

On a grander scale, entire pieces of archival furniture (and not just individual compartments or drawers) were used to identify and segregate well-defined corpora of writings. The colouring of armoires was often used as a key identifier in such cases. From 1799 onwards, the Bayerisches Hauptstaatsarchiv distinguished four of its major finding aids and, by implication, also their respective documentary fonds, with a colour scheme: 'Kasten Schwarz', 'Kasten Blau', 'Kasten Rot' and 'Kasten Grün'. Elsewhere, even the archival armoires themselves were distinguished by their external colour, for example, in Gotha, where a 'white cabinet' was casually referenced as containing certain types of documentation.[54] In such cases, the furniture in which documents were stored became part of a document's 'call number'. In the Munich case, while the colour and style of the actual armoires referenced by the 'black' or 'blue' inventories are unknown, the colour scheme in part remains a key element of the official call numbers of the documents to this very day.

While the role of archival furniture (and its parts) for the structuring of archival fonds was widely acknowledged and implemented in practice, this was, nevertheless, an ambivalent and sensitive topic. Using external surfaces of armoires to identify their contents not only facilitated authorised document retrieval, but also enabled unauthorised access. As a compromise, therefore, specialists suggested using abstract signs (i.e. numbers, letters or symbols), which remained meaningless to outsiders, rather than keywords as external call numbers.[55] Numerous extant pieces of furniture from early modern Europe still feature such abstract notations on the outside, differing in this respect from the otherwise similar case of the Fugger armoire.

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52 Positively reported, for the case of the Reichsarchiv in Mayence, in Heiliger 1752, col. 899.

53 Quoted from Casanova 1928, 328: 'De foris quoque super qualibet armarii camerula infigat cedulam exprimentem quid continetur in illa.'

54 Friedrich 2018b, 103.

55 Heiliger 1752, col. 900. The author preferred nondescript abstract numbers on the outside, while recommending that one should place on the inside of the doors a 'table made from sturdy paper detailing the compartments inside this part of the [multi-door] armoire and explaining which contents are housed under which number'.

Fig. 14: Archival armoire from the monastery of Heiligkreuztal; © Staatsarchiv Ludwigsburg.

A piece from the monastery of Heiligkreuztal, for example, clearly displays such exterior signs, thus, indicating what could be found where (Fig. 14).

Debates about the conflicting goals of secrecy and accessibility also affected ideas of archival furniture design on an even more fundamental basis. Experts discussed the advantages and disadvantages of having armoires with closed doors along these lines. An armoire with a closed door may hide its contents, perhaps even locking its documents away, thus, enhancing secrecy, especially if no external references were given. From a user's perspective, the same doors, however, may be a handicap, especially if the piece's contents are not properly described externally – one needs to open first, before being able to inspect what is inside. Thus, archival users in early modern Germany sometimes expressly suggested that doors should be removed because they 'blocked the aisles' if open and required the users to have multiple keys always ready at hand.[56] In brief, doors made using an archive inconvenient. Immediate accessibility and visibility of archived documents, by contrast, was user-friendly, and it was an absolute condition of usability in those cases, for instance, in ancient Greece, where meta-documentation, such as inventories or lists of archived materials, were unknown.[57] Again, compromises were sometimes found. Some early modern European archival armoires were, for instance, fitted with glass doors (e.g. in the Spanish Archivo General de Indias de Sevilla, 1784/1785) or other types of transparent covers, thus, combining the effects of closing, and locking, with the possibility of instantaneous inspection (Fig. 15).[58] Sir Christopher Wren once spoke positively of such 'neat Lattice dores for archives'.[59]

56 'nur möchten die Thüren von den Schränken weggenommen werden: dann dieselbe in denen Gängen nur ein beschwerliches Gesperre machen, wie sie dann auch zu nichts dienen zumalen die Schlüssel dazu nicht mehr vorhanden', Wolfenbüttel, Niedersächsisches Landesarchiv Wolfenbüttel, 36 Alt Nr. 112.

57 On the key role of visually intuitive spatial arrangements as key forms of document organisation especially in Greek poleis, where 'era sconosciuto l'uso di cataloghi', see Faraguna and Boffo 2021, 508.

58 On Sevilla, see Schulz-Dornburg and Zimmermann 2020, 32 and *passim*.

59 Quoted in Clark 1901, 280, from a manuscript memorial by Wren.

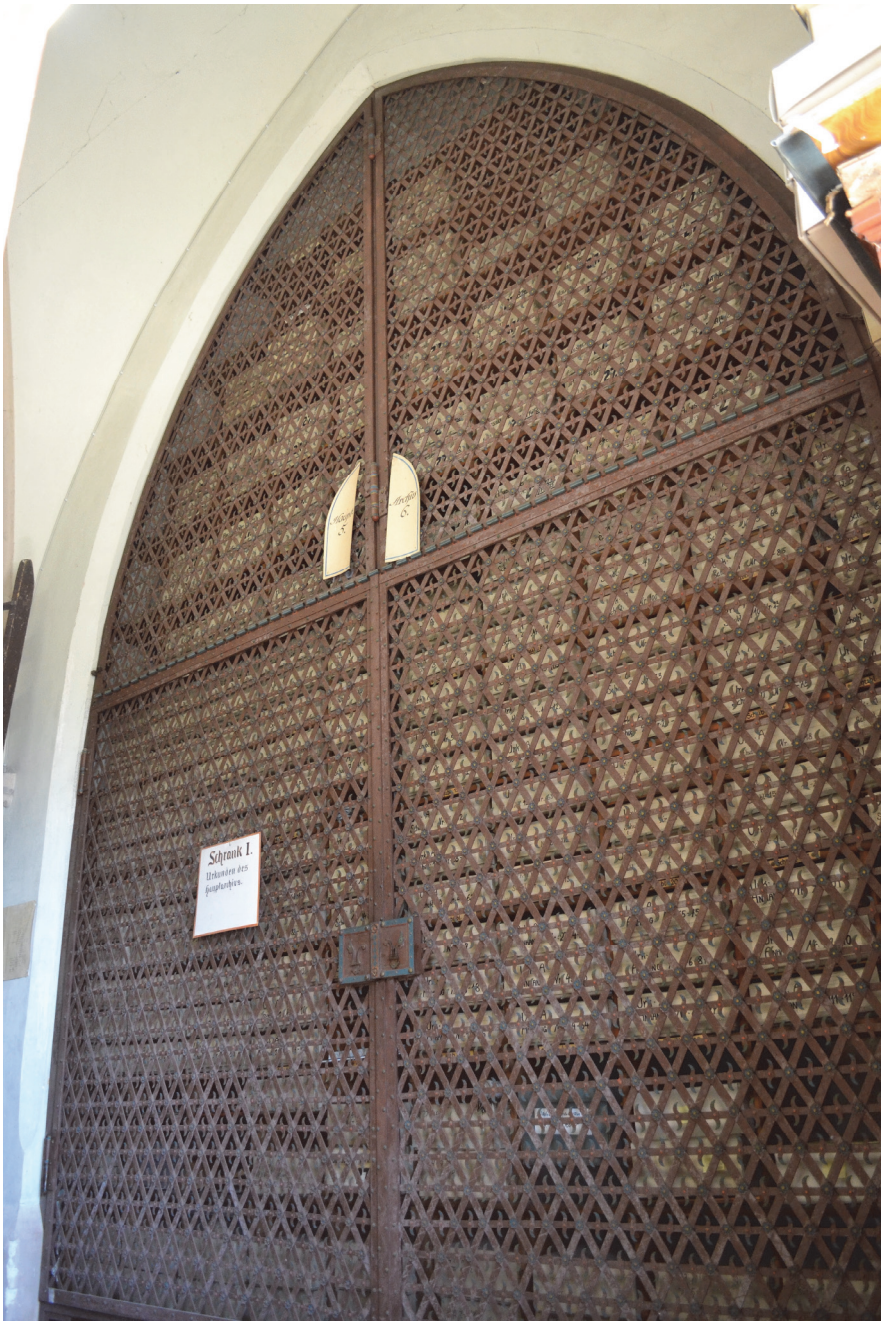


Fig. 15: Archival armoire with transparent covers; © Schloss Braunfels.

Permeable covers for archival storage furniture had yet another advantage, as archivists realised from early on. Wire mesh or lattice doors allowed the circulation of fresh air, and this greatly helped prevent dampness, moisture and mould.[60] Yet, again, this was no unambivalent advantage. If permeable doors helped preservation by avoiding mould and moisture, they also contradicted that goal by facilitating access for mice, rats and other vermin. Therefore, the various points to consider were hard to align even in the context of early discussions about the impact of archival furniture design on the material preservation of documents. Creating archival armoires and shelves was a complex process, requiring the careful calibration of numerous, potentially contradictory goals and purposes.

5 Furniture for using archived writings

Spaces of archival storage were not necessarily also preferred locations of archival usage. In fact, a majority even of professional premodern repositories may not have had dedicated reading facilities on site.[61] However, exceptions exist. Sources from Han-era China, for instance, indicate occasional usage of documents in their storage locations:

> Il y a les dépôts de documents et d'archives du Tianlu et du Shiqu. Des gens illustres y étudient l'antiquité avec application. Des lettrés célèbres y transmettent leur enseignement et discourent sur les Six Arts, liuyi; ils examinent et recueillent ce qui est semblable et ce qui est différent.[62]

Yet, even if on-site usage is unlikely or simply undocumented, archives needed additional types of furniture to be functional. From a long list of types of archival furniture not related to storage (which would, for example, also include stoves or trolleys), two cases are selected here for brief discussion: tables and ladders.

One type of rarely mentioned, seemingly mundane, yet, utterly fundamental furniture in the context of successful archival work are tables (see Case Study 4.5). Seemingly ubiquitous, they are not frequently discussed, but their importance is hard to miss. One of the rare, more explicit early descriptions from China comes

60 Gatterer 1768, 86.

61 On the absence of proper reading rooms in Sevilla, see Schulz-Dornburg and Zimmermann 2020, 32.

62 Ban Gu, quoted in Drège 1991, 23.

from a ninth-century bibliophile, Zhang Yanyuan, who mentioned in detail what kind of reading equipment was required for perusing valuable scriptures:

> À la maison, il faut disposer une table plane avec une couverture et l'essuyer avant de dérouler et déployer (un rouleau) pour le regarder. Pour un rouleau de grandes dimensions, il vaut mieux faire fabriquer une étagère et le suspendre pour le regarder.[63]

If proper tables were unavailable or unsuitable, alternatives were possible. Various sources from early modern Europe attest, for instance, that archival chests were sometimes mounted on high stiles so that their sides could be used as a support for heavy codices.[64] Users of archival documents may often have preferred the usage of moveable, inclined bookstands on the top of tables, as are visible on many depictions of readers and writers in premodern Europe.[65] Tables or desks, in quite a few contexts, also featured lockable compartments or drawers where individuals could store private written artefacts, such as confidential correspondence.[66]

Another type of tool, easily overlooked, yet, equally important in archival contexts, are ladders. As the number of documents grew, archivists and producers of records sought to maximise the space available: they built shelves and armoires that reached the ceiling of sometimes very high rooms – in the case of Simancas quoted above, for instance, including even the spaces above the door-frames.[67] Top shelves could not be reached easily. Ladders became a necessary piece of inventory for these archives. The illustrations in the Parisian manuscript of al-Hariri's *Maqamat* mentioned above also show the use of a ladder in Muslim libraries.[68] Additionally, entry into the Damascus Qubbat al-khazna, a major repository of written artefacts (if not, perhaps, an 'archive' properly speaking) in the Umayyad Mosque, would only have been possible with the help of a ladder.[69] The existence and necessity of a ladder is (disapprovingly) mentioned, for instance, in a 1728 account of University College's archive in Oxford.[70] Similarly disappointed was one user in 1725 when saying that many of the registers of the Parliament de Paris could only be reached via ladders.[71] Obviously, ladders were considered as a necessary evil resulting from the availability of only limited archival spaces which

63 Drège 1991, 163.
64 See the image in Petroski 1999. Further examples in Aston 2004, 239.
65 Petroski 1999, 36.
66 Examples from early modern England in Daybell 2012, 220.
67 Grebe 2012, 500.
68 Hirschler 2016, 91 (with plate 3).
69 D'Ottone Rambach, Hirschler and Vollandt (eds) 2020.
70 Aston 2004, 246.
71 Friedrich 2018b.

made it necessary to fill rooms to the maximum. Presumably, an ideal archive, by contrast, would have been so spacious as to not require stocking documents up to the ceiling or above tall doors.

Other tools for improving access to written artefacts were more sophisticated. Craftsmen in East Asia and Europe produced rotating pieces of furniture in order to enhance the access to written artefacts. Buddhist monasteries in China, Korea and Japan feature so-called 'rotating *sūtra* repositories' (Chin. *lun zang*, Jap. *rinzô*, Kor. *yunjang* 輪藏). Allegedly invented on the Chinese mainland by Fu *dashi* 傅大士 ('Great scholar Fu', 497–569), these structures revolve around a central axis and hold bookshelves containing the corpus of canonical scriptures, amounting to several thousand codicological units, typically in a woodblock-printed edition. A *rinzô* is located within a monastic compound or housed in a hall dedicated to that specific purpose. It is built of wood, raised on a dais and sheltered by a roof (even when located inside a hall). It is several metres tall and octagonal in shape. Its original function was to facilitate access to the different parts of the extensive Buddhist canon, but both the form and the rotation itself are also rich in additional symbolic meaning. The eight sides of the octagonal represent the cardinal and diagonal directions, implicating the ubiquity of the Buddha dharma (i.e. the Buddhist teachings). Moreover, the rotational functionality resounds with religious meaning: The proclamation and spread of the Buddhist teachings is known by the metaphor of 'turning the wheel of the dharma' and, by extension, the rotation of devotional objects hold the very same significance in a condensed form (Tibetan prayer wheels are probably the most well-known example). The *rinzô* can be employed in an analogous fashion for East Asian Buddhists: the karmic merit gained by one rotation of the *sūtra* repository is tantamount to that of having read the entirety of the Buddhist canon.

Rotating machines, though not turning horizontally but vertically, were also in fashion in premodern Europe, though embedded with much less charisma. Rotating book wheels were available in several Central European reading rooms.

Agostino Ramelli depicted an (idealised?) version in a sixteenth-century book (Fig. 16), and roughly comparable pieces of furniture from the seventeenth or eighteenth century still survive in Wolfenbüttel or Regensburg (Fig. 17).[72] These machines remained popular beyond the baroque era. An elegant, neoclassical example from 1792 is still to be found, for instance, in the Palazzo Reale of Naples.

72 See, e.g., Considine 2016.

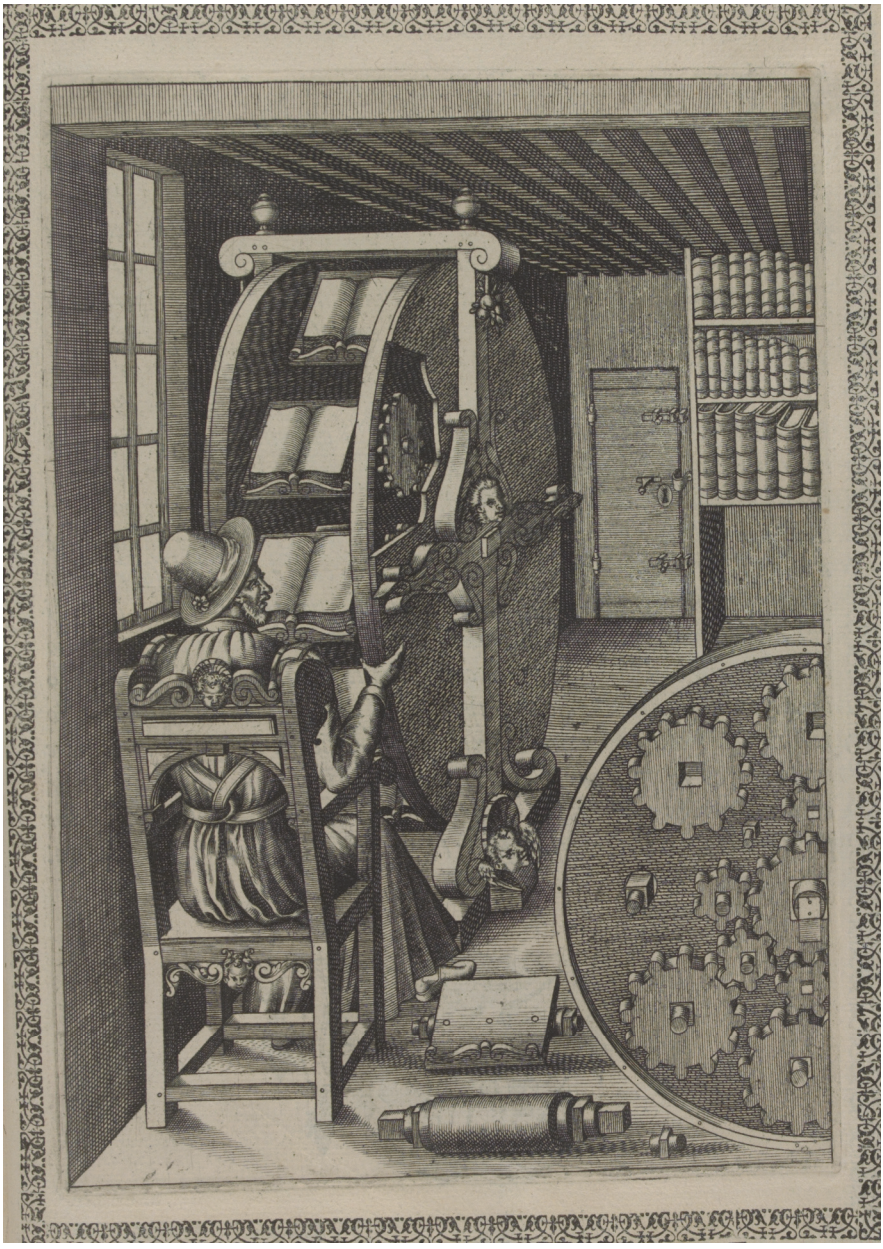


Fig. 16: Agostino Ramelli, *Le diverse et artificiose machine*, Paris, 1588, [16], 338 leaves: ill., port; 38 cm (fol.); © Library of Congress, Rare Book and Special Collections Division, <https://www.loc.gov/resource/rbc0001.2008rosen1086/?sp=670&r=-0.89,-0.12,2.781,1.495,0> (accessed on 4 July 2025).

Fig. 17: The book wheel from St Emmeran, Historisches Museum Regensburg; © Museen der Stadt Regensburg; photo: Staatliche Bibliothek Regensburg, T. Holzer.

An even larger archival machine imagined by François-Jacques Guillote, in 1749, when thinking about how to improve the police services in the city of Paris was of a more utopian nature (Fig. 18). Among many other suggestions, several of which touched upon the police's management of files and archives, he also dreamed up a machine to facilitate and speed up the retrieval of dossiers from the police archives. A drawing of this arrangement was subsequently presented to the French king.[73]

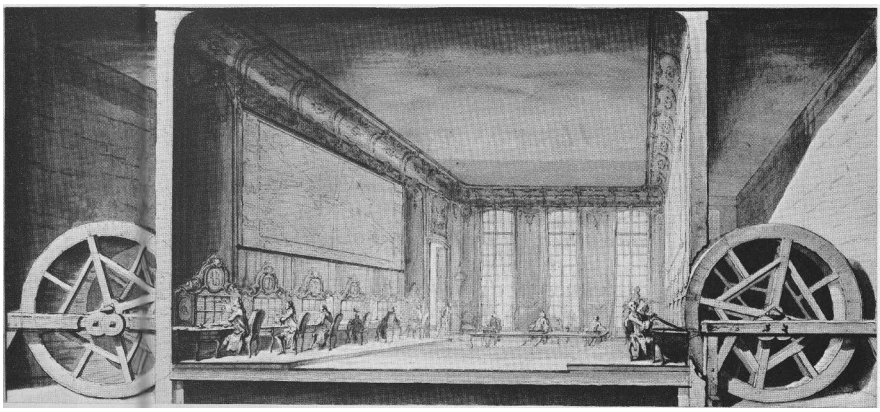


Fig. 18: Drawing by Gabriel de Saint-Aubin in Guillaute 1974, 65.

While purely imaginative, such phantasies of archival machinery, nevertheless, indicate how deeply concerned early modern European writers on archives and paperwork were with the role and development of efficient equipment, furniture and spatial arrangements in the contexts of record-keeping and -using.

6 Creating archival furniture: Production, décor design

There is little explicit information available detailing the production processes of archival furniture in explicit terms for most parts of archival history. We can often only judge the intentions and production practices retrospectively from

73 Guillaute 1974.

extant objects or their literary descriptions. Differing significantly from libraries and natural collections, which were intentionally designed as accessible spaces for a public of (a few select) visitors, archival interiors were, by and large, not intended as representative spaces; hence, their artistic adornment usually remained relatively simple and under-conceptualised. As much of (non-elite) furniture in Europe well into the seventeenth century was probably built by carpenters rather than by more refined craftsmen (such as joiners), household items were generally only of moderate artisanal elaboration – the few written artefacts stored in everyman's houses, for instance, were presumably kept in relatively roughly hewn pieces.[74]

It is, however, obvious that storage furniture for written objects was sometimes designed with great care and at great cost. Sima Qian (*c.* 145–90 BCE), for instance, reports for Chinese archives of the Warring States era that 'charters and archives (*tuji*) and jade tablets (*yuban*) [were] preserved in golden coffers' in the 'stone hall' of Mingtang.[75] From a later era, the reign of Yangdi, second emperor of the Sui dynasty (gov. 604–618 CE), a description of the interior of the imperial library survives, which indicates that written artefacts were stored with great splendour:

> Les exemplaires principaux étaient magnifiquement montés et rognés, avec des bâtons précieux et des couvertures de brocart. Devant le palais Guanwen se trouvait la salle des écrits aux quatorze travées. Les fenêtres, les coussins des bancs, les tentures des armoires, tout était d'une beauté exquise. Toutes les trous travées s'ouvrait une pièce. Des portes pendaient des tentures de brocart, au-dessus desquelles se trouvaient deux immortels volants.[76]

74 Emmison 1976, 16–23.

75 *Shiji* ch. 130, 3319, quoted (in French translation) in Drège 1991, 21, n. 27 ('coffres d'or').

76 Drège 1991, 46.

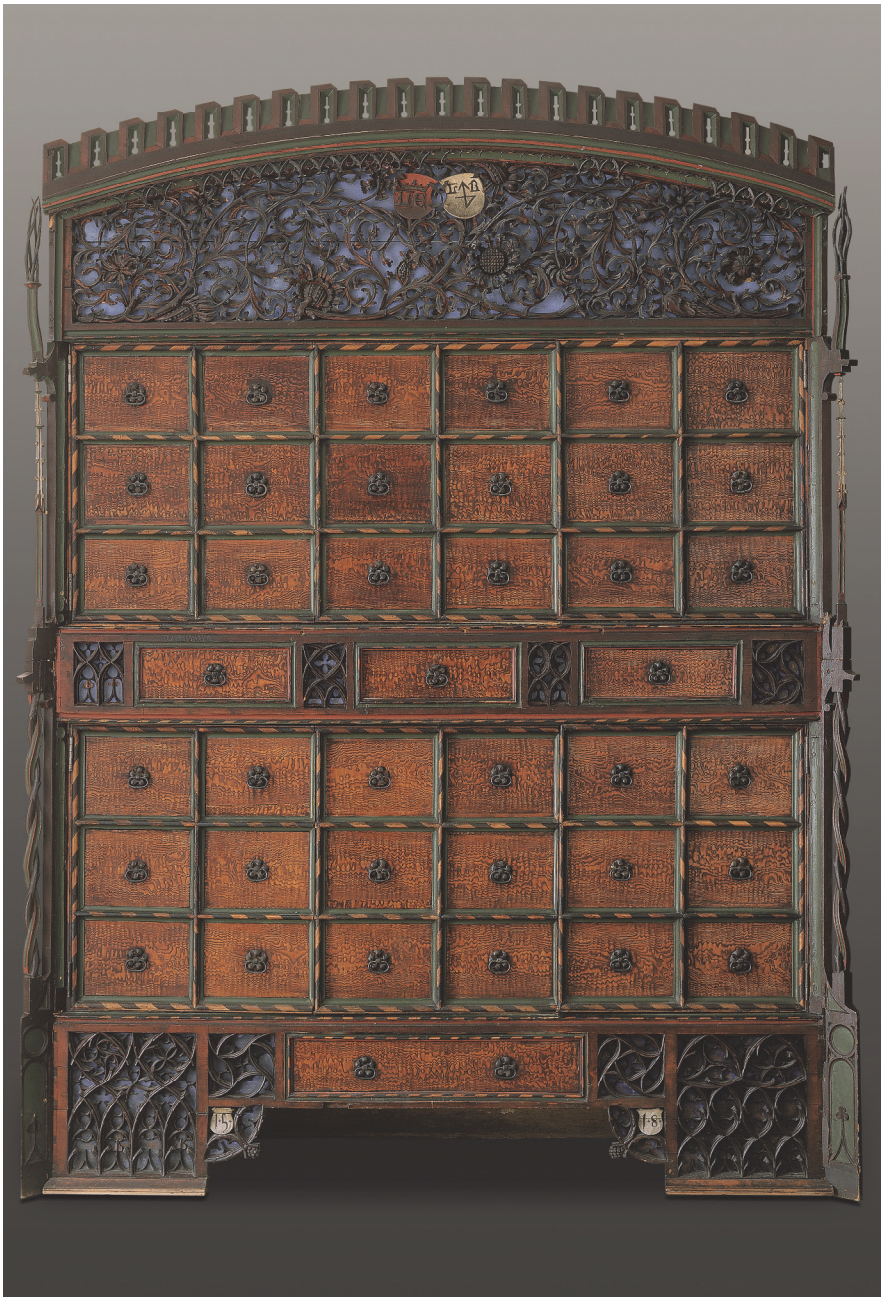


Fig. 19: Archival armoire Baseler Domstift, Basel, 1518; © Historisches Museum Basel, Peter Portner.

Archival furniture in Europe was also occasionally adorned by elaborate artistic details, thus, adding decorative elements to the predominantly functional intention (Fig. 19). More than a few medieval and early modern pieces of archival furniture feature elaborate carvings or paintings.[77] Yet, the application of aesthetic considerations to archival furniture was not a given and, in fact, often entirely rejected. Archives were predominantly functional affairs, some early modern archive owners insisted. One German prince, for instance, when thinking about how to improve his archival facilities in the eighteenth century, took care to make explicit his understanding that archives, including their interiors, did not need to be 'magnificent and valuable', but only 'solid and indestructible'.[78] While exceptions are more common than may be thought from such statements, ideas of soberness, constraint and economy, nevertheless, dominated a lot of thinking about the external décor of archival infrastructure.

In a few cases, however, uncommonly elaborate pieces of furniture were created for archival purposes. Such exceptional pieces illustrate particularly well how archival furniture may express and be seen (rightly or wrongly) as expressing certain archival attitudes. A prominent example is the famous Armoire de Fer of the French king Louis XVI, which was the locus of an important scandal precipitating the events of the French Revolution in late 1792, leading to the king's decapitation.[79] Revolutionaries claimed that the king had asked a local locksmith a few months earlier to build an 'iron chest' in the Palais des Tuileries – hidden behind a wooden panel and an additional iron plate for protection. The king's allegedly most secret private archive was violently opened in the hope of finding compromising materials. Even though the armoire's actual contents were of limited importance in the ensuing political affair, this piece of archival furniture acquired overblown symbolic importance as a token of the Ancien Régime's alleged culture of political secrecy and royal seclusion and came to embody the monarchy's tradition of hiding away problematic evidence.

77 Grebe 2012, 668 and *passim*, notes that the Spanish kings showed considerable concern for artistic decoration of their newly renovated central archive.

78 Josef W. E. von Fürstenberg: 'Unser Meinung ist nicht ein prächtig- und kostbahres Gebäu zu einem Archiv auszuführen, sondern Wir verlangen lediglich ein solid-dauerhaft- und vom Feuer wohl verwahtes Gebäu', quoted in Wilts 2019, 189.

79 Freeman 1989.

Fig. 20: Skeleton of Mirabeau coming out of the Armoire de Fer, Bibliothèque nationale de France, Paris; source: Gallica / Bibliothèque nationale de France, <https://gallica.bnf.fr/ark:/12148/btv1b84116867> (accessed on 26 September 2025).

A contemporary print depicted this piece of archival furniture as containing the proverbial 'skeleton in the closet', here in the shape of Count Mirabeau, accused of conspiring with the king against the revolution (Fig. 20). Later, the discovery

of this archival armoire became the subject of a popular play (George Colman, *The Iron Chest*, 1796), made an appearance in Wordsworth's poetry and is even referred to in George Eliot's *Middlemarch* from 1871.[80] Exquisitely crafted pieces of specialised archival furniture became symbols of a detested political regime and emptying out such archive closets became an emblematic revolutionary act. As the French minister of the Interior, Jean-Marie Roland de La Platière stated when presenting his findings to the National Convention on 20 November 1792, it was not only the 'nature' of the documents that made them suspect, but also, and particularly, 'the location where they were found'.[81]

Fig. 21: Armoire de Fer, Grands Dépôts, Archives nationales, Paris; CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Archives_nationales_(Paris)_L%27armoire_de_fer_ouverte_(Grands_D%C3%A9p%C3%B4ts).png> (accessed on 26 September 2025).

80 Davies 2002.

81 'Je viens rapporter à la Convention Nationale plusieurs cartons remplis de papiers qui, par la nature et par le lieu où ils ont été trouvés, m'ont paru de la plus grande importance', see *Réimpression de l'ancien Moniteur* 1840, 530.

Yet, the creation of iron chests could also be an emblem of revolutionary activities. Shortly before Louis's Armoire de Fer was discovered, the revolutionary *constituante* also ordered the construction of such an armoire in 1790. This large piece of furniture is still visible today in the French National Archives (Fig. 21). This iron chest is protected by a complex locking mechanism, involving several keys.[82] A detailed plan from 1849 indicates the multitude of internal compartments and their organisational function, clearly dividing extant documentation into more or less coherent groups (Fig. 22).

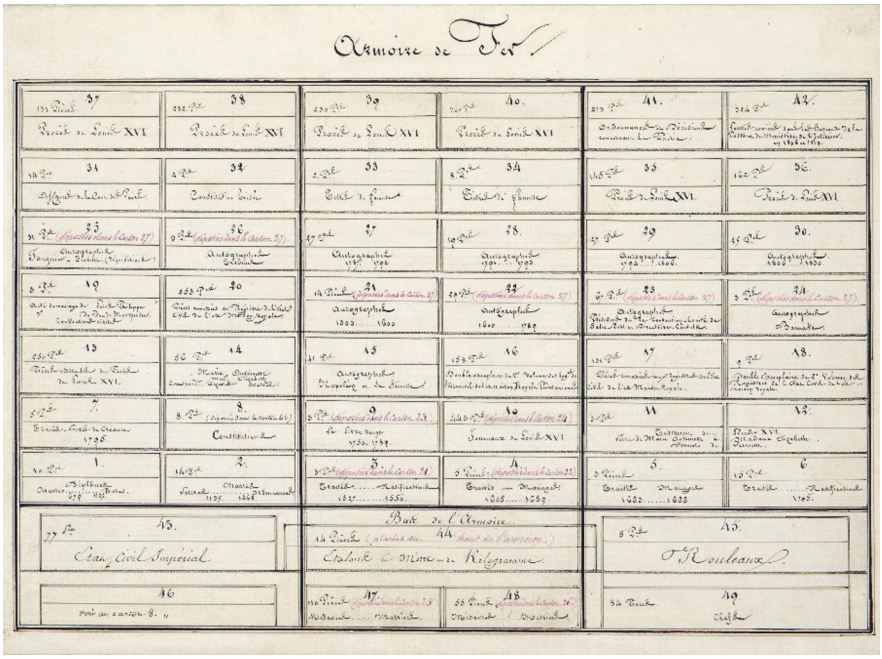


Fig. 22: 'Relevé synoptique des cartons contenus dans l'armoire de fer', Archives nationales, Paris; public domain, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Relev%C3%A9_synoptique_des_cartons_contenus_dans_l%E2%80%99armoire_de_fer-_Archives-nationales-_AB-XII-3.jpg> (accessed on 26 September 2025).

82 See a detailed description of the restauration works in 2019, including additional images and schemata, at <https://latribune.lazardfreresgestion.fr/armoire-de-fer/> (accessed on 17 August 2023).

7 Industrial furniture for the professionalised archives of the nineteenth, twentieth and twenty-first centuries

The later nineteenth century was also a turning point in archival history concerning archival furniture. Industrialisation changed the ways in which (archival) furniture was produced profoundly, and the gradual professionalisation of archives and archivists not only expanded the demand for new archival furniture, but also stimulated a critical reflection about ideal forms of storage and created new concepts of how to preserve written artefacts. Moreover, advances in science improved understandings of the perils that led to manuscript decay. These developments – first visible in Europe and later in the colonial and postcolonial world – led to the rise of mass-produced furniture specifically designed for (archival) storage purposes. This included, for instance, what may be considered the most iconic piece of archival furniture: the filing cabinet.[83] The latter relied on a vertical storage of loose sheets 'standing' upright.

This new type of archival equipment, invented in North America in the 1890s after a lengthy period of experimentation with horizontal flat files and filing furniture, was soon being produced on an industrial scale in numerous places, including, for instance, in Strasbourg (Fig. 23).[84] The new storage technology quickly caught on worldwide. In the United States several government agencies started using filing cabinets in 1906. Eventually, these new and 'modern' storage technologies, combined with ideas of bureaucratic procedure and state control, were also exported into the various European colonies and, thereby, acquired global reach.

JoAnn Yates and, more recently, Craig Robertson have demonstrated that the new type of archival storage furniture must be seen as an expression and facilitator of wide-ranging shifts in the conception and usage of information in typically modern, office-based bureaucratic administrations.[85]

83 Robertson 2021.

84 For details of the development, including specifics on previous horizontal filing, see Yates 1982, esp. 12–14.

85 Yates 1982; Robertson 2021. See also Gardey 2008.

Fig. 23: Strafor commercial, 'Les Forges de Strasbourg', Pub. Ch. Lemonnier, online via <https://www.industrie.lu/ForgesDeStrasbourg.html> (accessed on 18 August 2023).

Furthermore, the new type of storage furniture was closely intertwined with aspects of gender relations and capitalist ideas about administrative efficiency, as the adjacent commercial pamphlet from 'Art Metal' demonstrates (Fig. 24). Archival furniture was increasingly considered to be a key element in science-based approaches to enhance organisational efficiency.

New archival furniture, such as the filing cabinet, served many purposes, often working in tandem with other newly invented technologies. The advent of new archival storage facilities and furniture, combined with the nascent technology of photography, for instance, revolutionised the policing of deviant behaviour.[86]

86 For the following, see Tagg 2012, 24–37.

Fig. 24: Commercial pamphlet from 'Art Metal', in Robertson 2021, 5.

Fig. 25: Bertillon's filing system. A photograph from Alphonse Bertillon's photo album from his exhibition at the 1893 World's Columbian Exposition in Chicago, The National Gallery of Canada, Ottawa; public domain, <https://www.nlm.nih.gov/exhibition/visibleproofs/galleries/exhibition/views_image_5.html> (accessed on 26 September 2026).

Mid- and late-nineteenth-century police organisations around the world relied increasingly on mug shots to identify criminals – and needed specialised furniture to archive tens of thousands of images in usable ways so as to facilitate comparison between images and real people. The system of 'Bertillonage', named after its inventor Alphonse Bertillon, required elaborate storage technologies for vast numbers of photographs (Fig. 25).[87] Other image producing entities also quickly came to rely on (specialised) filing cabinets and related furniture to protect and store their photographic archives. The English Photographic Survey and Records,

87 See also Sekula 1986.

for instance, requested sophisticated storage furniture for thousands of images documenting current everyday life.[88]

Once the new 'information sciences' and the science of 'management' had started to focus on record-keeping furniture as a key facilitator of administrative efficiency and power, new inventions and competing systems for optimising archival processes proliferated. There was no end to attempts at improving archival record-keeping by devising (and selling) new pieces of equipment and furniture. One of the more durable improvements of the original concept of filing cabinets was the creation of hanging files, which relied on punching and binding loose pages into specialised folders before hanging them upside down in specialised cabinets or shelves.[89] Another important twentieth-century innovation in archival furniture was the invention of 'mobile shelving', i.e. moveable shelves to maximise storage space by eliminating the aisles between shelves. Several types were suggested. The so-called Lapouyade shelving in the 1960s, for example, moved sideways. Elsewhere, forward movement was preferred. Whatever the system of moveable shelves consisted of in detail, the amount of storage space available in such arrangements increased significantly.

Based on such developments and following suit upon broader developments of organisational theory and documentation sciences, professional archivists and architects, in addition to management theorists, began to think in ever more explicit and concrete terms about the material implications of archiving. An international landmark was the publication of *Les bâtiments et equipments d'archives* by French archivist Michel Duchein in 1966. The book was translated into English and appeared in several updated editions.[90] Concerning archival furniture, he stated simply, 'Shelves are the main strongroom fittings. [...] The chapter devoted to shelving is thus one of the most important in a book about archive buildings.'[91]

88 Tagg 2012. See, e.g., <https://www.surreycc.gov.uk/culture-and-leisure/history-centre/marvels/photographic-survey> (accessed on 31 May 2024).

89 This system was used, for instance, by the secret service (Ministerium für Staatssicherheit) of the former German Democratic Republic in East Berlin. Personal files about hundreds of thousands of citizens of East Germany were organised and made accessible for rapid inspection by the despotic regime through using these advanced twentieth-century filing technologies. See a number of images of original files in Häckel (ed.) 2020.

90 Though perhaps not updated enough given the rapid technological change, as one reviewer noted, Roper 1979, 47. All of the following, including the images, comes from Duchein 1988, 48–54, and the numbered plates at the end of the volume.

91 English version, see Duchein 1988, 48.

Other pieces of furniture, while used in special cases, were not generally considered fit for proper archival storage.[92] Shelves were now usually made of steel, and, according to Michel Duchein, came in mostly standardised length of roughly 100 to 120 cm. No less than six additional pages were required to explain how shelves were best arranged and used in modern archives.

A tendency to express specific requirements of archival furniture in numerical language using measurements and mathematical formulae is clearly visible (Figs 26 and 27). Nowadays, specialised literature and expert professionals provide guidance for furnishing archival storage facilities and reading rooms. Even the minutest details of the construction of archival furniture are either subjected to regulatory norms or the object of practical counselling.[93] A broad tendency towards the usage of steel furniture and horizontal storage of files is in evidence; the use of wooden furniture and the upright or vertical storage of documents, though regionally still common, is strongly discouraged.[94] A complex industry providing professional archival supplies – from small items, such as paper envelopes, to the largest pieces of furniture – currently exists. As one recent introductory pamphlet notes,

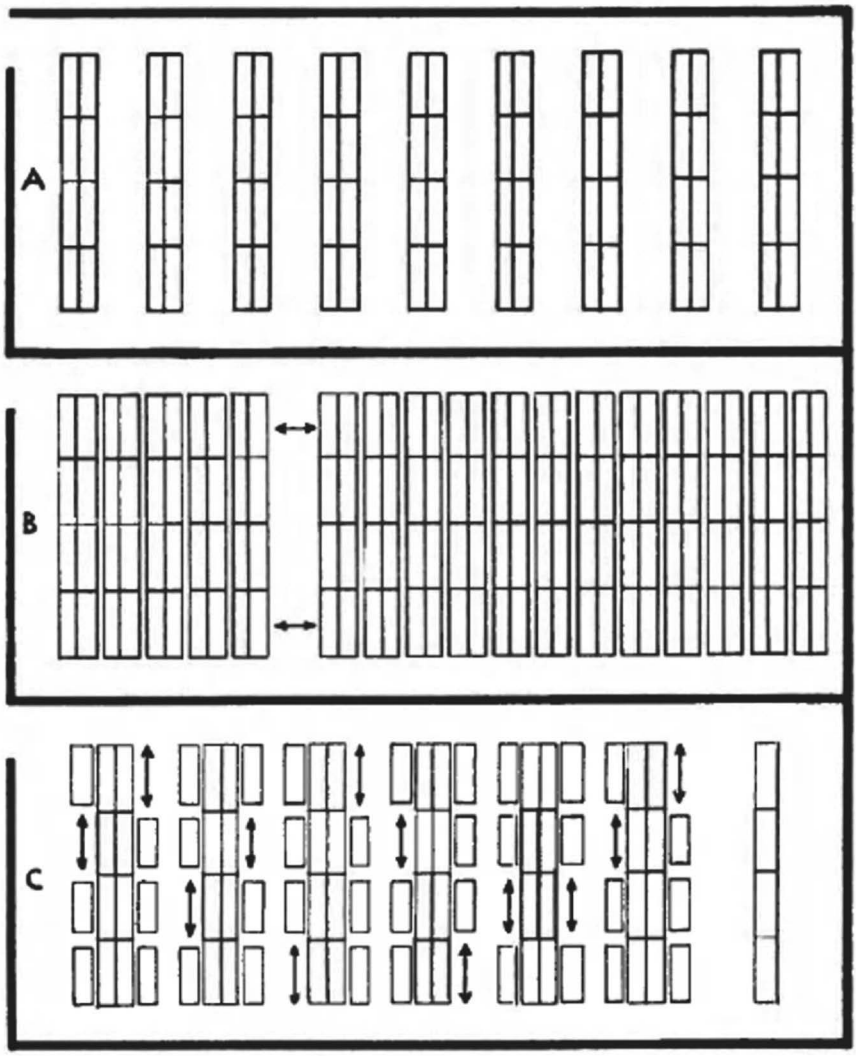
> Without the establishment of secure and well-maintained storage accommodation, incorporating appropriate high-quality storage furniture and materials, all other actions to preserve library and archive collections will have limited impact. Most library and archive collections will spend a much greater proportion of time in storage than in any other form or use.[95]

92 Duchein 1988, 49, n. 13.

93 For one typical example, see, e.g., Cermenati 1997, 229–246.

94 For both points, and generally as a typical example of contemporary specialist treatment of archival furniture, see Kießling 2002.

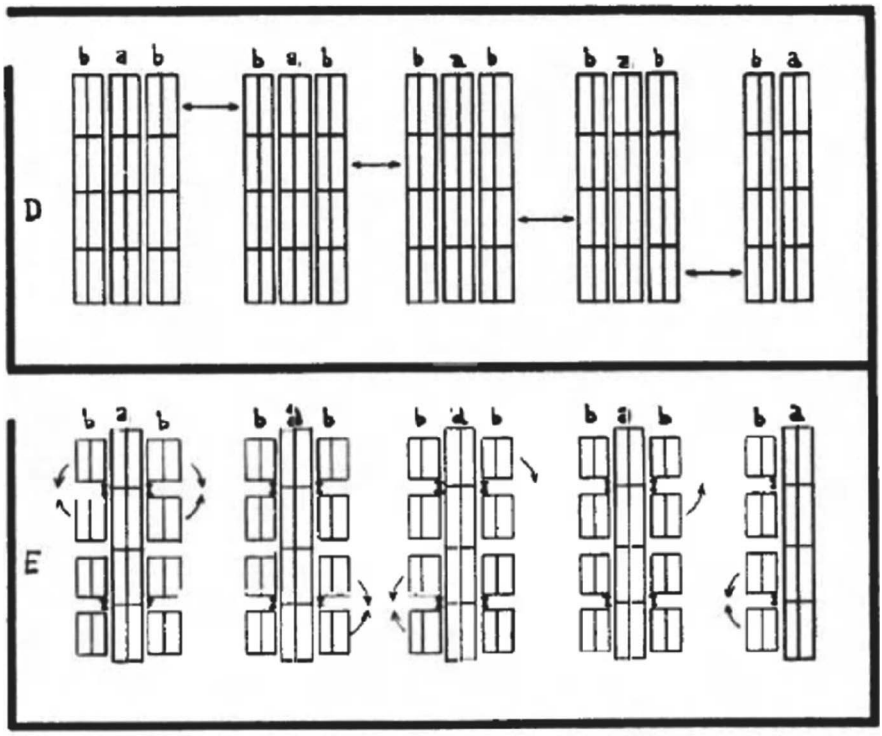
95 Rhys-Lewis 2021, unpaginated. This is a brief eight-page pamphlet produced by the British Library.



A. Room fitted out with traditional shelving
B. Room fitted out with compact shelving with transversal movement (compactus)
C. Room fitted out with compact shelving with lateral movement

Ill 34. The layout of fixed and mobile (or compact) shelving.

Fig. 26: Diagrams of different systems of compact shelving, in Duchein 1988, 179.



D. Room fitted out with compact shelving, having transversal movement, in groups of 3 rows (a fixed rows; b moveable rows)
E. Room fitted out with pivoting compact shelving (a fixed rows; b pivoting bays)

Fig. 27: Diagrams of different systems of compact shelving, in Duchein 1988, 180.

To make that time on the shelf as harmless as possible for stored materials, conservators currently insist that the furniture used should follow detailed specifications, often laid down in officially sanctioned national standards. The British BS 4971:2017, for instance, insists that shelves ideally 'need to be fully adjustable' to meet the formats and sizes of the materials stored.[96] Shelves should preferably not be mounted on an external wall because there is a danger of a 'cold bridge', leading to condensation and threatening humidity. While the benefits of wooden shelves continue to be appreciated, nowadays, 'metal is seen as an archival indus-

96 This and the following remarks come from the summary by Rhys-Lewis 2021, unpaginated.

try standard'. Shelves are usually made from coated steel. Detailed specifications in such industry standards explain which kinds of coats may be used and which potential dangers are implied.

As options for archival furniture multiplied and technical considerations proliferated, appropriately selecting and then competently working with it became an increasingly complex task. Expert handling of furniture became a key element in the education of future archivists. A widely used textbook originating in the New York School of Filing, founded in 1914, for instance, tellingly opened with a first chapter dedicated to 'Filing Equipment', which started with a brief discussion of filing cabinets and other types of archival furniture.[97] Archivists were also required in their increasingly specialised (and state-controlled) education to learn about proper storage facilities, including furniture, and the adequate deployment of all the equipment available for storage and preservation, even though restauration and conservation remained specialised activities in their own rights. Nevertheless, at least a rudimentary familiarity with current trends in archival furniture today counts among the basic knowledge for professional archivists, not least, in order to navigate the ever-expanding market constantly offering new solutions.

From corporations and state bureaucracies, the modernist obsession with perfecting the organisation of paperwork via dedicated furniture eventually conquered private spaces. Post-World War II private life was increasingly seen as requiring bureaucratic organisation, prominently including the organisation of growing amounts of papers. Filing cabinets and their companion technologies and tools were marketed as ideal solutions to optimise the self in this regard. A distinctive advice literature emerged, often targeting private individuals in the form of self-help books (Fig. 28).

97 On the school, see McCord 1920, vii. For filing education in general, see Robertson 2017.

110 • File... Don't Pile!

2. *Keep the duplicate copy away from your home.* If your home is destroyed, you'll be grateful to have copies of irreplaceable papers.
3. *Keep the original in as safe a place as possible.* Items can be stored in a trunk by the door or in the bottom drawer of a metal filing cabinet.

Safeguarding precious papers doesn't mean they have to be buried. If the papers are hidden for fear they might be lost, they will never be in view to be enjoyed as they should. A preconceived plan may save irreplaceable originals in the event of an emergency evacuation. Make a list of items that should be taken and keep several empty peach crates handy to make removal easy.

Papers classified as "replaceable" can be evaluated in terms of contribution. The following questions may be considered.

1. *How frequently is the paper used?*
   Some people put an "x" at the top of the paper each time it is removed from the file. Many of my recipes bear telltale signs that indicate their usage.
2. *Is there a copy of the item available elsewhere?*
   If an item isn't used too frequently and you don't have room to store it, get rid of it. You can always go to the library if you need the information.
3. *How timely is the information?*
   Always date each item filed and this question will be easy to answer. Determine the number of years you feel information will be current and let this be your guideline of how long to retain them. Even new cooking products and equipment may affect the usefulness of recipes that seemingly never would become outdated.

Papers usually fall in three groups in terms of usage — Active Files, Semi-Active Files, and Inactive or Dead Files. Assuming the top and bottom drawers are the most difficult for people to reach, many offices use them to store less active files. The middle two drawers are reserved for the most frequently used or active files. Adapt this procedure to fit your personal needs. In my case, I use the bottom drawers of two cabinets to store the very active **STORY FILE** and **GAME FILE** because my children can reach those drawers. In another cabinet, I store back issues of a magazine to which I absolutely will not put a scissors. The magazines are heavy so the bottom drawer is the best place to store them even though I refer to them frequently.

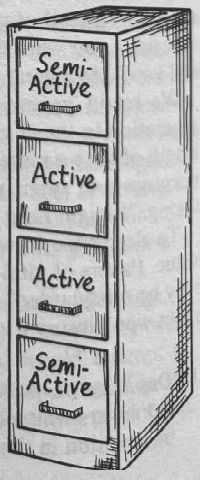


Fig. 28: Comic illustration from a self-help book, in Dorff 1986, 110.

Sporting enthusiastic titles such as *File… Don't Pile!*[98] or *Taming the Paper Tiger* (followed by *Taming the Office Tiger*)[99], such works were often funny in tone and presentation. Yet, despite their casual surface, these works were unflinchingly committed to their basic assumption that personal well-being in the twentieth century implied control of paperwork, which (in decidedly modernist understanding) required not only large amounts of self-discipline ('Always file papers correctly right away'), but also complex pieces of material equipment, including filing cabinets. As imagined by these works, all private homes of the modern era needed to be equipped with some sort of semi-professional archival furniture, thereby bringing the most recent and up-to-date developments into the life of countless individuals.

Acknowledgements

The research for this paper was funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2176 'Understanding Written Artefacts: Material, Interaction and Transmission in Manuscript Cultures', project no. 390893796. The research was conducted within the scope of the Centre for the Study of Manuscript Cultures (CSMC) at Universität Hamburg.

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98 Dorff 1986.

99 Hemphill 1992; Hemphill 1995.

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Case Study 4.1: Fluchtkisten

Ann-Sophie Hellmich-Schwan

> So hat man in neueren Zeiten ganze Kasten verfertiget, und wie Gestelle in denen Registraturen auf einander gestellt; dergestalten, daß diese Kasten mit einer oder zweyen gegen einander aufgehenden Thüren und wohlverwahrtem Schloß versehen.
>
> In more recent times, entire boxes have been made and placed on top of each other like racks in the registries; in such a way that these boxes are provided with one or two doors opening towards each other and a well-guarded lock.[1]

The containers described by German archival theorist Philipp Fladt are today mostly called *Fluchtkiste* ('escape / rescue box') and became the most common container for Central European archival material during the late seventeenth to mid nineteenth century.

The boxes vary in size and internal division but share a set of similar features that makes them definable as one type of container. In most cases, fir wood is used for construction, only a few examples are made of the heavier oak wood. The size is never larger than carriable for two people. Iron handles attached at the two shorter sides make it easier to lift the box. Other iron parts could be found in the form of bands holding the lid or doors and the locking mechanism to secure the contents. In those cases where drawers make up the front, sealing was used for this purpose. Leftovers of the sealing wax can still be found in some cases – also on doors as an additional security mechanism. Decorations or adornment in any form were seldom applied. Yet, many boxes carry signs, such as letters or numbers, that refer to the archival inventory.

The boxes are internally subdivided by either a simple rack or drawers, depending on the preferences and needs of each individual archivist/archive. The paper format was not standardised during the Early Modern Period. Depending on the type of documents, sheets were stored either flat, folded or rolled up. Some sources explain how the internal subdivision was altered for a better use of space when a changing practice of preparing the documents for storage was implemented in the archive.

The popularity of the *Fluchtkiste* reflects the constant mobility of archives and the issue of space management. The main threats for archives were posed by fire and war. In both cases, a quick escape had to be possible. Experience had proven that it was much more convenient if the documents could be moved in the container they were already in, rather than packing them into sacks or barrels. This made the boxes preferable over racks or armoires. Yet, their characteristic of a good use of space, especially in the vertical, was also important. This is why the boxes were constructed in such a way that up to four of them could be stacked on top of each other when stored in the archive. This makes the *Fluchtkisten* a border case between the two categories 'containers' and 'furniture'.

1 Fladt 1764, 64 (my translation).

https://doi.org/10.1515/9783111656014-015

Fig. 1: Archival boxes from Landesarchiv Karlsruhe; © Landesarchiv Karlsruhe.

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Case Study 4.2: Shelves and Manuscripts in Tibet

Agnieszka Helman-Ważny

Tibetan monasteries were known for being the main repositories of book collections and other antique objects, including *thang ka* (painted textile scrolls), murals and statues, that traditionally filled their interiors. Some of these, when no longer in use, were essentially held in storage, while others continued to be used in religious life and rituals. The largest collections of Tibetan books were found in either the temples and assembly halls of monasteries or designated monastic libraries (*dpe mdzod khang*). Smaller collections were also kept in private homes.

Tibetan books usually existed as loose-leaf volumes; they are wrapped tightly in a cloth between wooden boards, and then neatly placed on the normally red and gold painted wooden shelving structures, where each volume has its own designated pigeonhole in a specific order within the collection. The storage-shelves for books were usually adapted to the general form and size of canonical volumes. They consist of open wooden frames with designated spaces for one or more volumes, and, in most cases, they do not include full planks as shelf bases as is the case of Western storage. The volumes themselves are placed so that they are perpendicular to the wall against which the shelving system stands. The contents of the volume are identified by a cloth label tucked into the wrapping and displayed on the end, sometimes covered by a cloth flap that can be lifted to reveal information about the volume.

Well-constructed bookshelves were a regular part of Tibetan interiors. In some monasteries nowadays, however, the books are stored in cabinets with full shelves and glass doors, more in the Western style. The interiors of the Tibetan monasteries were not properly heated and the buildings were often not sufficiently protected against leakage from melting snows or summer rains. The resulting changes in temperature and humidity were unfavourable for preserving books. Moreover, books in smaller Tibetan monasteries were often stored in spaces that were not specifically dedicated for this purpose and were, thus, less well protected than they might have been otherwise. The interiors were also invariably poorly lit, but, fortunately, low exposure to light is a positive factor for paper conservation.

The fact that books were often placed near the altar, exposing them to butter lamps, is more problematic because the books, thus, received their share of the combustion products of the butter which traditionally fuelled temple lamps. Consequently, the pages of books that were stored in the monastery, and opened for ritual or study, were often covered with a layer of dust and oily soot due to these conditions. The presence of chemically unstable substances in the air brings with it a risk to books and other valued objects kept within the temple.

https://doi.org/10.1515/9783111656014-016

Fig. 1: Traditional shelving storage of books at private home in Ghami, Mustang, Nepal; photo: Agnieszka Helman-Ważny (2018).

Fig. 2: The books cabinet at Shalu monastery in Tibet; photo: Agnieszka Helman-Ważny (2013).

Case Study 4.3: Storing Books (and Potentially Archival Bundles) in Medieval Arabic Societies

Konrad Hirschler

To what extent archives as distinct spaces existed in the medieval Arabic Middle East or whether documents were rather stored in a range of 'non-archival' spaces, such as in private homes, is disputed in modern scholarship. No specifically archival furniture has been identified to date, and we do not have images depicting a distinct archival space or any such furniture. This is a major methodological challenge for historical scholarship and this situation is in no way unique for the medieval Arabic Middle East. Historians have, thus, tried different options to work with this challenge and the image chosen here can be taken as one such methodological workaround. It is taken from a work called *The Assemblies* (*al-Maqāmāt*), an entertaining and edifying collection of fifty short narratives featuring a fictional roguish wanderer and eloquent trickster called Abu Zayd. Its author, al-Ḥarīrī (*c.* 1054–1122), set these stories in cities and towns across the Arabic lands. *The Assemblies* became one of the most popular works of medieval Arabic literature and also engendered an unusually high number of illustrated copies, mostly produced in the thirteenth century. The pictures of these manuscripts have been widely used in scholarship as a rare insight into the social and material world of thirteenth-century Iraq and Syria. The picture chosen here is from a manuscript produced in the early thirteenth century and illustrates Abu Zayd's assembly taking place in a (unidentified) 'library' (*khizāna*). The Arabic term *khizāna* simply means 'storehouse' and could refer to spaces for storing books and documents (or other objects). The codices depicted here were, as was standard in this period, laid on top of each other on wooden shelves. For ease of access, abbreviated forms of the author's name and/or the title were typically written on the codex's fore edge or on a label (not shown in this illustration). The shelves' compartment system was widely used and served to organise the codices according to theme, alphabet and/or size. Artificial lighting posed a major fire risk, therefore, such shelves were positioned opposite the room's window or door, whichever provided the best daylight. Archival documents were often bound into bundles according to the needs of the document-holding individual or organisation. They could, thus, be arranged by criteria, such as chronology, content of the document and/or locality, so that, for instance, all estate inventories of a specific year dealt with by the judge in Jerusalem could end up in one single bundle (see the case study on stringing documents by Anna Steffen in this book, Case Study 1.3). Such bundles were of comparable materiality as the codices depicted here and they were most probably stored together with such codices and/or in separate shelves similar to the furniture depicted in *The Assemblies.*

https://doi.org/10.1515/9783111656014-017

Fig. 1: Paris, Bibliothèque nationale de France, Département des manuscrits, arabe 5847, fol. 5ᵛ, Al-Ḥarīrī, *al-Maqāmāt*; source: Gallica (<https://gallica.bnf.fr>) / Bibliothèque nationale de France.

Case Study 4.4: Ida Dehmel's Archive Cabinet (Hamburg, 1901)

Sebastian Schirrmeister

Largely forgotten today, Richard Dehmel (1863–1920) was considered a literary prodigy in late-nineteenth- and early-twentieth-century Germany. He was hailed as a 'new Goethe' and very well connected in the literary world of his time. Before he met his second wife Ida (born Coblenz, 1870–1942) in 1895, he supposedly used to store his vast correspondence with many notable contemporaries simply in bags in his attic. It was Ida who made it her life's mission to gather and manage the famous poet's papers and preserve them for posterity. In 1901, the year of their marriage, she commissioned this impressive wooden archive cabinet which is more than two metres in height and made from oak, alder and pine. The upper part, covered by three lockable doors, consists of six vertical compartments of varying width with about one hundred adjustable shelves, labelled with names of individuals, groups, places or years. The centre is occupied by an additional compartment with a lockable flap. In a letter to her sister Alice Bensheimer of 18 March 1902, Ida sketches the layout of what she confidently refers to as 'my archive cabinet': poets are neatly separated from artists, friends and family, writers on art, and publishers. Letters grouped by year are awaiting entry into the registry. Apparently, the cabinet was not meant to store the materials permanently but rather support the organisation and classification of the author's archive while it was still growing and changing. Being able to easily rearrange the shelves was most likely a prerequisite. The lower part of the cabinet has nine drawers, three of them full-width and each of them equipped with a lock as well. Around 1912, a second cabinet with similar configurations was added and the first one slightly altered. The many locks with their many keys seem to indicate that, right from the start, Ida was well aware of the cultural (and economic) valuables she was keeping. After his death in 1920, the cabinets indeed became a site of pilgrimage for scholars and admirers of Richard Dehmel. In 1926, the archive was eventually purchased by the city of Hamburg, but remained in the custody of Dehmel's widow until September 1939 when most of the materials were removed for safekeeping. Persecuted by the Nazis as a Jew, but unable to part with the house and her duty as Richard's literary executor, Ida committed suicide in 1942. Today, Dehmel's papers are held at the Staats- und Universitätsbibliothek Hamburg Carl von Ossietzky. The two archive cabinets – once derelict and damaged, but thoroughly restored in 2015 – are displayed at the Dehmelhaus in Hamburg-Blankenese. Even without the original contents, the curious compartmentalisation, the many locks and keys as well as the inscriptions on the remaining shelves still offer a glimpse into Ida Dehmel's archival devotion and her idiosyncratic filing system.

https://doi.org/10.1515/9783111656014-018

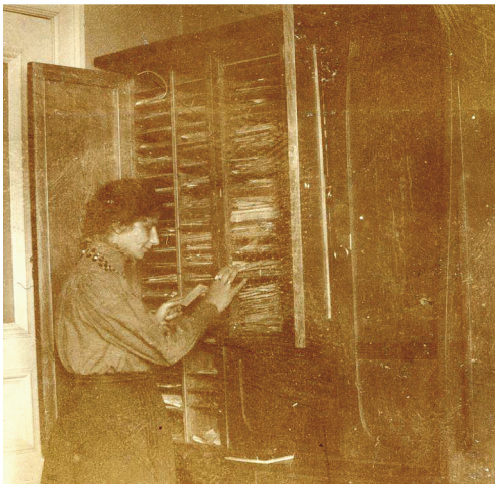

Fig. 1: Ida Dehmel in front of her archive cabinet (before 1912); courtesy of Staats- und Universitätsbibliothek Hamburg.

Fig. 2: Ida Dehmel's archive cabinet after restoration; © Carolin Vogel.

Case Study 4.5: Working the Archive: An Archival Desk and Many Drawers

Ann-Sophie Hellmich-Schwan

When the new archive building for the princely archive in Donaueschingen (southern Germany) was built in the 1760s, a separate bureau for the archivist and his personnel was included in the plans from the very beginning. This is not necessarily unique, but the large desk that was constructed fittingly for this room certainly is. Constructed around the central pillar of the room, it offers six workplaces and sixty drawers for storage.

The source material directly relating to the desk is scarce. We can only find one short note from 17 April 1765 stating that the desk with sixty drawers for the registry has to be brought there when the weather allows for it.[1] Information about who constructed it or how much it cost are not transmitted. Yet, we can be sure that a day with fitting weather was found, and the desk made of oak wood was brought to the new archival building and installed in the working room. The drawers for each workplace are arranged on each side of the chair and underneath the desk. Two each are equipped with locks for secure storage.

With this set-up, it is not hard to imagine archival staff sitting at the desk with a number of documents spread out in front of them on the surface. One or perhaps two drawers stand open so a user could quickly reach the writing materials stored in them. Daily work in the archive required a number of different stationeries, including string, quills, ink, grit, pencils, paper, sealing wax and seals. When the sun set and the workday at the archive was over, the diligent writer put down his quill and locked away unfinished work in one of the drawers.

Desks were common in European archives in the eighteenth century, and before and after. Yet, most of them were not as elaborately built as the example given here – in fact, only very few other cases of desks with drawers are documented. In most cases, desks that were used in the archive were not constructed in a specific way and have, therefore, been lost over time. The only mentions in the sources tell us about their usage. Besides being used as writing tables, desks served as a short-term repository when taking documents out of their long-term storage space (e.g. armoire, shelf or drawer). Desks, therefore, served as an important transition area in the usage of archived documents or documents that are meant to be archived. This makes them as equally important in the archive as the storage furniture.

1 Fürstlich Fürstenbergisches Archiv, Hauptkasse, Bausachen, vol. 13/1, Notanda 17.04.1765, not foliated.

https://doi.org/10.1515/9783111656014-019

Fig. 1: Donaueschingen, Fürstlich Fürstenbergisches Archiv; photo: Ann-Sophie Hellmich-Schwan.

Philippe Depreux

Chapter 5: Storage Spaces: Rooms and Buildings

Abstract: The construction of a space dedicated to archives is a modern phenomenon that highlights the growing importance of the need to document administrative activities, and a change in the relationship with the past, which gives historical documents a heritage value for society as a whole. It was only the preservation of archives that mattered in premodern societies, sometimes indiscriminately of other objects that constituted a treasure. The earliest documented concern was the construction of storage facilities to protect archive documents from various dangers, such as fire and damp. The interest in history shown by the citizens of modern societies has made it necessary to design places where documents can be consulted, open to an ever-growing public. Archives have become buildings charged with symbolic significance, whose choice of location and architecture help to exalt the identity of the populations whose history they house.

1 Introduction

Archival documents are not necessarily kept in dedicated buildings; hence, the dedication of specialised buildings may indicate a particular societal investment in record-keeping. Accordingly, the investigation of buildings dedicated to archives leads the historian to not only consider their construction as a response to conservation needs, but also question the value accorded by individual human societies to the written testimonies housed in such dedicated buildings. It is considered normal nowadays to dedicate a building to the conservation of archives, but this was not always the case. The discovery of archival documents in a building (e.g. during the excavation of an ancient Mesopotamian, Greek or Roman structure) does not necessarily mean that this edifice was dedicated exclusively to the preservation of archives. In many contexts, including most premodern societies and even in the Early Modern Period of European history, there was, for instance, no clear-cut distinction between libraries and archives: they were both storage places of knowledge.[1] Our word for ‘archive’ derives from the Greek term

1 Assmann 2010.

https://doi.org/10.1515/9783111656014-020

ἀρχεῖον (Lat. *archivum*), which means 'public building' or 'town hall', but, for a long time, there were no buildings exclusively dedicated to 'archival' functions; instead, documents were usually kept somewhere in a multi-purpose building, including palaces, temples or churches. Records were occasionally carried around when people travelled.[2] Historians often argue that the creation of designated archive buildings impacts on the relation between people and the written testimony about their past: it is the expression of a transformation and, at the same time, conditions their relationship to archival documents.[3] Archives not only related to public life and palaces during Antiquity and in many other premodern societies,[4] but are also part of a treasury and are movable, before becoming more stable and staying located at a dedicated place, thereby reinforcing the sustainability of administrative documents and, thus, becoming a symbol of power. Unfortunately, we do not know what archives looked like in Antiquity, we only know where they were – i.e. in some dedicated rooms within a palace or at some strategic location in a public place.[5] Archives have been intimately connected with historiographical work and the intellectual activities of remembrance in modern times (since the middle of the nineteenth century).[6] Depending on the period, the place and the context, archival documents may retain an administrative value or only be of heritage and scholarly interest.

Rooms can be dedicated to special collections, but archival materials were very often kept without any apparent system or minimal order at best, such as the chaos depicted by Pieter Brueghel the Younger (1564–1638) (Fig. 1): there are many copies of this painting, which can be interpreted as a critique of the arbitrary power of tax collectors, who kept many documents by themselves, but were perhaps not aware of every document they had in their room.

2 Fichtenau 1972.

3 On the transformation of the social meaning of archives, see Krakovitch 1994 commenting on Pomian 1992.

4 For a Korean example, see Ok 2021; for Japan, see Abe 2021.

5 Coqueugniot 2013; Messina 2021; Schreiber 2021.

6 Bautier 1968.

Fig. 1: *The Tax-collector's Office*, Pieter Brueghel II, Flanders, *c.* 1615, oil on wood panel; © Adelaide, Art Gallery of South Australia, acc. no. 0.814, <https://www.agsa.sa.gov.au/collection-publications/collection/works/the-tax-collectors-office/24080/> (accessed on 5 December 2024).

In a general sense, every facility dedicated to storing written artefacts can be considered as an archive, even if the documents are awaiting destruction. Such a case occurs in the Jewish world – for religious reasons. Rooms or small buildings called genizah are dedicated to the temporary preservation of documents that are to be discarded, however, for religious reasons, they cannot be simply destroyed. When found by historians, these genizot may acquire enormous importance, as they contain otherwise unavailable precious archive material documenting the social and economic life of Jewish communities. In the most famous case, the storeroom of Ben Ezra Synagogue in Old Cairo, the well-orchestrated discovery of thousands of documents at the end of the nineteenth century focused historical attention on the documentary value of Jewish genizot (Fig. 2);[7] the prominent afterlife of the Cairo Genizah illustrates the nearly mythical status that archives occasionally acquire.[8]

7 Glickman 2011.
8 Jefferson 2022.

Yet, if such storage facilities may be called archives in a very loose sense, they appear as exact opposites of archives if by that term historians mean the documentation of legal, administrative and economic activity. Genizot were intended to store only (large amounts of) isolated texts that did not collectively form the memory of a coherent administrative activity, thus, they had no administrative purpose. Nevertheless, a comparison between genizot and archives is interesting, since, even in times when archives as rooms and buildings were more common, this did not necessarily amount to careful preservation of ancient documents, as many early modern narratives attest.[9] Strict regulations prevail currently for keeping archive material,[10] but this is, apart from more or less successful measures for protecting archives from water or fire,[11] only a very recent phenomenon, which occurs parallelly to the professionalisation of the functions of an archivist.[12]

Fig. 2: Interior view of Ben Ezra Synagogue showing the entrance to the genizah high in the end wall; © Cambridge University Library, <https://www.lib.cam.ac.uk/genizah-fragments/posts/augusta-de-wit-and-genizah-hoard-0> (accessed on 5 December 2024).

9 For some examples see Friedrich 2016, 69.
10 Glauert 2019.
11 See Friedrich 2013, 160–163.
12 Duchein 1992.

2 A place for eternity? Stability as a condition for the preservation of archives

The preservation of documents for religious purposes and the close link between archives and religious institutions in premodern societies can be observed in various cultures. Monastic and ecclesiastic archives enjoyed relative stability in many places around the world. An impressive example is provided by the Mogao Caves situated near the oasis town of Dunhuang in western China, a UNESCO World Heritage Site (Fig. 3). The first caves of this important Buddhist temple complex were dug out in 366 CE as places of meditation and worship; the caves later became a place of pilgrimage, and they continued to be built at the site until the fourteenth century (see Case Study 5.1). The Library Cave (cave 17) had been sealed and hidden since the turn of the first millennium CE. In 1900, a Daoist monk named Wang Yuanlu discovered it and found approximately forty thousand manuscripts, paintings and printed documents on silk and paper within its walls.[13] Similarly, many Ethiopian monasteries also contain a room where manuscripts are preserved (sometimes a well-protected building also inside a rock-hewn cave), often together with other kinds of artefacts, not necessarily written, which is generally known as an *ʾəqā bet* (Amharic, lit. 'objects house, repository'). The *ʾəqā bet* is a room or even a building that can be locked, where all kinds of precious objects pertaining to the monastic and church activity are preserved.[14] Indeed, the distinction between diverse documents, for instance, books and charters, was not very strict, thus, both kinds of written artefacts were sometimes kept together, sometimes separately.

Similarly, the case of the Abbey of St Gall is revealing.[15] Although an archivist is mentioned no later than in the last decades of the eighth century, there is no mention of any archive on the ideal plan of the Abbey of St Gall made in the ninth century, even though the library is mentioned. At that time, charters, most probably among the most precious manuscripts, were kept in an armoire (*armarium*) within the library. Its location is mentioned near the choir of the church (on the northern side) on the first floor (the ground floor was dedicated to the *scriptorium*, the room where the scribes were working); the sacristy is mentioned symmetrically (on the southern side of the choir): the room for liturgical vessels was on

13 Zhang (ed.) 2000.
14 Bausi 2014–2015.
15 Wagner 2016.

the lower floor and the vestry on the upper floor (Fig. 4).[16] The St Gall plan adapts the late antique traditional buildings on both sides of the apsis (the *pastophoria*) to the needs of the early medieval period, as one can see in the late antique church of San Giovanni Evangelista in Ravenna (Fig. 5); the *pastophorion* originally referred to the treasury and the priests' quarters in the Temple of Solomon, potentially also indicating a relatively safe space where documents could be stored. Generally speaking, we can say that special care is given to the choice of building materials for churches due to their religious importance. Many temples were exceptionally secure places because they were built in stone.[17] For that reason, they served as storage buildings in the premodern world and were preferred for the storage of the monks' documents.

Fig. 3: Dunhuang Mogao Caves, photo: Zhangzhugang; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Dunhuang_Mogao_Ku_2013.12.31_12-30-18.jpg> (accessed on 5 December 2024).

16 Tremp 2014, 44.
17 Iogna-Prat 2006.

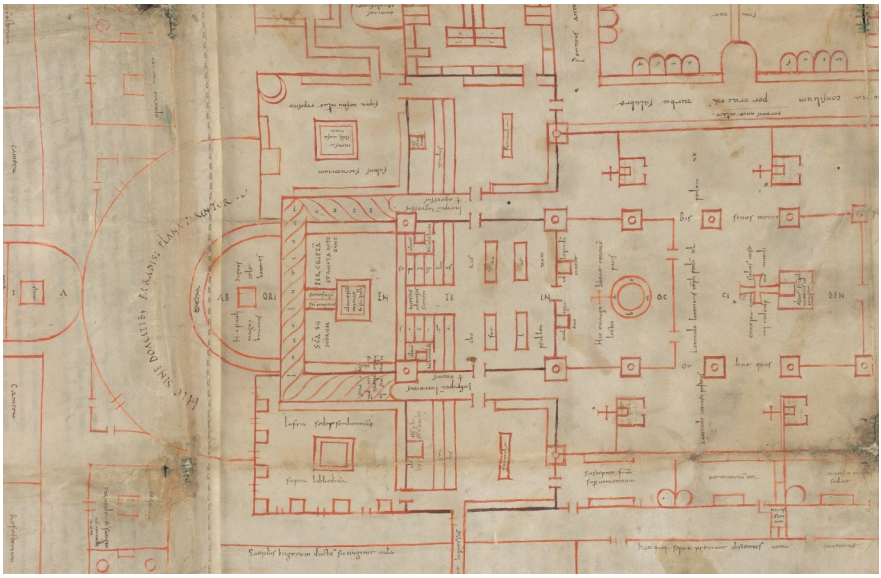

Fig. 4: St Gall monastery plan (detail), St Gallen, Stiftsbibliothek, Cod. Sang. 1092, recto; CC BY-NC 4.0, via e-codices: <https://www.e-codices.unifr.ch/de/csg/1092/recto> (accessed on 5 December 2024).

Fig. 5: San Giovanni Evangelista, Ravenna (fifth century): apsis and *pastophoria*, photo: GFreihalter; CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Ravenna_San_Giovanni_Evangelista_126.jpg> (accessed on 5 December 2024).

With solid architectural structures also came local stability, another feature that contributed significantly to enhancing the chances of survival of an archive, as the case of the French medieval royal archive illustrates. The English king Richard the Lionheart defeated the French king Philip II Augustus in the Battle of Fréteval (3 July 1194). The latter lost all his documents which were being transported in coffers. After this difficult experience, the kings of France used to keep their archive in more secure places and increasingly decided against taking them with them as they moved through the country. The most ancient example of advanced storage spaces is a special room within the palace on the Île de la Cité in Paris (Fig. 6). King Louis IX of France ordered the construction of one of the most beautiful churches in France at that time, the Sainte-Chapelle, in his Parisian residence in the 1240s. Another building added onto the northern part of that church was devoted to royal audiences and next to it stood the sacristy, where the treasury and the royal archive were kept. On the northern side also stands a smaller building, which housed the workshop for preparing parchment for the court,[18] indicating that the conservation of documents is not necessarily disconnected from the place of their production: these are two moments of the activity of administration and government. The royal archive was kept among the manuscripts collected by the king on the first floor of the sacristy of the Sainte-Chapelle, above the collection of golden precious artefacts and liturgical vessels kept on the ground floor. Medieval sources call this place, housing golden artefacts, manuscripts and charters, the *thesaurus capelle Parisius* (the 'treasury of the Parisian chapel'); for that reason, the modern name of this royal archive is Trésor des chartes (from 1379, the keeper of the royal archives was called the 'guardian of the treasure').[19] It remained there until 1783; since 1808, the royal archive has been kept in the Parisian Hôtel de Soubise as part of what is now the Archives nationales.[20] Books and charters were stored together for many years, indicating that modern distinctions between libraries and archives are not necessarily applicable to premodern contexts.[21]

18 Guérout 1949–1951; Leniaud and Perrot 1991, 98–104; Sohn 2019, 18–23.

19 Guyotjeannin and Potin 2004, 24.

20 Babelon 1988; Pomian 1992; Hildesheimer 1997; Béchu and Béchu 2008.

21 Potin 2020.

Fig. 6: Courtyard of the royal palace in Paris with view of the sacristy of the Sainte-Chapelle housing the royal treasury ('Élévation des batimens anciens qui formoient l'enceinte de la cour du mai au Palais, Dess. par Thierry architecte et lith. par Nicolle. Imp. Lemercier, Benard et Cie'), Bibliothèque Sainte-Geneviève, COLL GUEN ICONO TOPO 6 RES (11); © PDM 1.0, <https://archive.org/details/COLL_GUEN_ICONO_TOPO_6_RES_11> (accessed on 5 December 2024).

3 Stone buildings as secure places for archives?

A concentration of documentation in a secure location is also attested in the medieval Muslim world. According to the testimony of Al-Maqrīzī, a fifteenth-century historian, correspondence received by and sent from the Mamluk chancellery had to be deposited and kept in the Cairo citadel, built around two centuries earlier by Saladin (Fig. 7).[22] Fortified places were often preferred options for securing docu-

22 Hirschler 2016, 10.

ments, frequently by furnishing or constructing a tower. The popes proceeded that way before creating the modern Vatican archives around 1600: Pope Paul III (1534–1549) located his archive on top of Hadrian's mausoleum, the so-called Castel Sant'Angelo. The Archivum Arcis was a very secure place (Fig. 8). At the same time, Emperor Charles V (d. 1558) and his successor, King Philip II (d. 1598), had an old fortress at Simacas, near Valladolid, retrofitted as an archive, including archival use of a prominent tower (Fig. 9).[23]

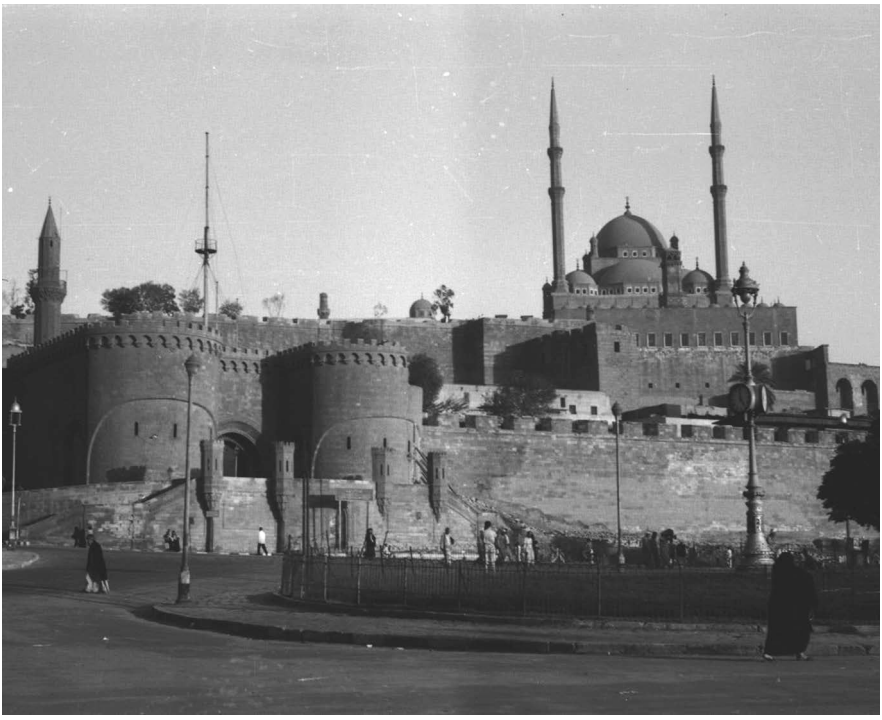

Fig. 7: 'A view of the Cairo Citadel, 1950's', photo: Zdravko Pečar; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Cairo_Citadel,_1950%27s.tif> (accessed on 5 December 2024).

23 Fernandez-Gonzalez 2016.

Fig. 8: 'Castel Sant'Angelo room with treasure chests', photo: Matthias Kabel; CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Castel_Sant%27Angelo_room_with_treasure_chests.jpg> (accessed on 5 December 2024).

Fig. 9: Castillo de Simancas, Valladolid (Archivo General de Simancas), photo: Rabiespierre; CC BY 2.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Castillo_de_Simancas.jpg> (accessed on 5 December 2024).

The primary natural risks to archival documents are fire and damage from moisture and water; archival buildings, therefore, were often designed in such ways as to minimise exposure to these damaging agents and provide protection in case of fire or flooding. The heirs of the noble Riedesel family, Freiherren zu Eisenbach, followed this trajectory when they had a purpose-built archive building erected in their familial seat of Lauterbach in 1760. It is clear from various documents that they wanted a lavish building rising up over a fireproof vault. The lowest floor was exclusively dedicated to the archive, including a special room for working with documents. On the upper floor, there was only a spacious conference room with two (small) chambers next to the antechamber. The wooden panelling of the room known as the 'archive', i.e. the actual magazine with a vaulted ceiling, had to be completely removed and replaced in 1781 as it had become rotten in places. The archive room could be entered only through an iron door. There were also concerns about the windows, which were secured with iron bars, as documents could easily be stolen or even set on fire through them. However, the windows could not be permanently closed, as the high humidity and bad smell were a cause for concern. Protection against fire and water, the major natural threats, often followed contradictory logics. Nonetheless, cats kept entering the building when the windows were open, causing inconvenience. It was then decided to secure these windows with additional wire mesh. Judging from the resources and care which went into creating this archival building, archival consciousness, even among smaller, albeit supra-regional, noble families, in the middle of the eighteenth century must have been quite advanced.[24]

4 Specialised archival buildings: From preservation to communication

It was not only kings and princes who were concerned about the preservation of their archives; minor nobles also joined the growing interest in document protection. It became common practice in the late Middle Ages to store archives in a tower. A tower was built at Fürfeld Castle in southern Germany in the middle of the fifteenth century specifically for the safe storage of charters and other valuables. At a distance of about 2 m from the residential building and built completely out of stone, it can be considered fireproof. The upper floors of the tower can only be reached via a covered wooden walkway from the second floor of the castle. An

24 Reuther 2012.

iron door closes the narrow upper archive room, which is poorly lit by two small windows. There are high shelves on the walls and in the middle of the room for storing files and documents. The upper archive room is also secured by means of an iron door. There are neither windows nor slits in the wall for lighting. This room is a particularly early example of a purpose-built archive building.[25]

Other, later buildings are more ostentatious in their outward appearance. The Fürstlich Fürstenbergisches Archiv is the dynastic archive of the House of Fürstenberg and one of the largest aristocratic repositories in Germany (Fig. 10). The Fürstenberg archive, one of the earliest free-standing archive buildings in Germany, was built between 1756 and 1763.[26]

Fig. 10: Fürstlich Fürstenbergisches Archiv; © F. F. Archiv Donaueschingen.

Special archival buildings were also erected outside Europe in the Early Modern Period, including in Ethiopia (see Case Study 5.2). Nevertheless, the late nineteenth century was clearly the heyday of archive construction. New archive buildings were erected throughout Europe as a result of the rapid increase in bureaucratic

25 Andermann 2014

26 Wieser 1960.

document production. In the context of political centralisation and affirmation of national unity, they become monuments of state identity. An early instance of such developments was the Habsburg Haus-, Hof- und Staatsarchiv, which was founded by Empress Maria Theresa in 1749. All the important legal and sovereign titles of the House of Habsburg were now brought into the new Geheimes Hausarchiv, partly from disjointed and previously largely inaccessible depots in Vienna itself, and partly from documents previously housed outside Vienna in various distant parts of the country. Initially, a few rooms on the ground floor of the imperial chancellery wing of the Hofburg served as archive rooms, where the archive headquarters remained for the next century and a half. Under Emperor Franz Joseph I, the decision was made to build a new archive building on Vienna's Minoritenplatz, where the Haus-, Hof- und Staatsarchiv is still located today, in view of the ever-increasing lack of space due to the growing volume of files. The building, erected in 1899–1902 next to the Ministry of the Imperial and Royal Household and Foreign Affairs, met the most advanced technical requirements for a purpose-built archive at the time. With the founding of the Archiv der Republik department (1983), a significant reorganisation took place within the Österreichisches Staatsarchiv: all official records of the Austrian federal administration after 1918 were transferred to the new department, which also became the office exclusively responsible for current file transfers. The Haus-, Hof- und Staatsarchiv was, thus, transformed into a 'historical' archive that was no longer growing and whose holdings ended with the year 1918.

A distinction was increasingly made between different types of rooms in modern archival buildings.[27] Functional areas were progressively separated from storage spaces, as, for instance, happened in the new archive building in Münster, which opened in 1889. The preliminary design by Karl Friedrich Endell (1843–1891) envisaged two separate buildings for administration and storage, connected by a narrow two-storey corridor. Although a similar two-part structure had already been realised in 1880 in the new building of the district archive for Middle Franconia in Nuremberg, this building was still a functional jumble compared to Münster only a few years later. The conventionally constructed, two-storey storage wing also contained representation rooms and a cimelia room, which was located in the rear part of the western storage wing.

Dedicated archival structures were also created in conjunction with the growth of historical scholarship. European historicism, in particular, focused increasingly on archival records and scholars required specific spatial structures to work with them. Special collections were one key instance, including those

27 Leiskau 2008.

created for teaching.[28] The diplomatic cabinet of Georg-August-Universität Göttingen, founded by Johann Christoph Gatterer (1759–1799),[29] is among the most prominent examples. Such teaching collections did not usually require entire buildings, but could rather be preserved in a dedicated room (or rooms), for instance, in private buildings or within the university library.

Growing interest in historical and genealogical research in the nineteenth century and, even more so, in the twentieth century, led more and more people to visit archives, which become civic temples of historical culture and national identity. Originally primarily places of conservation, archives gradually turned into places of consultation. Eventually, spatial arrangements had to be made to accommodate growing numbers of visitors. A dedicated reading room for researchers, for example, was set up in Paris in 1902 in the first rooms of the apartment of the princes of Soubise. By contrast, there were five different document consultation locations at the French Archives nationales in 1987. It was at this time that the National Archives Reception and Research Centre (Centre d'Accueil et de Recherche des Archives Nationales, called CARAN) was built, to accommodate an ever-growing audience. Today, it is possible to accommodate 350 readers at the same time.[30] A similar phenomenon can be observed in the national archives of Quebec. A modern building was built in 1999 as part of the renovation of the Maison Jodoin, erected in 1871, and the Gilles-Hocquart building, the main component of which is the former structure of the École des Hautes Études Commerciales de Montréal built in 1910. The consultation room can accommodate 200 people carrying out research (Fig. 11). In other contexts too, archival facilities are surrounded by additional purpose-built spaces, for instance, in the Archives internationales de la danse (see Case Study 5.3).

28 Mersiowsky 2000.

29 Goetting 1969; Petke 2001.

30 Babelon 1988.

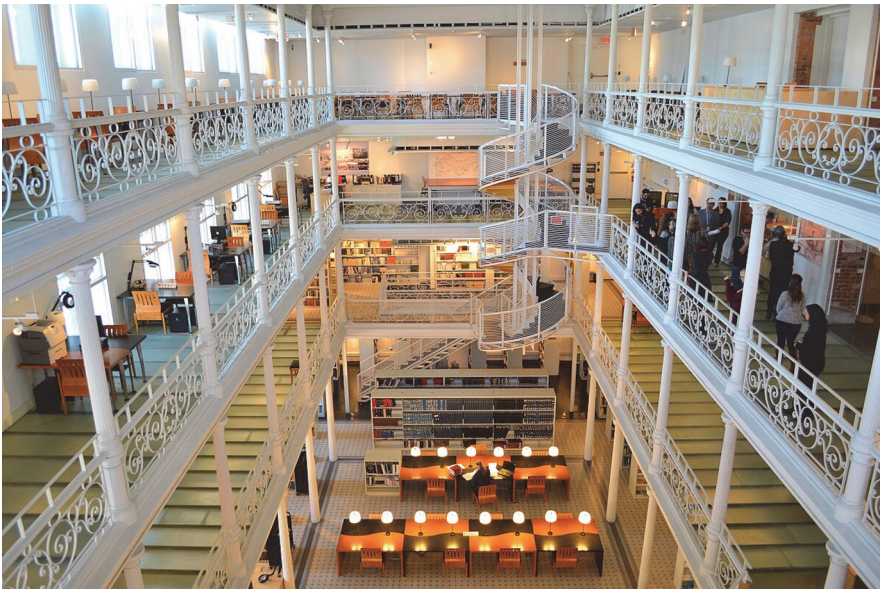

Fig. 11: Gilles-Hocquart building, Bibliothèque et Archives nationales du Québec, photo: Benoit Rochon; CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Salle_de_consultation_de_l%27%C3%A9difice_Gilles-Hocquart_BAnQ_Vieux-Montr%C3%A9al_08.JPG> (accessed on 5 December 2024).

5 Looking for more space: Archive building as means of urbanisation policy

Certain events, including prominently wars and other episodes of violence, may cause archives to be moved. In the case of the Toggenburg War (1712), for example, most of the archive of the Abbey of St Gall mentioned above was evacuated to the monastery of Mehrerau, near Bregenz, where some of the documents remained until the twentieth century. When the modern canton of St Gall was created by Napoleon in 1803, most of the monastery's archival documents were congregated in the northern wing of the cloister court where they remain until today (Fig. 12). Together with the library, the archive enjoys the protection of UNESCO as a World Heritage Site.

Fig. 12: Northern wing (arsenal) of the St Gall cloister areal with the Stiftsarchiv, photo: Rocky187; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Zeughausfl%C3%BCgel_mit_Kathedrale.jpg> (accessed on 5 December 2024).

Another essential and recurring reason for moving archives is a lack of space. Storage capacity is a big problem for archivists. Although destruction of huge parts of the documentation produced by modern administrations is a standard part of the work of archive keepers, the storage capacities required grow rapidly. The archive of the city of Hamburg, for instance, has had to move twice in the last five decades because of the need to increase storage capacity (Fig. 13). It moved to ABC-Straße in 1972, located in the centre of the city,[31] and moved again twenty-six years later to the eastern periphery of the city (Wandsbek).[32]

31 Bolland 1973.

32 Loose 2000.

Fig. 13: Manual mobile shelving units on the ground floor of the Staatsarchiv Hamburg's storage building, photo: Alexander Svensson; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Staatsarchiv_Hamburg_Magazin.jpg> (accessed on 5 December 2024).

Relocation of archives is, however, not merely a result of practical concerns, but also part of conscious urban planning and politics. The city archive of Augsburg (Bavaria) had to relocate about ten years ago. At around the same time, the inauguration of the new state archive (Staatsarchiv Augsburg) took place in the southern periphery of the town near the university campus. Both archives needed more space for the documents they house: with a storage area of 2800 m² for 18.5 km linear archive material, the Staatsarchiv Augsburg is expected to run out of space during the next generation (about thirty years). The Augsburg city archive, meanwhile, has built more space (3200 m²) for less material (14 km linear archive). This resulted, however, from a set of different considerations, namely, urban and museological ones. By moving the archive from the location at Fuggerstr. 12 (a downtown area, next to the cathedral church), where it had been located since 1885, to the more remote Augsbuger Kammgarnspinnerei (AKS), an ancient industrial quarter where the new Augsburg textile and industry museum opened its doors in 2010 on the emplacement of a textile factory founded in 1836, the city of

Augsburg wanted to revitalise this quarter and transform it into a museum-like area, where the archaeological museum (Stadtarchäologie / Archäologisches Zentraldepot) is also located.[33] Similarly, in Paris, the relocation of the headquarters of the National Archives of France to Pierrefitte (Seine-Saint-Denis) and the construction of a new building designed by architect Massimiliano Fuksas and inaugurated in January 2013 certainly responded to a need to increase storage capacities, but it also proved to be a measure with political significance, intended to revalorise the suburbs.

Some contemporary archives are architectural masterpieces and reflect the technological evolution of their time. This is the case, for example, of the Seine-Maritime departmental Tour des archives, situated in the city of Rouen. This particularly rich archive, whose origins date back to the Middle Ages and the Normandy Exchequer, had long been due to receive new quarters; in a report written in 1941, its director had already requested the construction of a depot housing 20 linear km of racking and planning to extend storage possibilities to 40 km, documenting the spatial demands in the first half of the twentieth century. Construction of a new archival building, however, was only begun in 1953. It was decided to build a twenty-eight-story tower 89 m high by 11 m wide. Height was synonymous with modernity[34] in the 1960s (we can also cite another example in Burgundy: the Tour des Archives départementales de Saône-et-Loire in Mâcon, built in the second half of the decade, has twenty floors and is 50 m high). The design of the Rouen tower was chosen in order to ensure delivery of documents requested for consultation more quickly than in a horizontal archive building, thanks to an elevator which, at the time of the inauguration of the archive building, moved at a speed of 1.5 m/s – indicating how archival architecture, technology and user-requirements intersect to shape the appearance and nature of archives. The construction of this tower took eleven years. All windows are protected by screens to protect documents kept on the upper floors from light.[35] The Seine-Maritime departmental council took a very innovative decision in 2007 by lighting up the monument that dominates the city: the Rouen Archives Tower is the first media façade of contemporary architecture in France. Twelve years later, the light-systems were renovated. Currently, the building is equipped with 648 lights which illuminate the night by adapting the colours and symbols to current events[36] (Fig. 14).

33 Engelke et al. 2019.

34 Direction des archives de France 1987.

35 Seine-Maritime, Archives départementales 1965 (a publication on the occasion of the inauguration of the Archive Tower on 9 June 1965).

36 <https://www.lightzoomlumiere.fr/realisation/tour-des-archives-rouen-renovation-premiere-media-facade-france/> (accessed on 11 November 2024).

Fig. 14: Tower of the departmental archives of Seine-Maritime, Rouen, photo: Kaelkael; CC BY-SA 3.0, via Wikipedia: <https://en.wikipedia.org/wiki/File:Tour_des_archives_-_Rouen.jpg> (accessed on 5 December 2024).

6 Archive building as places of memory

Archive buildings as symbols of power are representative buildings and should generate respect and pride. When the archives of the small Bavarian town of Amberg (in the Upper Palatinate) were built at the beginning of the twentieth century, this feeling was palpable among the population. An article appeared in the local newspaper (*Amberger Volkszeitung*) on 29 March 1909, which read: 'The whole building promises to be an ornament for Amberg'.[37]

Some archives are situated in places of particular symbolic importance. Consider, for instance, the French military archives in Vincennes, hosted in a former royal residence built by Louis Le Vau (1612–1670) for Louis XIV. This palace, intimately connected with the history of France, was sumptuously restored in the past decades.[38] Originally a hunting residence of the Capetian kings east of Paris, this location turned into one of the governmental places in the late Middle Ages: it was the main residence of King Charles V (1364–1380), who kept his treasury in the donjon. This defensive castle was transformed into a representative palace during the Early Modern Period, where the military archives are hosted (Fig. 15).

The Imperial Archive (Huangshicheng 皇史宬) located within the Forbidden City (Beijing)[39] was one of the locations where central documents of the Ming (1368–1644) and Qing (1644–1911) dynasties were stored. This building, constructed in 1534, is located slightly south-east of the imperial palace. It was intended to house portraits of emperors and princes and official documents issued by the emperors, but, once finished, it was decided to store portraits in a separate archive in the Jingshen Hall (景神殿). The building is constructed with bricks, without timber, to prevent fire. Inside the building, documents are enclosed in 152 cabinets of carved, gold-lacquered wood decorated with dragons and clouds. The archive was plundered and damaged in 1900 by the Eight-Nation Alliance and restored by the Communist regime.[40]

37 Kruse 2010, 9.

38 Chapelot 1994; Boyer 2006.

39 MacFarquhar 1972; Barmé 2008. On Chinese archivistic practices, see Zhang 2008; Fölster 2018.

40 <http://www.chinaknowledge.de/History/Terms/huangshicheng.html> (accessed on 5 December 2024).

Fig. 15: Vincennes castle, photo: Chabe01; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Tour_Roi_Ch%C3%A2teau_Vincennes_6.jpg> (accessed on 5 December 2024).

The conservation of archives for memorial reasons appeared in Europe during the Early Modern Period. During the French Revolution, a crucial period for the creation of many archives in France,[41] the memorial dimension of historical monuments, including, but not limited to written artefacts, increased significantly:[42] although many pieces of parchment no longer have any juridical value, their symbolic value has now become increasingly important. They served as tokens of and sources for national history and grandeur. For such reasons, a special museum room dedicated to the history of France was created in the Parisian *hôtel* where the French National Archives were located at the beginning of the nineteenth century: in 1867, Napoleon III decided that the most precious documents must be presented to a public audience (Fig. 16).

41 Guyotjeannin 1998.
42 Favier 2004.

Fig. 16: Exhibition room in the Archives nationales / Atelier de photographie (Paris); CC BY-SA 3.0, via Wikipedia: <https://de.wikipedia.org/wiki/Datei:Archives_nationales_%28Paris%29_Grands_d%C3%A9p%C3%B4ts_%28salle_de_l%27Armoire_de_fer%29.png> (accessed on 5 December 2024).

Similarly, archive buildings can help to keep alive the memory of this past in countries whose history is deeply marked by colonisation. Cape Verde is one of the younger states in the world: the Portuguese colony gained its independence in 1975. A former customs office, originally built in 1878, was transformed into the state archive created in December 1988 (Arquivo Histórico Nacional, since 2012, the Arquivo Nacional de Cabo Verde) for preserving the national archival heritage. In this manner, the new national identity can be associated with the remembrance of the colonial past of the archipelago (Fig. 17).

Fig. 17: Arquivo Histórico Nacional, Praia, Cape Verde, photo: Xandu; public domain, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Arquivo_Hist%C3%B3rico_Nacional,_Praia,_Cape_Verde.jpg> (accessed on 5 December 2024).

The centralisation of archives and promotion of historiography based on preserved documents, the consultation of which is strictly controlled by those in authority, are two concomitant phenomena of which Egypt offers a particularly interesting example. The neo-classical ʿĀbdīn Palace (built 1863 to 1874, see Case Study 5.4) symbolises the beginning of modern Cairo, as it was built to give Cairo a European style layout. In addition to the construction of a library, accessible only to a privileged minority, the construction of a building dedicated to archives underlines the importance of these documents:

> the ʿĀbdīn archive played two complementary and, for its time, unusual roles: first, its creation represented a pioneering attempt to establish a modern research archive in Egypt; and second, it simultaneously functioned as a state-governed royal workshop for politicized writing.[43]

43 Di-Capua 2009, 91.

This central Egyptian national archive was subsequently moved to a new location in the 1920s; it is an example of the 'modernisation' of archival practices in a semi-colonial context. Yesterday as today, the building leaves its mark on men, as recently noted by an American-Egyptian historian: 'Custodian of memory, the archive is at the same time an organic part of Egypt's contemporary state bureaucracy'.[44]

The reuse of industrial buildings for archival purposes, already addressed in the case of Augsburg and Quebec,[45] is even more obvious in Roubaix (northern France), where the French National Archives of Industrial Work (called Archives nationales du monde du travail since 2007), originally created as the Centre des archives du monde du travail (1983), was created by the French government:[46] ten years after its creation, this new institution opened its doors in the transformed textile factory Motte-Bossut, built 1843–1845 (Fig. 18).

Fig. 18: Archives nationales du monde du travail), Roubaix, photo: Velvet; CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Roubaix_archives_travail.JPG> (accessed on 5 December 2024).

44 Mikhail 2023, 5.

45 See above pp. 236–237, 233–234.

46 Porte (ed.) 2022.

7 Propaganda and symbolic value of archive buildings

Modern archival architecture can reflect environmental parameters and humanity's interaction with it, thereby, symbolically integrating archiving into broader societal and cultural concerns. This is the case, for instance, in the recently constructed new archival building of the French Département de l'Isère in the Alps: the skin and the concrete structure of the project link the geology of the limestone massifs which surround the Grenoble plain to the industrial history of this region, which is also an area playing a major role in technological research in France. The building is composed of three entities: a base, a plant stratum and the storage space. These spaces are supposed to express the raw and mineral nature of the territory of Isère (Fig. 19).[47]

Fig. 19: Archives of the department of Isère, France, photo: Binnette; CC BY-SA 4.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:Archives_d%C3%A9partementales_de_l%27Is%C3%A8re.jpg> (accessed on 5 December 2024).

47 Delohen 2022.

However, the fact that the construction or decoration of an archive building is an instrument of political communication and can be used as a propaganda tool is nothing new. This was the case, for example, at Westminster Abbey in the Middle Ages. This church featured a distinctive muniment room, which 'occupies a curious position overlooking the South Transept and is a kind of open gallery midway between the floor and the triforium of the Abbey Church'.[48] This room dates from the reign of King Richard II (1377–1399), whose emblem, the White Hart, is painted on the wall above the armoire where the archival documents are kept: by painting this emblem over their archives, the monks were underlining the link between themselves and royalty (Fig. 20). The popes were also aware of the importance of propaganda through images, since the decoration of archive rooms is a means of communication about the value of the documents kept there. One of the most illustrious archive places is the Vatican archive (for a long time called Archivio Segreto Vaticano, since 2019, Archivio Apostolico Vaticano), created out of previously disjointed papal document repositories in many stages in the early seventeenth century.[49] The iconographic programme of the rooms decorated at that time emphasises the affirmation of the pre-eminence of the papacy.[50]

Perhaps no archive building can express the sacrality of legal and historical documents more clearly than the American National Archives Building in Washington DC. The American Congress authorised the construction of the National Archives Building in 1926 as part of a massive public buildings programme in the capital city. This structure, built in 1931–1935, imitates the architecture of Greek temples. Consequently, it makes a clear link to Athenian democracy and celebrates the proudest elements of American identity, as President Herbert Hoover said during the cornerstone ceremony (in February 1933): 'This temple of our history will appropriately be one of the most beautiful buildings in America, an expression of the American soul. It will be one of the most durable, an expression of the American character'[51] (Fig. 21).

48 Tanner 1936, 44; see also Mortimer 2012, 2–4.

49 Poncet 2007.

50 Maiorino 2014.

51 Reinert Mason 2009, 11; on the building, see also Viola 1984, 39–53.

Fig. 20: Muniment room at Westminster Abbey; © Dean and Chapter of Westminster, London.

Fig. 21: National Archives Building, Washington DC, photo: David Samuel; CC BY-SA 3.0, via Wikimedia Commons: <https://commons.wikimedia.org/wiki/File:US_National_Archives_Building.jpg> (accessed on 5 December 2024).

8 Conclusion

As we have seen, the stability and security of archive buildings in the face of external dangers, whether fire, damp or theft, are essential criteria in their design. Another criterion is the need to cope with ever-increasing documentary production. Despite the current practice of selecting documents for archiving, this has led to the relocation of archive collections and the erection of buildings that meet social demand, contribute to regional planning policy or influence the awareness of the symbolic value of archive documents. Archive buildings have increasingly gone from being places where documents are stored to being places where they are communicated. We can, therefore, consider that archive buildings, as places of memory, are not only places for preserving the memory of a society but also contribute to the construction of its identity.

Acknowledgements

I would like to thank my colleague Markus Friedrich for his careful proofreading and invaluable advice.

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Case Study 5.1: Caves as Storage Spaces

Agnieszka Helman-Ważny

Caves are a repository of data about the past, offering clues on human habitation, art, culture and climate history. They have served across millennia as shelters for communities living in extreme conditions, as well as pilgrimage destinations. They have important archaeological implications, since the inhabitants were surrounded by their household goods, as well as ritual and art objects, including books. Caves are sometimes foundations for temples, preserving objects that would usually be stored in monasteries. The Potala Palace, for instance – Tibet's most sacred site and the residence of the Dalai Lamas – was founded upon a meditation cave used by Tibet's first Buddhist king, Songsten Gampo. Through this association, the cave has become sacred, providing the basis for the establishment of a temple complex.

It is not surprising, then, that large collections of manuscripts have been found in caves over the last two centuries. Probably the best-known is the library discovered in the Mogao cave complex in Dunhuang in the early twentieth century (Fig. 1). A hidden chamber, Cave 17, was packed with manuscripts and paintings. This was the largest deposit of manuscripts ever discovered. The repository was probably created in the ninth century by a Chinese monk called Hongbian, the leader of the local Buddhist community. After his death in 862 CE, the cave became a shrine to Hongbian; a statue of the monk was installed, and manuscripts belonging to him were deposited there. More manuscripts were deposited in the cave over the following 150 years before it was sealed. There is also a large cluster of grottoes in Kucha, notably the Kyzil grotto, where paper and other artefacts have been found; there are clusters near Gaochang, the largest being the Bezeklik grottos, and Turfan. More recently, mountaineers and archaeologists have discovered such caves in the Himalayas, many of which were used by Buddhists as meditation chambers, while others were storage units or libraries.

Many formerly inhabited cave complexes can be found in Mustang, near Chusang, Choser, Di, Dhe, Sangboche and Monthang. One such complex where manuscripts were found is Mardzong (Fig. 2). Some caves were burial sites – as witnessed by the discovery of skeletons and tomb goods – while others were refuges for hermits who lived in darkness and isolation to meditate. Some caves were (and still are) monasteries, where monks have lived alongside the manuscripts and pieces of art. Murals are still visible on a few walls. The cave complex was probably a monastery where texts were deposited once they were no longer useable: as sacred objects, books should not be destroyed. Caves present a challenge in securing and storing manuscripts. Damage is caused by temperature fluctuation, dirt and dust; birds and other animals have access to them, causing further damage.

https://doi.org/10.1515/9783111656014-021

Fig. 1: The Mogao cave complex in Dunhuang; photo: Agnieszka Helman-Ważny (2011).

Fig. 2: The Mardzong cave complex; photo: Agnieszka Helman-Ważny (2017).

Case Study 5.2: Archive Building in Gondar Ethiopia

Dirbwork Bitsu Kassa

The archival practice of Ethiopia is closely linked with the history of writing and manuscript production. In the traditional way of archiving, archival places are built together with the church and monastery, *ʾəqā bet* ('objects house, repository') that are used as archives, libraries and a property store for precious objects of the church. It is a small and sacred room, not a building like a Gondarine archival building. There was a tradition in Ethiopia to build a church in the compound of the royal palace. The Gondarine period, from the 1630s up to the 1760s, had a strong imperial administration, and Gondar emerged as a major religious and cultural centre. The influence of Gondar in the political and literary history of Ethiopia persisted well into the nineteenth century.

In addition, the period was accompanied by a peculiar architecture and artistic style, traditionally known as Gondar-style architecture, Gondar-style art and Gondar-style melodies. The well-known Gondar royal castle building Fāsil Gənb ('Fāsil bullding') was initiated by King Fāsiladas (1632–1667) and expanded by his successors. Yoḥannəs I (1667–1682), the son of Fāsiladas, in addition to constructing his palace, built an archive, which is called *beta mazāgbet* ('home of archives') within the same compound as his father's palace. The archival-library building of Yoḥannəs I was to the east of Gəmǧā Bet Māryām church (Fig. 1). The architecture of the building is similar to other Gondarine architectural styles. It was a tradition in that period to build archives and libraries adjacent to the ruler's residence or royal palace. Fig. 2 shows an archive/library which was built by *ʾƎtege* Məntəwwāb (the widow of King Bākāffā, 1721–1730) in 1742, in the compound of the royal palace and Dabra Ṣaḥāy Qʷəsqʷām Māryām church. It is located between the palace and the church specifically, to the east of the church and the west of the palace or the resident of Məntəwwāb. The building of the archive is connected to the surrounding wall. The manuscripts that were kept in this archive were brought to Maqdalā by *ʾAṣe* Tewodros II (1855–1868) and later taken by British expeditionary forces in 1868. However, there are some manuscripts, including the land charter, crowns and other ancient objects, which still remain in the archival building.

https://doi.org/10.1515/9783111656014-022

Fig. 1: *Mazgab bet* ('treasury house') of the main Gondar castle built by Yoḥannəs I (r. 1667–1682); photo: Dirbwork Kassa, March 2023.

Fig. 2: Beta Niqotā ('Home of Niqota'), Dabra Ṣaḥāy Qʷəsqʷām Māryām church archival building; photo: Dirbwork Kassa, March 2023.

Case Study 5.3: The Archives Internationales de la Danse in Paris

Franz Anton Cramer

Dance-related archival collections were a new phenomenon in twentieth-century Western modernity. As the art form developed to be part of avant-garde movements and progressist discourse, the need to preserve and make accessible textual and visual documents as well as objects relating to the evolution of dance was vigorously discussed. Individuals and institutions alike launched ambitious projects from the 1920s onwards. One of these was the Archives internationales de la danse (AID), the international dance archives. This pioneer project was founded in Paris in 1931 by Swedish patron of the arts Rolf de Maré, and moved in a newly erected building in 1932. The latter was set in the well-to-do sixteenth district (*arrondissement*) of Paris, not far from the Trocadéro Palace. It is the first known instance of a twentieth-century archival institution dedicated to dance and performing arts that was given a purpose-built locale. The construction plan and the façade photographs show an elegant Art Deco ensemble.

The property acquired by de Maré consisted of a turn-of-the-century mansion and a building terrain in the back. It was on this terrain that the operational rooms were constructed, comprising a lecture hall, a small theatre, an exhibition space, some museum rooms and two apartments. The street building was dedicated to offices, storage space and the reading rooms. In line with the arts-driven concept of a collecting archive, the site was designed to house a continuously growing collection and welcome a general audience. Access to the collections and information contained therein was a key element from the start. Hence, large space was provided for vestibules as well as rooms for consulting documents both visual and textual.

The AID closed in 1940 when France was invaded by German troops. After a short interlude between 1946 and 1949, it closed its doors for good in 1952. The building was demolished in the 1960s. The only traces of it today are the collections that were partly handed over to the French national library's music department at the Bibliothèque-musée de l'Opéra and partly to the newly founded Museum of Dance in Stockholm (1953).

https://doi.org/10.1515/9783111656014-023

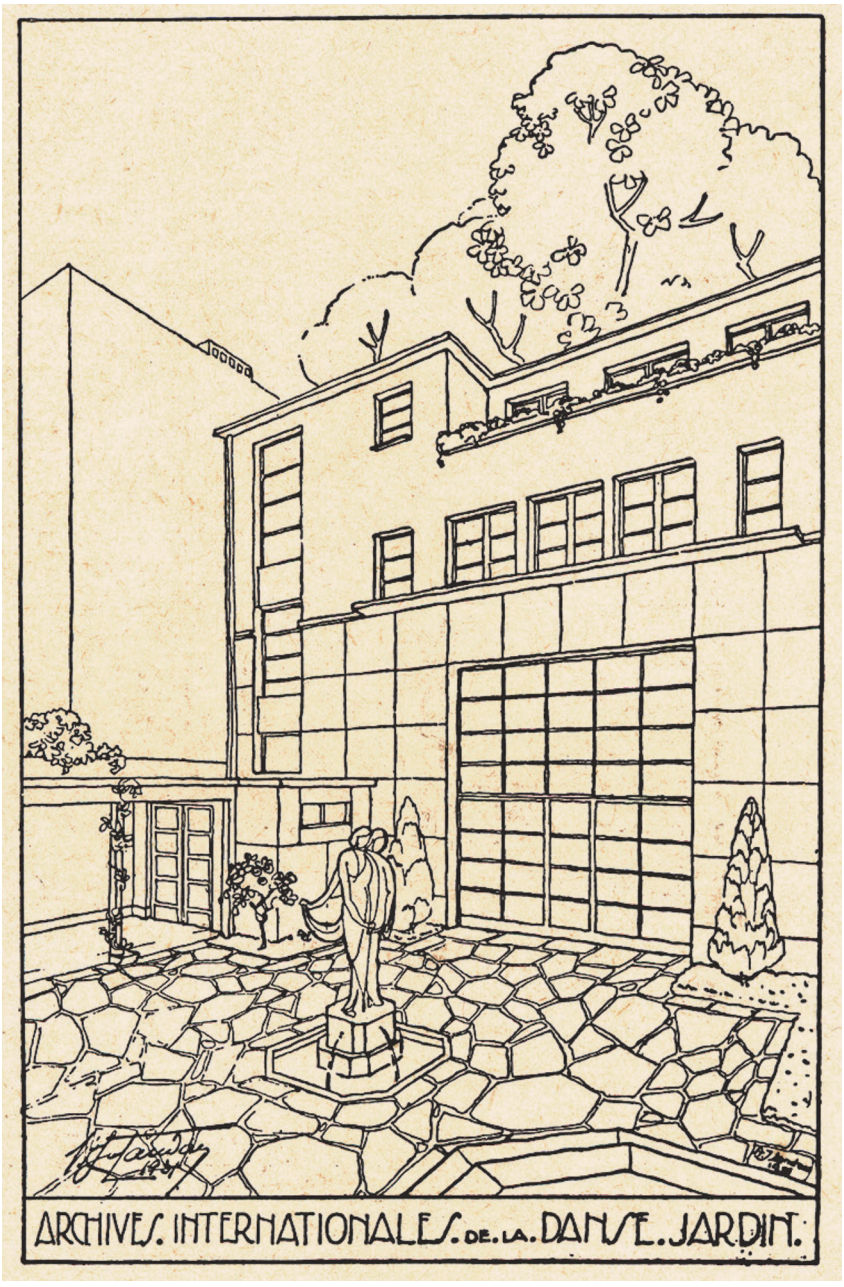

Fig. 1: Drawing for the façade of the rear building, 1931, Stanislas Landau; *Les archives internationales de la danse*, 0 (1932), 3; © Médiathèque du Centre national de la danse – Fonds Gilberte Cournand.

Case Study 5.4: The ʿĀbdīn Palace Archive in Cairo: Merging Monarchy and Nation

Konrad Hirschler

Archival spaces were profoundly reconfigured with the gradual development of the Egyptian nation-state under increasing colonial hegemony in the course of the nineteenth and early twentieth century. The Daftarkhāne was founded in Cairo in the 1820s as the archive of state administration, but other archival sites, such as the courts, continued to store documents that they produced in their day-to-day work. In addition, pre-nineteenth-century documents were not transferred to the Daftarkhāne, but instead remained distributed across the urban topography. The Daftarkhāne started to develop into an archive with national ambitions after the abolition of provincial archives in 1865. This development reached a new milestone in the 1920s when the royal ʿĀbdīn Palace, built in 1873, officially became the central Egyptian national archive to which documents were gradually transferred from all across Cairo and Egypt. The neo-classical ʿĀbdīn Palace housed the royal government from the palace's inauguration in 1873, up to the revolution in 1952. Planned by the French architect Léon Rousseau, it was meant to materialise an Egypt that was modernising and reforming.

The creation of the ʿĀbdīn archive was far from linear: it was initiated in the 1920s as a royal library and only slowly transformed into a distinct archive. The creation of this national archive was closely linked to the state-sponsored project of writing an Egyptian national history, as the ʿĀbdīn Palace also hosted a workshop of royal historians who wrote a massive history of 'modern' Egypt that narrated the story of a reforming Egypt under benevolent European guidance with the Ottoman Empire acting as a hostile alien entity. The archive's collection criteria, thus, both reflected this developing national narrative and shaped it profoundly. Most importantly, Ottoman language documents were marginalised and those in Arabic and European languages prioritised, thereby, 'de-Ottomanising' the Egyptian past.

Situating the national archive in this palace, at the very heart of state authority, made a clear statement as to its envisioned role. Yet, at the same time, the existence of this royal archive, located in one of the palace's wings, was not evident to the uninitiated observer. In a sense, this architectural design collapsed the monarchy and the Egyptian history into one indistinguishable entity. The new Nasserist archive (*Dār al-wathāʾiq*) on Cairo's Nile corniche replaced ʿĀbdīn in the 1960s. Housed in a typical Eastern European modernist building, it created the first distinct archival space within Cairo's urban topography and, thus, made the state's claim to the documents visible.

https://doi.org/10.1515/9783111656014-024

Fig. 1: ʿĀbdīn Palace, Cairo, 1944; photo: John Phillips; © Time Inc. / Shutterstock.

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https://doi.org/10.1515/9783111656014-025

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General Index

This index offers an overview of persons, places and selected key terms. Completeness was not the primary aim, particularly for key terms. Page numbers marked with an asterisk refer to illustrations.

https://doi.org/10.1515/9783111656014-026