The Recordkeeper’s Bookshelf
Acknowledgements

We gratefully acknowledge the support of an International Council on Archives Programme Commission award in the development of this resource (http://www.ica.org/1174/about-programme-commission-pcom/about-programme-commission-pcom.html).
This resource is dedicated to the memory of our friend and colleague, Dr Marian Hoy (1957-2012).
The volume of literature available on recordkeeping subjects is vast. Books, articles, papers, policies, standards, guidance and internet resources are written frequently in efforts to improve practice or enrich the body of recordkeeping theory that underpins all professional activities. Texts and standards from other disciplines, such as information technology, librarianship, management, and digital curation, also have a direct bearing on the work of archivists and records managers and increase exponentially the amount of available literature relevant to them.

This resource, developed by the Centre for Archive and Information Studies (CAIS) at the University of Dundee in Scotland, and supported by the Programme Commission of the International Council on Archives (PCOM), is designed to act as a starting point for anyone wishing to engage with six major areas of professional practice. Thematic chapters, selected by CAIS in conjunction with PCOM, each consider a particular aspect of recordkeeping, highlighting major themes and citing some relevant literature.

The resource is not intended to be a comprehensive literature review. Rather, it has been developed as an introduction and starting point for further research on the subjects covered. It is offered at no charge and under a creative commons license to assist archivists and records managers and support the mission of the International Council on Archives: to ensure ‘the effective management of records and the preservation, care and use of the world’s archival heritage’.

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The appropriate management of the retention and disposal of records is a fundamental professional service provided by recordkeepers to their organisations. No organisation can keep everything; physical and electronic storage space is expensive and legislative, regulatory and organisational imperatives govern the length of time for which particular records are needed and for what purposes. It is important to remember that the purpose, or value, of a record may change over time, which is why retention and disposal activities must be considered carefully.
1. Definitions

Decisions on the retention of information are normally documented in a ‘retention schedule’. The *Glossary of Archival and Records Terminology* defines a retention schedule as a document that identifies and describes an organisation’s records, usually at the series level [and] provides instructions for the disposition of records throughout their life cycle.

The definition also notes that the related terms for this document include ‘disposal schedule, records schedule, records retention schedule, and transfer schedule’. Disposal is defined as the transfer of records ... to their final state, either destruction or transfer to an archives.

The explanatory notes for this term also make the important point that ‘disposal is not synonymous with destruction’. Destruction is likely to be the outcome for records with no enduring value beyond their business uses. However, ‘disposal’ as a term can also refer to the transfer of records, identified in a retention schedule as having enduring value and worthy of permanent preservation, to an archive or similar facility.
Retention schedules are designed to govern the retention and disposal of all organisational records and are an important policy document. That is not to suggest that they are not ‘living’ documents; they will be revised as organisations evolve and as legislation and regulations are revised and updated. They are, however, crucial to defending organisational decisions concerning the retention and disposal of information. It is far better to defend a decision from the basis of approved policy, developed in light of an understanding of the organisation’s own needs and the legal imperatives under which it operates, than to account for a decision made without properly considered policies and procedures.

As they are designed to encapsulate the retention decisions for all organisational records, retention schedules will include policies for records that may or may not be in the physical custody of a records manager or an archivist. They are a fundamental tool in establishing intellectual control of organisational records and, in that sense, physical control of the records themselves is not integral to the implementation of retention and disposal policies. Many organisations are now far too complex for records managers and archivists to have physical custody of all organisational information and this is a particularly pressing issue when considering the enormous amount of business conducted electronically. This modern administrative reality should not, however, be seen as reducing the importance of retention and disposal schedules and policies. When records are diffused throughout an organisation, providing policy guidance on their appropriate retention becomes even more important and is an area where the recordkeeper, as the organisation’s records and information specialist, should take the lead role.

**Post-custodialism**

‘The idea that [recordkeepers] will no longer physically acquire and maintain records, but that they will provide management oversight for records’ stored elsewhere and in the custody of others is known as ‘post-custodialism’. This term is often used in discussions surrounding electronic records, suggesting that, although records may remain on a server or other media, their control will pass to the recordkeeper who will make decisions concerning their processing, management, preservation, retention, disposition and access conditions. This concept is not without its critics. Luciana Duranti, amongst others, has highlighted the traditional links between the custody by the recordkeeper and the verification of authenticity. However, in complex modern organisations, post-custodial
2. Appraisal

Clearly then, the development of retention schedules involves taking decisions about the value of records both to the business and in terms of their long-term value. This process of ‘documenting a record’s value’, or indeed evaluating a record’s value, is known as appraisal.\(^5\)

Appraisal, as a term, is often used as shorthand to indicate the process of deciding which records are of historic importance and ‘worthy’ of inclusion in an archive. However, the meaning of the term is broader than that and when making choices about retention, the appraisal of records is a crucial part of that process and must encompass more than an assessment of historical value.

Hilary Jenkinson described appraisal as the process of ‘decreasing by selection ... the intolerable quantity of [records] accumulated by modern administration’.\(^6\) The reasons for the reduction in records may be based upon legal requirements, the management of space, or the obsolescence of the information contained in the record, but the key here is that a selection is being made concerning the continued retention of records, the length of time for which they should be retained and the rationale for that retention (or disposal).

Schellenberg’s ‘taxonomy of values’ from the 1950s provides one framework that articulates some of these points. He identified a record’s ‘primary value’ to an organisation as deriving from its legal, administrative, or fiscal importance; the categories of records, created or received by the organisation in the normal course of business, which ‘can be viewed as those which represent business operations and those which safeguard essential organisational interests’.\(^7\) He categorises ‘secondary values’ as those values that deal with ‘future record use rather than current business use’ where their importance is based on their evidential or informational value.\(^8\) It is important to note here that Schellenberg’s ‘evidential’ or ‘informational’ value in respect of secondary use of the record means something slightly different to the way these terms are used now. Schellenberg was referring to a secondary group of users of the record (normally historians) who would value the information or evidence contained in the record in a different way to that of the originating organisation.
A more modern analysis of the value of records is unlikely to make quite the same distinction. A consideration of evidential and informational value (using the terms in a modern sense) is normal when appraising records in a primary setting and considering areas such as the accountability of decision making, appropriate governance, organisational (and often societal) memory and the integrity of financial transactions. The important point is that records have multiple values and characteristics and consideration (or appraisal) of all these aspects is central to taking appropriate decisions on the retention and disposal of records.

Since the 1950s and the pioneering work of Jenkinson and Schellenberg, appraisal theory has continued to evolve and now includes concepts such as macro-appraisal (where records are appraised by series rather than individually). Ever increasing organisational sophistication has necessitated the continued development of approaches to appraisal to help recordkeepers cope with the impact this has on the volume and complexity of records. Similarly, the notion that records exist in multiple dimensions and contexts and embody multiple values simultaneously, which has been expressed most clearly in the records continuum model, challenges the idea that appraisal decisions can be made by considering one or two limited factors or values.

For more on the development of appraisal theory, see the chapter of this resource on that subject. In the context of retention and disposal, the important thing to remember is that a knowledge and understanding of records and their role and value within the organisation and in the longer-term is integral to making appropriate decisions about their retention.

3. Business classification

Of course, before decisions can be made about the value of records to the organisation, an understanding must be developed of the organisational functions and activities they support and the transactions they record. This process is known as classification. The International Standard on Records Management (ISO 15489) details the rationale for classification:

Classification of business activities acts as a powerful tool to assist in the conduct of business and in many of the processes involved in the management of records including...
a) providing linkages between individual records which accumulate to provide a continuous record of activity,

b) ensuring records are named in a consistent manner over time,

c) assisting in the retrieval of all records relating to a particular function or activity,

d) determining security protection and access appropriate for sets of records,

e) allocating user permissions for access to, or action on, particular groups of records,

f) distributing responsibility for management of particular sets of records,

g) distributing records for action, and

h) **determining appropriation retention periods and disposition actions for records.**

As the list above indicates, business classification is fundamental to all aspects of recordkeeping, but its importance to the development of policies for retention and disposal cannot be overstated. Without understanding what an organisation does and the context in which it operates, it is impossible to make informed appraisal decisions concerning its records.

The International Standard recommends that business classification for recordkeeping is conducted on the basis of analysis of organisational functions, not an analysis of structures. Administrative structures, reporting lines, and departmental responsibilities are subject to regular change within organisations and if recordkeeping policy and practice is aligned with particular structural arrangements it requires, at best, frequent realignment or, at worst, quickly becomes obsolete and is no longer fit for purpose. Similarly, many functions can cut across administrative arrangements, perhaps where authority for particular areas is devolved from the centre to business units. For example, most organisations will have a Human Resources or Finance function, regardless of where those functions sit within current administrative arrangements.

When records policies are based on an analysis of functions rather than structures, structural change does not have the same impact on measures designed to ensure the integrity of organisational records and the procedures used to manage them. This process of **functional**
analysis and the consequential alignment of recordkeeping policy is widely accepted as best practice in the recordkeeping literature.

The recommendation in ISO 15489 is that the ‘structure of classification system is ... hierarchical and reflects [an] analytical process as follows.

a) The first level usually reflects the business function.

b) The second level is based on the activities constituting a function.

c) The third and subsequent levels are further refinements of the activities or groups of transactions that take place within each activity’.

By producing an analysis of the functions of the organisation in this way, a platform is established upon which retention schedules can be constructed.

**Functional analysis**

Functional analysis is the process by which a functionally-based business classification scheme is developed. The use of a functional classification is widely accepted as best practice and most of the standard recordkeeping texts will mention it during a discussion of approaches to classification. When reading the literature it is important to remember that ‘Functions are the things that your organisation has to do to achieve its corporate goals and strategies. Activities are the things it does to carry out its functions’. A good starting point to find out more about classifying records and the importance of functional classification is the opening sections of chapter 3 of Shepherd and Yeo’s *Managing Records: a handbook of principles and practice*.13
4. Developing a retention schedule

By extending the process of constructing a classification scheme, the building blocks for a retention schedule can be put in place. As well as establishing what the organisation does in terms of its functions, activities and transactions, another element can be added: the record groups that support those processes. Adding this element extends the business classification to cover the following questions:

- What do we do?
- How do we do it?
- What records are created or received in the process of doing it?

Surveying records

There is not the space here to consider the different methods of surveying records, but there is lots of information on this topic in the literature. Standard texts such as Shepherd and Yeo's *Managing Records* and Parker's *Managing Your Organisation's Records* cover this subject, as does the Design and Implementation of Records Systems (DIRS) methodology in the International Standard, ISO 15489.

The JISC model Business Classification Scheme and Records Retention Schedule for UK Higher Education Institutions provides a good example of the process of adding record groups to a classification scheme. The following example demonstrates how appropriate record groups can be added to an analysis of functions/activities:  

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>Student Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>The function of administering the institution’s contractual relationships with its students.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Student Academic Appeal Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>The activities involved in handling appeals by students against academic decisions.</td>
</tr>
</tbody>
</table>

| RECORD GROUPS             | Records documenting the handling and results of academic appeals by individual students. |

As well as indicating how record groups can be integrated into the classification scheme, this example also illustrates the importance of clear ‘scope notes’ to minimise the potential for ambiguity in the classification scheme/retention schedule. Remember as you look at this example that ‘Student Academic Appeal Handling’ is just one activity under the broader function of ‘Student Administration’.

The next step in the development of the retention schedule is to appraise the value of the records, take decisions on how long they should be retained and note any appropriate disposal actions. This
process, at the most basic level, adds fourth and fifth questions to those outlined above:

- What do we do?
- How do we do it?
- What records are created or received in the process of doing it?
- How long should we keep them (and why)?
- How do we dispose of them?

Using the example from the JISC model again, the classification is extended as follows:15

<table>
<thead>
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</table>

<table>
<thead>
<tr>
<th>RECORD GROUPS</th>
<th>Records documenting the handling and results of academic appeals by individual students.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RETENTION</td>
<td>Last action on case + 6 years</td>
</tr>
<tr>
<td>PERIOD</td>
<td></td>
</tr>
<tr>
<td>AUTHORITY</td>
<td>1980 c. 58 s 5</td>
</tr>
<tr>
<td>NOTES</td>
<td></td>
</tr>
<tr>
<td>DISPOSAL</td>
<td>Destroy</td>
</tr>
<tr>
<td>ACTION</td>
<td></td>
</tr>
</tbody>
</table>

The example above answers all the basic questions asked earlier. The disposal action is an addition not included in the original model scheme but something quite commonly seen in retention schedules. It is helpful to take each of the questions we have been asking and answer them in light of this example from the JISC model scheme.

- **What do we do?** – This example is concerned with the function of student administration, explained as ‘The function of administering the institution’s contractual relationships with its students’.

- **How do we do it?** – One of the activities associated with the student administration function is student academic appeal handling. This is defined as ‘The activities involved in handling appeals by students against academic decisions’. (Again, remember that this is one activity amongst many which will be undertaken in support of this function).

- **What records are created or received in the process of doing it?**
  - The record groups associated with this activity are those ‘Records documenting the handling and results of academic appeals by individual students’. There is an opportunity here for the addition of more detail or example records series.
• How long should we keep them (and why)? – They should be kept for six years after the conclusion of the year in which the last action on the case is taken. The reason for this is that this is the period outside which it is less likely that an action for damages will be raised against the organisation (based on the UK (excluding Scotland) Limitation Act, 1980).

• How do we dispose of them? – These records should be destroyed – the rationale being that after the retention period the organisation is unlikely to have to defend a legal action on the basis of the decisions documented in the records and, in the UK, the Data Protection Act 1998 mandates that in normal circumstances (and where they have no long-term archival value) records containing personal information should be destroyed when they are no longer needed.

5. Key elements of a retention schedule

In looking at the example above, the key elements of a retention schedule become clear, as well as the process of its development. All retention schedules normally contain the following elements:

• A description of the record groups and the functions/activities they support with detailed scope notes.

• The retention period (in this example, 6 years).
• The **trigger** for the retention period. This is extremely important. If a retention schedule simply specifies $x$ number of years it is impossible for the policy to be implemented. Is that $x$ years from the creation date, the date the record was last altered, the date that a file was closed, the date a decision was made, etc? The trigger specifies when the clock starts. Common trigger points are things such as ‘last action’, ‘termination of relationship’ (for example at the conclusion of a contract or when a member of staff leaves the organisation), ‘end of financial year’, etc. The important thing about the trigger is that it is specific enough to remove any ambiguity about when the retention periods begins (and therefore when disposal should take place).

• The **rationale** for the retention period. This is the area where the appraisal decision made about the record is recorded. Is there a legal reason for the period (as in the example)? Does an administrative convention based on organisational precedent apply? Is there a relevant financial or accounting rule (for example, do certain records have to be retained for tax or audit reasons)? Should the records be retained to demonstrate the governance of the organisation or to ensure the accountability of its decisions and actions? Do the records have cultural, societal, or historical importance?

• The **disposal action**. The disposal action will normally be ‘destroy’ for those records with no enduring value, or ‘transfer to the archive’ (or similar) for those records that do have enduring value. (Remember that ‘transfer to the archive’ can mean transfer to the control of the archivist as well as physical transfer of the records themselves). It can also be ‘review’ for those records where value cannot be fully determined at the time of the development of the retention schedule and it is considered prudent to review their retention status after a given period.

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**Who writes a retention schedule?**

The development of a retention schedule is a collaborative effort. With so many factors to take into consideration (legal, financial, administrative, historical, cultural) it is likely that the survey work involved in the development of a classification scheme and retention schedule will involve lots of stakeholders, including the records manager, the archivist, legal teams, accountants/finance officers, key administrative officers, and so on. The earlier all these stakeholders are involved the better, as that will help develop both a sense of
ownership and buy-in to the policy and make sure the document takes account of as many perspectives as possible.

Having said that, it will normally be the recordkeeping team that writes the schedule itself, as they are the ones with the knowledge and expertise to pull all the various elements together and make informed appraisal decisions about the organisation’s records.

Given the potential ramifications arising from retention decisions in terms of the consequences for the organisation of retaining information for too long or destroying information prematurely, the retention policy should be signed-off and approved by an appropriate senior officer or governing body.

6. Examples of retention schedules

One of the best ways to become familiar with records retention schedules is to look at examples produced by other organisations or sectoral model schemes. When doing so, look for the elements detailed above:

- A description of functions, activities and records with scope notes
- The retention period

- The trigger
- The rationale for the retention period
- The disposal action (where appropriate).

Some examples of retention schedules available online include:


navigate the retention schedule and how its constituent elements are displayed.

7. Disposal practice

Disposal is normally considered in the recordkeeping literature at the same time as retention because the two areas are inextricably linked. Once a record has reached the end of its retention period and is scheduled for disposal (rather than review), normally one of two options will be available:

- **Destroy.** This means permanently destroying records to ensure no opportunity for their recovery. There are different types of destruction, such as shredding, incineration, physical destruction, overwriting of digital media, and so on, and they all vary in cost.

- **Transfer to Archive (or similar).** For those records deemed to have enduring value beyond their initial business use, the disposal action is likely to be an instruction to retain the records permanently under the auspices of an archivist or officer with similar responsibility. In these cases the control of the records (and often the records themselves) will be passed to the archivist.

There are several factors associated with good disposal practice:

- Make sure that the **retention schedule is implemented.** ‘It can be far more damaging to have a retention policy which is misused or ignored than not to have a policy at all.’\(^{18}\) Consistency of approach is normally more defensible than a haphazard implementation of a policy. Similarly, if a retention schedule is not implemented consistently, how can the organisation ensure that all records of a particular type have been properly disposed of?

- For records scheduled to be destroyed, **choose an appropriate method of destruction.** ‘The choice of method will be determined by security needs, costs and environmental impact’, but it is important to make sure that the level of security chosen is appropriate to the sensitivity of the information in the records.\(^{19}\) For instance, do you allow information to be taken off-site for destruction, or is it important that it is destroyed in-situ? How many times should a piece of digital information be overwitten to ensure it has been destroyed? Are there any rules or regulations governing how certain types of information in your organisation should be destroyed? These are all factors that should be considered when destroying records.
• Ensure that the **disposal is properly authorised**. Authorisation should be obtained and documented from a person or governing committee of sufficient status to ‘commit the organisation to the consequences’ of disposal.\(^ {20} \)

• Maintain an **record of the disposal that can be audited**.\(^ {21} \) This should include a note of the records that underwent disposition, why, what the disposition actions were, the dates they were carried out, by whom, and on whose authority. Such a record is just as necessary when records are transferred to an archive.

**NOTES**


4. Ibid. pp. 19-26


Parker, *Managing Your Organisation’s Records*, p. 26

Shepherd and Yeo, *Managing Records…*, pp. 72-80


Parker, *Managing Your Organisation’s Records*, p. 52

Parker, *Managing Your Organisation’s Records*, p. 57

Shepherd and Yeo, *Managing Records…*, pp. 72-80
Proper retention and disposal policies and practices are at the centre of good recordkeeping practice and fundamental to the role of records managers and archivists. Documenting which records are to be retained, why, and for how long, and aligning these rules with organisational and legal requirements is a core skill. As such, there is extensive advice in the recordkeeping literature and any textbook on records management or archival practice is likely to cover the themes outlined above. Any of the following are useful starting points when thinking about retention and disposal and developing local approaches:

Appraisal is the process of deciding how long and which records or archives should be kept. It is one of the most fundamental aspects of professional recordkeeping practice.
## Appraisal

1. What is appraisal?

Appraisal is the process of deciding how long and which records or archives should be kept. It might involve asking the following questions:

- Are the records still useful for the person or organisation that created them? Might they still be used for personal or administrative purposes?

- Are there legal reasons why the records should or should not be kept?

- Might the records be useful for purposes other than those for which they were originally created, such as for historical research?

This chapter does not consider the lifecycle or continuum, but it should be borne in mind that the distinction between the questions above might be blurred: a record does not necessarily progress through clear chronological stages. However, in general, the questions in the first bullet are most likely to be considered by those dealing with current and semi-current records (records managers) and the question in the final bullet by those dealing with archival records or records that have long-term or permanent value (archivists).
Recordkeepers managing current records will consider the administrative and legislative requirements that govern their retention and will draw up a retention schedule, often at series level and based on a functional or other classification scheme. The retention schedule details how long certain records will be kept and their final disposition, whether this be destruction or storage in an archive. This chapter on appraisal will not focus on current records; rather, it will look at appraisal in the context of long-term or permanent preservation (archives), although the criteria that influence decisions and the methods employed in making these decisions may be broadly similar for both.

According to *A Glossary of Archival and Records Terminology*:

In an archival context, appraisal is the process of determining whether records and other materials have permanent (archival) value. Appraisal may be done at the collection, creator, series, file, or item level. Appraisal can take place prior to donation and prior to physical transfer, at or after accessioning.¹

When archivists decide whether to accept a particular collection or part of a collection they are undertaking appraisal. Once a collection is accepted into an archive (accessioned), an archivist may make further decisions about what to keep or what not to keep. Making decisions about what records are to be retained and what records destroyed is an important – some have argued the most important – archival decision and has generated much debate in archival literature. Key questions have included:

- Who should make appraisal decisions? Who should decide what to keep and what not to keep?
- What criteria should be used on which to base these decisions?
- Can theories and concepts be applied? What is value?
- How should appraisal be undertaken in practice? What methodologies should be used?

This chapter will consider these questions by reviewing some of the key literature relating to appraisal. The review takes a broadly chronological approach but this is not to suggest that appraisal theory and methodology has developed in a linear fashion. Concepts and practices continue to be revisited and reinterpreted and it should be noted that writers can and frequently do develop and change their opinions.
Many authors have summarised the history of appraisal theory and key appraisal concepts. The following are suggestions for a starting point:

- Frank Boles, *Selecting and Appraising Manuscripts* (Chicago, 2005)
- Terry Cook, ‘What is past is prologue: a history of archival ideas since 1898, and the future paradigm shift’
- Ciaran B. Trace, ‘On or Off the Record?’ in *Currents of Archival Thinking* (Santa Barbara, 2010).

### 2. Appraisal theories, concepts and methodologies

Decisions about the retention of records have been made since records were first created and authors such as Ernst Posner have discussed the reasons for the keeping of records and the creation of archives in early societies. The building of national repositories for archives and the legislation which established national archives and their precursors in the late eighteenth, nineteenth and twentieth centuries reflects some of the perceived values of archives: as evidence, as a symbolic reflection of nationhood or as a resource for historical and other research.

However, despite the importance of decisions about what to keep, the book that is often referred to as the first archival textbook (or the ‘bible’) – Muller, Feith and Fruin’s *Manual for the Arrangement and Description of Archives* – does not mention appraisal at all. Some of their discussion about what constitutes an archive (personal vs. official, manuscripts vs. books, for example) is relevant, but there is no discussion of selection. It is a British writer – Sir Hilary Jenkinson – who is most frequently credited with initiating the debate about appraisal.

### 3. Jenkinson: creator appraisal

Jenkinson was Deputy Keeper at the then Public Record Office in London and his *Manual of Archival Administration* became a standard archival work. Jenkinson is well known for his insistence on both the physical and moral integrity of archives. He saw the role of the archivist as one of keeper, whose main function was to preserve this
integrity. If an archivist decides to destroy part of an archival collection, this will inevitably involve using a certain amount of personal judgement, and therefore reduce the impartiality of the archives. For Jenkinson, there are no reliable criteria on which to base an appraisal decision because archivists should not appraise, only creators should. If a creator decides to destroy records that it no longer needs, however regrettable this might be for future users, the integrity of the collection is not compromised as long as this decision is not based on ‘the alleged historical requirements of the future’.  

Whether or not archivists agreed with the concepts underlying Jenkinson’s arguments, his views were seen by many as simply unworkable. In practice the increasing volume of records generated exacerbated the problems that Jenkinson himself had predicted (creators not destroying enough or destroying too much). Although in the 1937 re-edition of his Manual Jenkinson reiterated his argument that archivists should not select records to keep, in 1956 he wrote:

The necessity for decreasing by selection of some kind the intolerable quantity of documents accumulated by modern administration is very well known to all of us who have had the responsibly for preserving modern as well as ancient Archives, but it is known as a disagreeable necessity: disagreeable because we know also that there can be no absolutely safe criterion for Elimination.  

4. Schellenberg: evidential and informational values

That selection was a necessity was forcefully argued by Theodore R. Schellenberg, Assistant Archivist of the United States, whose formulation of criteria for appraisal (sometimes referred to as a taxonomy of values) has led him to be called the father of appraisal theory in the United States. Schellenberg saw public records as having two types of value:

- **Primary value**: the value for the originating organisation, which may be legal, administrative, fiscal, and/or operational.

- **Secondary value**: the value for others (such as researchers) after the records cease to be of current use.

Secondary value can be further defined as:

- **Evidential value**: evidence of the creating organisation and its functions and activities.
• Informational value: evidence of other people, bodies or subjects; value to be based on an analysis of uniqueness, form and importance.\(^8\)

Schellenberg argued that these were general principles rather than concise criteria and that some element of judgement was likely and even to be welcomed. Inconsistency in agreement on what might be valuable, particularly on informational value, would ‘spread the burden of preserving the documentation of a country among its various archival institutions, making one preserve what another may discard.’\(^9\)

Moreover, archivists could not be expected to make these decisions on their own: they should consult experts who would advise on which records would be of most value for research.\(^10\)

5. The changing winds of historiography vs. a representative record of human experience

Schellenberg’s model was, on the face of it, based on sound principles – why keep archives if they are not going to be used? And what better way to decide what to keep than to consider how useful it might be? However, several writers were uneasy with his approach.

Even Jenkinson had discussed whether archivists should dispose of items ‘not considered to be of sufficient value to justify their preservation’ and had concluded ‘who can project himself into the future and foresee its requirements?’\(^11\) Furthermore, he warned against following the advice of specialists, such as historians, who were liable to be prejudiced to their own research interests.\(^12\)

In a much-quoted article, F. Gerald Ham queried the status quo established by Schellenberg. Writing about ‘our most important and intellectually demanding task’ to ‘provide the future with a representative record of human experience in our time’, Ham asked ‘why must we do it so badly?’\(^13\) For Ham, appraisal tended to be random, fragmented, uncoordinated, and often accidental. He quoted Howard Zinn and others, who were urging archivists to make sure their collections documented not just the rich and powerful or traditionally popular subjects but also the lives of ordinary people.\(^14\)

Archivists (including those following Schellenberg’s model) were in danger of perpetuating skewed and biased versions of history and reflecting ‘narrow research interests rather than the broad spectrum of human experience’. By emphasising their role as custodians and the role of their collections in historical research, archivists were in danger
of remaining ‘at best nothing more than a weathervane moved by the changing winds of historiography’.\textsuperscript{15} Ham argued that changes in society and institutions, in the quantity, quality and vulnerability of documentation, and in technology, should lead archivists to re-examine their approach to selection. They should become active archivists, undertaking fieldwork and even creating documentation themselves.

Ham’s concerns reflected, to an extent, the ideas of the German Hans Booms, who considered the relation between societal values and archival standards and the impact of this on the creation of documentary heritage.\textsuperscript{16} His societal approach to appraisal required an analysis of contemporary society and public opinion to create a documentary model that would inform selection. Booms’ argument that ‘Measuring the societal significance of past facts by analysing the value which their contemporaries attached to them should serve as the foundation for all archival efforts towards forming the documentary heritage’ was significant both theoretically and practically.\textsuperscript{17} Value cannot be decided by a bottom-up analysis involving evidential and informational criteria applied to records themselves but only by analysis of the events and activities that produce these records. Although his full article was not published in English until 1987, his ideas have influenced many writers from the 1980s onwards.

6. Top-down and bottom-up

We saw above that Booms advocated an analysis of the functions of record creating bodies rather than the records themselves. This was a top-down approach that involved the analysis of functions, activities, creators, contexts and provenance, and the attribution of value to these. The archivist decides which are the most valuable, then identifies the best records to document these. Deciding the value of individual records is referred to as a bottom-up approach. The latter lends itself to a Schellenbergian ‘is it useful?’ methodology as well as analysis of value based on uniqueness, authenticity, reliability, condition and so on.\textsuperscript{18}
7. Documentation strategies

Booms and Ham argued for a strategic and collaborative approach, a call that was later repeated by Helen W. Samuels. In ‘Who Controls the Past’, Samuels attempted to articulate a technique for selection that would be fit for purpose in a world where institutional change and the quantity of information produced threatened to overwhelm archivists. She proposed documentation strategies as a way of ensuring that archives select the records most appropriate to their purposes and to wider society. The documentation strategy would ‘assure the documentation of an ongoing issue, activity or geographic area’ through collaboration between creators, archivists, institutions and users. Research into the history and other aspects of the topic to be documented, and identification of appropriate records (both current and historical), was needed in order for records to be placed in the most suitable repositories. Samuels acknowledged that there were intellectual, practical and political issues in choosing what was to be documented and by whom. However, the benefits were clear: coordination of activities and the creation of a national collection rather than individual piecemeal collections. While Samuels was praised for attempting to take a strategic approach to appraisal, many struggled to put her ideas into practice. Identifying themes and topics was problematic, the research required time consuming, and identifying and consulting partners and users proved resource-intensive. In 2008, Elizabeth Snowden Johnson, exploring the development of documentation strategies, concluded that the idea was ‘ultimately unworkable’.

8. Functional analysis

Despite owing a clear debt to the ideas of Booms and Ham on creating a more comprehensive documentation of society, Samuels was further criticised for proposing a methodological approach with little theoretical substance and one that focused on themes and subjects rather than on context and provenance. However, Samuels went on to develop her ideas and in Varsity Letters outlined a new approach where analysis was to concentrate not on theme but on function, within as well as between institutions. Appraisal decisions were to be based on functional analysis with a top-down consideration of the significance of the functions undertaken by an institution, rather than a review of the value of individual documents or
of the structure of the organisation. As with documentation strategies, Samuels saw this as a practical tool rather than a theoretical approach, but her emphasis on function rather than administrative structure or subject, and the consequent prominence given to context and provenance, went some way to deflecting the criticisms levelled at documentation strategies.

9. Macro-appraisal

One of those who criticised Samuels for lacking a theoretical underpinning was Canadian Terry Cook. Cook is well known as an advocate of macro-appraisal, which is often viewed purely as a top-down methodology. However, it is important to remember that, for Cook, macro-appraisal is as much a theoretical construct as a practical approach. His article ‘Mind over Matter: Towards a New Theory of Archival Appraisal’ explores his development of a societal model for appraisal. Acknowledging his debt to fellow Canadian Hugh Taylor (and later to American David Bearman), Cook argues that the focus of appraisal should shift from the actual record to the conceptual context of its creation, from the physical artifact to the intellectual purpose behind it. He argued that archivists were locked into a ‘cyclical “values” framework’ focused on Schellenbergian taxonomies and characteristics such as age and authenticity. In doing so they were missing the broader picture, the ‘articulation of the most important societal structures, functions, records creators, and records-creating processes, and their interaction, which together form a comprehensive reflection of human experience.’ This is Cook’s macro approach – not evaluating larger groups of records but a call to evaluate the functions and factors that produce records before appraising the records themselves. As he argues, ‘the central appraisal question becomes What should be documented? rather than What records should be kept?’ Appraisal starts with an analysis of organisational structures and functions, interactions and record creating processes, and for Cook a key component of this is societal dynamics: the interactions of citizens with state and institutions and the identification of the best documentation of this to create an ‘image’ of society.

Cook further elaborated on the theoretical as well as practical implications of his proposals in ‘Macro-appraisal and Functional analysis: documenting governance rather than government’.
argued that his approach (which had been applied at national level in Canada) could also be applied at governmental and institutional levels and did not preclude later analysis of the records themselves in some circumstances. A special issue of Archival Science in 2005 contained several articles on macro-appraisal, its theoretical basis and practical application in a variety of contexts, including a useful literature review by Terry Eastwood. 

10. Records, evidence and authenticity: neo-Jenkinsonians

Some writers have viewed this shift of focus from the record itself to the context of the record as partially problematic in that it ignores the characteristics of archives. On a practical level, some archivists might make an appraisal decision based on how reliable or authentic a record might be. On a theoretical level, some authors have argued that the approach to appraisal must necessarily be based on a thorough analysis of the nature of archives.

Luciana Duranti in ‘The Concept of Appraisal and Appraisal Theory’ emphasises the role of archives in providing evidence and stresses characteristics such as impartiality, authenticity, interrelatedness, naturalness and uniqueness. For Duranti, assigning value is ‘in clear conflict’ with these characteristics and selection by the archivist based on notions of value undermines the integrity and meaning of the archive. In this Duranti echoes Jenkinson and views Schellenberg’s emphasis on value for research use as pragmatic but ‘theoretically flawed’. All users, whoever they are, need archives to be as accurate and authentic as possible, and this should be the archivist’s priority. Any active intervention leads to archivists controlling and artificially engineering the past. Duranti acknowledges a problem with her approach: ‘if the archival profession has a responsibility to preserve an integral and complete societal archives, how can it reduce such archives to a manageable size without wounding its integrity and completeness of meaning?’ This, she argues, is really a question of methodology rather than theory, and the answer, she holds, is to be arrived at

not by attributing externally imposed values, but by carefully defining archival jurisdictions and acquisition policies and plans, and by remembering that archivists are mediators and facilitators, custodians and preservers of societal evidence, not
Duranti’s defence of the characteristics of records and archives has led to her being referred to as a neo-Jenkinsonian. Certainly her emphasis on the dangers of archivists intervening in the selection of archives by basing their decisions on notions of value reflects some of Jenkinson’s earlier writings. However, other neo-Jenkinsonians, particularly Australian and American writers concerned with electronic records, have recommended active intervention by archivists to preserve the authenticity and integrity with which Duranti was so concerned.

The label neo-Jenkinsonian has also been applied to those who, like Duranti, or even more so, have stressed the evidential characteristics of archives and have focussed on their administrative and business use and role in organisational accountability. As an example, Terry Cook points to Australian writers such as Upward and McKemmish.  

Frank Boles cites David Bearman as being particularly influential, with his focus on provenance as a basis of selection, and Richard Cox as emphasising ‘the fundamental mission of the archival mission to maintain evidence’.  

and there have been some debates about the relative importance of the cultural or evidential role of archives (often focused on definitions of records and archives) which lie outside the scope of this chapter. To some extent, this debate has lessened in recent years, with many authors allowing both a cultural and administrative role for archives while still emphasising the importance of preserving and documenting characteristics of records such as authenticity and reliability.

Bearman’s ‘new paradigm’ was developed partly in response to the challenges posed by electronic records. Successful management and preservation of these required a clearer (and some would argue more restrictive) definition of archives, as described above, but also perhaps the acknowledgement that long-term preservation of these records would best be done by the originating body, with advice from archivists. Thus post-custodialism often becomes equated with neo-Jenkinsonianism. These arguments had some impact on discussions of appraisal – see for example the criticisms of Linda J. Henry in ‘Schellenberg in Cyberspace’.
11. What are archives? Use and the Minnesota Method

Duranti’s article and the emphasis on records as evidence provoked a spirited response from Frank Boles and Mark Greene, who argued that there is no universal concept of archives, that theory must not drive methodology, and that archivists should be pragmatic and ‘ask not what is theoretically correct, but what works.’

For Mark Greene, the correct approach to appraisal hinges on the answer to the question, ‘What are archives?’ If they are purely evidence of business transactions ‘then use is irrelevant as an appraisal consideration’. Greene, however, disagrees with authors who argue that appraisal should be based on ‘archivalness’, whether demonstrated in a record’s value as evidence or through the context of its creation. He argues that some kind of value judgement always needs to be made and that when doing so archivists should bear in mind Eastwood’s view that ‘archives are social creations for social purposes.’ Despite acknowledging some validity in Ham’s arguments and agreeing that we cannot always predict future research interests, Greene argues that ‘use can, should and must be a principle appraisal tool’.

Greene took a pragmatic, utilitarian approach, as evidenced in the methodology he developed for the selection of records by the Minnesota Historical Society. Known as the Minnesota Method, the strategy was developed to help a small number of staff cope with appraising a large volume of records. Businesses were ranked according to economic impact, uniqueness and role within the state, and then decisions were taken on what documentation to take ‘that will provide the most use for the widest variety of users through preservation of the smallest quantity of records possible’.

James O’Toole discusses a further consideration: he sees the value of archives as lying not purely in the evidence they provide of transactions or activities, or the use they will be to researchers and others, but also in their symbolism. In ‘The Symbolic Significance of Archives’, he reminds us that records can be revered as objects and that sometimes it is the act of recordmaking rather than the record itself that is important. In emphasising the symbolic context as well as the practical context of the record, O’Toole adds another dimension to the wider debate about the nature of records and archives – one that has been further developed by Jeannette Bastian, Geoffrey Yeo and others.
12. Power and practice

So much has been written about appraisal because it is potentially such a powerful process. Deciding what to keep and what not to keep, what will form part of the archival record and what might be remembered and forgotten, is a big responsibility and archivists now play a prominent role in this.

In *No Innocent Deposits* Richard Cox speaks eloquently about the power that the appraisal act gives to archivists: ‘archives do not just happen but are consciously shaped (and sometimes distorted) by archivists, the creators of records, and other individuals and institutions.’[^44] Randall C. Jimerson, who has written extensively about the role of archives in memory, accountability and social justice, argues that, although we make seek to ensure a broad representation of society through our appraisal decisions, ‘the documentation of certain aspects of society means that others will not be documented.’[^45] Archivists have, in the past, been reluctant to admit their role in shaping archives (after all, that is the very thing that Jenkinson sought to avoid), but a recurring theme in the literature is that archivists should be prepared to be accountable and that the decisions they take should be transparent and recorded. The *General International Standard Archival Description* (ISAD(G)) recommends the inclusion of a field for appraisal, destruction and scheduling information in archival catalogues.^[46] Basing appraisal decisions on a clearly thought out and articulated theoretical or conceptual underpinning is one way archivists can begin to be transparent, and consistent, in their approach. Very little study has been undertaken, however, on the impact of appraisal theory on practice. **Caroline Williams** in ‘Studying Reality: The Application of Theory in an Aspect of UK Practice’ concluded that, for collecting repositories, ‘In the main there is no theory generally acknowledged to be applicable to, or useful for, the general run of archival repositories’ and that many still undertake on the ground detailed appraisal where ‘Schellenberg’s evidential/informational model would appear to be the most relevant and useful if not explicitly acknowledged’.^[47] She contends that experience and intuition (and organisational setting) play a key role in guiding practitioners, although she suggests that this is based, at least implicitly, on a theoretical education and training. **Barbara Craig**, in a similar study in Canada, also found that most respondents valued intuition and experience above any particular theoretical approach.^[48] However, when considering the
purpose behind appraisal, many archivists might agree with much of the theory even if they do not articulate their views in the same way. Williams identified, among others, the following purposes of appraisal—
to:

- select records that will have a permanent value for the company
- build a comprehensive but compact picture of the university over time
- continue to supply the historical record
- record the business of government.\textsuperscript{49}

Practicing archivists often cite practical issues as being as important as any conceptual considerations. These might include:

- space/volume of material
- resources\textsuperscript{50}
- condition of items
- media
- legislation

- access restrictions and closure periods
- depositor requirements
- fit with collecting policy.

They might also consider the following, without necessarily relating them to any particular theoretical construct:

- information about context and provenance
- authenticity, integrity, reliability, uniqueness
- whether the material is archival (rather than books, artefacts or ephemera, for example).

Williams also found that archivists might employ certain methodologies without linking them to any particular theory. So they might adopt macro-appraisal or functional analysis without being aware of the theoretical background, perhaps as a response to the impossibility of performing item by item or even series by series appraisal due to the volume of records. As well as the books and articles already quoted, most basic archive textbooks will examine how to do appraisal rather than focus solely on what appraisal is
trying to achieve.\textsuperscript{51} Other texts which have explored practical ‘how to’
modules are:

- Frank Boles and Julia Marks Young, ‘Exploring the Black Box: The
  Appraisal of University Administrative Records’ American Archivist
  48 (1985)

- R. Hosker and L. Richmond, ‘Seek and Destroy – an archival
  appraisal theory and strategy’ in A.Tough and M.Moss (eds) Record
  Keeping in a Hybrid Environment (Oxford, 2006).

Several of the publications under UNESCO’s RAMP (Records and
Archives Management Programme) were related to appraisal and
focused on practical approaches, for example Felix Hull’s ‘The Use of
sampling techniques in the retention of records’ (Paris, 1981). A full list
of RAMP publications is available at http://www.unesco.org/archives/

13. Personal and electronic records

One criticism of the discussions in the literature about appraisal has
been that they focus mainly on appraising papers of organisations
rather than on personal papers. Sue McKemmish addressed the
parallels and differences between personal and organisational
archives in ‘Evidence of Me’ and Riva A. Pollard discussed the
absence of personal papers from appraisal models and theories in
‘The Appraisal of Personal Papers: A Critical Literature Review’. However, there remains relatively little written on this area when
compared, for example, with literature that discusses the impact of
electronic records on theory and practice.

As we have seen, the digital environment encouraged a re-evaluation
of the nature of records and archives, which had an impact on
appraisal theory. The inherent instability of electronic information has
also encouraged a practical shift, with archivists intervening earlier
and becoming involved in building appraisal decisions into systems
before records are created.\textsuperscript{52} The question is sometimes asked
whether appraisal is actually necessary given the increasing storage
capabilities of servers and sophisticated searching techniques. The
Library of Congress, for example, decided to archive all Twitter’s
tweets without appraisal. Steve Bailey discusses these issues and
summarises some of the opposing arguments, such as cost (including
environmental cost), information overload (and the danger of burying
information that we need), legislation and privacy, and the fact that creators of records do not wish to keep everything. Some of these issues have been raised by commentators on the Twitter archive.53

The quantity of information produced electronically has reinvigorated debate about sampling or random selection (see the Felix Hull article above). Websites are often captured for preservation through a mixture of random and targeted selection, and some commentators have argued that this should be extended to the whole appraisal process – an argument articulated by Neumayer and Rauber in Why Appraisal is not ‘Utterly’ Useless and why it is not the Way to Go either.54

NOTES


4 S Muller, J A Feith and R Fruin Manual for the Arrangement and Description of Archives, Chicago, 2003, first published in Dutch in 1898

5 H Jenkinson, A Manual of Archival Administration, London, 1965. The 1922 edition is available through the Society of American Archivists’ website at http://www2.archivists.org/publications/epubs (accessed 2012). This chapter will focus on literature written in English but the authors acknowledge that this does not do justice to the appraisal literature written in the non-English speaking world. Beginning a history of appraisal theory with Jenkinson, as many authors do, is also misleading as it ignores this as well as dismissing earlier writing and debate in English. See, for example, M Procter ‘Life Before Jenkinson – The Development of British Archival Theory and Thought at the Turn of the Twentieth Century’, Archives, vol xxxii, 2008

6 Jenkinson, Manual p. 151


9 Schellenberg, Appraisal of Modern Records (conclusion)

10 For more on Jenkinson and Schellenberg, see R Tschan, ‘A Comparison of Jenkinson and Schellenberg on Appraisal’, American Archivist 65, 2002

11 Jenkinson, Manual p. 144

12 Ibid. p. 147


14 Zinn had addressed the Society of American Archivists in 1970, see Ham ‘The Archival Edge’ p. 5

15 Ham, ‘The Archival Edge’ p. 8


17 Booms p. 104. In a later article in Archivaria 33, 1991, Booms further argued that societal value could be best identified through research into the functions of key record creators rather than through analysis of public opinion

18 Sometimes recordkeepers will use top-down to refer to appraisal of large volumes of records, such as series, and bottom-up to refer to appraisal of files or items.


22 See for example Terry Cook, ‘Documentation strategy’, *Archivaria* 34, 1992

23 Helen Willa Samuels, *Varsity Letters*, Metuchen, 1992


25 Ibid. p. 38

26 Ibid. p. 41

27 Ibid. p. 47


31 Ibid. p. 339

32 Ibid. p. 343

33 Ibid. p. 343

34 Cook, ‘What is past is prologue’ footnote 17, referring to publications by Frank Upward and Sue McKemmish


39 Ibid. p. 127


41 Ibid. p. 150

42 Ibid. p. 150

44 Richard J Cox, No Innocent Deposits, Lanham, 2004, from book cover

45 Randall C Jimerson, Archives Power, Chicago, 2009, p. 11

46 General International Standard Archival Description (ISAD(G)), ICA, 2000, section 3.3.2


49 Williams, ‘Studying Reality’ p. 92

50 For example, money available and staff time required. In The Management of Information from Archives, Aldershot, 1999, Michael Cook goes so far as to argue that ‘Cost is one of the two specific and measurable criteria to be taken into account in the course of appraisal’ p. 73 (the second being how often something is used).

51 See for example J Bettington, ed. et al, Keeping Archives, Canberra, 2008

52 Projects examining recordkeeping in electronic environments such as InterPARES http://www.interpares.org/ (accessed 2012) and PARADIGM http://www.paradigm.ac.uk/index.html (accessed 2012) look at appraisal in the digital world.


From random selection to no appraisal at all – the process of choosing what to keep as archives remains complex and contentious. This chapter has reviewed some of the extensive literature written on the subject to provide a summary of:

- The theories and concepts that have been suggested to guide archivists when appraising. These theories relate to:
  - What records and archives are
  - What the purpose of keeping archives is
  - Why appraisal takes place and what appraisal is trying to achieve
  - Who should appraise
  - How to appraise
  - The methodologies that have been proposed to facilitate the appraisal process.
  - The practical issues that might impact on appraisal.
Arrangement and description, or processing, refers to the process of arranging an archival collection in a certain order and producing a catalogue, list or other finding aid of the collection.
1. Principles of arrangement

Archival arrangement has traditionally involved grouping archives, creating sub-groups within these main groups, and deciding on the order of these sub-groups and the items within them. Three of the best known archival principles relate to the subject of arrangement. These principles are:

- respect des fonds
- the principle of provenance
- the principle of original order.

According to *A Glossary of Archival Terminology*, original order ‘is a fundamental principle of archives. Maintaining records in original order serves two purposes. First, it preserves existing relationships and evidential significance that can be inferred from the context of the records. Second, it exploits the record creator’s mechanisms to access the records, saving the archives the work of creating new access tools.’ The *Glossary* defines provenance as ‘a fundamental principle of archives, referring to the individual, family, or organisation that created or received the items in a collection. The principle of...
provenance or the respect des fonds dictates that records of different origins (provenance) be kept separate to preserve their context'. This definition equates provenance with respect des fonds. However, as we will see, they have slightly different origins and provenance has taken on a broader meaning reflecting the whole context of the creation, use, and relationships of the archive.

T R Schellenberg in Modern Archives outlines the development of these principles in Europe and America, starting with the adoption of the series and subseries system in late-eighteenth century France. Initially these groups were based, following library tradition, on predetermined classification schemes, often focusing on topics or subjects. The mid-nineteenth century, however, saw the Archives Nationales develop the principle of respect des fonds, where records originating with an institution or family were to be grouped together and not mixed up. Within each fonds, records were still to be arranged by subject matter and then either chronologically, geographically, or alphabetically. In these sub groups the important was to come before the unimportant and the general before the specific. In fact, arrangement might involve 'simply the reproduction of the order of the former custodians'.

The Prussian State Archives extended the principle of respect des fonds. Regulations issued in 1881 stated that records should be arranged according to each administrative unit that created them. This was Provenienzprinzip or the principle of provenance. The regulations also introduced Registraturprinzip, or the principle that records were to be arranged in the archives in the order in which they were received, not rearranged according to subject, as was often the case in France. This principle was relatively easy to apply as Prussia had a very strong registry system, which meant records were properly arranged by the originating bodies before transfer to the archives.

By 1881, then, in Europe three key principles of archival arrangement had been established: respect des fonds and the principals of provenance and original order. These were described and developed in what is widely regarded as the first archival textbook, Muller, Feith and Fruin’s Handeleiding voor het Ordenen en Beschrijven van Archiven, which is often referred to as the ‘Dutch Bible’ or ‘Manual’. The Manual proposed a hundred rules that should govern arrangement and description. It sought to define the ‘archive’ and introduced the concept of the archive as an ‘organic whole’, a living organism which grows and changes. The authors elaborated in
particular on the reasons why archives should be arranged by the
administrative unit that created them rather than by subject, arguing
that if the originating unit was abolished and its functions transferred
to another unit, the archive should also be transferred to the new unit.
The overall structure of the archive was likely to reflect the structure of
the organisation. Also covered in detail was the principle of original
order, with the authors arguing that the only arrangement the archivist
should attempt was to rectify mistakes which had been made and to
intervene if the original order was obscured.

The English writer Sir Hilary Jenkinson, writing about ‘the moral
defence of archives’, agreed with the Manual that the ‘primary
division’ of archives should be ‘provided by the Administration which
produced them’ but acknowledged the difficulty in defining a fonds.\(^8\)
He settled on ‘the Archives resulting from the work of an
Administration which was an organic whole, complete in itself, capable
of dealing independently, without any added or external authority, with
every side of any business which could normally be presented to it’.\(^9\)
Like the Dutch authors, he believed the aim of the archivist is to
‘establish or re-establish the original arrangement’ even if ‘we think we
could have done it better ourselves’.\(^10\) Jenkinson’s Manual goes into

some detail discussing problems that may be encountered when
identifying fonds, series or sub-series, and in applying original order.
He recommended, for example, using administrative functions as one
approach. He also acknowledged that in some circumstances there
may be very little original order or arrangement and that archivists
may be tempted to impose their own arrangement. He did not
absolutely rule this out but argued that the archivist who does this is
‘taking a very grave responsibility’.\(^11\)

In Modern Archives, T R Schellenberg described how the American
National Archives, founded in 1934, followed to a large extent the
principles that had been developed in Europe. Schellenberg described
how the American record group or fonds differed from European
models. For example, he believed that Jenkinson’s definition could
only be applied to closed or dead records, whereas the Americans
were dealing with records that were being produced by live agencies.
Within groups, records were arranged by organisation, function, or,
ocasionally, physical characteristics. Like Muller, Feith and Fruin, and
like Jenkinson, Schellenberg argued that archives were to be arranged
as far as possible in the order followed by the creating agency when
they were in current use. However, he also acknowledged that there
would be times when the original order was unintelligible or non-existent and when ‘the archivist may devise a system of his own’.\textsuperscript{12}

For Schellenberg, this was a real possibility as, unlike in Europe, there was no strong registry tradition in America, and some records were likely to be disordered before transfer to the archive.

Both Jenkinson and Schellenberg discussed the purpose of arrangement. For Jenkinson, arrangement was important so that ‘the Archive significance of every document – its own nature and its relation to its neighbours – is brought out as clearly as possible. In this way we give the fairest opportunity to the Archive of saying what it has to say and to the students of understanding and profiting’.\textsuperscript{13}

Schellenberg echoed this when discussing what system the archivist should impose if there was no original order. He stated that the system ‘must protect the integrity of the records ... by reflecting their functional or administrative origins and should be designed to facilitate the use that can be anticipated for the records’.\textsuperscript{14} The latter point reflects Schellenberg’s focus on user as well as archives. In fact, he argued that records that were kept for informational purposes, rather than as evidence of an organisation’s activities and functions, should be arranged solely with a view to facilitating research.\textsuperscript{15}

\section*{2. Principles of arrangement: problems}

Although the principles were developed in the nineteenth century they are familiar to archivists working today. The Dutch authors, Jenkinson and Schellenberg all raised problems relating to the practical application of these principles, problems that remain current. These issues are further complicated by the fact that the models and examples discussed by the early authors related solely to records of nineteenth and twentieth century government and their proposals are more difficult to apply to the archives of other bodies, to personal archives or to electronic records. The literature continues to discuss key issues:

- what constitutes a fonds or archival group, and whether this should be considered the ‘basic’ archival unit

- the different merits of arrangement based on administrative and functional models and the difficulties caused when departments are closed, the responsibility for records are transferred or functions change, or records are re-used for different purposes

- the problems of establishing original order, particularly when there is no order or the order frequently changes
• the purpose of arrangement – to ‘reflect’ the creator, uses and relationships between records, to preserve the authenticity of records as evidence or to facilitate their access and use
• differences between physical and intellectual approaches to arrangement.

In an article published in *Archivaria* in 1986, David Bearman and Richard Lytle discussed some of these issues. The principles developed in the nineteenth century were influenced by the contemporary nature of organisations, which tended to be hierarchical and fixed. Modern organisations do not function like this; they tend to be flexible, evolving and non-hierarchical. In ‘The Power of the Principle of Provenance’, Bearman and Lytle argued that the traditional archival hierarchical model of arrangement did not fit the mergers, divisions, and changes of modern organisations. They argued strongly against the adequacy of the record group concept.  

Bearman and Lytle referred to an article that had been published in *American Archivist* in 1966 by Australian Peter Scott. In ‘The Record Group Concept: A Case for Abandonment’, Scott built on earlier articles written by compatriot Ian Maclean who had examined how far the principles and practices described by Jenkinson could be adapted to the Australian situation. Using practical examples, Scott discussed the difficulties of defining a record group and the problems associated with assigning a series that had been created or used by different agencies or administrative units to a particular group. He concluded that using the record group as the primary unit of arrangement was artificial and threatened to destroy context and original order and proposed using the record series instead, stating: ‘Provided that one respects the physical integrity of the record series and fully records its administrative context, one is in complete harmony with traditional principles.’

Maclean, Scott and others developed the Commonwealth Records Series based on these ideas. They attracted some attention in the English-speaking world, although Bearman and Lytle argued that Scott’s article was largely ignored. Some responses, as well as the original article, have been reprinted in *Debates and Discourses: Selected Australian Writings on Archival Theory*. Colin Smith in particular, in ‘A case for abandonment of ‘respect’’, summarised the criticisms levelled against Scott, vigorously defended his ideas, and explored in some detail definitions of and approaches to the notions
of fonds and original order. His analysis centred on the traditional theorists, Muller, Feith and Fruin, Jenkinson and Schellenberg, but also looked at more recent writing, such as that by Michel Duchein and Frank Boles. The latter’s view was that original order was to be respected as long as it was useable, but usability was to be the benchmark: ‘Because it is the better rule, usability is the more pragmatic principle.’

Discussion about the problematic concept of the fonds has continued and proposed approaches have shifted from the issue of physical arrangement to the role of descriptions. Laura Millar, looking at the problems of applying the term respect des fonds to the fragmentary records existing in many Canadian archives, suggested replacing the term with ‘respect des provenance’, a ‘respect’ which was to include providing descriptions of creator history, records history and custodial history. Writing in the next issue of the same journal, Peter Horsman provided a comprehensive historiography of the debate around the fonds culminating with Terry Cook’s vision of the ‘conceptualised fonds’. As Horsman says,

Cook’s fonds is not primarily a physical thing anymore, to construct or reconstruct by (physical) arrangement, but a set of relationships between records, between records and records creators, between records and business processes: a multiple and dynamic series of interconnected relationships between records and their context.

Terry Cook discussed these ideas in ‘The Concept of the Archival Fonds: Theory, Description, and Provenance in the Post-Custodial Era’, and the emphasis on context and interrelationships between records, users, and creators, and the recording of these in archival description, resonates throughout his work. The unease with which Horsman, Millar, Cook and others regard the principles of respect des fonds and, to an extent, original order, reflect reservations which have been voiced almost since these principles were conceived. By insisting on a fixed fonds or order, archivists may be making things simpler for themselves but mislead the user and detract from the ‘real’ provenance, which is far more complex and dynamic.

3. Arrangement in practice

Debates in the literature about arrangement stem from both a theoretical questioning of the relationship between arrangement and
an understanding of creators, records and users, and from the practical need for archivists to organise the records in their care. Many of the above articles contain case studies and examples, and textbooks such as Caroline Williams’ *Managing Archives* and the Australian *Keeping Archives* discuss practical approaches.\(^{25}\)

Institutions may follow in-house practice or models and archives that are received through transfer from established records management systems may be arranged according to the classification or filing schemes established by that system. Such schemes may in the past have mirrored the administrative structures of organisations but are now more likely to be based on function. An example of a functional classification scheme in the United Kingdom is one developed by JISC for the Higher Education sector – see for example [http://www.jiscinfonet.ac.uk/partnerships/records-retention-he](http://www.jiscinfonet.ac.uk/partnerships/records-retention-he). The identification and use of functions is also discussed in records management literature on file plans, functional analysis and classification schemes, as well as archival literature on appraisal.

Archivists may also be guided by national or international standards. **General International Standard Archival Description (ISAD(G)),** for example, advocates ‘a hierarchical model of the levels of arrangement for the fonds and its constituent parts’, which it sees as ‘a practical consequence of the principle of respect des fonds’, and includes a glossary defining terms such as fonds, series and provenance.\(^{26}\)

However, the standard is mainly concerned with description rather than arrangement, as are other similar standards, such as the American DACS (*Describing Archives a Content Standard*) and the Canadian RAD (*Rules of Archival Description*).\(^{27}\)
NOTES

1 This is often referred to as hierarchical arrangement. Groups may be known as fonds, records groups, archive groups or collections. Divisions of these groups may be sub-groups or fonds, series, files or items.


4 Schellenberg, *Modern Archives* p. 172

5 Ibid. p. 174

6 First published in 1898, see also the English version *Manual for the Arrangement and Description of Archives*, Society of American Archivists, reissued 2003

7 A footnote qualifies this by saying ‘at least an organism which once lived’, the collection that the archivist manages is assumed to be ‘dead’, *Manual* p. 19


10 Ibid. p. 99 (Jenkinson's italics)

11 Ibid. p. 114

12 Schellenberg, *Modern Archives* p. 186


14 Schellenberg, *Modern Archives* p. 186

15 Schellenberg, *Modern Archives* p. 193


18 P Biscup et al., eds., *Debates and Discourses: Selected Writings on Archival Theory*, Australian Society of Archivists, 1995


20 Boles, ‘Disrespecting original order’, p. 31

21 L Millar, ‘The death of fonds and the resurrection of provenance: archival context in space and time’, *Archivaria* 53, 2002
22 Horsman, 'The last dance of the phoenix or the de-discovery of the archival
fonds', Archivaria 54, 2002, p.16

23 Cook, ‘The Concept of the Archival Fonds: Theory, Description, and
Provenance in the
31–85

24 This emphasis on the importance of context, the ‘spirit behind the principle’,
and a conceptual rather than physical or rigid approach was repeated by Jennifer
Meehan in ‘Rethinking original order and personal records’, Archivaria 70, 2010

25 C Williams, Managing Archives Foundations, Principles and Practice (Oxford,
2006); J. Bettington, et al, Keeping Archives, Canberra, 2008

26 ISAD(G): General International Standard Archival Description, (International
Council on Archives, 2000), p. 8

27 See below, in section on Description
For many authors, the purpose of description is similar to that of arrangement. By creating descriptions, archivists seek to preserve and reflect the provenance (in its broadest sense) of a group of archives and to facilitate access to and understanding of the items. The **General International Standard Archival Description (ISAD(G))** states that ‘the purpose of archival description is to identify and explain the context and content of archival material in order to promote its accessibility’.\(^1\) This discussion will be confined to archive catalogues or lists only, rather than to other types of finding aid such as guides.

### 1. Standards

Standards might seek to regulate what kind of information is recorded (dates, number of items, reference number, etc.) and how this information is written (for example, how dates are configured, how the contents of a file are described). Archives are often unique and collections may include a variety of formats or media, so not all archivists have been in favour of the idea of using a standard description that would suit all archives.\(^2\)
For Sir Hilary Jenkinson, description was not essential but a secondary duty of the archivist. Writing in *A Manual of Archival Administration*, he acknowledged that standardisation was difficult, particularly if applied in an international context, but argued that consistency in method and terminology amongst ‘English or English-speaking Archivists’ was desirable. He suggested certain elements that should be included in a descriptive list but also acknowledged that some elements would be ad hoc and dependent on the type of document. While there was some attempt to move towards consistency – for example, some local record offices in the United Kingdom used similar systems to describe public records – it was not until the 1980s that there was a real attempt to impose standardisation.

The impetus for this came from America where, in 1983, S Hensen first published *Archives, Personal Papers and Manuscripts: A Cataloging Manual for Archival Repositories, Historical Societies and Manuscript Libraries (APPM)*. This was an attempt to establish standards for the content, structure and presentation of archival descriptive entries and was offered as an alternative to relying on the library-based *Anglo-American Cataloguing Rules*. In Canada there was a similar initiative with the publication of *Rules of Archival Description (RAD)* in 1990, which contained rules for data content as well as authority lists. It was argued that greater consistency would make cataloguing more straightforward and would have benefits to users. In addition, the library world was leading the way in creating online catalogues and exchanging electronic descriptions with the development of MARC. Its archival equivalent, *US MARC-AMC*, along with APPM and RAD, went some way to provide the structure and format necessary to exchange and access information online.

In their *Manual of Archival Description* (MAD), Michael Cook and Margaret Procter sought to provide guidelines for description that were not based on bibliographic standards but allowed for differences in format and media and tried to capture interrelationships between items and provenance. Eighty-nine possible data elements were suggested, some describing the content and context of archives, others allowing administrative information to be recorded. MAD was influential in the framing of *ISAD(G)*, which suggests compulsory and optional elements that should be used when describing archives as well as discussing what is appropriate at each level of arrangement.
ISAD(G) has been fairly influential, at least in the English-speaking world; it does not, however, suggest how the content of each element of description is to be written. This may be governed by in-house, local or national standards. In America, for example, DACS *(Describing Archives a Content Standard)* is a standard for archival description based on ISAD(G) and ISAAR(CPF). Not only does it provide guidance on fields to use in archival description, it also seeks to encourage standardisation of the content of these fields. In the UK, the National Council on Archives’ *Rules for the Construction of Personal, Place and Corporate Names* gives guidance on how to write certain elements of a description, such as dates or names, but is now fairly old and is less used than it once was, perhaps indicating a continuing reliance on in-house standards. *Describing Archives in Context: A Guide to Australasian Practice* (2008) discusses the series system and description.

Despite the lack of consistency in how elements in descriptions are written, continuing developments in the digital world have encouraged some standardisation of how these fields are used and described. EAD *(Encoded Archival Description)* is an international encoding standard that uses tagging to identify different elements in descriptions, facilitating online access and data exchange. Other standards that have a broader application in the digital and online environment include Dublin Core, METS and AGL. Archival description is often referred to as metadata. ‘Traditional’ archival description is just one sort of metadata which may relate to an archival collection, as ‘Metadata is data that describes the content, format or attributes of a data record or information resource’. For further discussion of the broader role and application of metadata, see Haynes’ *Metadata for information management and retrieval* or Zeng and Qin’s *Metadata*. As technology develops, data exchange and sharing plays an increasingly significant role, whether in mobile phone technology or linked data, and an understanding of this will remain important when framing archival descriptions.

### 2. Provenance

It is now accepted that description of archives should focus not only on the content but also on the context of the records. As we have seen, it has been argued that description can be used to address some of the issues encountered when trying to apply the principles of
respect des fonds, original order, and, in particular, provenance. A full recording of provenance allows for a proper understanding of Millar’s creator history, records history and custodial history, supports Cook’s ‘conceptualised fonds’ and allows users to find and access collections in different ways.\textsuperscript{15}

In \textit{Canadian Archival Studies and the Rediscovery of Provenance}, Tom Nesmith describes how the emergence of computer technologies in the 1970s and early 1980s led to a concentration on research into information retrieval and particularly into subject indexing and retrieval. However, he argues, the complexity of modern records, in particular electronic records, later brought about a revived concern with provenance both as a way of accessing information and as way of capturing multiple and changing relationships between records.\textsuperscript{16}

Discussions about the nature of records and concepts such as evidence, authenticity and reliability, which were also a response to this complexity and the growth in electronic records in the 1990s, reinforced the role of provenance and the importance of recording both content and context in archival descriptions. Heather MacNeil describes some of these discussions and the adoption of an agreed purpose of archival description by the Canada-U.S. Task Force on Archival Description (CUSTARD):

1. to provide access to archival materials by means of a description that is retrievable, at a minimum, by provenance
2. to promote the understanding of such materials by documenting their context, structure, and content
3. to establish grounds for presuming records to be authentic by documenting their chain of custody, their arrangement, and the circumstances of their creation and use\textsuperscript{17}

Exploration of the impact of so-called postmodern ideas on archival functions has also had an impact on description. The acknowledgement that archivists can never be neutral custodians has led many to argue that descriptions of custodial history should not stop at the point that records reach the archive. Verne Harris and Terry Cook, for example, have argued on several occasions that archivists cannot make neutral appraisal decisions, and that they should record in as much detail as possible what they have decided and why. Sir Hilary Jenkinson argued that, ‘Whenever it is possible, the personality of the modern editor is to be eliminated and the document left to
However, for more recent authors, this is impossible: the archivist’s personality and background will influence the description and the descriptions themselves become part of the history and provenance of archives, giving them new or different meanings. Wendy Duff and Verne Harris, for example, explored this fully in the context of an analysis of historical and current approaches to arrangement and description in ‘Stories and Names: Archival Description as Narrating Records and Constructing Meanings’.  

However, despite the development of standards that encourage detailed descriptions and the acknowledgement of the importance of recording information about provenance, context and the archivists’ actions, the size of many repositories’ backlogs and their relative lack of resources has led to debate about whether the time taken to produce full, detailed catalogues is effective and efficient. Archivists now very rarely produce calendars of their collections, and some have argued that perhaps it is now time to revisit the extent to which we catalogue. Addressing the issue of backlogs, Mark Greene and Denis Meissner in ‘More Product Less Process’ argued that cataloguing ‘is not working’ and that to achieve the purpose of arrangement and description, to maximise accessibility and to allow researchers to access collections efficiently, archivists should be prepared to do the ‘golden minimum’ in terms of description and arrangement.

3. Searching

In a subsequent article in *American Archivist*, Greene surveyed a number of archive users to ascertain how they accessed collections and their opinions on catalogues and finding aids.  

Research into how users navigate through finding aids and how they search for things exists in archival literature, albeit to a rather limited extent. Many authors agree that an approach to arrangement and description should be informed by an understanding of the information-seeking behaviour of our users and potential users, as well as by a desire to protect the integrity of our collections. For a summary of some of the literature in this area, see Yeo’s ‘Debates about Description’ and Duff et al.’s ‘Archival Metrics Toolkits’.

The creation of access points, authority files and indexes enable users to access collections in ways other than using the main catalogue description. **Taxonomies**, classification schemes and controlled vocabularies or **thesauri** allow consistent identification of, for
example, subjects in collections and assist users’ searches across groups of archives. Common thesauri include Library of Congress, UNESCO and the Getty Art and Architecture thesaurus.\textsuperscript{23} National and international standards may also cover subject indexing.\textsuperscript{24}

Common access points as well as subjects include names (people, organisations, families and places) and functions. The international archival community has encouraged the development of what are sometimes called authority files (model descriptions). Standards developed by the International Council on Archives, which suggest what elements to include in these descriptions, include:


Web 2.0 and the development of online social networking has encouraged archivists to move beyond considering solely how to encourage efficient, effective or even serendipitous access to collections. Literature is beginning to address how people interact with and contribute to descriptions. Allowing people to take control is not new: search facilities in online catalogues have allowed people to save and sort search results for several years, thereby creating their own arrangements and forming their own relationships between archives. While there has been some disquiet about the theoretical implications and practicalities of users contributing to descriptions, developments in this area are reflective of a shift in perceptions of archives, from seeing them as static resources owned by repositories towards viewing them as an evolving resource, to be used and reused, and belonging to the communities who create and use them. Krause and Yakel in ‘Interaction in Virtual Archives: The Polar Bear Expedition Digital Collections Next Generation Finding Aid’
discuss an American project to create more interactive catalogues and Kate Theimer in ‘What is the meaning of archives 2.0’ outlines how new technologies have encouraged archivists to view their role and their collections in different ways.\textsuperscript{25}

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\textsuperscript{1} ISAD(G): General International Standard Archival Description p. 7

\textsuperscript{2} For example in the UK Michael Roper complained that standards ‘forced archival descriptive elements into a pre-existing bibliographic standard, developed for an entirely different type of material.’ See M Roper, ‘Archival Standards: Constraint or Catalyst’, \textit{Journal of the Society of Archivists}, vol. 13, no. 2, 1992, p. 111

\textsuperscript{3} Jenkinson, \textit{Manual} p. 119

\textsuperscript{4} Ibid. p. 129.

\textsuperscript{5} Bureau of Canadian Archivists, \textit{Rules for Archival Description}, Ottawa, Canada, 1990, there have been revised versions since

\textsuperscript{6} M Procter and M Cook, \textit{Manual of Archival Description}, Aldershot, 2000. MAD3 contains a useful and comprehensive guide to the theory and practice of description and arrangement

\textsuperscript{7} Six elements are identified as compulsory as is description at both collection and item level

\textsuperscript{8} Society of American Archivists \textit{Describing Archives a Content Standard}, Chicago, 2004, see below for ISAAR(CPF)
9 National Council on Archives Rules for the Construction of Personal, Place and Corporate Names, 1997


11 This is a specifically archival standard developed for use with multilevel descriptions, see http://www.loc.gov/ead/index.html (accessed August 2012) or more information


13 D Haynes, Metadata for information management and retrieval, London, 2004


15 See references in Millar and Cook in 1.2 above

16 T Nesmith in the introduction to Canadian Archival Studies and the Rediscovery of Provenance, Society of American Archivists and Canadian Society of Archivists, 1993

17 Canada-U.S. Task Force on Archival Description Statement of Principles for the CUSTARD Project quoted in H MacNeil, ‘Picking Our Text: Archival Description, Authenticity, and the Archivist as Editor’, American Archivist 68/2, 2005

18 Jenkinson, Manual p. 128

19 W Duff and V Harris, ‘Stories and Names: Archival Description as Narrating Records and Constructing Meanings,’ Archival Science 2, 2002


21 M A Greene, ‘MPLP: It’s Not Just Processing Anymore’, American Archivist. 73, 2010


24 For example in the UK BS 8723 Structured vocabularies for informational retrieval – Guide

vol. 70 (2007); K Theimer, ‘What is the meaning of archives 2.0?’, American Archivist 74, 2011
Processing is one of the most written-about topics in archival literature and while archivists may still, on the whole, adhere to principles developed in the nineteenth century, there is plenty of debate about the processes of both arrangement and description. Much of the discussion has broad relevance, centred as it is on the integrity and nature of archives, the reasons for keeping them, the role of archivists and user, the relationship between archives and current records, and the impact of the digital environment.\(^1\) Approaches to arrangement and description involve an interplay of theory, methodology and practice which lies at the heart of recordkeeping and which the profession should continue to debate and discuss.

**NOTES**

\(^1\) Many of these topics are covered by Geoffrey Yeo in ‘Debates about Description’, which provides a summary of much of the literature relating to arrangement and description.
The records lifecycle and records continuum are two major recordkeeping theories. The lifecycle and continuum attempt to capture the totality of the life of a record. They do so in different ways and with different levels of sophistication, but they represent theoretical conceptions that act as significant foundations for professional theory and practice.
The records lifecycle

1. The records lifecycle

The records lifecycle is a model used to understand the different stages in the life of a record. It uses the idea of records having a ‘life’ in the same way as a plant or animal as a metaphor to explain different phases of a record’s existence from ‘birth’ to ‘death’ or, more commonly, from ‘creation’ to ‘disposal’. The idea of records having a lifecycle was developed in North America during the 1950s as it became apparent that the volume of records being created was outstripping the capacity of recordkeepers to cope with them. T R Schellenberg famously proposed that recordkeepers should consider the ‘life span’ of the record as a good way of understanding both what was happening to records during their life and what might happen to them at the disposal stage:

Record management is thus concerned with the whole life span of most records ... [It] assists in determining which of them should be consigned to the “hell” of the incinerator or the “heaven” of an archival institution, or, if perchance, they should be held for a time in the “purgatory” or “limbo” of a records centre.¹
Shepherd and Yeo in their book *Managing Records: a handbook of principles and practice* explain that there are two ways to depict the records lifecycle.² The first is the ‘progression of actions’ lifecycle model, which focuses on what happens or is done to the records as a linear series of actions during their life:³

As Shepherd and Yeo illustrate, this progression can also be illustrated as an incomplete circle with the stages noted as points in a clockwise motion; literally as a cyclical representation.⁴

However, the key point here is that the circle is incomplete. The lifecycle model does not suggest a cycle that can be repeated by individual records nor one in which they can move backwards or jump over stages. It is a conceptual representation of the time-bound...
movement of records in a defined progression and for that reason it is perhaps easier to think of the lifecycle in a linear manner as per the first diagram above.

The second way of thinking about the records lifecycle is the ‘ages’ model. Rather than thinking about the actions taken in respect of the records themselves, this representation of the lifecycle model suggests that the important factor when thinking conceptually about the life of records is their use or value in respect of the business transactions and activities they were created to document and the functions they exist to support. In its most basic form, this version of the lifecycle model suggests that records can be divided into three broad groupings or stages:

- ‘current’ records, which are being used regularly for the business reason for which they were created
- ‘semi-current’ records, which still have business value for the reasons for which they were created, but the value of which will have been reduced by that passage of time
- ‘non-current’ records, which are no longer required for the normal operation of the business, but that may still have value in respect of demonstrating evidence of legislative compliance, audit of previous activities for financial or regulatory purposes, or to demonstrate accountability in decision-making and good governance.

The ages model can be represented with similar diagrams to the progression of actions model. Again, this is a linear, time-bound way of thinking about the life of a record.
‘archival’ stage after the non-current one. The archival stage is normally defined as those records no longer required for their original business purpose but which retain (or have new) value in terms of their historical importance (either to the organisation’s own memory or to wider communities). The importance of records transferred to an Archive may also be based on their value in respect of good governance or providing evidence and accountability in terms of decision-making (values often associated with records during their ‘active’ phases (i.e. where they are being used and retained for reasons that can be clearly defined as deriving from business functions)). The blurring of the evaluation of the value of records at different stages of their life is one of the factors that led to the development of the records continuum, as it is difficult to represent multiple values and contexts in a strict linear model.

The second area where complications are introduced to the basic ages lifecycle model is where it is combined with the progression model and where potential or ideal custodians and physical locations of records are added to the basic stages to produce a diagram similar to this one.

Whilst developing a diagram such as this can, at first, appear attractive, introducing so many elements into what is an otherwise relatively straightforward model can diminish its effectiveness. It introduces unnecessary complication and confusion by taking a simple conceptual idea and attempting to tie it to the reality of the organisation. Such complication leads to questions such as ‘when should I take the records off my desk?’ rather than allowing the
recordkeeper to concentrate on developing and maintaining records programme based on their understanding of the model.

Another area often introduced into representations of the lifecycle model is the volume of records. This does not necessarily introduce complication into an understanding of the records lifecycle and can be applied to either the ‘progression’ or the ‘ages’ conception. Adding volume to the model allows the recordkeeper to illustrate to colleagues that not everything they create will require long-term retention and that the disposition of records and information is a normal part of business processes (see the section of this resource on file planning and retention schedules). This diagram provides an example of how volume can be expressed in an ‘ages’ conception of the lifecycle model. By replacing the labels, a similar diagram could be developed for the ‘progression’ model.

2. Limitations of the records lifecycle

The lifecycle model is not without its critics and the issues they raise led directly to the development of the records continuum model, examined below. Having looked at the lifecycle model it is important to pause for a moment and consider what some of those limitations are.

Firstly, the linear nature of the model is inflexible. Critics suggest that records can have more than one value or be available for more than
one purpose at any given moment. Similarly, the importance of a record is not simply defined by the length of time for which it has existed. To therefore define something as ‘semi-current’ or having progressed to the ‘storage’ stage on the basis of time alone is too simplistic.

Secondly, many ‘practical’ implementations of the lifecycle model lose sight of the fact that this is a conceptual model for understanding recordkeeping, rather than something to which absolutes can be attached. For example, whilst the lifecycle may help the recordkeeper understand what is happening to records as they move from being of immediate importance to non-current, this is not something to which you would wish to attach the location of records. At that point it has stopped being a tool for understanding and become part of a tool for implementation.

Thirdly, it presupposes that organisations have defined administrative structures and processes and that the only place records are created and managed is in large organisations, neglecting the records created and managed by individuals or communities.

Fourthly, it was developed and became popular at a time when recordkeepers only had to cope with physical records. The nebulous nature of electronic information, which is rapidly changed and manipulated, is difficult to reconcile with a concept that depends on the linear passage of time.

Finally, it creates an artificial distinction between the business use of a record and its historical or archival value and neglects the fact that records still used for business purposes may have historical implications, or that records held in archives may be used to resolve issues of governance or accountability of actions.

These criticisms combined to influence the development of the records continuum model.7
NOTES


3 Diagram based on stages identified by Shepherd and Yeo, *Managing Records*, p. 5

4 Shepherd and Yeo, *Managing Records...*, figure 1.1, p. 5

5 Ibid. pp. 5-8

6 Diagram adapted from I A Penn, G Pennix and J Coulson, *Records Management Handbook*, Hampshire, 1994, Figure 2.1, p. 13

7 For an overview of the development of the records continuum as a response to the criticisms of the lifecycle, see S Flynn, 'The Records Continuum Model in Context and Its Implications for Archival Practice', *Journal of the Society of Archivists*, vol. 22, no. 1, April 2001, pp. 79-93
The records continuum was largely developed as a response to the perceived shortcomings of the records lifecycle models and to offer an evolution in the understanding of the life of records. The elements of the continuum are neither time-bound nor linear and it is a way to represent the multiple contexts in which a record may exist and the multiple values it may embody simultaneously.

The idea of a records continuum entered common usage following a paper by Jay Atherton in the 1980s. He proposed replacing the lifecycle with a ‘more unified model ... reflecting the pattern of a continuum, rather than a cycle ... in which both records managers and archivists are involved ... in the ongoing management of recorded information’.\(^1\) Atherton’s argument highlighted the weakness of the lifecycle model in terms of its rigid stages, suggesting that the implied separation between the role of the records manager and archivist was an unhelpful one. Instead, he proposed a characterisation of recordkeeping based upon four stages:

- creation/receipt
- classification
- establishment and implementation of retention/disposal schedules
• maintenance and use.

Crucially, he did not view this as a linear process. The stages could take place in a different order or concurrently.²

The breaking-down of the linear approach embodied in the lifecycle model was taken much further, and codified as the records continuum model, by Australian archival and records theoreticians in the 1990s. Frank Upward, in two seminal articles, proposed a way of conceptualising recordkeeping that took a holistic approach, recognising the multi-faceted nature of records and recordkeeping.³

He developed this diagram as a way of representing the model:

The complexity of the diagram and the difficulty associated with some of the writing on the records continuum (structuration theory, the use of the refraction of light as a metaphor for understanding the continuum concept, etc.) is off-putting to many.⁴ However, at its core is the simple idea ‘that the same principles apply to the management of all records, whether newly created or inherited from the past’ and
that ‘rather than passing through defined stages ... [records have the potential to exist] in multiple dimensions [concurrently]’. 

Perhaps the best way to break down the ideas behind the records continuum is to take a single dimension from the diagram and consider what is happening on each axis within that dimension, or to take a single axis and move through the dimensions thinking about the ways that a record’s value or characteristics evolve or change when viewed from different contexts. Remember, however, that the dimensions and axes are not mutually exclusive or linear, so a record’s multi-faceted nature may, for example, include a wide relevance to societal memory, represent a trace of an activity and have organisational importance at the same time, depending on the questions being asked of the record or the perspective of the questioner.

The point above concerning societal value is an important one in the context of the records continuum. Shepherd and Yeo, citing McKemmish, note that the continuum recognises that records may have a societal value from the point of creation. This contrasts markedly with the traditional view that records only inherited their secondary value (to historians and posterity) once their primary value (to the business) was exhausted.

Another area frequently mentioned in the literature on the records continuum is its applicability to electronic recordkeeping. Electronic information is inherently manipulable, can be infinitely recontextualised, and exists in several dimensions simultaneously (for example, some systems will organise information almost at the point of creation). The process of working with electronic information is not a linear one and the idea that systems will be created into which records are captured and managed in that manner is not easy to implement, nor necessarily desirable in this context. Upward’s characterisation of records as ‘logical rather than physical entities’, fluidly embodying multiple values and inhabiting multiple contexts simultaneously, is perhaps more applicable in this environment than a rigid adherence to a linear way of thinking.
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5 Shepherd and Yeo, *Managing Records…*, p. 10; R Loo, K Eberhard and J Bettington, ‘What are archives and archival programmes?’ *J* Bettington, K


6 Shepherd and Yeo, *Managing Records…*, p. 10


8 Upward, ‘Structuring the Records Continuum…’ cited in Flynn, ‘The Records Continuum Model in Context…’, p. 84
Any conceptual representation of a subject is necessarily going to appear abstract and separated from the day-to-day operation of a recordkeeping facility. This is perhaps more apparent with the continuum than the lifecycle, but if the extent of thinking about the operation of a recordkeeping unit is simply that ‘we take the records when they are no longer needed day-to-day’, then appraisal, retention and disposal decisions can never be taken on the basis of an understanding of the value(s) of and context(s) for the records. The lifecycle and the continuum provide recordkeepers with mechanisms for understanding. The debates concerning the relative merits of the models will continue in the recordkeeping literature. The continuum will be characterised as too fluid and too complex; the lifecycle as too simplistic and rigid.

Both approaches to recordkeeping have merit and should be examined by recordkeeping professionals. They are not tools for implementation. Rather, they are ways to conceptualise recordkeeping and improve understanding. That understanding can then be used to inform the development of processes and procedures.

These concepts are so embedded in thinking about records and recordkeeping that they appear in most standard texts on the subject.


Many official publications, codes of practice, and regulations on records management and recordkeeping make use of the records lifecycle at their centre. Examples of such documents include the United States Environmental Protection Agency’s *Records Management Manual* (http://www.epa.gov/records/policy/manual/intro.htm), the records policies and guidance produced by the Government of the Northwest Territories Public Works and Services in Canada (http://www.pws.gov.nt.ca/records/index.htm and specifically http://www.pws.gov.nt.ca/pdf/recordsManagement/bulletins/PDFBulletin_06.pdf), and the *Code of Practice on Records Management ... pursuant to section 61(6) of the Freedom of Information (Scotland) Act 2002* (http://www.scotland.gov.uk/Resource/Doc/1066/0003775.pdf). Again, it is important to be aware of the approach to the lifecycle taken in the document.

The arguments concerning the pros and cons of the records lifecycle have largely been rehearsed in professional literature in the context of the development of the records continuum since the 1990s. A review of the contents of journals such as *Archivaria, Archival Science, Archival Outlook*, the *Records Management Journal*, and the *Journal of the Society of Archivists* will lead the reader to many useful articles. Flynn’s article ‘The Records Continuum Model in Context and Its Implications for Archival Practice’ (*Journal of the Society of Archivists*, Vol 22, No 1, April 2001, p. 79) is one of the more accessible articles on the records continuum.

The ‘electronic records problem’ is a pressing professional concern. The issues are complex and the technology difficult. Add to that the rapidity of change and the issues around electronic information become some of the most taxing facing modern recordkeepers.
1. Introduction: the electronic records problem

The exponential growth in personal computing technology since the 1980s and the movement of computers from the laboratory to the pocket (via the desktop) has fundamentally changed the relationship of most people with electronic information and records. Every employee has become the custodian of their portion of their organisation’s records; every person is the custodian of their own personal digital archive at home. Filing clerks and typing pools have vanished from offices and at home family photographs have moved from an album or an old shoebox to a hard drive or to the cloud.

The problems electronic information and records create for recordkeepers are both obvious and manifest. In 1995 Luciana Duranti, writing in *Archivaria*, summarised the issue by stating that the easiness of electronic records creation and the level of autonomy it has provided to records creators, coupled with an exhilarating sense of freedom from the bureaucratic structures, procedures and forms [has] produced the sloppiest records creation ever in the history of record making. Too many persons and too many records forms generated in too many different
contexts participate in the same transaction; too much information is recorded; too many duplicates are preserved; and too many different technologies are used.¹

Arguably, these problems are amplified by the development of the internet. In particular, the recent evolution of the web as not just as a source for the consumption of information but as a platform for the creation, maintenance, and storage of information in the cloud, using systems not owned or controlled by individuals or the organisations for which they work— one of the key aspects of the developments known collectively as ‘web 2.0’.

Cal Lee, in the introduction to his edited volume on personal digital collections, I, Digital, highlights the issues associated with the volume of digital information and records now being created and kept by individuals. His points could equally be applied to the actions of individuals in the workplace when he suggests that the computing revolution has given people more ability to create and store materials that they find meaningful, useful or simply more convenient to keep than to discard ... Various factors make it increasingly less likely for individuals to delete files that they have created, resulting in a proliferation of data in personal digital archives:

• Deleting takes time, attention, and a conscious commitment to the idea that something will definitely be no longer needed.

• The cost and size of the storage medium required to store a given number of bits has decreased dramatically every year ... which means that many individuals do not have to worry about running out of space.

• The number and types of storage media that an individual may have at his/her disposal (e.g. thumb drives, telephones, cameras, mobile [devices], desktop computers, laptop computers, external drives and disks) also continues to grow.

• Increasingly sophisticated technologies for both searching over and reusing digital data provide a strong case for keeping things ‘just in case’ ²

In short, the advent of the widespread creation, management and transmittal of information electronically has created a culture of poor records creation, a proliferation of formats and storage options, significant difficulties in exerting command and control over
information, an exponential growth in the amount of information being retained and a reliance on ‘search’ for recovery and discovery instead of the use of classification schemes and naming conventions.

Of course, none of the above deals with perhaps the single biggest issue in respect of digital information: its preservation. For digital information to have the status of a ‘record’, it has to survive for as long as it is required. If that record is to become part of an archive it will have to survive for considerably longer than in its original business or personal use dictated. Techniques for the preservation and conservation of physical records are long established with a culture of excellence amongst practitioners. Whist there are many experts in digital preservation, their techniques and standards evolve rapidly and continually, responding to changes in technologies and platforms.

Marilyn Deegan and Simon Tanner sum up this problem succinctly by explaining that ‘the challenge for our digital future is to not perpetuate [the] scenario of data loss and poor records that [has] dogged our progress over the last 25 years. Otherwise, in just 50 years from now the human record of the early 21st century may be unreadable’. Citing Geser and Mulrenin, they note that the digital preservation problem is a result of both digital obsolescence arising from the rapid development of technology (both hardware and software) and the instability of the media on which information is stored. So, to the problems of poor records creation, management and control can be added inherent issues with the stability and longevity of electronic records.

The computing revolution

Computer technology has changed wholly the way that organisations and individuals conduct their lives. It is important to remember that, although there is a learning curve, computers have made the creation and exchange of information far easier than it has ever been. The modern organisation could not exist without computers, be they for major line of business systems, such as payroll or human resources, or the computers used by individuals as tools for communication and productivity. In our personal lives the calculations possible with computers have fostered fundamental change in areas such as healthcare, banking and travel, right through to the options for leisure time and communicating with friends and family.

Those changes are based upon the processing of vast amounts of data, information and records (of which more below). It is therefore
helpful to have a level of understanding of the development of computing technologies when thinking about electronic records issues. For an accessible introduction to the evolution of computer systems, from the mainframes of the 1950s through to the advent of the personal computer in the early 1980s, see Steven Levy, *Hackers: Heros of the Computer Revolution* (Penguin, 2001). For a readable personal account of the evolution of the personal computer from one of its architects, see Steven Wozniak and Gina Smith, *iWoz - Computer geek to cult icon: getting to the core of Apple’s inventor* (Headline Review, 2006).

A major tipping point in the widespread use of computers was the development of the graphical user interface, or GUI (pronounced ‘gooey’). This facilitated the development of software that allowed the user to interface with their computer via the screen, mouse and keyboard, and meant that the system could be operated with very little technical knowledge as the user did not need to be able to program the system or remember lots of complicated textual commands. The GUI introduced the era of WYSIWYG (pronounced ‘wizywig’) computing: ‘what you see is what you get’. For instance, a word-processed document was shown on the screen (rendered) in the same way it would look when printed, which hitherto was not the case. Steven Levy’s *Insanely Great: The life and times of Macintosh, the computer that changed everything* (Penguin, 2000), has sections on the development of the GUI at Xerox’ famous Paolo Alto Research Centre (PARC) and its subsequent adoption by Apple for the Macintosh, which, in turn, influenced Microsoft’s development of Windows.

From the point of view of recordkeepers, the widespread acceptance and use of GUIs was incredibly important as it introduced what has become known as the ‘document metaphor’ to computing. People were no longer working with computer data. Rather, they were writing a document, completing an entry in a ledger or looking at an image in exactly the same way they would if they were holding a physical object in their hands. Similarly, those documents could be saved inside folders in just the same way as a memo would be placed in the correct hanging file in a filing cabinet. The GUI also allowed a visual representation of how a particular folder structure had been set up without the user needing to remember the folder hierarchy and navigate through it using text-based commands. Philip Bantin provides an overview of technological change and the evolution of
Steve Bailey, in chapters two and three of his book *Managing the Crowd: Rethinking records management for the web 2.0 world* (Facet 2008), characterises the evolution of computing technology as undergoing three major paradigm shifts. The first shift is from mainframe to PC. The second is the growth of the internet following the invention of the world wide web. The third shift is the development of web 2.0 and the use of the web itself as a platform. He uses these shifts as context for his thoughts on how web 2.0 may change records management – ideas he develops throughout his book.

The development of the internet does represent a significant change in how records and information are created, stored, and exchanged. Bailey’s book is an interesting read for anyone interested in what the advent of web 2.0 might mean for the recordkeeping profession. For more information on web 2.0 tools and their uses by recordkeepers, particularly in archival contexts, Kate Theimer’s book and her edited collection are helpful: K Theimer, *Web 2.0 Tools and Strategies for Archives and Local History Collections* (Neal-Schuman, 2010) and K Theimer ed, *A Different Kind of Web: New connections between archives and our users* (Society of American Archivists, 2011). For anyone interested in the origins of the internet and its evolution into the world wide web, the following books provide a narrative account: J Naughton, *A Brief History of the Future: the origins of the internet* (Phoenix 10th impression, 2005), and K Hafner & M Lyon, *Where Wizards Stay Up Late: the origins of the internet* (Pocket Books, 2003).

### 2. Are electronic records different?

Essentially, the characteristics that identify something as a record are universal. Format is unimportant and the standard definitions of records can be applied to electronic information in just the same way as they can to information in physical formats.

> records: information created, received and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of business.\(^5\)

This is the familiar definition of records from the International Standard on Records Management, ISO 15489. It makes no mention of format and it is clear that information in either a physical or electronic format
can be considered a record. The *Glossary of Archival and Records Terminology* suggests that a record ‘has fixed content, structure, and context’ and from this fixity arise the characteristics identified in ISO 15489: authenticity, reliability, integrity and usability.\(^6\) Again, format is unimportant and information meeting these requirements can be considered a record.

The definition of a record in the International Standard on Records Management is, understandably, focused on evidence and transactions in a business context. However, this definition is somewhat limiting when thinking about records in a personal or archival context. Here, Geoffrey Yeo’s conception of records as ‘persistent representations of activities’ may be more helpful as it allows the definition of records to be extended to activities beyond those in a business context.\(^7\) Yeo’s definition does, however, highlight an important issue in respect of electronic records. For records to provide information about, or evidence of, an activity, they have to persist – they have to survive for the necessary amount of time (however long that may be). This is an area that is particularly problematic when considering electronic information.

Although the basic understanding of the nature of records is the same, regardless of format, electronic records do differ from physical records in an important respect. As Kelvin Smith notes, electronic records are comprised of multiple elements (for example, a single webpage will consist of many different elements which, in combination, render the page on the screen, all of which may need to be fixed to properly capture the page as a record).\(^8\) Although this is true of physical records too (insofar as they have content, context and format), it is normal for electronic records to be made up of multiple objects (the informational content, metadata, the data needed to render the information on screen in software, etc.). Therefore, and crucially, to fully understand an electronic record, these elements must be in place and both software and hardware are required to achieve that – electronic information is not intelligible without these systemic elements.\(^9\) Fundamentally, to achieve the ‘usability’ criteria of ISO 15489, mechanisms are needed to render to the end user the individual bits and bytes which in combination with each other form the record. Without the right software and hardware to extract meaning from those bits and bytes, it is incredibly difficult, if not impossible in some instances, to properly appreciate and articulate the record.
The external mechanisms needed to represent electronic information are subject to constant change. Operating systems are updated every few years, as are software platforms. Similarly, the computers and machines on which the software runs are regularly upgraded, leading to more powerful software that leaves earlier versions behind. These changes may take account of backwards compatibility for legacy information and records for a limited period, but that is by no means guaranteed. Similarly, cross-platform compatibility for information written on other systems may be built in, but such compatibility is at the discretion of the software developer. Alan Bell, in a blog post in 2009, estimated that he had used c.15 different operating systems at different stages of his life and this is by no means untypical given the rapid pace of evolution in digital technology and the speed at which systems and software become obsolete. The process of digital obsolesce is a major factor in the loss of information and the increasing complexity associated with digital recordkeeping and preservation processes.

Data, information, and records

The difference between data, information and records can be a confusing one, particularly when dealing with electronic records, as information and data are often used interchangeably to describe information in electronic systems. At the most basic level, it can help to think of one state building on another. Using the definitions from the Glossary of Archival and Records Terminology, it can be seen how data and information are particular things, both of which can arise from records, but that records – with their requirement for content, context, and structure to ensure authenticity, reliability, and integrity – have a higher level of sophistication than data or information.11

**data** - facts, ideas, or discrete pieces of information, especially when in the form originally collected and unanalyzed.

**information** - 1. a collection of data, ideas, thoughts, or memories. - 2. the meaningful portion of a signal, as distinguished from noise. (Note - Information1 and data are near synonyms. Whereas data connotes facts or ideas in their most atomized form, information refers to more complex concepts made up of multiple data elements).

**record** – 1. written or printed work of a legal or official nature that may be used as evidence or proof; a document. - 2. data or information that has been fixed on some medium, has content, context, and structure, and is used as an extension of human memory or to...
demonstrate accountability. - 3. data or information in a fixed form that is created or received in the course of individual or institutional activity and set aside (preserved) as evidence of that activity for future reference.\(^{12}\)

### 3. Authenticity

One of the major recurring themes in the literature on electronic records issues and, understandably, one of the major concerns of recordkeepers, is the establishment of the authenticity of electronic information. As ISO 1589 suggests, for a record to be authentic it must be proven that:

- it is what it purports to be
- it was created or sent by the person purported to have created or sent it
- it was created or sent at the time purported.\(^{13}\)

The *Glossary of Archives and Records Terminology* describes authenticity as ‘the quality of being genuine, not a counterfeit, and free from tampering, and is typically inferred from internal and external evidence, including its physical characteristics, structure, content, and context’. It goes on to suggest that ‘authenticity can be verified by testing physical and formal characteristics of a record. The ink used to write a document must be contemporaneous with the document’s purported date. The style and language of the document must be consistent with other, related documents that are accepted as authentic.’\(^{14}\)

It is apparent from the discussion of verification in the *Glossary* that the establishment of the authenticity of digital objects will differ from that of their physical counterparts. Whilst formal characteristics can be considered (style, language, etc.), provided that the information can be rendered using software and hardware, recordkeepers do not have the ability to scrutinise ink or handwriting in the same way they could with physical objects. Similarly, whilst it may be possible to look at the relationships between digital objects, scrutiny of such relationships (and the preservation of relationships longer-term) will not be straightforward as, for example, viewing the development of a correspondence over time in a wet-copy letter book.
When attempting to establish authenticity it is therefore prudent to return to the principles of diplomatics, undertaking the same fundamental analysis of digital objects as with physical ones: ‘the study of the creation, form, and transmission of records, and their relationship to the facts represented in them and to their creator’.\textsuperscript{15}

An element of the \textit{InterPARES} project at the University of British Columbia examined the use of diplomatics as it pertained to the authenticity of an electronic record.\textsuperscript{16} Their contention was that an electronic record, like its traditional counterpart, is a complex of elements and their relationships. It possesses a number of identifiable characteristics, including a fixed documentary form, a stable content, an archival bond with other records either inside or outside the system, and an identifiable context. It participates in or supports an action, either procedurally or as part of the decision-making process (meaning its creation may be mandatory or discretionary), and at least three persons (author, writer, and addressee) are involved in its creation.\textsuperscript{17}

However, during the analysis of their case study, it became evident that the fundamental problem ... was that of identifying an electronic record in diplomatic terms ... [I]t was necessary first to penetrate the complexity of the electronic system and the surrounding record-keeping environment in order to establish whether records even resided within that system and, if so, to understand the specific ways in which they manifested themselves. To reach that understanding required a detailed knowledge of the electronic system and the record-keeping environment that was difficult to achieve. The difficulty stemmed in part from the fact that the knowledge had to be gleaned not on the basis of an examination of the system itself and the entities within it—which is the traditional diplomatic approach—but rather on the basis of the information found in the case study tools and related documentation.\textsuperscript{18}

The experience of the researchers on this project underlines both the interdependencies associated with the identification, verification and preservation of electronic records and the difficulties in assuring their authenticity.
The relationship between authenticity, integrity, and reliability

ISO 15489 requires that records management systems (either physical or electronic) ensure the authenticity, reliability, integrity, and usability of records. It is easy to conflate authenticity, reliability, and integrity and assume that they mean the same thing and that the same criteria apply to all three. However, it is important to note the distinctions between these terms and avoid using them interchangeably: the differences between the terms are important.

As noted, authenticity concerns a record being what it purports to be and to have been created or sent by the person purported to have done that, and at the time specified. Reliability concerns the contents of the record and that the facts or other informational content can be depended on as an accurate and truthful account of activities or transactions. Integrity concerns the completeness and state of the record in respect of any alterations. If a record appears unaltered, that should be the case. If any alteration has taken place, that should be documented and apparent, as should the authorisation for that alteration.\(^\text{19}\)

4. Electronic Records Management Systems

One of the ways to approach the issue of the capture of electronic records is to use a system designed to ensure their authenticity, reliability and integrity and which facilitates classification, organisation and disposition according to agreed structures and protocols. Several vendors offer systems specifically designed to achieve these aims (known as Electronic Records Management Systems (ERMS) or Electronic Document and Records Management Systems (EDRMS)) and many other ‘content management systems’ (CMS), ‘document management systems’ (DMS), or ‘digital asset management systems’ (DAMS) suggest they can provide solutions to the problem of the storage, organisation and retrieval of digital objects (in a broad sense), including electronic records. It should be noted that the capabilities of systems vary widely and evaluation is always necessary to ensure that products are fit for purpose.

The attraction of ERM systems is clear. They allow the identification of electronic objects as records, based on existing and well-understood professional principles and their management in a system that, at its foundation, facilitates the use of functional classification schemes, hierarchical filing structures and retention and disposition according to
policy. Essentially, they allow the management of electronic records according to paradigms developed for physical records and implement electronically the processes and procedures familiar to recordkeepers and designed to preserve content, context and structure.

A number of standards have been developed to help recordkeepers evaluate the capabilities of ERMS systems (and to help developers design the capabilities of their systems). Three of the most well known are DOD 5015.2 in the United States, MoReq in Europe and the International Council on Archives’ ‘Principles and Functional Requirements for Records in Electronic Office Environments’ (subsequently adopted by the International Standards Organisation as ISO 16175-1:2010, ISO 16175-2:2011 and ISO 16175-3:2010):


Although the attraction of ERM systems to recordkeepers is clear insofar as they facilitate the application of professional principles to the electronic sphere, they are not universally accepted by users who have come to expect and require the ‘exhilarating sense of freedom from the bureaucratic structures, procedures and forms’ observed by Duranti in their interactions with electronic systems and information.²⁰ Caution is required in the specification of such systems to ensure that
they are fit for purpose both in respect of their technical capabilities and their appropriateness to the organisation in which they are to be deployed. Organisations with a strong command and control culture or significant regulatory or audit requirements may find that ERM systems are a good fit for their operational models and the expectations of their employees. Those organisations with a more devolved culture or where employees are given more intellectual and creative freedom may find the implementation of a formal ERM system more problematic. As Bailey suggests:

[ERM systems do] little, if anything, to win over the hearts and minds of users who have it in their power to make [a] system either a success or a failure. Users will soon find ways around the use of mandatory, but unpopular, systems and even where all escape routes have been blocked off ... [they are unlikely to give any thought] as to how a file is named, or where it should be stored, when all sense of enthusiasm, autonomy and ownership has been squeezed out of them.\(^{21}\)

Cultural issues such as these were also a key component of the Accelerating Positive Change in Electronic Records Management (AC+ERM) project at the University of Northumbria. This project focused on designing an organisation-centred architecture from three perspectives: (i) people, including vision, awareness, culture, drivers and barriers; (ii) working practices including processes, procedures, policies and standards; and (iii) technology in terms of the design principles for delivering effective recordkeeping.\(^{22}\)

The AC+ERM project ran between 2007 and 2010 and covered far more than cultural change and ERM systems. The outputs include extensive information on all these areas identified above and a major and highly useful systematic review of the available literature on electronic records: [http://www.northumbria.ac.uk/sd/academic/ceis/re/isrc/themes/rmarea/erm/](http://www.northumbria.ac.uk/sd/academic/ceis/re/isrc/themes/rmarea/erm/).

5. Digital preservation

The preservation of digital objects, information and records is one of the most difficult and rapidly evolving areas of professional recordkeeping practice. As such, there is no way to fully represent the issues and myriad potential solutions and perspectives in a short
resource such as this. However, there are some resources, standards and projects that provide helpful information and indications of developing practice.

Chris Prom articulated the digital preservation problem clearly in his proposal to the Fulbright Commission for a funded research project on electronic records issues in 2009:

The [recordkeeper's] charge was difficult enough to fulfill before the advent of networked computing technologies. Today it seems overwhelming because most records of permanent value are created and used in ephemeral electronic formats. Both archival and non-archival records exist as magnetic or electrical impulses and can be used only when machines and software interpret them. Email, websites, blog entries, digital photographs, and electronic documents are very susceptible to loss, deletion, tampering, de-contextualization, and misinterpretation. Furthermore, records of permanent archival value typically exist alongside records that have only fleeting utility. The individuals or institutions that created these records as a part of their daily activities have little knowledge of archival principals and practices, although they often have a strong interest in permanently preserving their records for future personal or research use.\(^{23}\)

The outcome of this project was a ‘Practical E-Records’ method that walks recordkeepers through a process to improve their storage and preservation processes for digital objects and records.\(^{24}\) Tellingly, however, Prom’s method requires knowledge of several different standards, tools and methodologies to implement a ‘trusted digital repository’ for the long-term preservation of digital records and the development of the necessary policies and procedures for the use of such a repository.

Key Standards: The Open Archival Information System (OAIS) reference model and the Preservation Metadata: Implementation Strategies (PREMIS) Data Dictionary

Prom’s work and that of other digital preservation projects such as the Paradigm project, the successor FutureArch project and the methodologies implemented by Oxford University’s Bodleian Electronic Archives and Manuscripts section (amongst others) have drawn heavily on the Open Archival Information System (OAIS) reference model.\(^{25}\) The OAIS model has evolved through various iterations, the current version being approved by the International Standards Organisation as ISO 14721:2012. Barbara Sierman from the
National Library of the Netherlands has a helpful summary of the recent evolution of the standard on her blog: http://digitalpreservation.nl/seeds/standards/oais-2012-update/.

The Consultative Committee for Space Data Systems developed the technical Recommended Practice document that became the ISO standard: http://public.ccsds.org/publications/archive/650x0m2.pdf.

This document states that the OAIS reference model:

- provides a framework for the understanding and increased awareness of archival concepts needed for Long Term digital information preservation and access;
- provides the concepts needed by non-archival organisations to be effective participants in the preservation process;
- provides a framework, including terminology and concepts, for describing and comparing architectures and operations of existing and future Archives;
- provides a framework for describing and comparing different Long Term Preservation strategies and techniques;
- provides a basis for comparing the data models of digital information preserved by Archives and for discussing how data models and the underlying information may change over time;
- provides a framework that may be expanded by other efforts to cover Long Term Preservation of information that is NOT in digital form (e.g., physical media and physical samples);
- expands consensus on the elements and processes for Long Term digital information preservation and access, and promotes a larger market which vendors can support;
- guides the identification and production of OAIS-related standards.\(^{26}\)

The OAIS reference model is based upon recordkeeping principles and workflows and, as such, is essential reading when attempting to understand digital preservation issues and develop appropriate technical solutions.

Another major standard in digital preservation is the **PREMIS Data Dictionary for Preservation Metadata** from the Library of Congress: http://www.loc.gov/standards/premis/\(^ {27}\) In a report from 2005, Lavoie and Gartner detail the importance of preservation metadata for the
long-term survival of digital objects and in doing so highlight the importance of standards such as PREMIS:

Preservation metadata is information that supports and documents the long-term preservation of digital materials. It addresses an archived digital object’s provenance, documenting the custodial history of the object; authenticity, validating that the digital object is in fact what it purports to be, and has not been altered in an undocumented way; preservation activity, documenting the actions taken to preserve the digital object, and any consequences of these actions that impact its look, feel, or functionality; technical environment, describing the technical requirements, such as hardware and software, needed to render and use the digital object; and rights management, recording any binding intellectual property rights that may limit the repository’s ability to preserve and disseminate the digital object over time. Preservation metadata addresses all of these issues and more. In short, preservation metadata helps make an archived digital object self-documenting over time, even as the intellectual, economic, legal, and technical environments surrounding the object are in a constant state of change.  

The PREMIS Data Dictionary is the ‘international standard for metadata to support the preservation of digital objects and ensure their long-term usability’ and, as such, represents another key element the digital preservation toolkit.  

Although the rapid evolution of digital preservation techniques, procedures, and standards is difficult to capture in a resource such as this, there are groups who document the evolution of digital preservation and curation and provide extensive briefing notes, reports and other materials online. Two examples of such groups from the UK are:  

- The Digital Curation Centre - http://www.dcc.ac.uk  

Another aspect of digital preservation being explored by scholars and experts is the potential for digital forensic techniques to be applied to the preservation of digital objects. This is an incredibly complex area, but one of great potential. Jeremy Leighton John from the British Library notes that ‘Digital archivists and forensic specialists share a common need to monitor and understand how technology is used to create, store, and manage digital information. Additionally, there is a
mutual need to manage that information responsibly in conformance with relevant standards and best practice’. Cal Lee expands on this idea stating that ‘digital resources are composed of interacting components that can be considered and accessed at different levels of representation (bitstream, file as accessed through a filesystem, files as rendered through specific applications; records composed of multiple files; larger aggregations such as websites) ... To ensure integrity and future use, archivists must make decisions regarding treatment at multiple levels of representation’. Leighton John’s report for the Digital Preservation Coalition is a good place from which to start exploring the potential relationship between digital forensics and digital preservation in recordkeeping: http://www.dpconline.org/component/docman/doc_download/810-dpctw12-03pdf.

6. A note on line of business systems

This resource has largely concentrated on unstructured electronic information and records, such as the outputs of office software. However, it is important to remember that most organisations have a class of software known as ‘line of business systems’. Line of business systems are the major systems that manage ledger accounts, human resources, client relationships, and so on. They are often relational databases, comprising entities with varying relationships of different strengths. The information in the systems may necessarily constitute records either individually or in various combinations, depending upon the questions asked of the system by users.

It is important to remember such systems as they can be overlooked when designing processes for electronic records, viewed as ‘looking after themselves’ to a degree or as ‘self contained’ both in terms of their informational content and their long-term management. However, this view is too narrow. For example, a ledger accounts system is fundamental to the current business of any organisation both in terms of its operation and its financial accountability. Similarly, accounting ledgers are a type of record often appraised as having long-term archival value. For instance, leather-bound volumes of accounts are common sights in nineteenth-century business collections.

This is another difficult area as different systems have different capabilities and store or output information in different ways.
However, an accessible place to start examining this issue is Philip Bantin's *Understanding Data and Information Systems for Recordkeeping* (Facet, 2008), which looks at large information systems in the context of recordkeeping theory and practice.

### NOTES


4. This section adapted from the Centre for Archive and Information Studies course *The Management and Preservation of Digital Records*. For more information please contact armtraining@dundee.ac.uk


8 K Smith, Planning and implementing electronic records management: a practical guide, Facet, 2007, p. 21


20 Duranti, ‘Reliability and Authenticity…’, p. 9

21 S Bailey, Managing the Crowd: rethinking records management for the web 2.0 world, Facet, 2008, p. 152

22 University of Northumbria, Accelerating Positive Change in Electronic Records Management (AC+ERM), http://www.northumbria.ac.uk/sd/academic/ceis/re/isc/themes/ermarea/erm/ (accessed March 2013)


31 Lee, ‘Introduction’, pp. 11-12
Conclusions and further reading

The advent of modern computer technology has created varied and pressing issues for recordkeepers. Traditional ideas, theories and approaches have been adapted to help recordkeepers with the tsunami of electronic information, and the potential for new techniques such as digital forensics to improve recordkeeping practice is being explored. In such a dynamic and fast paced environment, all a resource such as this can achieve is to identify issues and signpost useful information. However, this resource should act as a useful starting point when designing solutions that take account of local situations, resources, technical infrastructure and aims and objectives. Alongside the standards research outputs and projects identified in the text above, the following volumes are helpful resources for anyone wishing to build a library on electronic records issues (some of which are cited above). Some of the older texts should be read in terms of the evolution of electronic recordkeeping, rather than as representations of the current state of technology and thinking on these issues. Remember also the importance of general texts on records management, such as E Shepherd and G Yeo, Managing Records: a handbook of principles and practice (Facet, London 2003), and the usefulness of bibliographies and literature reviews on this subject, such as the ones produced by the AC+ERM.
project (http://www.northumbria.ac.uk/sd/academic/ee/work/research/clis/information_records_management/rmarea/erm/diss/diss_slr/?view=Standard) or the resources identified during Chris Prom's ‘Practical E-Records' Fulbright research (http://e-records.chrisprom.com/resources/).

- S Bailey, Managing the Crowd: Rethinking records management for the web 2.0 world, Facet 2008

- P Bantin, Understanding Data and Information Systems for Recordkeeping, Facet 2008

- M Deegan and S Tanner eds, Digital Preservation, Facet Publishing 2006


- J McLeod and C Hare eds, Managing Electronic Records, Facet 2005

- W Saffady, Managing Electronic Records, ARMA International 2002

The preservation of records is a core activity of archivists and records managers. Ensuring that records persist through time is fundamental to the role of the recordkeeper.
Preservation and Disaster Management

1. Preservation, conservation or restoration?
2. Composition of archives
3. Threats to archives
4. Protecting archives
5. Disaster prevention and recovery
6. Conservation
7. Literature and resources

The preservation of collections is a core activity of archivists and records managers. Sir Hilary Jenkinson, author of one of the early archive textbooks, began his *A Manual of Archive Administration* with a discussion of the first primary duty of archivists: the physical defence of archives.¹

Preservation is a wide-ranging area. This chapter will give a brief overview of key aspects of preservation and will suggest useful resources and literature. Research and debate tends to concentrate on technical factors, such as the correct levels of temperature and relative humidity, rather than on theories or concepts, so this chapter differs somewhat in approach to the others.² Digital preservation will only be briefly mentioned as the extent of the issues surrounding the preservation of digital material lies outside the scope of this chapter.

### 1. Preservation, conservation or restoration?

*A Glossary of Archival and Records Terminology* defines preservation as ‘The professional discipline of protecting materials by minimizing chemical and physical deterioration and damage to minimize the loss of information and to extend the life of cultural
property’ and ‘The act of keeping from harm, injury, decay, or destruction, especially through non-invasive treatment.’

Conservation is based on repairing records and archives – ‘The repair or stabilisation of materials through chemical or physical treatment to ensure that they survive in their original form as long as possible’ – and restoration is ‘The process of rehabilitating an item to return it as nearly as possible to its original condition.’

Preservation is often seen as being defensive and reactive, with archivists focusing on preventing damage to their collections, while conservation and restoration involve active intervention. However, as this chapter will demonstrate, preservation requires archivists to be proactive, to act strategically, to formulate and implement policies, and to intervene to ensure the long-term survival of the material in their care.

Conservation requires particular skills and training, which archivists and records managers do not normally have, and this chapter will focus mainly on preservation, apart from a brief section towards the end. In addition, four main areas of preservation will be examined: the composition of archives, risks to archives, protecting archives and disaster prevention and recovery. References are made to particular sources throughout but key and other useful resources are listed in the literature and resources section (7).

2. Composition of archives

In order to ensure the preservation of collections, it is essential to understand what material makes up records and archives. Without knowing the composition of collections we cannot identify threats or work out how to counteract these threats. Most archives will contain some or all of the following:

- vellum
- parchment
- paper
- bound volumes
- photographic material
- film and sound material
- printed books
• maps and plans
• ephemera
• electronic records.

Each of these types of archives might themselves consist of different media, for example:

• Photographic material can include negatives, prints and transparencies made from a variety of material and processes such as daguerreotypes, calotypes, collodion negatives and prints, cellulose and polyester.5

• Sound recordings can include cylinders, discs, tape, CD-ROMs and other digital media.

Each of these different media may be composed of different material, for example:

• A photograph is usually made from: a support base, such as paper, glass, metal or plastic; an emulsion or binding agent which holds the image (in the past this was albumen or collodion but is now more commonly gelatin); and an image-forming light-sensitive material which is usually a silver compound.

• Paper can be made of any fibrous material including wool, silk and even metal, but is most commonly made from plant fibres (in the past cotton or linen, now commonly wood pulp) with the addition of other material such as sizing agents to bond the fibres and coat the paper.

All this is important to understand; how archives react to and can be protected from threats depends upon their composition. For example, paper made from wood pulp may contain a higher proportion of lignin, which reacts with light and leads to yellowing and deterioration.6

3. Threats to archives

Threats to collections can come in many forms and may be physical or chemical. They include:

• People – poor handling can lead to damage; archives are also at risk from theft.

• Vermin, insects and mould.7

• Pollutants, the composition of archives and the composition of the atmosphere – the reaction between pollutants and other elements in
the atmosphere and the archives themselves can cause deterioration (see comments above on lignin).

- Light and heat both speed up chemical reactions in archival material (photographs may fade, emulsions may soften); ultraviolet light is particularly dangerous.

- Relative humidity (RH) – temperatures may impact on the amount of humidity in the atmosphere. High RH can make some emulsions sticky and increases the risk of mould growth, oxidisation and acidic deterioration; low RH will make paper and parchment brittle and dry out glues and emulsions. Large fluctuations in temperature and relative humidity are to be avoided.

- Disasters – fires, floods, earthquakes, hurricanes and so on. Even minor water ingress can cause widespread damage.

- Storage – the materials in which archives are stored, the shelves on which they are stored and the way in which they are stored (for example, vertically or horizontally).

- Buildings – the location of the building and the way it has been constructed.

- Changing technology – some archives are at risk because it becomes impossible to access them. This might apply to sound or film material that needs specialist equipment to play or any digital records, particularly those that rely on particular types of software or hardware for storage and access.

4. Protecting archives

It follows that if archives are to be protected then action must be taken to reduce these risks. If possible, records that are likely to have long-term value should be made from material that is at less risk of deterioration. Archives should be stored in appropriate folders and boxes, in storage areas with the correct levels of temperature and humidity, and in buildings that will protect them, not put them at risk. Staff and users should be trained in appropriate handling techniques. Many of the resources in section 7 discuss this in more detail.

It is important to take a strategic approach to preservation. This might include:
• ensuring preservation is seen as a core activity with appropriate resources allocated to it, while securing funding for special preservation projects

• planning and prioritising preservation activities, for example by doing preservation surveys

• providing digital or other forms of surrogates for access or as preservation copies

• planning to combat obsolescence of hardware and software.

5. Disaster prevention and recovery

Archives can protect themselves against day-to-day threats to their collections but might be reluctant to concede that their repository may be at threat from forces completely beyond their control. Disasters, or even minor incidents, can happen to any archive and can cause significant damage. Preservation activities should include:

• preparing for disasters by identifying potential risks

• seeking to prevent disasters from happening by minimising these risks

• establishing procedures which detail how to react if there is a disaster or incident

• making sure recovery is possible and effective.

A disaster plan should be produced that covers the points above and details the people who will be responsible for ensuring the plan is implemented and the resources that will need to be used in the event of a disaster. Most archives will also have a disaster pack which includes items and equipment to help with recovery after an incident. In addition to the resources listed in section 7, the following are useful:

• British Library Preservation Advisory Centre webpages http://www.bl.uk/blpac/disaster.html

• Library of Congress web resources http://www.loc.gov/preservation/emergprep/index.html

• M25 Consortium of Academic Libraries http://www.m25lib.ac.uk/m25dcp/ a UK based site but with some useful templates and reading.
6. Conservation

This chapter focuses on preservation rather than conservation. It assumes that most archivists are not trained to repair the items in their care. At most, archivists might undertake some basic cleaning, flattening of documents or dealing with a mould outbreak. Even then it may help to seek the advice of a professional conservator.

Conservators operate under strict principles, focused on preserving the integrity of the item. For example, any treatment:

- should be reversible
- should use materials that tolerate the same conditions and react in the same way as the originals
- must be obvious
- must be documented
- must not cause damage to or disguise something in the item
- should not be excessive.

7. Literature and resources

This chapter has given a brief overview of the key issues involved in preservation. The following books and other resources are intended as suggestions for further reading.

7.1 General textbooks

Several textbooks or general works on preservation have been published, including:


7.2 Online resources: general

The following contain information about collections care, preservation of all types of media, conservation and disaster planning.

Canadian Conservation Institute (CCI)

• Notes - relating to conservation but some useful publications on general preservation http://www.cci-icc.gc.ca/publications/notes/index-eng.aspx

Canadian Council of Archives


International Federation of Library Associations and Institutions (IFLA)

• Useful information on the Preservation and Conservation group pages http://www.ifla.org/pac


• International Preservation Issues series, including publications on disaster preparedness, the care of photographs and E.P. Adcock’s IFLA Principles for the Care and Handling of Library Material, 1998 http://www.ifla.org/publications/international-preservation-issues

National Archives and Libraries

• Australia, including guidance on disaster preparedness, digital preservation and storage of all media http://www.naa.gov.au/records-management/publications/index.aspx

• United Kingdom

• British Library Preservation Advisory Centre, lots of useful publications and resources http://www.bl.uk/blpac/index.html

• National Archives http://www.nationalarchives.gov.uk/archives-sector/caring-for-archives.htm

• United States of America
• Library of Congress http://www.loc.gov/preservation/

• NARA http://www.archives.gov/preservation/

Northeast Document Conservation Center

• In particular their preservation leaflets http://www.nedcc.org/resources/leaflets.list.php

UNESCO


7.3. Photographs, film and sound

Online Resources

Association of Moving Image Archivists (AMIA)

• www.amianet.org/

Australian National Film and Sound Archive

• The Film preservation handbook http://www.nfsa.gov.au/preservation/handbook/

• Care for audiovisual material http://www.nfsa.gov.au/preservation/care/

Image Permanence Institute (concerned with the preservation of images on all types of media)

• A range of comprehensive guidance in the Resources section including articles, bibliographies and tools to check the effect of temperature and humidity https://www.imagepermanenceinstitute.org/

• Summary of international standards https://www.imagepermanenceinstitute.org/testing/classification-of-standards

International Association for Sound and Audiovisual Archives

International Council on Archives Photographic and Audiovisual Archives Group


TAPE Training for Audiovisual Preservation in Europe

- No longer updated, but includes a comprehensive bibliography and some publications online, including E. Klijn and Y.L. Lusenet’s *Tracking the reel world* 2008, an interesting survey of audiovisual preservation and management [http://www.tape-online.net/](http://www.tape-online.net/)

Books and articles


7.4. Other media (a very random and brief sample of the types of guidance available)


- The Ink Corrosion Website [http://ink-corrosion.org/](http://ink-corrosion.org/)

7.5. Buildings


• M. F. Pacifico and T.P. Wilsted, Archival and Special Collections Facilities. Guidelines for Archivists, Librarians, Architects, and Engineer, Chicago, 2009


7.6. Disaster prevention and recovery


• G. Matthews et al., Disaster Management in Archives Libraries and Museums, Farnham, 2009


• The National Archives, Protecting archives and manuscripts against disasters, 2004 [http://www.nationalarchives.gov.uk/documents/information-management/memo6.pdf] (NB: many of the websites in the National Archive and Library resource section above have extensive information on this area)

• J. Wellheiser and J. Scott, An Ounce of Prevention, Maryland, 2002

7.7. Conservation (again these are just examples of the types of resources available)

• American Institute for Conservation of Historic and Artistic Works, with their online journal JAIC [http://www.conservation-us.org/]

• Conservation Online [http://cool.conservation-us.org/]

• A. Richmond and A. Bracker (eds.), Conservation Principles, Dilemmas and Uncomfortable Truths, London, 2009
7.8. Standards

Preservation and conservation is governed by a range of national and international standards. In Britain, for example, there are standards relating to structural design, environmental management systems, air filters, smoke control, cultural property, fire prevention, inks, leather, microfilm, photographs and film, security, and alarm systems.¹⁴

Three key documents produced by the British Standards Institute are:

• PD 5454:2012 *Guide for the Storage and Exhibition of Archival Material*

• PAS 198:2012 *Specifications for managing environmental conditions for cultural collections*


The first two were published in 2012, so represent some of the most up-to-date research on storage conditions for archives, including recommended temperature and humidity levels, storage, repository location and fire protection and prevention.

A number of International Standards have also been published (see the UNESCO and IFLA publications referenced above). Some include:


- ISO 11108:1996 *Information and documentation – Archival paper – Requirements for permanence and durability*


- ISO 18902:2001 *Imaging materials – Processed photographic films, plates and papers – Filing enclosures and storage containers*

- ISO 18918:2000 *Imaging materials – Processed photographic plates – Storage practices*

- ISO 18911:2010 *Imaging materials – Processed safety photographic films – Storage practices*

ISO 11799:2003 Document storage requirements for archive and library materials

See the International Organisation for Standardisation (ISO) website http://www.iso.org/iso/home/standards.htm

NOTES


2 Ongoing research means that the recommended optimum conditions for the preservation and storage of archives are often reviewed and revised. All the sources referenced in this chapter were current in 2012


4 Ibid.

5 See, for example, the British Library Preservation Advisory Centre’s Preservation of photographic materials, 2009 at http://www.bl.uk/blpac/pdf/photographic.pdf (accessed November 2012)

6 Many of the resources listed at the end of this chapter go into detail about the composition of archives


10 See the British Library Preservation Advisory Centre *Cleaning books and documents*, 2011

11 Some archive books deal with basic conservation processes; see for example J. Bettington et al., eds., *Keeping Archives*, Canberra, 2008, pp. 124-132

12 For more information about professional guidelines for conservators see the European Confederation of Conservator-Restorers’ Organisations [http://www.ecco-eu.org/about-e.c.c.o/professional-guidelines.html](http://www.ecco-eu.org/about-e.c.c.o/professional-guidelines.html) (accessed November 2012)


14 See the British Standards website for more information [http://www.bsigroup.com/en-GB/standards/](http://www.bsigroup.com/en-GB/standards/); it’s easy to browse through the shop feature
Preservation involves understanding the composition of archives, recognising the risks to collections and seeking to minimise these and putting in place the correct storage conditions, strategies, policies and training, to ensure that records and archives are preserved for as long as possible. Disaster prevention and recovery plans and preservation surveys form part of these strategies, as should the involvement of properly trained conservators.

Agreement on best practice is constantly evolving but the literature and web resources cited in this chapter covers both the basic, accepted knowledge required to preserve collections and the most up-to-date standards.