

Foreword

Archives by their very nature are unique both as individual documents and as documents in context. Lost archives are irreplaceable, any loss is final, and in most cases reconstruction is impossible. Archives from the past have been handed over to us by our ancestors, it is our duty and our privilege to keep them for our children and their children's children. Archives allow us to establish communications between past and future generations. We archivists are in this process the guardians of the continuity with previous and future generations of our nations.

Some of the records in our custody have come to us in an orderly manner well cared for by the creating agencies, other records are refugees of the turmoil of history, many, too many have been victims of war, arson, flooding or other kinds of manmade or natural disasters, and are partially saved or lost forever.

Whatever their past, the archival heritage in our custody is nevertheless threatened by both internal and external factors, such as the quality of component materials, rodents, mould, acidity, etc. Regrettably we have to add external factors of another kind, such as the physical ones of fire, water, dust and use and political ones like shelling, arson and ethnic cleansing.

Archives are generally considered to form the skeleton of the Memory of Humanity, by containing not only factual information but also the informational context in which other elements of life, for example paintings and sculptures, war and discovery, occupation and religion, can be placed and better understood.

However, by using the generic term 'archives' one implicitly accepts its limitations: archives are part of a European concept, based on Roman law, a concept that received a gun-point introduction in modern societies all over the world. Many societies outside Europe had developed an extensive oral and intangible heritage and advanced writing systems and preservation practices long before European colonists arrived with their own record-keeping systems, and with their European paper. Climatically well proven systems for 'memorising' data, meeting the needs of the local societies of that time, have been put aside as not suitable for 'European' administrations. In some cultures both systems cohabited, the European one providing core data, 'facts', the indigenous one providing circumstantial evidence of some importance for understanding local traditions relating, for example to religion, or to culture, or providing other kinds of information, or seen from another perspective, the occupying forces kept the official records, the occupied nations continued keeping the records of the indigenous people, be it in tangible or intangible form.

In essence the information system embodied in European archives was created to deal with property. In other cultures the information system dealt mainly with different kinds of data, like the location of fresh water (e.g. Australia), movement of herds (e.g. North-America) or the relationship between deities and man, or the continuity of generations.

I would like to note as an observation that, assuming script for storing data was introduced in accordance with local needs, one should keep in mind that even in highly literate cultures, elements of oral and other traditions are still in use. For instance, oral testimony in court becomes written evidence and a public record – and this can even include objects as evidence, such as the bullet that missed Gladstone. What is in a name? There are many good reasons to reconsider the validity of 'European' archival definitions for their applicability in non-European societies and to consider the acceptance of 'data' or objects transmitted via other traditions as part of the corpus of historic data to be kept in archives repositories.

Thinking along these lines one might consider the 'Memory of Humanity' to include all that can be memorized in physical or intellectual form, be it landscape, nature or components of human life, like tradition, artefacts, ideas, and so forth. As this Bibliography deals with preservation of archives according to established tradition I will return to the safe side and concentrate on archives within the traditional definition.

However, before doing so I would like to dwell a little on the relative relevance of archives for the knowledge of the 'history of man', by relating archives to the voyage of the human species in time. According to many scientists 'Modern Man' started after the last Ice Age, about 100,000 years ago to domesticate animals and to settle for a sedentary life. Modern Man added script to his utensils for preserving the 'Memory of Humanity' only about five thousand years ago. The earliest recordings of his writing – even when apparently official records – are to be found in museums and not in archives.

Writing is nowadays a reliable way for transferring information. How 'reliable' will it be in future? How can a message be conveyed to homo sapiens over a period of 5000 years or more? For instance, a message like: *keep out, radiation zone*, put on top of under-ground nuclear waste belts? What kind of 'sign' will be understood 5,000, 25,000 or 50,000 years from now, as a warning not to drill in the ground because of the danger of radiation? What material should one choose for preserving any sign for such a long period, paper, wood-blocks, parchment, microfilm, clay-tablets, palm leaves, rock, computer-tape or diskettes, acoustic systems? Will there be any institution keeping records over 5000 years old? Will records of that age be more likely to be kept in museums, as happens nowadays with records of 5000 years ago? What equipment will people have by then to decipher messages – computers, or only brains and reading glasses? Such questions are not easily answered. As a native Australian expression goes, 'rocks vanish, word remains'.

These questions open a domain of professional relevance, for instance, what about durability of data carriers, like paper, computer-diskettes, movie-film, clay-tablets; what about the presentation of 'data', like script of any kind, graphics, and so on, what about the chemical and physical fixation techniques that make data-carriers and data stick together (water in ink; magnetism; heat); what about instruments and 'brains' that make data understandable, and thereby turn data into information (several early scripts are still waiting to be deciphered).

Little is known about the expected life span of specific data-carriers apart from rock, of the 'sticking-material-technique' and of the 'equipment-brain-span' that makes information out of data (or even identifies possible data as such). Here is an example for the sake of the argument.

In modern archival literature one can read a lot about acidity and the ageing of paper. However, how much has been published on the life expectancy of a specific make of paper of a given era, exposed to a continuous high relative humidity; or a cyclical high and low relative humidity; or a continuous low relative humidity, combined with temperature, high, low, moderate or cyclical, combined with dust, exposure to sunlight, folders, boxes, administrators, archivists or users? Is any such data available? Is data available on the ageing of paper in thick-walled, heavily insulated repositories in a variety of climates? Are there data on what happens to paper in thin-walled repositories fitted with cooling equipment that functions a few hours per day only? Is any information available on what happens to records that are stored in properly conditioned repositories and consulted or listed in hot and humid searchrooms or office blocks? Do we have any idea of the relationship between storage conditions and chemical and physical decay of paper, photographic materials, and so on? Do we have any data for any formula that will enable us to make reliable estimates on the return on our investments in creativity, in staff-time, or in money? Do we have any that can be used as input for risk calculation, or as input for establishing priorities?

Here are some postulations. In some tropical climates – as has been established – it may take records, even if made of long lasting paper, only some 100 to 200 years to become dust. Before becoming dust they would have passed the no-use line (identical to a no-research line), and shortly after the no-touch line (identical to no-reformatting line or past-lamination line). In moderate climate zones the no-research line may be crossed after 1,000 years and the no-reformatting line after 1,500 years. Special problems are posed by newspapers. Most of those are printed on unstable paper of low quality. In some countries this kind of paper is also used for stationery. The no-research line of this kind of paper will be crossed in the tropics within 100 years, in more favourable climates within 400 years.

However, long before dust has become dust, the data may have faded away. Some carriers just lose the data they carry easily. For example, some makes of ink fade easily, other kinds 'eat' paper. Some kinds of photocopies do not tolerate sunlight, other kinds can, if not properly processed, be wiped out easily. Some kinds of stencil seem to lose contrast, etc. Poor quality of ink, of magnetism – submitted to chemical and physical processes as they are – will increase the speed of decay of carriers and their data even further, even when, by comparison, they are kept under stable conditions. One may conclude that according to the materials used and their environmental and office and repository conditions the life span of carriers and data may vary in the tropics from a few years for some materials to twice the life span of man for other materials and in moderate climate zones from one or more decades to 5-20 times the life span of man.

Preventative measures are generally consistent with the accepted guidelines for a professional preservation policy. Such a policy should include:

- measures to minimise the rate of deterioration;
- housekeeping routines to clean, protect and extend the life of materials;
- staff and user training programmes to promote and encourage correct handling and transport of materials;
- security measures and contingency plans for disaster control and recovery;
- protective measures, such as boxing, binding, and wrapping, to reduce wear and tear on materials;
- a substitution programme for replacing valuable or very brittle originals with surrogates such as microforms;
- conservation treatments to repair damaged originals;
- disposal programmes for materials of no further use;
- procedures for reproducing originals;
- procedures for the exhibition of materials within the institution or while on loan to another organisation.

The physical environment in which materials are stored will have a significant effect on their life span. Environmental conditions such as temperature, humidity, light and atmospheric pollution can each affect documents of any kind. Preventative measures should aim to achieve the best possible conditions for storing and using items. The process of decay can be slowed down considerably by creating favourable storage conditions taking into account the general level of air pollution, the possibility of creating a controlled climatic environment and the cleanliness of the storage facility. 'Greening' of archive buildings – i.e. use of low energy and low technology engineering; use of minimally toxic, environmentally friendly materials in construction; use of recycled materials; low running costs – should get top priority on the professional research list.

At the Annual Meeting of ICA of 1987 one of the participants made an interesting remark: 'preservation is a question of management, not of repairing.' Good archives management implies the proper organisation of an archives office. Proper organisation implies disaster awareness and preparedness, proper storage, security, handling, conservation, etc., and if applicable, reformatting. One has to set priorities and to evaluate the cost benefits of different types of action, be it passive preservation, active conservation or reformatting, against the importance of collections. The simplest preservation measures, good handling etc., are by far the cheapest. That is why there is a lot we can do.

The common way of preserving collections, all over the world is by reformatting the collections in priority order through microfilming or digitization, after having listed them, and then keeping the originals unused but in stable condition. Damaged documents should receive, if possible, conservation treatment. Again, if possible, documents should be placed in folders, folders in boxes, boxes in stacks. One should strive for an optimal climate for permanent storage, be it through air-conditioning 24 hours a day, seven days a week or through building and insulation techniques.

Many archivists are working along these lines, implicitly or explicitly. If the quantities to be considered are small, there are no real problems. A few hundred reels of microfilm will do. Most repair shops do a good job. There

is no doubt about that. Reality, however, is different. What can one do with hundreds, thousands of files, each containing dozens or hundreds of sheets of paper, all filled with text and drawings, some of them torn and soiled, others brittle, and so on? What is to be done with the backlog? Current activities are well aimed, and often cost-effective, but the level of activities is disproportionate to the extent of the problem.

Traditional conservation techniques may be sufficient for coping with several kinds of mechanical, biological and chemical damage, but one should consider any irreversible technique to be a potential danger. For example, it has been reported that in some European countries major damage to records was due to their chemical treatment in the past. Even the use of lamination for stabilizing archive materials is questioned and could well turn out to be a counter-productive preservation process. However, for documents nearing the no-touch line, it may be the only solution for preservation for the time being.

On their own all archivists are minor players in safeguarding the elements of the Memory of Humanity entrusted to them. Two possible outcomes of a world wide performance analysis of this role of archive services could be a recommendation to globalize workshops for technical services, and to globalize storage facilities as well. Many barriers will have to be dismantled.

Globalizing intellectual access has been an odd idea. What else, however, will be the outcome of the introduction of electronic formats and electronic finding aids? One cannot cut communication lines in order to keep the electronic data on-site.

Globalizing storage facilities and technical services still sounds odd, but the profession should start considering such options. The Indonesian – Dutch co-operation sets an interesting example. Options for improvement of co-operation in the fields of micro-filming, digitization, restoration, computer storage capacity and training should be studied, sponsors should be identified and engaged.

Cooperation at institutional, national and international levels, in conjunction with libraries and museums, would be one of the ways of ensuring the better preservation of the Memory of Humanity. Progress in modern technology may assist in coping with some of the problems posed by both natural and man-made hazards and by the ever increasing quantity of archives to be kept. However, the information age will not solve the problems of record keeping, on the contrary it will only add more problems. No administration has produced more records, both in paper and in electronic format, than this era called the information age. Together all archives services worldwide take in accruals on an annual basis of a few hundred linear kilometers, or more, something like the distance between Jakarta and Jogjakarta. On top of this we receive huge quantities of electronic data, data that will have no significance if not prepared for transfer together with software and necessary documentation. And to add to this, one should not forget the masses of audio-visual materials, such as TV reels, audio tapes, still and moving film, etc.

The initiative of the Arsip Nasional Republik Indonesia together with the National Archives of The Netherlands in organising a seminar on preservation of archives in tropical climate zones and in commissioning an annotated bibliography on preservation of archives in tropical climates could turn out to be a decisive step towards developing tropical archivology as a subject in its own right, a subject that should form the subject of one of the next ICA International Congresses on Archives. Such a tropical archivology should provide for best practices and standards for record keeping in tropical countries, and can only be developed in close co-operation between professional and other partners. The Jakarta conference was a first step.

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