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The Scent of the Digital Archive

Dilemmas with Archive Digitisation[1]

CHARLES JEURGENS

Archival infrastructure is changing at a rapid pace as a consequence of digitisation. The effort to digitise analogue collections seems to have benefits only for researchers. Still, only a fraction of analogue archive material is currently available in digital form. This article raises some of the problematic aspects about the practice of digitising analogue collections and their consequences for historical research. The dilemmas that confront archivists and historians are not easy to resolve: the digitisation of analogue collections is leading to two costly and co-existing infrastructures, while archival collections that are not digitised risk becoming marginalised.

In *The Social Life of Information* (2002), John Seely Brown and Paul Duguid describe the labours of an historian in a Portugese archive from the eighteenth century. He was behaving rather unusually for an historian conducting archival research. Instead of looking for relevant data by carefully reading through documents, he would once in a while grab an envelope and start sniffing it vigorously. He would then open the letter, quickly glance at it, and make a few notes before proceeding. After observing this scene for a while, Duguid asked the researcher what he was doing. The man answered that he was conducting historical medical research into the spread of cholera. Whenever cholera broke out in the eighteenth century, it was common to sprinkle vinegar on letters to halt the spread of the disease. By linking the smell of vinegar to the date and place of the letter, the historian was hoping to trace the course of a cholera epidemic.[2]

This is a nice example of archival research that is based on the study of the physical aspects of the medium rather than on an analysis of the information found in the text itself. Yet, it is no longer a given that a researcher will deal with physical materials when conducting archival research. Continuing digitisation is not only transforming our concept of

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the archive, it has also substantially influenced the instruments that archival institutions develop to give users access to their collections via the Internet, and the methods that historians develop and employ to find particular archival collections, to search through them and to analyse their contents.[3] Janine Solberg has recently suggested that digitisation 'is transforming the epistemological spaces we occupy as researchers' and she has advocated a thorough debate about the impact of these technological changes on historical research because '[o]ur scholarly rhythms and habits have begun to shift as we have increasingly come to rely on the infrastructure of digital, networked technologies for our research – much in the way people's behaviors, language and daily rhythms shifted as they came to depend on electricity and its infrastructure'.[4] This debate, to my mind, should not only be conducted within the history and archival science communities, but particularly between these two communities because digitisation is fundamentally changing the relationship between the archive, the archivist and the researcher.[5] The Swedish media scholar Trond Lundemo has described these changes as follows:

1 This article is based on a lecture that was given in honour of Elly Touwen on the occasion of her departure as Director of Collections and Services at the NIOD, Institute for War, Holocaust and Genocide Studies on 11 April 2013. The author thanks the editors of *BMGN - Low Countries Historical Review*, the anonymous referees and Gerben Zaagsma, Theo Thomassen, Frans Smit and Agnes Jonker for their remarks on a previous version of this article.

2 John Seely Brown and Paul Duguid, *The Social Life of Information* (Boston 2000) 173-174. By the way it is possible to represent scents digitally. See: William J. Turkel, 'intervention: Hacking History, from Analogue to Digital and Back Again', *Rethinking History* 15:2 (June 2011) 287-296.

3 Wendy Duff, Barbara Craig, and Joan Cherry, 'Historians' Use of Archival Sources: Promises and Pitfalls of the Digital Age', *The Public Historian* 26:2 (Spring 2004) 7-22.

4 Janine Solberg, 'Googling the Archive: Digital Tools and the Practice of History', in: *Advances in the History of Rhetoric* 15:1 (2012) 53-76. This has also been pointed out by Marlene Manoff. See, for instance, her article 'Archive and Database as Metaphor: Theorizing the Historical Record', *Portal: Libraries and the Academy* 10:4 (2010) 385-398 and Renée Sentilles, 'Toiling in the Archives of Cyberspace', in: Antoinette Burton (ed.), *Archive Stories: Facts, Fiction, and the Writing of History* (Durham, London 2005) 136-156 and Jerome de Groot, *Consuming History: Historians and Heritage in the Contemporary Popular Culture* (London, New York 2009), especially chapter 6 'Digital history', 90-101.

5 Alexis E. Ramsey, 'Viewing the Archives: The Hidden and the Digital', in: Alexis E. Ramsey et al. (eds.), *Working in the Archives: Practical Research Methods for Rhetoric and Composition* (Carbondale 2010) 79-90, 86.

> Just to persist in the idea that the old archives will prevail falls short of analysing how the digital conversion fundamentally changes not only the politics and priorities of the archive institutions, but also how one accesses and thinks about archival material [...] at large.[6]

Digitisation is generally considered to be an important step towards improving access to historical sources. Our traditional idea of the analogue archive – which is commonly viewed as closed, complex, difficult to access, and at the very least as time-consuming to use – is increasingly replaced by the new idea of a digital archive as a metaphor for ubiquitous accessibility on the Internet.[7] Archival institutions contribute to this image by repeatedly emphasising the importance of digitisation in improving access to archives. This article raises a number of critical questions that need to be asked regarding the digitisation of analogue collections. It is based upon the premise that the current one-sided focus by the archival as well as the research communities on the technological opportunities presented by digitisation neglects too much the task of preserving the existing, analogue 'cultural memory' of our society. This in turn, risks marginalising those parts and aspects of our analogue cultural memory that cannot adequately be incorporated into the digital infrastructure.

'Thresholds of adequacy'

In their book *Processing the Past: Contesting Authority in History and the Archives*, Blouin and Rosenberg draw a comparison between the current situation in which users increasingly turn to digitised forms of particular information rather than their traditional analogue forms, and the way users increasingly turned to printed texts at the expense of handwritten texts after the invention of the printing press. From the sixteenth century onwards, materials were available in print and '[s]cholarship increasingly could rely on printed sources alone'.[8] It was much easier to employ one of the numerous printed versions rather than to refer back to the original manuscripts. According to Blouin and Rosenberg historical research passes over a 'threshold of adequacy' when almost all research is based on the use of digital information at the expense of going back to the original analogue information.

6 Trond Lundemo, 'Archival Shadows', in: Eivind Røssaak (ed.), *The Archive in Motion: New Concepts of the Archive in Contemporary Thought and New Media Practices* (Oslo 2010) 183-196, 195-196.

7 Lundemo, 'Archival Shadows', 183.

8 Francis X. Blouin and William G. Rosenberg, *Processing the Past: Contesting Authority in History and the Archives* (New York 2011) 204.

The parallels are interesting, but there are also fundamental differences between these two 'thresholds' from manuscript to print and from analogue to digital. The consequences of digitisation will be even more far-reaching than those that occurred because of the development of printing techniques in the sixteenth century. With both written and printed texts we are considering physical media that embody information. Users only have access to this information by directly engaging with the information medium. Digitised archival documents, however, can only be consulted via an interface. That difference has consequences not only for the accessibility and reproducibility of the information, but also for matters such as how information is ordered and the sustainability of the documents. What does a large-scale digitisation of archives imply for the historical infrastructure? What are the consequences for search behaviour and methods of historical inquiry when analogue collections are digitised? What implications does digitisation have for the independent value of analogue artefacts? Finally, what implications does the current approach of digitisation have for those archival documents that have not yet been incorporated into the digital environment? These questions are central in this article. Here I do not consider the complex question of which parts of which archives are selected for digitisation and which are not. That question is so broad that I could not possibly deal with it here, and it deserves independent attention. I also limit myself here to discussing the problematic aspects of digitising analogue archives, and pay no attention to born-digital archives.

Digitisation of analogue materials

In 1997 Gordon Bell and Jim Gray of Microsoft's research department predicted that in half a century – that is, in the year 2047 – all information about physical objects, people, buildings, processes and organisations would be available online. They also added that 'this trend is both desirable and inevitable. Cyberspace will provide the basis for wonderful new ways to inform, entertain, and educate people'.[9] As time passes it increasingly appears that Bell and Gray are being proved right. Fifteen years on, their prediction seems also to be coming true in the cultural heritage sector.[10] Libraries,

9 Gordon Bell and Jim Gray, 'The Revolution yet to happen', in: P.J. Denning and R.M. Metcalf (eds.), *Beyond Calculation: The Next Fifty Years of Computing* (New York 1997).

10 Christian van de Ven, 'De vraag is dus niet óf al het papieren archief ooit volledig gescand en toegankelijk zal zijn. Maar alleen nog wannéér dat het geval zal zijn' [The question is not whether all the papers in our archives will ever be completely scanned and accessible, but rather when that will be the case], see http://www.digitalearchivaris.nl/2012/06/de-vraag-is-alleen-wanneer.html#.UeJS_xZIYbQ (10 July 2013). There is also some scepticism about digitisation. See, for example, 'Het digitale drama', *NRC* 10-11 September 2011.

museums and archives are digitising access to their collections at a rapid pace and, to some extent, are also digitising parts of their collections themselves.

Digitisation refers to the transformation of an analogue signal into a binary representation of that signal. There are two ways in which written documents can be digitised: their outward physical appearance can be digitised through scanning, while their message can be digitised by converting the characters into ASCII or Unicode.[11] By employing Optical Character Recognition (OCR) techniques these two forms of digitisation can be combined – until now, particularly in cases of printed or typed material.[12] Such a purely technical approach to digitisation offers no guarantees however, that the digital representations of the analogue documents can be used meaningfully. For that more is needed. When archivists speak of digitisation, therefore, they are almost always also referring to the process of adding metadata to the digital representation to ensure that the information is contextualised, searchable and well-presented in a digital environment.[13] The added information should ensure that the document can be understood in its original context and that it for example, can be found in a search by keywords, a date or a location. One can enrich documents with metadata in countless ways. About a decade ago, Daniel J. Cohen already asked the following question: 'When you are digitizing a 1909 map of Chicago, how many coordinates do you highlight, and which ones? A hundred, ten, a thousand?'[14] In other words the choices made with regard to the metadata that is added, determine in what ways digital objects can be used. Hence, digitisation is usually not just the making of a digital copy of an analogue document, but rather the creation of a new informational object.

The digitisation of access tools to collections: a panoptic reality?

The most rudimentary form of digitisation occurs when analogue access tools to archives – such as archive overviews, inventories and placement lists – are digitised. This type of digitisation does not concern making a digital reproduction of the archival documents, but rather concerns making inventories digitally legible so that they can be searched by users. The

11 Roberto Bourgonjen, Marc Holtman and Ellen Fleurbaay, *Digitalisering ontrafeld. Technische aspecten van digitale reproductie van archiefstukken* (Amsterdam 2006) 9.

12 There are also research projects that focus on making handwritten texts searchable, such as SCRipt Analysis Tools for the Cultural Heritage: http://www.catchplus.nl/projecten/deelprojecten/scratch4all/gebruikers/ and http://www.nwo.nl/onderzoek-en- resultaten/programmas/continuous+access+to+cultural+heritage+(catch).

13 See Digitaal Erfgoed Nederland: http://www.den.nl/abc/Digitaliseren/.

14 Daniel J. Cohen, 'Digital History: The Raw and the Cooked', *Rethinking History* 8 (2004) 337-340.

digitisation of access tools really only offers benefits to the researcher. It allows for connections to be drawn between existing collections that are physically separated and often described and made accessible in their own ways. The long-cherished dream of historians to consult archives from a central (nowadays virtual) location thus, is becoming much more of a reality.[15]

Notably, there is still not a central portal in the Netherlands by which users can obtain an overview of the thousands of collections housed by Dutch archival institutions and by which they can search these collections in a standardised fashion. Nevertheless, a large number of Dutch archival institutions do make use of a service developed by the private sector, www.archieven.nl, which allows users to browse the inventories of affiliated archival institutions.[16] Although the provider of such services is probably of little consequence to the historian, there has recently been a noticeable shift in attitude in the archival sector with regards to the organisational form that such a central access tool should take. Inside as well as outside the Netherlands there are plans and concrete projects in development to simplify archival access by building a central digital access tool.

In December 2012, the Dutch Minister of Education, Culture, and Science came to an agreement with *Interprovinciaal Overleg* (Association of Provincial Authorities), the *Vereniging van Nederlandse Gemeenten* (Association of Dutch Municipalities) and the *Unie van Waterschappen* (Association of Regional Water Authorities) to provide the archival sector with a much-needed boost in the 2012-2016 period.[17] The innovative agenda constructed by these parties provides the basis for a yearly plan of action for which the minister has allotted a total of nine million euros until 2016. One of the five themes in these yearly programmes is the improvement of public access to the archival collections in the Netherlands. The goal is to have a nation-wide portal on which archival institutions can offer access to their collections in a standardised manner by 2016.[18] An important argument for governmental control over such a portal is that it assures the information remains public even in the distant future. Also at the European level, there are efforts to build a virtual library and archive

15 See for example, Jo Tollebeek's article 'Het Archief. De panoptische utopie van de historicus', *Feit & Fictie. Tijdschrift voor de Geschiedenis van de Representatie* 4:3 (1999) 40-54. It is also the explicit wish of many non-professional users in the Netherlands to have a complete online overview of all the collections housed at Dutch archival institutions. See Margreet Windhorst (as commissioned by Erfgoed Nederland), *Archieven in Transitie. Innovatieagenda voor de archiefsector* (Amsterdam 2010) 20.

16 See: www.archieven.nl. About 80 archival institutions from the Netherlands make use of this service and together they provide users with more than 90 million archival descriptions, searchable online.

17 http://www.nationaalarchief.nl/sites/default/files/docs/archiefconvenant_2012-2016_pdfa.pdf (2 April 2013).

18 http://www.ipo.nl/files/2013/6014/6646/3_bijl_2.pdf (2 April 2013).

from which users can browse the archival collections of affiliated institutions in a straightforward manner.[19]

Loss of meaning

At first sight, the digitisation of existing access tools to archival collections only seems to have benefits. Nevertheless, this process has unintended but serious side-effects. It is therefore, important to examine more closely the way in which existing analogue access tools are digitised. After all, the traditional methods that archivists developed to present archives in their historical, organisational and functional context cannot simply be shifted to an Internet environment. The access tools first have to be made suitable for Internet search engines, a technical operation that might seem simple and innocent, but has far-reaching consequences.

First of all, standard search engines have not been developed to keep intact the meaningful hierarchical structures out of which traditional archive inventories are built – that is, as a representation of the often complex structure of the actual archives.[20] Search engines are geared to finding results and representing the key words by which the search is conducted, not to showing the document's place in the archival structure, which explains its context.[21]

Furthermore, inventories are also historical products with their own authors. The archival scholar Eric Ketelaar for instance, recently noted the remarkable differences between the original version of the archival inventory of Amsterdam's hospitals (*gasthuizen*) created by the municipal archivist Veder in 1908 and the modern PDF version of this inventory available on the Internet and created in 2010. The inventory from 1908 not only offers many more details than the 2010 PDF version on the Internet, but in 'retyping (or scanning) the introduction, ludicrous corrections were at times made'. Ketelaar

19 For the archives: http://www.apex-project.eu/ and http://www.archivesportaleurope.net/. Libraries and other collections: http://www.europeana.eu/portal/. For Belgium, see: Bart De Nil and Marc Jacobs, 'Naar een meervoudig pad en een innovatieagenda voor de Vlaamse archiefsector Archieven 2020'. See also http://www.faronet.be/blogs/bart-de-nil/werkgroepen-archieven-2020-werk-mee-aan-een-innovatieagenda-voor-de-archiefsector (2 April 2013).

20 Theo Thomassen, 'Waardering en digitale toegankelijkheid als onderzoeksspeerpunt', *Archievenblad* 116:4 (2012) 19-22.

21 Junte Zhang, *System Evaluation and Archival Description and Access* (Amsterdam 2011).

wondered, 'Do archivists realize that old inventories (and their introductions) are archival monuments that should be handled with care?'[22]

Inventories are not only archival monuments, but also archival instruments that are the result of the choices and interpretations of the archive by the archivist. They contain important contextual information about the creator(s) of the archives and the archive, but are also structuring and ordering instruments. Hence, inventories are an important interface between the historian and the archives and they form the lens through which the researcher looks when finding information. Changes in the inventory have irrevocable consequences for how the contents of the archive are viewed.[23]

Theo Thomassen shows through a number of examples how digitisation processes can completely ruin the hierarchical structure of an archival inventory. He identifies the compilation in 1926 of the archive *De regeeringsarchieven der Geünieerde en der Nader Geünieerde Nederlandsche Provincien 1567 September–1588 Mei* by R. Bijlsma as one of the most meaningful events in the Dutch history of archivistics. The records creation in this period was so complicated that documents from the time are barely interpretable without additional explanation. The documents Bijlsma describes in this inventory are from the States-General of the Netherlands and the Council of State, and from five public servants who worked at these and other general institutions of government. In fact, the archive consisted of a number of small governmental archives (sub-fonds), separate but interconnected. The general introduction to this inventory and the annotations to the eleven sub-fonds that Bijlsma constructed cover more pages than the actual descriptions of the documents, but are extremely useful. The digitisation of Bijlsma's inventory, however, was completed only on the basis of the individual sub-fonds because the digital inventory of the National Archives does not offer the possibility for the representation of hierarchical relations; hence, the original connection between all these sub-archives has been entirely lost after digitisation.[24] Tools developed for a standardised and easy search in the archives should not be applied indiscriminately if this leads to loss of (context) information. At the very least users should be warned about this.

22 '[…] bij het overtypen (of scannen) van de inleiding (zijn) correcties aangebracht, soms lachwekkende'. […] 'Beseffen archivarissen dat de oude inventarissen (en de inleidingen) archiefmonumenten zijn, waar je voorzichtig mee moet omgaan?' Op cit: Theo Thomassen, 'Archiefvormers en archivarissen als auteurs', in: Peter Horsman and Chris Streefkerk (eds.), *Archieven in het geding. Een pak van Sjaalman voor Eric Ketelaar bij zijn afscheid als hoogleraar archiefwetenschap aan de Universiteit van Amsterdam op 28 mei 2009* (Amsterdam 2009) 107-119, 107.

23 Elizabeth Yakel, 'Archival Representation', *Archival Science* 3 (2003) 1-25, 14-15 and M. Hedstrom, 'Archives, Memory and Interfaces with the Past', *Archival Science* 2 (2002) 21-43.

24 Thomassen, 'Archiefvormers en archivarissen als auteurs', 108-109.

The digitisation of archives: new possibilities

Besides offering digital access tools to archives, there have also been substantial efforts to digitise actual parts of archival collections. This is also the case in the Netherlands where much money and energy has gone towards digitising analogue archives in recent years. Slowly but surely, the memory of our past, which has traditionally been stored in archives, libraries and museums, is being transferred to a digital brain.[25] To promote better access[26], to reach a larger audience and to better protect often fragile documents, the focus has shifted from an analogue to a digital access to our past. The digital availability of original analogue archives has even been offered as an argument for limiting the opening times of archival reading rooms[27], and the possibilities for such limitations as an argument for making financial means available for the purposes of digitisation.[28]

Reports from archival institutions generally lend themselves easily to the conclusion that the digitisation of archival collections has been a great success and that the transition of analogue to digital has already been made. Many annual reports and policy briefs refer proudly to the greatly increased access for the public through the institution's website: from hundreds of thousands of web page visitors to tens of millions of page views per institution

25 Edwin Klijn, 'Van 'oud' geheugen naar digitaal brein. Massadigitalisering in de praktijk', *Tijdschrift voor Mediageschiedenis* 14:2 (2011) 56-68, 56.

26 Accessibility is described by Theo Thomassen as 'the ability of a user with certain competencies to, at a particular time and place, effectively interpret the archives, within the bounds set by the environment within which the archiving system is situated'. See Theo Thomassen, 'De veelvormigheid van archiefontsluiting en de illusie van de toegankelijkheid', in: Theo Thomassen, Bert Looper and Jaap Kloosterman, *Toegang. Ontwikkelingen in de ontsluiting van archieven* (The Hague 2001) 14-43, 17.

27 Researcher Ton Kappelhof expressed his concern about this in a blog in 2011. The Dutch Royal Society of Archivists (*Koninklijke Vereniging van Archivarissen in Nederland*, KVAN) subsequently during the 'KVAN-study days' dedicated a session to this problem entitled 'Archieven open, studiezaal dicht' on 11 June 2012 in Middelburg. See http://www.huygens.knaw.nl/gaan-de-studiezalen-van-archieven-dicht/ and http://hethistorischatelier.blogspot.nl/2011/12/gaan-de-studiezalen-van-nederlandse.html (5 April 2013). See also 'Wordt het archief van de toekomst een cultureel centrum?', *Reformatorisch Dagblad* 3 September 2012, http://www.refdag.nl/achtergrond/geschiedenis-cultuur/wordt_het_archief_van_de_toekomst_een_cultureel_centrum_1_671787.

28 'Archief digitaliseren kost veel tijd', *Nederlands Dagblad* 3 December 2011.

per year.[29] Supposedly, digitisation has greatly increased the extent to which archival collections are consulted. For some archival institutions digitisation has resulted in more visitors to their physical location, while at others the number of visitors to the reading rooms has decreased substantially.

That the digitisation of analogue collections offers great advantages to those who wish to use these archives is beyond all doubt. The user no longer has to travel from afar to find and analyse coveted information. Additionally, digital techniques allow for new types of research of which historians could only dream several decades ago. By analysing digitised serial archival holdings it is possible to uncover patterns that otherwise would never have been uncovered or only after very extensive research. The digital newspaper database (http://kranten.kb.nl) of the Dutch National Library of the Netherlands (*Koninklijke Bibliotheek*) or the digital repository of the Proceedings of the States-General (http://www.statengeneraaldigitaal.nl) of the Netherlands (*Handelingen van de Staten-Generaal*) are good examples of such new applications.[30]

Digitisation and the function of physical archives

Toni Weller views 'digital history' as a form of historical practice which has completely integrated new digital technologies 'in presenting and representing the past, both in terms of the utilization of such technologies in scholarship and teaching, but also in considering new methodologies resulting from them'.[31] 'Digital history' is not just based on traditional analogue collections and 'born-digital documents', it is also highly dependent on their digital availability. What is of concern here is the historical data rather than the media or carriers of the information. Digital access not only provides new opportunities for researchers, but also for the traditional cultural heritage

29 The Archive of Utrecht (*Utrechts Archief*) writes the following in its annual report about the year 2011: 'The presentation of scans of archival documents through the Archiefbank seems to meet a public need. With about 9 million consultations, this part of the website has pushed the visitor numbers of the website to more than 2.3 million visitors/sessions, with an average session time of 7 minutes. An increase of more than 50% compared to 2010. The number of page views rose with 86% to more than 69 million, http://www.hetutrechtsarchief.nl/files/jaarverslagen/jaarverslag2011.pdf.

30 For an archival example see the website of Arsip Nasional Republik Indonesia and Corts Foundation (http://www.sejarah-nusantara.anri.go.id) launched in October 2013. A selection of VOC-archives kept in the Indonesian National Archives is digitised and is accessible online.

31 Toni Weller (ed.), *History in the Digital Age* (New York 2013) 3. In this book several authors discuss methodological and technical aspects of digital history.

institutions, especially when these organisations succeed in jointly offering their collections to the public in a cohesive way. Promising in this regard are the cooperative efforts between scientific research institutions and archival institutions to employ digitisation to make reconstructions of archives that have either disappeared in their physical form or have been dispersed.[32]

Digitisation also has downsides however, for historical research. Although archives probably do not receive visitors like the historian sniffing envelopes for vinegar on a daily basis, the point that Brown and Duguid were trying to make clear is that digitisation also always leads to a loss of information. Scent is one such piece of information, but there are also other informational aspects, such as the structure and chemical composition of the paper and the ink, watermarks, the method of binding, weight and traces of other users that can be important to certain kinds of research. As long as the original documents are maintained there is no cause for concern. One can then still continue to conduct this kind of research. More problematic however, is when the original objects disappear after digitisation. The American journalist and activist Nicholson Baker in 1994 already furiously criticised the practice of clearing out and destroying paper card systems in libraries after they had been captured on microfilm.[33] In his book *Double Fold* from 2001 he also crusaded against the, in his eyes barbaric, practice of destroying newspapers and books after they had been digitised. Baker's central point was that librarians and archivists not only have a duty to preserve the information housed in their institutions, but also their artefacts.

Few have suggested (selectively) discarding paper archives after digitisation in the manner of books and newspapers. Nevertheless, it is worth considering whether all archival documents need to be preserved once they have been stored in digital form, particularly because consultation of the original analogue documents is generally strongly discouraged once they have

32 A good example is the large international European Holocaust Research Infrastructure (EHRI) project that intends to create a central portal to the numerous Holocaust-related archives spread throughout Europe. See http://www.ehri-project.eu/ and Tobias Blanke and Conny Kristel, 'Integrating Holocaust Research', *International Journal of Humanities and Arts Computing* (Forthcoming). Some bolder projects are even on their way, such as the effort to digitally reconstruct the concentration camp administrations that were dispersed throughout European archives after the Second World War. A similar reconstruction is planned for the lost archives of a VOC trading post via the digitisation of both the documents that were sent out from the post as well as the minutes of documents that were sent to the post from elsewhere.

33 Nicholson Baker, 'Discards', *The New Yorker* 4 April 1994.

been digitised.[34] There are good arguments that weigh against the destruction of any archival documents – they have intrinsic historical value. After all, the physical documents, or the artefacts, form an integral part of history itself, in contrast to their digital representations.[35] Wolfgang Ernst contends that '[f]or these kinds of monuments the task of the traditional archive and the museum remains intact'.[36] The traditional archive has its own independent value. Half a century ago Marshall MacLuhan already argued that 'the medium is the message'. It is precisely for this reason that analogue archival documents and their digital counterparts in terms of their form and character are two entirely different types of sources, each accompanied by their own heuristic and methodological approaches.[37] Not only are the methods and techniques by which the historian is accustomed to working focused on scarcity (the individual document) rather than abundance, the ways in which analogue and digital sources are studied differ greatly from each other. In an analogue archive the researcher automatically obtains an impression of the context by browsing through all the documents during his search for particular items, while in a digital environment searches are primarily conducted with key words so that the researcher is much further removed from the context.[38]

There are additional important reasons why an analogue archival document cannot be completely replaced by a digital version. Digitised historical documents are a great instrument for studying the past, but they are only copies. They do not form a part of history itself. They are scanned copies of unfolded and smoothed out originals, removed from their administrative context. Characteristics such as size, folds in the documents, seals and the construction of the binding are largely lost in digital representations.[39] For example, in the NIOD's archival collection, there is a tiny diary covering the

34 Jim Gemmel and Gordon Bell already refer to this in their article 'The E-Memory Revolution', *Library Journal* 15 September 2009, 20-23. Although not transferred to the National Archive yet, and in that respect slightly different, there are some examples of this practice: in 2014 the Dutch government is planning to destroy millions of handwritten/drawn paper cadastral maps after digitisation. Some worried citizens have lodged an appeal at the Council of State to prevent destruction. See for details 'Interview Keverling Buisman over kadastrale hulpkaarten', *Geo-info. Vakblad van Geo-Informatie Nederland* 10:3 (2013) 28-31.

35 Jenny Newell, 'Old Objects, New Media: Historical Collections, Digitization and Affect', *Journal of Material Culture* 17:3 (2012) 287-306.

36 Ernst, 'Cultural Archive', 59.

37 Marcel Broersma, 'Nooit meer bladeren? Digitale kranten en archieven als bron', *Tijdschrift voor Mediageschiedenis* 14:2 (2012) 29-55.

38 *Ibid.*

39 Gabriëlle Beentjes, 'Digitaliseren (ten koste) van het origineel: pragmatisme versus ethiek', *Archievenblad* 116:9 (2012) 12-16. Much of the information on the analogue documents themselves might also be lost in the process of preparing them for digitisation. For instance, will unfolded and smoothed letters be returned folded into their envelopes?

years 1943-1945 that was written on cigarette rolling papers by someone who was imprisoned in the Tjimahi internment camp close to Bandung. Because digitisation is exclusively focused on generating legible reproductions of the text, it is not possible to see on the digital copy that the original diary was written on exceptional material.[40]

Kjetil Jacobsen contends that 'with digitization the archive is once again what it used to be: texts rather than physical objects'[41], and according to Wolfgang Ernst the twenty-first century will revolve around 'data streaming' and 'network-based communication':

> What will retroactively remain are isolated islands of archival storage, heterotopias of 'counter-spaces' as defined by Michel Foucault, monumental and material resistance against dynamic and permanent reorganization of binary data, counter-practices in this age of general digitisation.[42]

Because so little is known about the importance of 'physicality' in conducting historical research, the historian Emily Robinson advocates carrying out much more research into the role of feeling, smelling and working with the original physical documents for acquiring knowledge.[43]

The archival scholar Peter Horsman has studied the value of the physical form of documents from an archival angle and views the 'physical reading' of the archive as a legitimate and important research technique. 'Physical reading' is a technique for understanding previous archival systems: '[h]oles in solitary pieces indicate they were previously bound, while dirt suggests neglect. Inventories that are still in a pristine condition after several centuries have obviously been little consulted'. For example, on the basis of its binding Horsman suspects that a register which lists the important privileges of the city of Dordrecht must have originally been housed in the municipal administration, even though the annotations convey the information that the document comes from the personal library of Visscher, a former pensionary, and that he bought the document in a private transaction.[44]

40 NIOD, diary H. van Kalshoven; see http://www.archieven.nl/nl/search-modonly?mivast=298&miview=inv2 (12 April 2013).

41 Jakobsen, 'Anarchival Society', in: Røssaak (ed.), *The Archive in Motion*, 127-154, 138.

42 Wolfgang Ernst, 'Cultural Archive versus Technomathematical Storage', in: Røssaak, *The Archive in Motion*, 53-73, 58.

43 Emily Robinson, 'Touching the Void: Affective History and the Impossible', *Rethinking History* 14 (2010) 503-520.

44 Peter Horsman, *Disordres ende abuysen. Archiefvorming en archivering in Dordrecht 1200-1920* (Amsterdam 2009) 53.

Several anthropologists who consider archives to be 'technologies of rule in themselves' have contributed significantly to this discussion about the different ways of reading archives.[45] Bruno Latour considered a

> [...] bureau [to be] a small laboratory in which many elements can be connected together just because their scale and nature has been averaged out: legal texts, specifications, standards, payrolls, maps, surveys [...]. The 'cracy' of bureaucracy is mysterious and hard to study, but the 'bureau' is something that can be empirically studied, and which explains, because of its structure, why some power is given to an average mind just by looking at files: domains which are far apart become literally inches apart; domains which are convoluted and hidden, become flat; thousands of occurrences can be looked at synoptically.[46]

The physical aspects of archives are thus important to understanding the accumulated knowledge systems from the past. In her dissertation on the role and importance of the Public Works Department of the city of Amsterdam to the spatial development of the city, historian Ida Jager shows that the archives of the Public Works Department offer more than just information captured on paper. The archive, which 'is bursting at the seams with plans, solutions, advisory briefs, and proposals' in which 'legions of folded drawings have been hidden'[47], conveys by the way in which notes, drawings and designs have been stored along with other pieces, how the specialists concerned with the city's spatial planning used these documents and how much they valued them. These types of observations are possible by studying the physical archives. What meta-information permanently disappears with scanned versions of such documents? How could such meta-information be retained with the digitisation of archives?

Both historians as well as archival scholars are increasingly interested in the differences between original analogue documents and their digital representations. More attention should be paid to the consequences of digitisation with regards to some of the aspects mentioned in this section (such as research methods, heuristics and knowledge of the context) in order to improve digitisation efforts.

45 Ann Laura Stoler, 'Colonial Archives and the Arts of Governance: On the Content in the Form', in: Carolyn Hamilton et al. (eds.), *Refiguring the Archive* (Dordrecht etc. 2002) 82-100, 83.

46 Bruno Latour, 'Visualisation and Cognition: Drawing Things Together', in: H. Kuklick (ed.), *Knowledge and Society: Studies in the Sociology of Culture Past and Present volume 6 (*Greenwich 1986) 1-40, 26.

47 Ida Jager, *Hoofdstad in gebreke. Manoeuvreren met publieke werken in Amsterdam 1851-1901* (Rotterdam 2002) 14-15.

Digitisation and cultural memory

A few years ago an article in the *New York Times* entitled 'History, Digitized (and Abridged)'[48] warned of the downsides of the current digitisation drive. The author feared that as more and more museums, libraries and archives digitise their collections the objects and documents not included in the digital domain are at risk of disappearing from our active cultural memory or, in Aleida Assmann's words, from our cultural working memory. The concept of cultural memory was introduced by Jan Assmann and with it he intended to target all of our expressions of culture with which society makes a connection to the past. That connection arises for example, through texts, monuments and rituals that are outside of individual personal memory and are thus accessible to different people.[49]

Aleida Assmann has further elaborated this concept by differentiating between different forms of cultural memory. She distinguishes between *Speichergedächtnis* (stored memory) and *Funktionsgedächtnis* (cultural memory). The *Speichergedächtnis* consists of the countless pieces of data about the past that have long been preserved in museums, archives and libraries. These data and artefacts however, only have meaning when they are connected in some way to contemporary society. Only then can they be a part of what Assmann calls our *Funktionsgedächtnis*. There is, therefore, a continuous exchange between these two memory spaces. The vitality of our cultural working memory is largely dependent on the way in which this enormous reservoir of data can be accessed. It is therefore, of importance that the permeability between these two 'memory spaces' is as large as possible, because

> wird der Grenzverkehr zwischen beiden Gedächtnissen durch eine Mauer versperrt und das Speichergedächtnis als latentes Reservoir von ungebrauchten Möglichkeiten, Alternativen, Widersprüchen, Relativierungen und kritischen Einsprüchen ausgesperrt, dann wird Wandel ausgeschlossen, und es kommt zur Verabsolutierung und Fundamentalisierung des Gedächtnisses.[50]

Such a wall, or a threshold as Blouin and Rosenberg describe it, is now potentially upon us.

48 Katie Hafner, 'History, Digitized (and Abridged)', *The New York Times* 10 March 2007.

49 Jan Assmann, 'Kollektives Gedächtnis und Kulturelle Identität, in: J. Assmann and T. Hölscher (eds.), *Kultur und Gedächtnis* (Frankfurt am Main 1988) 9-19. See also Ann Rigney, 'Teksten en cultuurhistorische context', in: Kiene Brillenburg Wurth and Ann Rigney (eds.), *Het leven van teksten. Een inleiding tot de literatuurwetenschap* (Amsterdam 2009) 295-334, 323.

50 Aleida Assmann, *Erinnerungsräume. Formen und Wandlungen des kulturellen Gedächtnisses* (München 2009) 140.

Digital expectations and digital reality

According to some there is a growing tendency among researchers to expect that informational resources will be available online and to dismiss those resources not available online as irrelevant.[51] The 'threshold of adequacy' mentioned by Blouin and Rosenberg therefore, might be crossed more quickly than anticipated. The consequence is that what is not digital is no longer considered to exist by researchers.[52] That is a very disturbing thought if we consider that only a fraction of what is available in analogue archives is actually available in cyberspace. From the estimated nine billion documents housed in the National Archives of the United States only a fraction is available online. In comparison, the massive Google-books project concerns an estimated three billion pages. In the Netherlands the situation is not much different. The most recent reliable quantitative data about the Dutch public archives date from 2000. The archival sector at that moment occupied 645 kilometres of shelf space.[53] This figure only includes archives from the national government, the provinces, the municipalities and the water boards. There is a substantial amount of additional material housed at all kinds of categorical archival institutions such as IISG, KDC, NIOD, and KITLV. At this moment it is estimated that only about two per cent of the analogue material housed in Dutch archival institutions is available digitally, although there is sustained effort to have ten per cent digitally available within a reasonable time frame.[54]

51 Adrian Cunningham, 'The Postcustodial Archive', in: Jennie Hill (ed.), *The Future of Archives and Recordkeeping; A Reader* (London 2011) 173-189, 182. Cunningham is specifically alluding to the usage rates of online versus physical archival records: 'Digitization programmes abound and users vote with their fingers in cyberspace in far greater numbers than has ever been the case with users voting with their feet in visiting reading rooms. The National Archives of Australia, for instance, has digitized about 20 million pages of records, or about 2% of its total holdings. Usage figures for this 2% of holdings that are available in cyberspace outstrip usage figures for the 100% of holdings that are available in search rooms by orders of magnitude'.

52 Cunningham, 'The Postcustodial Archive', 173-189, 182.

53 The Dutch Central Bureau for Statistics stopped collecting core facts about the archival sector in 2000; see http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=70002NED&D1=0-16,28-31,37-44,54-57,99,104-111&D2=0&VW=T. For European statistical data about digitisation and digital access to cultural heritage, see http://enumerate.eu.

54 Accurate statistics are difficult to obtain. From some management plans and yearly reports of the archival institutions however, we can deduce the percentage of the archival collection that is now digitally available: for the National Archives this was around 1% in 2010, and their goal is to have 10% of the 110 kilometres of shelf space digitised within ten years (http://www.ncdd.nl/documents/NCDDToekomst_2_Strategischeagenda.pdf). Of the NIOD's collection about 2% was digitised in 2012. The goal is to have digitised 7% of the two and a half kilometres of documents by 2016.

The risk that analogue archives will be forgotten is not only a problem for historical research but should also alarm the archival institutions. The whole user infrastructure is changing after all. In an advisory brief to the sector from the Dutch Cultural Council in 2010, the council sketches an image of how the archival sector will function in 2020: 'In 2020, the user will no longer be familiar with traditional archival institutions, but there will instead be the Digital Archive Collection of the Netherlands (*Digitale Archiefcollectie Nederland*)'.[55] Not that everything will be available digitally, but if we wish to consult something it will be offered digitally for instance, by 'scanning on demand'. This is a service already offered by the city archives of Amsterdam. Users determine what is digitised with as a consequence that Amsterdam's city archive scans about 12,500 archival documents a week. Specific scanning projects only really take place when subsidies are available.[56] Time will tell whether the Dutch archives will be available online everywhere in 2020, but things are moving in that direction. Both the Dutch trade association for archivists (*Branchevereniging Archiefinstellingen in Nederland,* BRAIN) as well as the Dutch professional association for archivists (*Koninklijke Vereniging van Archivarissen in Nederland*, KVAN) are adamant about the future of the archives: 'The societal value of archives stands or falls [...] with the accessibility through the world wide web. Digitisation is a must', so these organisations wrote in a joint policy note.[57]

It has also become clear that a digital infrastructure for archives is expensive. Costs run into the millions each year. Archival institutions have opted for managing digitised archives with the same focus on sustainability as for born-digital archives for which e-repositories are currently being developed. The costs associated with digitising analogue archives, and particularly with their sustainability-focused management, are starting to become worrisomely large. Libraries have managed to control these costs somewhat by making alliances with commercial parties such as Google, but there are non-financial downsides to such alliances. Concern however, has not only arisen about the costs of digitising analogue materials and managing these materials. The question also arises of what to do with the collections of paper documents that have been digitised. As analogue archives are increasingly digitised to high standards, the high cost of maintaining two infrastructures is going to become more and more of an issue.[58] If we also want

55 Raad voor Cultuur, *Sectoranalyse Archieven* (2010).

56 *Stadsarchief voor Amsterdammers. Strategie van het Stadsarchief Amsterdam 2011-2015* (Amsterdam 2011) 16-17. At this pace it would still take over 400 years to digitise all of Amsterdam's city archives. See, 'Archief digitaliseren kost veel tijd', *Nederlands Dagblad* 3 December 2011.

57 *Archiveren is vooruitzien. Visie van* BRAIN *en* KVAN *op de koers en de inrichting van het archiefwezen* (2009) 5.

58 According to calculations by the National Archives the annual costs of keeping the equivalent of one meter digitised archival material to these high standards amounts to 7000 euro.

to preserve the original, paper documents, then these should also be managed with a focus on sustainability. Although there will be much less physical handling of these documents after they have been digitised, because these documents are then only accessible in exceptional cases, the energy-draining climatised depots are an extremely heavy financial burden. In fact, duplication through digitisation results in two expensive, co-existing archival systems that need to be maintained and remain accessible. In times when governments need to economise, policy makers are more than likely to raise this issue.

Given the aforementioned concerns, archivists should question whether a high number of users should be a priority even in the short term. That is especially so given that there is difficulty financing the effort captured by the policy briefs just mentioned to increase access to archives via the Internet. The most important funding programme for digitisation within the archival sector, *Metamorfoze*, employs a very different criterion for distributing funding and was created to safeguard paper documents that are facing accelerated deterioration.[59] The improved access to such documents after digitisation has really only been a happy by-product of this programme. For many archival institutions however, it seems that lending digital access to the most important collections, or at least those most important for the public, has a much higher priority than the conservation of their collections and has become an aim in itself. This tension between digitisation for the purpose of providing online access on the one hand and preservation on the other hand is often seen in the newsletter distributed by *Metamorfoze*. In the autumn of 2013 the programme will adopt a new content-thematic guideline in judging subsidy requests and this appears to be an attempt to give more balanced attention to both motives for digitisation.

I am not contending that we should stop using digitisation to preserve archives that are in a fragile condition. I do contend however, that there should be a clear strategy for the digital infrastructure of analogue collections. A strategy encompasses more than just the desire to digitise as much archival material as possible and to build digital depots in which this digitised material can be managed sustainably. What is most important is to reflect on which archival collections should be digitised and why. It must constantly be considered how the user will actually benefit from the digitisation of certain

59 The Metamorfoze programme maintains three quality standards for digitisation. The default position is that the digital copy should be of such quality that it can replace the original: 'The produced preservation masters in this framework must be of such a quality and have such a close likeness to the originals, that they can replace the original material. This means that all the information visible in the original should also be visible in the preservation master; the information transfer has to be complete. The originals are, after all, subject to decay and are withdrawn from usage after digitisation'. See Hans van Dormolen et al., *Richtlijnen Preservation Imaging Metamorfoze, concept 1.0 January 2012* (The Hague 2012) 4.

BESCHRIJVING VAN DE SERIES EN ARCHIEFBESTANDDELEN

1 STUKKEN BETREFFENDE HET BESTUUR DER KOLONIËN IN HET ALGEMEEN

1.1 *OPENBAAR VERBAALARCHIEF*

1.1.1 VERBALEN

1-100 Verbalen van de secretaris van Staat voor de Koophandel en Koloniën, sedert 16 september 1815 van de directeur-generaal voor de Koophandel en Koloniën.
1814-1818 100 pakken

1	1814 mei 17 - okt.
2	1814 nov.
3	1814 dec.
4	1815 jan.
5	1815 feb.
6	1815 mrt.
7	1815 apr.
8	1815 mei
9	1815 juni 1 - 25
10	1815 juni 26 - juli 25
11	1815 juli 26 - aug. 20
12	1815 aug. 21 - sep. 8
13	1815 sep. 9 - 25
14	1815 sep. 26 - okt. 10
15	1815 okt. 11 - 21
16	1815 okt. 22 - nov. 3
17	1815 nov. 4 - 17
18	1815 nov. 18 - 30
19	1815 dec. 1 - 14
20	1815 dec. 15 - 31
21	1816 jan. 1 - 15
22	1816 jan. 16 - 31
23	1816 feb. 1 - 17
24	1816 feb. 18 - mrt. 3
25	1816 mrt. 4 - 16
26	1816 mrt. 17 - 31
27	1816 apr. 1 - 17
28	1816 apr. 18 - mei 4
29	1816 mei 5 - 16
30	1816 mei 17 - 31
31	1816 juni 1 - 18
32	1816 juni 19 - juli 4
33	1816 juli 22 - aug. 7
34	1816 juli 22 - aug. 7
35	1816 aug. 8 - 20

▲

Page from the inventory of the archive of the Ministry for the Colonies, 1814-1849: Description of the 'verbaalarchief', which consists only of dates. National Archive, The Hague, Archive Ministry for the Colonies 1814-1849, inventory 2.10.01, page 27.

documents. I argue for more selective digitisation, not just to control costs, but also to prevent a large amount of archival material disappearing from our cultural memory for the simple reason that it cannot be digitally traced. This argument is not really undermined by the fact that all inventories of archives in the meantime have become available online. Archival descriptions, which often only consist of dates, are meaningless for those who search the inventories by keyword and do not offer any access to the content of the materials they describe.

The risk of the loss of cultural memory: an example

The administration of governing bodies was essentially very simple until well into the twentieth century: it consisted mainly of letters received – possibly with enclosed items, the decisions made on the basis of these letters, and the minutes of outgoing letters. Most of these nineteenth-century governing bodies such as the ministries, functioned under a single head, and as decisions were often communicated through letters, the draft versions of outgoing letters frequently functioned simultaneously as the official decision documents. These pieces together (the incoming letters and the draft decision/outgoing letters) form the 'verbaalarchief' – one long, continuous series of draft decisions, arranged by the date the decisions were taken. This system of arrangement based on dates became mandatory for all departments in 1823[60], and these archives are only accessible by date due to their chronological ordering. For example, the description in the inventory reads as follows: '*Verbalen* [Communications] with enclosures from the Minister of the Colonies, 1818-1849, 1809 bundles'. This is followed by dozens of pages with inventory numbers that describe the individual pieces by no more than their exact dates. For example the entry for inventory number 178 reads, '178: 1818 apr. 1-10'.

The same principle applies to the extensive archives that have been formed according to the resolution system (*resolutiestelsel*) and the agenda system (*agendastelsel*). These archives can only be meaningfully consulted by using the indexation system provided by the administrations themselves. Because these collections are so extensive they will not be digitised in the near future, even though they contain a wealth of information about our past. A comment by Henny van Schie – archivist at the Dutch National Archives and an expert on these large serial systems – some time ago on the social network for Dutch archivists *Archief 2.0* regarding these *verbaal* archives noted that

60 Royal Decree dated September 1823, nr. 7. This 'verbaalstelsel' (*verbaal* system) would remain mandatory for all ministries until halfway through the twentieth century.

▲

Page from the 'klapper', or index of the Index, of the 'verbaalarchief' of the Ministry for the Colonies, with keywords arranged alphabetically. This 'klapper' gives access to the Index via keywords.
National Archive, The Hague, Archive Ministry for the Colonies 1814-1849, inventory 2.10.01, number 2181, index of the index 1848, second half of the year.

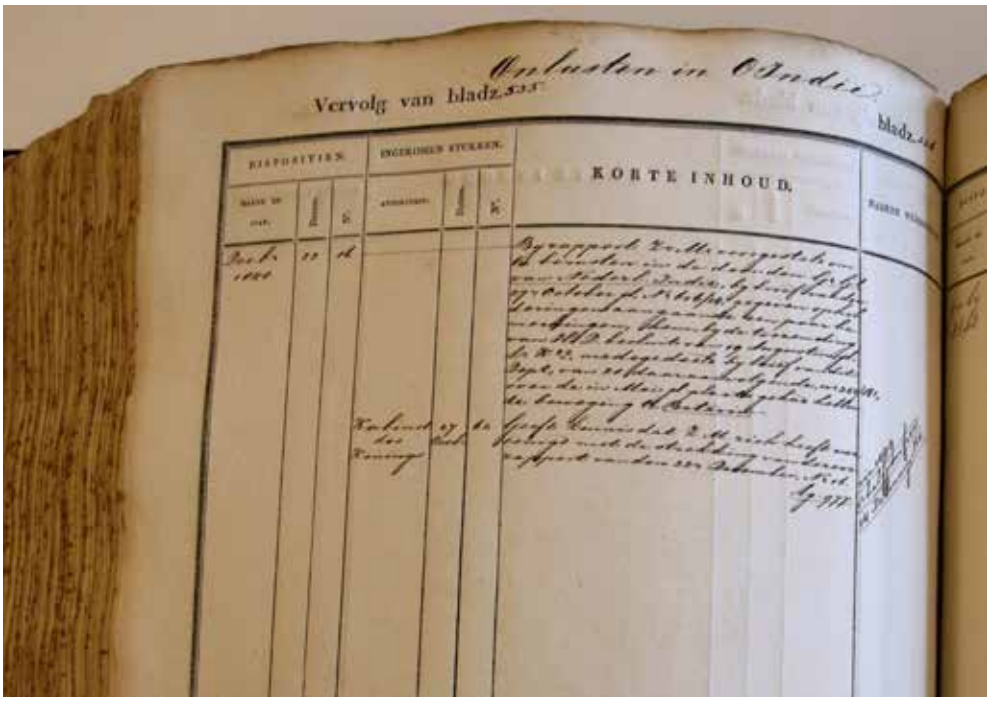
> [b]ecause it concerns extensive series that are not frequently consulted, these archives are not high on the digitisation priority list of any archival institution. The lack of familiarity of researchers and archivists with the wealth of historical information contained in these types of collections ensures that this situation will not change in the near future. I fear for their existence: they take up a significant amount of space and are thus costly to preserve, while they are rarely consulted. Who wants to pay for that?[61]

The digitisation of the more appealing and digestible parts of our archives of course, is much more productive in generating higher numbers of users. The likelihood is high that archives that are more difficult to access will be further marginalised in a digital world. If no plan of action is devised to make the information in these collections more open, they will eventually form part only of the passive 'Speichergedächtnis' without any connection to the (digital) 'Funktionsgedächtnis'.

The fixation of the contemporary archival sector with finding and applying technical solutions to problems with digital access and preservation seems to have come at the expense of the traditional expertise of archivists with respect to the administrative and functional context of archives.[62] It is exactly this expertise that is so needed by archivists to ensure that the more difficult paper archives can also be incorporated into the new digital infrastructure – and thereby our cultural memory. The point is that connections need to be made between the old analogue and the new digital world. The answer is not to *rücksichtslos* digitise all these kilometres of archives. The money is simply not available. It would be much wiser to practise selective digitisation by, for instance, opting to use the often refined and existing access tools that were devised by the administrations themselves – in the example mentioned of the 'verbalen' these would be both the indexes and the *klappers* (the indexes to these, often voluminous, indexes). Digitisation of these extensive access tools, perhaps enriched by searchable metadata, would ensure that the underlying archives (*verbalen*) also remain connected to the digital brain. Facilities to consult these underlying paper archives however, must be retained.

61 'Omdat het om omvangrijke series met een lage raadpleegfrequentie gaat, staan deze archieven niet hoog op de prioriteitenlijst van te digitaliseren archieven, bij geen enkele archiefdienst. De onbekendheid van onderzoekers én archivarissen met de rijkdom van dit soort archieven zorgt ervoor dat dit niet zal verbeteren. Ik vrees voor het voortbestaan ervan: veel ruimte innemend en dus kosten veroorzakend en bijna niet meer geraadpleegd wordend. Wie wil daarvoor nu geld betalen?' Comment by Henny van Schie, on Archief 2.0, 24 December 2012: http://www.archief20.org/profiles/blog/show?id=792394%3ABlogPost%3A80172&commentId=792394%3AComment%3A79978 (22 March 2013).

62 Bernadine Dodge, 'Across the Great Divide: Archival Discourse and the (Re)presentations of the Past in Late-Modern Society', *Archivaria* 53 (2002) 16-30, 21.



▲

Page from the Index of the 'verbaalarchief' of the Ministry for the Colonies.
National Archive, The Hague, Archive Ministry of Colonies 1814-1849, inventory 2.10.01, number 2133, index 1848, second half of the year, folio 536.

Paper archives are often ingeniously created physical information systems. The card systems and registers included in an archive are usually related to other parts of that archive. The connections are characterised in all sorts of ways. The way in which archival documents are digitised, however, usually fails to recognise the functions of these physical systems. The digitisation of archival systems thus until now, has been a rather unimaginative affair. Document after document is scanned and represented without considering the importance of its physical form. This is a serious shortcoming in current practices. At times I have tried to explain the *verbaal* system to students on the basis of the *klappers* and indexes available on microfilm in the reading room of the National Archive. I have stopped doing so and now always organise practical sessions with my students at the archives so that we can work with the original *klappers* and indexes. Only by physically seeing these information systems and for example, by feeling the weight of the annual index does it become clear why these systems are the way they are, and how different registers, binders, covers and bundles are related to each other and how they should be used. With the digitisation of these kinds of documents, much greater attention should be paid to their physical form. A register should be presented as a register, perhaps not because it increases our sense of historical worth of the information, but simply because this provides basic functional information.

Conclusion: a new direction for digitisation

Digitisation has substantial consequences for archives, the way they are used, and thus for historical research. Much time and energy has gone into digitising analogue archives and the research infrastructure is changing at a rapid pace as a consequence. In this article I have discussed several problematic aspects of this development. For several reasons the digitisation of analogue archives should not be equated with the replacement of the latter. First, not all aspects of an analogue information medium can be captured in digital form. Second, research is conducted differently with a digital collection than with an analogue collection. Hence, just because analogue archives are digitised does not mean that they can be set aside without loss. Digitised archives should complement, rather than replace, analogue collections. In the process of building a digital infrastructure to preserve and facilitate consulting archives there should be more awareness of the differences between the two.

The risk that archival collections that are not available in digital form will increasingly be marginalised needs to be recognised, in order to devise better digitisation strategies and educate current and future historians. Both archivists and historians should discuss what is being digitised and for what reasons? It is not so much the benefits and costs of new digital instruments that must be considered, but rather the consequences for historical research and access. ◀

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