BMGN - Low Countries Historical Review | Volume 128-4 (2013) | pp. 3-29

On Digital History[1]

GERBEN ZAAGSMA

Digital humanities seem to be omnipresent these days and the discipline of history is no exception. This introduction is concerned with the changing practice of 'doing' history in the digital age, seen within a broader historical context of developments in the digital humanities and 'digital history'. It argues that there is too much emphasis on tools and data while too little attention is being paid to how doing history in the digital age is changing as a result of the digital turn. This tendency towards technological determinism needs to be balanced by more attention to methodological and epistemological considerations. The article offers a short survey of history and computing since the 1960s with particular attention given to the situation in the Netherlands, considers various definitions of 'digital history' and argues for an integrative view of historical practice in the digital age that underscores hybridity as its main characteristic. It then discusses some of the major changes in historical practice before outlining the three major themes that are explored by the various articles in this thematic issue – digitisation and the archive, digital historical analysis, and historical knowledge (re)presentation and audiences.

Introduction

> [...] en histoire, comme ailleurs, ce qui compte, ce n'est pas la machine, mais le problème. La machine n'a d'intérêt que dans la mesure où elle permet d'aborder des questions neuves, originales par les méthodes, les contenus et surtout l'ampleur.[2]

Everything digital is hot. While humanities seem old-fashioned, boring and in continuous search of justification and valorisation, *digital* humanities conjure up images of unexplored territories and new horizons where funding flows freely, scholarly value is guaranteed and societal benefits self-evident. It is tempting to view the current excitement about digital humanities as a recent development. Yet, notwithstanding the discursive transition from 'humanities

URN:NBN:NL:UI:10-1-110020 | www.bmgn-lchr.nl | e-ISSN 2211-2898 | print ISSN 0615-0505

computing' and 'history and computing' to 'digital humanities' and 'digital history' in roughly the past decade[3], the history of digital humanities goes back at least sixty years and the use of computers in historical research can be traced back to the early 1960s.

Indeed, if Robert Swierenga is correct in his assertion that 'the first published work by an historian involving actual computerised research' was published in 1963, the use of electronic computers in historical research is now half a century old.[4] This leaves aside earlier studies of the 1940s and 1950s that involved the use of punch cards and what were known as unit recording machines. Considering that history as a modern academic discipline and profession arguably dates back to the second half of the nineteenth century, it follows that 'digital history' has been a part of the practice of doing history for a substantial period of time and is certainly less new than the current buzz surrounding digital humanities (DH) might suggest.

Le Roy Ladurie was not alone in asserting that tackling new questions with new methods should be the rationale underlying the use of computers in historical research. His words were echoed in 1980 by digital humanist *avant la lettre* Roberto Busa who, looking back upon his life's work that had begun in 1949, remarked that 'the use of computers in the humanities has as its principal aim the enhancement of the quality, depth and extension of research and not merely the lessening of human effort and time'.[5] If anything, one would assume that the current avalanche of digitised, as well as born digital primary sources and 'big data', enables scholars to realise the potential envisioned by Le Roy Ladurie and Busa. Nevertheless, as if reacting to their remarks, Andrew Prescott recently, and provocatively, stated: 'to judge from

1 I would like to thank the anonymous peer reviewers and editorial board of *BMGN - Low Countries Historical Review* for their constructive and useful criticisms and comments. All websites cited in this article have been visited at the latest on 21 October 2013.

2 'In history, as elsewhere, what counts is not the machine, but the problem. The machine is only interesting insofar as it allows to tackle new questions that are original because of their methods, content and especially scale', Emmanuel Le Roy Ladurie, 'L'historien et l'ordinateur', in: Emmanuel Le Roy Ladurie, *Le territoire de l'historien* (Paris 1973) 11-14, 11.

3 This is by no means to suggest they are identical phenomena; see for a good discussion framed in terms of varying epistemic cultures: Patrik Svensson, 'Humanities Computing as Digital Humanities', *Digital Humanities Quarterly* 3:3 (2009).

4 Robert P. Swierenga, 'Clio and Computers: A Survey of Computerised Research in History', *Computers and the Humanities* 5:1 (1970) 1-21, 5.

5 Roberto Busa, 'The Annals of Humanities Computing: The Index Thomisticus', *Computers and the Humanities* 14:2 (1980) 83-90, 89.

the projects it produces, the digital humanities as formally constituted has been party to a concerted attempt to reinstate an outmoded and conservative view of the humanities'.[6]

While Prescott based himself upon an analysis of projects conducted at DH departments of British universities, his remarks indicate a problem that is in urgent need of addressing: for all the talk about tools and data not nearly enough attention is being paid to how doing history in the digital age is changing as a result of the digital turn.[7] This tendency towards technological determinism needs to be balanced by more attention to methodological and epistemological considerations.[8] Moreover, the relative lack of debate and reflection on these issues feeds into the uneasiness felt by many more traditionally minded humanists and historians towards the digital turn and prevents them from taking up new technological developments.[9] What we have then is a small vanguard of self-described digital historians, whereas the discipline as a whole is struggling to come to terms with the brave new world. To use a linguistic analogy, while a small group of researchers seems to have successfully embarked upon a process of *créolisation*, many historians have not

6 Andrew Prescott, 'Making the Digital Human: Anxieties, Possibilities, Challenges', *Digital. Humanities@Oxford Summer School* (6 July 2012). See: http://digitalriffs.blogspot.nl/2012/07/making-digital-human-anxieties.html.

7 See for a recent discussion regarding the situation in contemporary history: Kiran Klaus Patel, 'Zeitgeschichte im digitalen Zeitalter. Neue und alte Herausforderungen', *Vierteljahrshefte für Zeitgeschichte* 59:3 (2011) 331-351. In 2013 a special Digital History working group was created within the German *Historikerverband* (Association of Historians) making it, as far as I have been able to ascertain, the first national professional organisation of historians to give digital history an organisational expression. See: http://www.historikerverband.de/arbeitsgruppen/ag-digitale-gw.html.

8 It is disturbing, though not surprising, to see this determinism also at the heart of Dutch political thinking on 'e-humanities'. See: Demetrius Waarsenburg, 'e-Humanities: Combining Forces into an Integrated Policy Vision', *Brainstorm Meeting - e-Humanities: Innovating Scholarship* (NIAS Wassenaar, 29 March 2011). Online at: http://www.nias.knaw.nl/Content/NIAS/Documents/Booklet%20e-Humanities%20Meeting.pdf.

9 As Toni Weller, for instance, remarked 'its very concentration on technology and digital tools means that it can be alienating to more traditional historians'. See: Toni Weller, 'Introduction: History in the Digital Age', in: Toni Weller (ed.), *History in the Digital Age* (London 2013) 1-21, 4. I disagree with Weller's insistence that 'historians do not need to learn new technologies or computer codes'. First of all, learning to use new technologies and coding are not the same thing. But more importantly, historians will have to acquire the basic skills needed to work with digital resources.

▲
Father Roberto Busa in front of an IBM computer (s.a.).
Unknown source.

even entered the *pidgin* phase, notwithstanding a growing number of books dealing with digital history.[10]

In this introduction to the *BMGN - Low Countries Historical Review*'s special issue on 'digital history' I am mostly concerned with the changing *practice* of doing history in the digital age, departing from the idea that systematically charting and discussing these changes is a *conditio sine qua non* for most historians to begin to engage with the digital turn. Important as they are, I will leave aside questions such as the impact of DH on the funding of future humanities research and how that influences our research agendas. In order to contextualise the debate, I will offer a short, necessarily limited, survey of history and computing since the 1960s with particular attention given to the situation in the Netherlands. I will then proceed to consider various definitions of 'digital history' and argue for an integrative view of historical practice in the digital age that underscores *hybridity* as its main characteristic. My focus subsequently will shift to what I have dubbed for the sake of clarity, historical practice 2.0. Finally I will introduce the articles in this special issue and the three major themes they explore: digitisation and the archive, digital historical analysis, and historical knowledge (re)presentation and audiences.

A very short history of digital history

The pioneering work of Roberto Busa (1913-2011) is often taken to be the starting point of computer-aided research in the humanities.[11] In 1949, Busa started his work on a lemmatised concordance of the works of Thomas of Aquino, the so-called *Index Thomisticus*, with the assistance of IBM, a project that was to last for three decades.[12] In 1962 an international conference entitled *The Use of Computers in Anthropology* took place in Burg Wartenstein in Austria which is often seen as the first 'digital humanities' meeting. As

10 To name some of the most important book publications: Daniel J. Cohen and Roy Rosenzweig, *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web* (Philadelphia 2006), online version: http://chnm.gmu.edu/digitalhistory/; Michael J. Galgano, Chris Arndt and Raymond M. Hyser, *Doing History: Research and Writing in the Digital Age* (Wadsworth 2008); Wolfgang Schmale, *Digitale Geschichtswissenschaft* (Wien 2010); Roy Rosenzweig, *Clio Wired: The Future of the Past in the Digital Age* (New York 2011); Klaus Gantert, *Elektronische Informationsressourcen Für Historiker* (Berlin 2011); Peter Haber, *Digital Past: Geschichtswissenschaft im Digitalen Zeitalter* (München 2011); Jean-Philippe Genet and Andrea Zorzi (eds.), *Les historiens et l'informatique: Un métier à réinventer* (Rome 2011); Weller, *History in the Digital Age*; Frédéric Clavert and Serge Noiret (eds.), *L'histoire contemporaine à l'ère numérique/ Contemporary History in the Digital Age* (Brussels 2013).

11 See: Busa, 'The Annals of Humanities Computing'.

12 The web version of the *Index Thomisticus* can be found at: http://www.corpusthomisticum.org/.

Manfred Thaller described it, the conference was 'presumably the first attempt to clarify a methodological position for the interdisciplinary world between the Humanities and Computer Science'.[13] Two years later, IBM organised a *Literary Data Processing Conference*, foreshadowing the dominance of text-based literary and linguistic analysis in the digital humanities.[14] It is interesting to note the correlating interests of the tech industry and humanities scholars at that time, resulting in a collaboration which has its modern equivalent in the Google-sponsored *Digging into Data Challenge* and other public-private sector initiatives, for instance within the University of Amsterdam's Centre for Digital Humanities.[15] While textual analysis was, and to a certain extent still is, central to digital humanities, the early stages of history and computing centred on quantitative analysis and data modelling.

As historian and digital libraries specialist Daniel Greenstein has shown, the uptake of computers in the historical profession from the 1960s onwards hinged very much on the extent to which historiographical directions and research trends were conducive to computer-aided research. Thus interest in social science history proved a crucial factor in stimulating the use of computing in historical research in the United States while 'the intellectual and source-orientation of European historians acted to stem enthusiasm for computer-aided history until computational techniques had advanced several generations'.[16] The interest in computer-aided quantitative analysis that started in the 1960s in the United States was in no small part influenced by New Economic History (or Cliometrics) and was the logical continuation of research dating back to the 1940s using punch cards and unit

13 See: Manfred Thaller, 'Controversies around the Digital Humanities: An Agenda', *Historical Social Research* 37:3 (2012) 7-23, 8. On the conference itself see: Dell Hathaway Hymes (ed.), *The Use of Computers in Anthropology: Result of a Conference at Burg Wartenstein Austria, June 20-30, 1962* (London 1965). I am aware that anthropology departments nowadays are often part of social science faculties, yet chapters such as 'Computer Processing and Cultural Data: Problems of Method' or 'Linguistic Data Processing' clearly justify the conference being included in a history of digital humanities.

14 Jess Balsor Bessinger and Stephen Maxfield Parrish (eds.), *Literary Data Processing Conference Proceedings, September 9, 10, 11, 1964* (White Plains, NY 1964). For more on humanities computing's 'epistemic commitments', see: Svensson, 'Humanities Computing as Digital Humanities'.

15 The CDH was created in 2011. Its stated goal is 'to initiate and coordinate short-term research with a private partner, that may lead to larger projects in which expertise from the humanities and industry is brought together'. See: http://cdh.uva.nl/about-cdh/about-cdh.html. The Royal Netherlands Academy of Arts and Sciences is currently also developing plans to create a Humanities Centre which would have a strong emphasis on digital humanities. What shape these plans will take is currently not known, however.

16 Daniel Greenstein, 'Bringing Bacon Home: The Divergent Progress of Computer-Aided Historical Research in Europe and the United States', *Computers and the Humanities* 30:5 (1996) 351-364, 357.

recording equipment.[17] Yet following a peak in the 1970s American computer-aided historical research had all but died by the mid-1980s, the result of a backlash against quantitative approaches and what was seen as too strong a 'concentration on measurements and methods' to the detriment of traditional problem-oriented and narrative history.[18]

In Europe different countries witnessed different trajectories.[19] Contrary to what is sometimes suggested, the *Annales* school did not significantly influence the uptake of computing in French historical research, despite Le Roy Ladurie's well-known remark that 'l'historien de demain sera programmeur ou il ne sera plus' (a remark that is often quoted out of context; Le Roy Ladurie was talking specifically about quantative history in the context of an observation that historians in the United States were technologically far ahead in comparison to France).[20] European interest truly took off in the late 1960s, particularly through British and French computer-aided historical demographic research. In the French context the group of historians around the journal *Le Médiéviste et l'Ordinateur* (published from 1979 onwards) was also important.[21] In addition one should mention the application of computer techniques in especially economic history in Russia from the early 1960s onwards.[22] In Germany the emphasis was on computing and social science historical research. The CLIO/κλειω, project started by Manfred Thaller at the *Max Planck Institut für Geschichte* in Göttingen was particularly important and influential.[23] κλειω was a software package offering 'source-oriented data processing for historians'.[24] The interest in computing among historians in Europe resulted in the establishment of the Association for History and Computing (AHC) in 1985.

17 See for a good overview of pre-computer and early computer aided research: Swierenga, 'Clio and Computers'.

18 Greenstein, 'Bringing Bacon Home', 354-355. See also: Onno Boonstra, Leen Breure and Peter Doorn, *Past, Present and Future of Historical Information Science* (Amsterdam 2004) 25.

19 See for good overviews in addition to Greenstein: Haber, *Digital Past*; Boonstra, Breure and Doorn, *Past, Present and Future of Historical Information Science*.

20 Le Roy Ladurie, 'L'historien et l'ordinateur', 14.

21 Boonstra, Breure and Doorn, *Past, Present and Future of Historical Information Science*, 26.

22 See for an important example: V.A. Ustinov, 'Primenie elektronnyck matematiceskich masin v istorices koj Nauke' (the application of electronic computing machines in historical science) *Voprosy Istorii* 8 (1962) 92-117. Referenced in: Onno Boonstra and Ben Gales, 'Quantitative Social Historical Research in the Netherlands: Past, Present and Future', *Historical Social Research* 30 (1984) 35-56, 35. For a short summary of Russian developments from the early 1960s onwards also see this paper: Leonid Borodkin, 'History and Computing in the USSR/Russia: Retrospection, State of Art, Perspectives', *XI International AHC Conference* (1996); http://www.ab.ru/~kleio/aik/aik.html.

23 Haber, *Digital Past*, 19-21; Boonstra, Breure and Doorn, *Past, Present and Future of Historical Information* Science, 26-27.

24 The κλειω website can be found here: http://www.hki.uni-koeln.de/kleio/.

Toertocht op INTERNET : pag 2

Een Goeie HinT Online ! : pag 3

Verslag VGI in België : pag 5

NUMMER 2
JAARGANG 2

Historia & Informatica

JUNI 1994
ISSN 0929 - 9408

DIT BLAD IS EEN GEZAMENLIJKE UITGAVE VAN HET NHDA, DE VGI EN HET IISG

Ook het IISG zit in het Web

(Amsterdam, HW) - **Sinds kort is ook het Internationaal Instituut voor Sociale Geschiedenis opgenomen in de boeiende wereld van het World Wide Web (www). Hierdoor is informatie van en over het Instituut overal ter wereld beschikbaar via het Internet. Het IISG beschikt over een eigen server. Via de homepage van het IISG zijn ook het Nederlands Economisch Historisch Archief en het Nederlands Persmuseum bereikbaar.**

Lege vitrines in de tentoonstellingsruimte van het IISG, nu het tijdperk van de digitale tentoonstelling is aangebroken.

CATALOGI EN ARCHIEVEN

Het belangrijkste is dat de gecombineerde catalogi van deze drie instellingen nu overal online te raadplegen zijn. De catalogus bevat ca 800.000 titels (monografieën, periodieken en beeldmateriaal) op het gebied van de sociale en economische geschiedenis en de historie van de Nederlandse pers. In de nabije toekomst zullen er ook toegangen tot het archiefmateriaal komen. Het IISG is het grootste particuliere archief van Nederland en één der grootste ter wereld. Naast de papieren van Marx, Engels, Kautsky, Trotski, Liebknecht en andere bekende voorlieden der internationale arbeidersbeweging, bevatten de magazijnen van het Instituut onder meer de archieven van de FNV, het CNV, de Provo-beweging, Den Uyl, Troelstra en Domela Nieuwenhuis. Via de homepage kan men per regio een overzicht krijgen van het belangrijkste materiaal. Men kan een overzicht krijgen van de congressen, lezingen en tentoonstellingen, die op het IISG gehouden worden. Er is nieuws over de laatste aanwinsten en men kan een lijst opvragen van de meest recente IISG-publikaties. Verder kan men op de nieuwe homepage regelmatig digitale tentoonstellingen zien. Om te beginnen is er de digitale weerslag van de tentoonstelling De Rode Droom, die eind vorig jaar plaatsvond in de Nieuwe Kerk te Amsterdam.

De tentoonstelling geeft een overzicht van 100 jaar sociaal-democratie. In de Web-versie kan men 'virtueel' door de tentoonstelling wandelen. Het electronische adres van het IISG is:

HTTP ://WWW.IISG.NL

VGI Actie !

Belangstellenden, die in 1996 nog lid worden van de VGI, ontvangen, behalve het blad Historica & Informatica, ook nog het laatste Cahier (nummer 9) met de Proceedings van het AHC-congres in Nijmegen (zie boekbespreking in dit nummer op pagina 6) gratis, zolang de voorraad strekt.

Voor aanmelding: Zie in Colofon onder penningmeester.

▲

In the period 1994-2005 the Dutch Historical Data Archive published the newsletter *Historia & Informatica*, later *E-data & Research*.

NHDA; NIWI-KNAW (2005), *Historia & Informatica, Nieuwsbrief*. Persistent Identifier: urn:nbn:nl:ui:13-cq0q-he.

Various phases or revolutions have been proposed in structuring and qualifying the use of computers in historical research. Common to all is a recognition of the watershed transition that took place when the personal computer arrived on the scene in the mid-1980s and the Internet and World Wide Web in the early 1990s.[25] Since then much work has focused on the construction and use of historical databases and the creation of text-based digital editions. At the same time scholarly communication and discussion moved online, particularly in the form of email and exchanges through mailing lists. In the past decade these processes have accelerated noticeably due to the digitisation boom in the heritage sector, big data, the proliferation of new forms of online publications such as personal blogs, as well as online collaboration.

Developments in the Netherlands

The use of computers in historical research in the Netherlands has traditionally been dominated by quantitative approaches in social, economic and demographic history.[26] From the mid-1980s onwards several Dutch universities set up departments of *alpha-informatics* geared towards educating humanities students in the use of computers. In 1987 the Belgian-Dutch Association for History and Computing (*Vereniging voor Geschiedenis en Informatica,* VGI) was established and published the *Cahiers voor geschiedenis en informatica* between 1988-1999. The Dutch Historical Data Archive (*Nederlands Historisch Data Archief,* NHDA) was established in 1988. In co-operation with the VGI and the International Institute of Social History (*Internationaal Instituut voor Sociale Geschiedenis,* IISG) it published the newsletter *Historia & Informatica* between 1994-2005.[27] In 1990 the *Tijdschrift voor Geschiedenis* published a special issue on history and information science which featured articles on topics ranging from databases in historical research to archival management, image analysis and teaching methods.[28]

25 See: William G. Thomas III, 'Computing and the Historical Imagination', in: Susan Schreibman, George Siemens and John Unsworth (eds.), *A Companion to Digital Humanities* (Malden, MA 2004). Online version: http://www.digitalhumanities.org/companion/index.html; Ian Anderson, 'History and Computing', *Making History* (2008); http://www.history.ac.uk/makinghistory/resources/articles/history_and_computing.html#3.

26 For a more detailed overview of early developments in the Netherlands see: Boonstra and Gales, 'Quantitative Social Historical Research in the Netherlands'.

27 The online archive can be found at https://easy.dans.knaw.nl/ui/datasets/id/easy-dataset:50714.

28 R.C.W. van der Voort, L. Breure and E.H.G. van Cauwenberghe (eds.), Special issue 'Geschiedenis en Informatica', *Tijdschrift voor Geschiedenis* 103:2 (1990) 213-390.

The Dutch approach to computer-aided historical research is best reflected in the definition that Onno Boonstra, Leen Breure and Peter Doorn proposed in their book *Historical Information Science* (*Historische Informatiekunde*, 1990) and which they reformulated in a 2004 report:

> [...] we propose to define historical information science as the discipline that deals with specific information problems in historical research and in the sources that are used for historical research, and tries to solve these information problems in a generic way with the help of computing tools.[29]

In their 2004 report they drew up a balance of historical information science and provided a broader context to their approach – that of the debate within the AHC between proponents of what they call 'plain IT' on the one hand and 'enhanced IT' on the other. In plain IT the 'underlying tacit assumption seems to be that IT-as-available is good enough and covers most, if not all historical requirements; it needs only to be learned and to be applied'. In other words, existing software packages should cater to the needs of most historians.

In enhanced IT by contrast, people 'show less confidence in standard information technology and pay more attention to dedicated software, to special tools, to the implementation of additional knowledge layers, and to fine-tuned methodologies and techniques'. The prime example here is the aforementioned CLIO/κλειω project. As the authors point out, these are opposite ends on a scale with a variety of positions in between.[30] Historical information science (HIS) clearly gravitated towards the enhanced IT approach, as is evident from reading the report. It should be noted that current debates about the need for historians to be able to program or not are based on similar notions of how generic or specific the skill set of an historian should be.[31]

29 Onno Boonstra, Leen Breure and Peter Doorn, *Historische Informatiekunde* (Hilversum 1990). English definition taken from: Boonstra, Breure and Doorn, *Past, Present and Future of Historical Information Science*, 20. Note that HIS is defined here not just as a field but even as a discipline in its own right while being rather vague about the 'specific information problems' which apparently lie at the core of the definition.

30 Boonstra, Breure and Doorn, *Past, Present and Future of Historical Information Science*.

31 See for example: Matthew Kirschenbaum, 'Hello Worlds', *The Chronicle of Higher Education* (23 January 2009), http://chronicle.com/article/Hello-Worlds/5476. Fred Gibbs, 'Coding in the Humanities' (5 August 2011), http://fredgibbs.net/blog/teaching/coding-in-the-humanities/. For historians there is *The Programming Historian* 2, http://programminghistorian.org/, a follow up to: William J. Turkel and Alan MacEachern, *The Programming Historian, 1st ed. NiCHE: Network in Canadian History & Environment* (2007-11), http://niche-canada.org/programming-historian.

Between 1997 and 2005 the Netherlands Institute for Scientific Information Services (*Nederlands Instituut voor Wetenschappelijke Informatiediensten*, NIWI), an institute of the Royal Netherlands Academy of Arts and Sciences (KNAW), established itself as an important player in the field. It provided information services and was involved in various research and digitisation projects. Some of its activities continued in other KNAW institutes such as the Huygens Institute for the History of the Netherlands (Huygens ING). Since 2009 the Erasmus University has an endowed chair Large Historical Databases (reflecting the Dutch historical information science approach with its focus on computer-aided social-economic-demographic research) and since 2013 the University of Amsterdam has an endowed chair Digital Methods and Historical Sciences.[32]

As in other countries, many heritage institutions in the Netherlands have digitised or are in the process of digitising (parts of) their collections.[33] In order to facilitate the sharing of collection information metadata aggregators such as the Netherlands Digital Museum Collection (*Digitale Museale Collectie Nederland,* DiMCoN) and Netherlands Digital Collection (*Digital Collectie Nederland*) have been created.[34] The latter project also serves to integrate Dutch content as linked open data in the Europeana portal. Regarding infrastructure, DANS (Data Archiving and Networked Services, the successor of the NHDA) acts as a repository for digital research data and as national coordinating institution for the European DARIAH project (Digital Research Infrastructure for the Arts and Humanities) which 'aims to enhance and support digitally-enabled research and teaching across the humanities and arts'.[35]

Much funding for digital humanities studies is provided by CLARIN (Common Language Resources and Technology Infrastructure) and through the Netherlands Organisation of Scientific Research (NWO) programmes CATCH and CATCHPLUS with projects being carried out at Dutch universities as well as the various humanities research institutes of the KNAW. An important collaborative project was Alfalab, which was co-ordinated at the Huygens ING, and involved the creation of a number of digital tools for humanities research.[36] Both CLARIN and CATCH/CATCHPlus exist to support the humanities as a whole. About 25 per cent of the projects financed under CLARIN (calls

32 Respectively occupied by Kees Mandemakers (IISG) and Charles van den Heuvel (Huygens ING). Mandemaker's oration can be downloaded here: http://socialhistory.org/sites/default/files/docs/publications/978-90-5260-352-0.pdf.

33 See for more information the website of DEN - Kenniscentrum Digitaal Erfgoed: http://www.den.nl. See also the 'Benchmark Data by Country and Organisation Type-2012' dataset on the ENUMERATE Data Platform for Dutch numbers: http://enumeratedataplatform.digibis.com/datasets.

34 http://www.dimcon.nl; http://digitalecollectie.nl.

35 The Dutch partner in DARIAH is DANS: http://dariah.eu/about/our-partners/netherlands/country-profile.

36 See: http://alfalablog.huygensinstituut.nl.

1-4) focus on historical topics. This is not surprising as CLARIN is focused on language resources and thus the projects it funds have a clear linguistic orientation.[37] For CATCH/CATCHPlus the percentage also hovers around 25 per cent. Of course the tools that are developed in these projects might very well be also applicable in historical research.

While the modest amount of CLARIN projects that deal with historical research can be explained by its remit, the NWO CATCH program focuses in the first place 'on innovative methods for the management of heritage and on new ways of making collections accessible'. In other words, the focus is on new ways of making collections accessible that could be used for historical research, and not so much a digital approach of that research itself. It should be noted that the KNAW humanities research institutes are overrepresented in these projects in comparison to universities. They have also taken the lead in the recent attempt to establish the CLARIN/DARIAH merger CLARIAH which aims to establish a common humanities research infrastructure in the Netherlands.[38]

Defining history in the digital age: recognising hybridity

In the above I have already touched upon the question of how digital history can be defined. As the definition of *historical information science* indicated, history and computing, or digital history, has often been described or defined as a field in its own right or a specific sub-discipline, echoing similar discussions with regard to humanities computing.[39] Indeed, the very phrase 'digital history' suggests separateness from, or the existence of, 'non-digital' historical practice. This seems highly problematic though. Both the idea that 'digital history' constitutes a specific sub-discipline, existing next to other historical sub-disciplines such as cultural, social, political or gender history, as well as the idea that it should essentially be seen as an auxiliary science of history, feed into the myth that historical practice in general can be uncoupled from technological, and thus methodological, developments and that going digital is a choice, which, I cannot emphasise strongly enough, it is not.

Before explaining that position further, let us first consider some recent definitions. According to Wikipedia

37 11 out of 45 projects. Note that this includes two literary studies projects with a historical bent and one art-historical project, excluding these projects leads to a 1:5 ratio. See this page on the CLARIN website for an overview of calls & accepted projects: http://www.clarin.nl/node/281.

38 See http://www.clariah.nl.

39 The terminological transition from 'history and computing' to 'digital history' took place around the year 2000. See this ngram: http://goo.gl/V9HDM.

> digital history is the use of digital media and tools for historical practice, presentation, analysis, and research. It is a branch of the Digital Humanities and an outgrowth of Quantitative History, Cliometrics, and History and Computing.[40]

The *Journal of American History* defined it 'as anything (research method, journal article, monograph, blog, classroom exercise) that uses digital technologies in creating, enhancing, or distributing historical research and scholarship'.[41] In Dan Cohen's words 'at least for research, digital history can be defined as the theory and practice of bringing technology to bear on the abundance we now confront'.[42] The Digital History Project at the University of Nebraska-Lincoln talks about 'a genre of scholarship engaged in conceiving, researching, and developing historical interpretations by creating a new kind of analysis using digital tools and data'.[43]

The common denominators in these definitions are clear: insofar as historical research is concerned, 'digital history' refers to the nature of the materials upon which we base our research as well as the tools we use to analyse them in order to achieve our analytical goals. This might suggest that the only difference with 'analogue' historical research is in the increase in available materials (data) and the technologies we chose to apply to them (tools). However, framing the issue in terms of data and tools, or scale and technology, tends to obfuscate the more fundamental aspects of change that they bring about in historical practice(s). I would suggest that the practice of doing history in the digital age is best defined in terms of Jeffrey Schnapps and Todd Presner's definition of digital humanities, as:

> [...] not a unified field but *an array of convergent practices* [emphasis GZ] that explore a universe in which: a) print is no longer the exclusive or the normative medium in which knowledge is produced and/or disseminated; instead, print finds itself absorbed into new, multimedia configurations; and b) digital tools, techniques, and media have altered the production and dissemination of knowledge in the arts, human and social sciences.[44]

40 Digital history - Wikipedia, the free encyclopedia, http://en.wikipedia.org/wiki/Digital_history.

41 Daniel J. Cohen et al., 'Interchange: The Promise of Digital History', *The Journal of American History* 95:2 (2008) 452-491, 453.

42 Cohen et al., 'Interchange', 455.

43 http://digitalhistory.unl.edu.

44 Jeffrey Schnapp and Todd Presner, *Digital Humanities Manifesto 2.0* (Los Angeles 2009). In the Netherlands the word 'ehumanities' is often used instead of digital humanities; occasionally 'computational humanities' acts as a synonym, which is problematic as used in this sense it is a reductionist *pars pro toto*.

Focusing on media and changing modes of knowledge production and dissemination, this definition, though fairly loose, has several advantages: 1) It bypasses the question of whether DH could or should be considered a field or discipline; instead, by focusing on practices it posits DH as *integral* to all humanities disciplines; 2) It does not separate digital history (or any other humanities sub-discipline) from digital humanities but acknowledges common methodological challenges and epistemological changes (which is not to suggest that the various humanities disciplines do not engage with distinct questions and specific methodological problems of their own too).[45]

More specifically, focusing on *practices* points to the transitional dimension of the use of the phrase digital humanities or digital history. I would argue that there is no such thing as 'digital history' as separate from 'history' and I would hope that within a decade or so there will be no more talk of 'digital history' as all history is somehow 'digital' in terms of incorporation of new types of sources, methods and ways of dissemination (just as all humanities will be inherently 'digital'). Nevertheless digital history is a transitional term that exists for a reason: it has helped to emphasise and put into focus new practices, whether in terms of analysis or knowledge (re)presentation or both; and it highlights how data and tools are changing historical knowledge production.

Be that as it may, it is disturbing to see the dichotomy that is often created between supposedly new 'digital' ways of doing history versus traditional, or if you will, 'analogue', historical practices. Whether the focus is on data as a new type of source, digital methods to analyse it, new forms of academic publishing or calls to change our narrative way of writing in order to better integrate and explicate our methodology[46], the suggestion is invariably that we face a fundamental break with past practices. An awareness of continuity and a historical contextualisation of 'digital' practices is often missing, let alone a qualification of what is supposedly new. This is problematic yet hardly unsurprising: many digital projects require a significant allocation of resources and investments that can only be justified by emphasising discontinuity from traditional historical practices.

45 The two classic takes on commonalities are Willard McCarty's *methodological commons* and John Unsworth's *scholarly primitives*. See: Willard McCarty, *Humanities Computing* (Basingstoke 2005) 114-158; John Unsworth, 'Scholarly Primitives: What Methods do Humanities Researchers have in Common, and how might our Tools reflect this?', *Symposium Humanities Computing: Formal Methods, Experimental Practice* (King's College London, 13 May 2000).

46 Frederick W. Gibbs and Trevor J. Owens, 'The Hermeneutics of Data and Historical Writing (Spring 2012 Version)', in: Jack Dougherty and Kristen Nawrotzki (eds.), *Writing History in the Digital Age* (forthcoming University of Michigan Press. Trinity College (CT) web-book edition, 2012), http://writinghistory.trincoll.edu/data/gibbs-owens-2012-spring/.

So what has changed in recent years, given half a century of computer-aided historical research/ history and computing? Without doubt the major shift is the increased availability of digital resources on the Internet in the past decade, coupled with new and increasingly web-based tools and methods to process and analyse these. The current buzz about big data notwithstanding, this affects every historian. Technology has become ubiquitous and much more pervasive than it was ten or fifteen years ago, and the Internet has become central to the historian's work; most information gathering and processing, whether dealing with scholarly literature or primary sources, takes place online and on the computer. And as the information avalanche grows so does the need for new tools to manage and analyse digital information and resources. Technology has become inescapable, even if many historians refuse to acknowledge the fact and remain reluctant to embrace it.

Indeed, *hybridity is the new normal*. Apart from a relatively small group of historians working exclusively on digital projects, most historians combine traditional/analogue and new/digital practices, at least in the information gathering stage of their research: we consult online journals and we might use bibliographic databases to manage our references; we consult online inventories before deciding to embark upon a journey to an archive; we use archival materials and books as well as online resources, and computers to process and manage it all. Often we create our own personal digital archives consisting of photographs taken on archival research trips. Yet reflection is often missing. On more than one occasion I have heard historians proclaim to be non-digital, as if this were something of which to be proud, while evidently making use of digital resources in their research. When fear of technology and a misplaced romantic idea of what it means to be an historian preclude keeping up with methodological developments in one's discipline something clearly goes wrong.

The current challenge facing the discipline of history is not in creating ever bigger sets of data and developing new tools, important as these are. The real challenge is to be consciously hybrid and to integrate 'traditional' and 'digital' approaches in a new practice of doing history (I realise that the concept of hybridity might underscore the dichotomy I have argued against earlier, but it seems to me a necessary sensitising concept to accompany the conscious mental transition that I deem so important). As Kirsten Sword rightly stated and as should be clear by now: 'the new media are profoundly changing the ways most historians work, whether or not we are self-conscious about how we are becoming digital'.[47] In that sense going digital is not a choice but a given. Indeed, when historians discuss going digital or not they actually mean the possibility of using digital tools in the information processing and/or analytical stages of their work (thereby often failing to acknowledge the pre-

47 Cohen et al., 'Interchange', 488.

digital roots of the former).[48] It is here that much more education is needed in order for historians to be able to make an informed choice as to which tools to employ in their research. At the end of the day, digital history is therefore about essential skills training and critical reflection upon historical practice. Crucially, it's not an option that can be ignored without consequences for the quality of historical research.

To summarise, we have arrived at a situation in which the computer has become integral to the historian's work, yet historical research in which the computer is understood 'as a machine to think with' (to paraphrase Willard McCarty[49]) is still limited to a relatively small group of historians. Indeed, the average historian is at most a passive user of digitised sources in which he/she mostly sees a substitute for the material original and has yet to adopt a systematic digital workflow.[50] This is no different from the situation twenty years ago but it is certainly much more problematic.[51] Not in the least because new possibilities in humanities research, particularly regarding big data, are

48 Two well-known examples are Paul Otlet's *Mundaneum* and Niklas Luhman's famous *Zettelkasten*. On Otlet see for instance: Isabelle Rieusset-Lemarié, 'P. Otlet's Mundaneum and the International Perspective in the History of Documentation and Information Science', in: Trudy Bellardo Hahn and Michael Keeble Buckland (eds.), *Historical Studies in Information Science* (Medford, NJ 1998) 34-42. On Luhmann's card index system: Niklas Luhmann, 'Kommunikation mit Zettelkästen', in: Horst Baier, Hans Matthias Kepplinger and Kurt Reumann (eds.), *Öffentliche Meinung und Sozialer Wandel: Public Opinion and Social Change. Für Elisabeth Noelle-Neumann* (Opladen 1981). See also: Markus Krajewski, *Zettelwirtschaft* (Berlin 2002). Otlet's *Mundaneum* as a knowledge organisation system has also been viewed as a precursor of the semantic web, see: Charles van den Heuvel, 'Web 2.0 and the Semantic Web in Research from a Historical Perspective: The Designs of Paul Otlet (1868-1944) for Telecommunication and Machine Readable Documentation to Organize Research and Society', *Knowledge Organization* 36:4 (2009) 214-226.

49 Willard McCarty, 'In the Age of Explorations', closing keynote lecture for the conference *Exploring the Archive in the Digital Age* (King's College London, 8 May 2010). See: http://www.mccarty.org.uk/essays/McCarty,%20Age%20of%20explorations.pdf.

50 See for a proposal: William J. Turkel, Kevin Kee and Spencer Roberts, 'A Method for Navigating the Infinite Archive', in: Weller (ed.), *History in the Digital Age*, 61-76. See also the 'how to' section on Turkel's blog: http://williamjturkel.net/how-to/.

51 As Boonstra, Breure and Doorn wrote in 1990: 'The historian who refuses to use a computer as being unnecessary, ignores vast areas of historical research and will not be taken serious anymore'. As quoted in: Boonstra, Breure and Doorn, *Past, Present and Future of Historical Information Science*, 9.

accompanied by epistemological claims in which knowledge production in the humanities itself is claimed to be undergoing a paradigm shift.[52]

Education and skills training, then, are of paramount importance. There is certainly no shortage of literature or practical information. A seminal book such as Peter Haber's *Digital Past* should be required reading for every historian and blogs like that of William Turkel, to mention just one example, offer concrete advice on how to 'digitise' one's research practice.[53] In addition though, what is needed is an enhanced source criticism and methodological awareness that accounts for the hybrid nature of historical scholarship in the digital age. How does our engagement with primary sources change by using digital sources and data? If the nature of our sources changes how does that affect our methods of analysis? In what ways does the balance between researcher and machine shift, and how can we integrate, for instance close and distant reading? For the sake of argument, in the following paragraphs I shall subsume these questions under the header 'historical practice 2.0'.

Historical practice 2.0: digitisation and the archive

The rapidly increasing number of digital libraries and archives in the past decade marks an important development in historical research by making accessible large amounts of sources online. Yet their importance for historical research needs to be qualified (leaving aside questions about the role of commercial partners, particularly in mass digitisation projects, and the impact of copyright restrictions[54]). Allusions to 'the infinite archive' or 'the age of abundance' notwithstanding, a large majority of archival materials is not digitised, nor is there any institutional intention to do so in the foreseeable future.[55] If anything there might be a rethink of how archives approach

52 A 2010 position paper by the KNAW Computational Humanities Programme Committee states without irony: 'In 2025, the field of humanities finds itself in a strong and integrated position among the sciences [...] The significant breakthrough, that happened both nationally and internationally, was a result of the effective integration of information science and information technology in the humanities'. These claims are partly inspired by Anthony J.G. Hey, Stewart Tansley and Kristin Michelle Tolle, *The Fourth Paradigm: Data-intensive Scientific Discovery* (Redmond, Wash. 2009).

53 See note 50.

54 Guy Pessach, '[Networked] Memory Institutions: Social Remembering, Privatization and Its Discontents', *Cardozo Arts & Entertainment Law Journal* 26:1 (2008) 71-149.

55 Natasha Stroeker and René Vogels, *Survey Report on Digitisation in European Cultural Heritage Institutions 2012* (Panteia on behalf of ENUMERATE, May 2012) 14. On abundance see Roy Rosenzweig's classic article: Roy Rosenzweig, 'Scarcity or Abundance?: Preserving the Past in a Digital Era', *The American Historical Review* 108:3 (2003) 735-762.

digitisation.[56] It is also useful to distinguish between mass digitisation and what Mats Dahlström has called 'critical digitisation' of small collections.[57]

Moreover, scale notwithstanding, digitisation is about selection and thus far from neutral. As is the case with printed source editions, every choice to digitise something implies a choice not to digitise something else. Archives, libraries, museums and other heritage institutions select materials to be digitised on the basis of a variety of criteria such as preservation of fragile materials, easy access to collection highlights and/or often-used material, and the research value of certain collections. Given the costs involved, the availability of funding plays a major role in enabling digitisation projects and funding is not only influenced by the aforementioned criteria but also by memory politics and the way in which a given country's past, or aspects thereof, resonate in public discourses and debates.

Historians should therefore consider the politics of digitisation and ask what implications it has for historical research. In particular, the nation still matters, and it matters a lot. The late Roy Rosenzweig made an interesting comment in this respect a decade ago. Discussing the reasons for the limited US government role in digital preservation at the time he suggested a possible answer by rhetorically asking: 'If national archives were part of the projects of state-building and nationalism, then why should states support post-national digital archives?'[58] Ten years later we can safely conclude that national concerns have far from disappeared when it comes to efforts to digitise the past.

To illustrate the point consider the example of Germany where the *Deutsche Forschungsgemeinschaft* (DFG) has funded several important digitisation projects in the past decade that aim to preserve and provide online access to German-Jewish heritage. It needs little explanation why this is the case. Many digital archives and libraries that have been launched in Central and Eastern Europe in recent years reflect an almost palpable sense of national pride and newly found independence in the post-communist era. And though the mission statements of West-European digital libraries and archives might sound less celebratory they *qualitate qua* also highlight their function as guardians of national heritage and promoters of 'the' national past. In short, digitisation in contemporary (post-communist) Europe is still a profoundly national effort. And while it is true that projects like Europeana transcend national boundaries, one of its *raisons d'être* is to promote the European project and create a sense of common European heritage, whereas paradoxically the

56 See: Charles Jeurgens' contribution to this issue, 30-54.

57 See: Mats Dahlström, 'Critical Editing and Critical Digitisation', in: W.Th. van Peursen, Ernst D. Thoutenhoofd and Adriaan van der Weel (eds.), *Text Comparison and Digital Creativity: The Production of Presence and Meaning in Digital Text Scholarship* (Leiden 2010) 79-97.

58 Rosenzweig, 'Scarcity or Abundance?', 752.

process of content selection is still mostly a national affair.[59] More than that, digitisation has also become part of a global postcolonial struggle for the past, for example in Africa, and has even been regarded as a form of repatriation.[60]

Why should this be of concern to historians and in what sense does this situation differ from working with traditional archival materials or source editions? First of all, the abovementioned examples prompt the question of what happens to those materials that do not easily fit into national master narratives, that are transnational and/or considered marginal. Secondly, whereas printed source editions usually explicate what selection has been made, both the frequent absence of an explanation of criteria as well as the sheer amount of material that is available in digital resources help to create a situation in which an awareness of processes of selection is easily obscured. Finally, as already mentioned, only a small amount of archival materials is actually being digitised.[61]

This in turn leads to the question of what kind of history can be written using digital sources. Which materials, points of view, events, historical actors, and thus possible narratives, are excluded? It is important to note that the interests of heritage institutions and historians do not automatically overlap when it comes to digitisation, neither in terms of how they see their role as guardians of 'social memory', nor in terms of what is worth preserving through digitisation.[62] From an archival point of view, digitising an institution's most used materials might be a perfectly sound criterion, but from a scholar's point of view it can be problematic because it has an inherent danger of allowing for the reproduction of only known narratives about the past instead of allowing for the interrogation of new sources that might question these.

The obvious counterargument here would be to suggest that historians keep on doing what they have always done – go to the archives. This is very true, but there are at least three points to be made. Insofar as digitisation means that an historian consults sources that he/she would not consult otherwise (because they might be abroad and budgetary constraints play a role), the selection matters a lot. Secondly, institutions know that they can

59 Exceptions are subprojects such as *Judaica Europeana* and *Heritage of the People's Europe (HOPE)* which are driven by international (academic) consortia.

60 See for instance: Allen Isaacman, Premesh Lalu and Thomas Nygren, 'Digitization, History, and the Making of a Postcolonial Archive of Southern African Liberation Struggles: The Aluka Project', *Africa Today* 52:2 (2005) 55-77; Michelle Crouch, 'Digitization as Repatriation?', *Journal of Information Ethics* 19:1 (2010) 45-56.

61 For information on the state of digitisation in Europe see: ENUMERATE, http://enumerate.eu.

62 On the differences between archives and historians when it comes to social memory see: Francis X. Blouin and William G. Rosenberg, *Processing the Past: Contesting Authority in History and the Archives* (Oxford 2011), especially 97-116.

▲
Screenshot of the app 'Hier was het nieuws' by the National Library of the Netherlands in The Hague which enables users to browse and search its digital newspaper archive.
National Library of the Netherlands, The Hague.

cut research costs by encouraging researchers to use online resources. And thirdly, there is already anecdotal evidence to suggest that students turn increasingly towards resources that are available online. If online availability starts dictating what is being researched we have a responsibility to ensure that what is offered online represents the broadest possible spectrum of historical sources, lest we exclude the possibility that the marginal becomes even more marginal in the digital age.

Historical practice 2.0: digital historical analysis

The next step is to question how historical research changes when historians start working with digital resources in their analyses. There has been much talk recently about 'big data', a rather crude label to describe large scale digital libraries/archives and born-digital resources whose data are computer-processable (as Manovich has pointed out, there is debate on the adjective 'big' which holds a different meaning to computer scientists than most humanists using the phrase[63]). It is important to historicise the idea of big data though, as, for instance, large scale historical population databases, have been around for at least twenty years.[64] Big data is oft-touted yet not uncontroversial. Its proponents point to the possibilities for advanced data/text mining, visualisation et cetera that huge text-searchable datasets offer and claim that history can now become truly scientific as these datasets can be mined for patterns or structures in verifiable and controllable ways. As Rieder and Röhle remind us however, data analysis is far from objective or neutral:

> What is too often forgotten, though, is that our digital helpers are full of 'theory' and 'judgement' already. As with any methodology, they rely on sets of assumptions, models, and strategies. Theory is already at work on the most basic level when it comes to defining units of analysis, algorithms, and visualisation procedures.[65]

63 See for the latter: Lev Manovich, 'Trending: The Promises and the Challenges of Big Social Data', in: Matthew K. Gold (ed.), *Debates in the Digital Humanities* (Minneapolis 2012) 460-476, 460-461.

64 The *Max-Planck-Institut für Wissenschafts-geschichte* has a Working Group Historicising Big Data whose mission statement says: 'It is vitally important not only to reconstruct a history of "data" in the *longue durée* (extending from the early modern period to the present), but also to critically examine historical claims about the distinctiveness of modern data practices and epistemologies'. See: http://www.mpiwg-berlin.mpg.de/en/research/projects/DeptII_Aronova_Oertzen_Sepkoski_Historicizing/index_html.

65 Bernhard Rieder and Theo Röhle, 'Digital Methods: Five Challenges', in: David M. Berry (ed.), *Understanding Digital Humanities* (Houndmills 2012) 67-85, 70.

While some welcome a supposedly more scientific approach that big data might bring and a new paradigm of knowledge production in the humanities, others fear for the hermeneutic character of the humanities, and a reduction of humanities research to data crunching or to a view that proclaims the search for underlying patterns and structures in human history and culture to be its essence.[66] The either/or attitude often brought to this debate however, is misleading and the distinction cannot be neatly mapped along lines of quantitative/qualitative or positivist/narrative analysis either; once again the debate should be about how to productively integrate different approaches and methods and recognise how they add up and reinforce each other. And as we have seen, such scepticism is hardly new as is evidenced by sharp criticism of the quantitative turn that computer-aided research in the United States had supposedly taken by the early 1980s.[67]

To be sure, big data allows for new research questions to be asked, and the quantitative analysis of patterns and structures, in ways that were not possible before, but as Andrew Prescott has warned:

> One of the problems confronting data enthusiasts in the humanities is that we feel a need to convince our more old-fashioned colleagues about what can be done. But our role as advocates of data shouldn't mean that we lose our critical sense as scholars [...] there is a risk that we look more carefully at the technical components of the datasets than the historical context of the information that they represent.[68]

The aim of big data analyses should not be the replacement of the historian's interpretive and hermeneutic work but an integration of both approaches.[69] In this respect, one should mention Frédéric Clavert's use of Franco Moretti's concept of 'distant reading' to propose a new way of reading and interpreting historical sources in the digital age using two axes – close reading/distant reading and human reading/computational reading.[70] This is exactly the consciously articulated hybrid vision for historical research that is necessary in the digital age. Unfortunately, the big data debate risks defining digital history to the detriment of attention for the changes taking place in the research practices of historians in general.[71] Indeed, most historians dealing

66 See the 'Forum' ('The End of the Humanities 1.0') in this issue, 145-180.

67 Greenstein, 'Bringing Bacon Home', 354-355.

68 Andrew Prescott, 'The Deceptions of Data' (13 January 2013), http://digitalriffs.blogspot.nl/2013/01/the-deceptions-of-data.html.

69 See also: Manovich, 'Trending: The Promises and the Challenges of Big Social Data', 460-476, 469.

70 Frédéric Clavert, 'Lecture des sources historiennes à l'ère numérique' (14 November 2012), http://www.clavert.net/wordpress/?p=1061.

71 A good example of this limited view of digital history is for instance: Thomas Thiel, 'Digitale Geschichtswissenschaft: Mittel auf der Suche nach einem Zweck', *Frankfurter Allgemeine Zeitung* 11 February 2013.

with digital resources are dealing with data (defined as computer-processable information[72]). The challenge is to apply our critical faculties to digital resources, as we are used to do when dealing with 'traditional' archival materials, be aware of the ways in which they differ and in which they affect historical analysis. This already starts at the basic level of locating resources, a seemingly trivial point yet how many historians are aware of deep web search engines like OAIster or BASE, and more generally adept in advanced search strategies on the Internet? As user studies show many historians only employ very basic search strategies when using digital resources.[73] Yet an ability to formulate meaningful queries and an awareness of how those queries might influence the search results and thus the analytical outcome is essential.

Most discussions of source criticism in a digital context tend to focus on *external* source criticism.[74] It is obviously crucial to train students in critically assessing online resources.[75] However, much less focus is put on the interpretation of the sources that are offered, in other words, on *internal* source criticism, whereas crucial changes take place on this level in comparison to 'analogue' sources. First of all we lose materiality and thus potentially valuable knowledge about our sources[76], and materiality arguably influences our imagination: if we accept that historical interpretation rests on both inference

72 Gibbs and Owens, 'The Hermeneutics of Data and Historical Writing', paragraph 5.

73 Max Kemman, Martijn Kleppe and Stef Scagliola, 'Just Google It – Digital Research Practices of Humanities Scholars', *ArXiv e-prints* 1309.2434 (2013). See: http://arxiv.org/abs/1309.2434.

74 See: Mark Vajcner, 'The Importance of Context for Digitised Archival Collections', *Journal for the Association of History and Computing* 11:1 (2008); Andreas Fickers, 'Towards a New Digital Historicism?: Doing History in the Age of Abundance', *Journal of European Television History and Culture* 1:1 (2012).

75 A well-known resource is this University of Berkeley Library guide: Evaluating Web Pages: Techniques to Apply & Questions to Ask: http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Evaluate.html. A recent, and controversial, university course entitled *Lying about the Past* taught these skills by letting students themselves create historical hoaxes. See the most recent course website here: http://globalaffairs.gmu.edu/courses/1124/course_sections/6500. Some discussion of the ensuing controversy can be found in this article: Yoni Appelbaum, 'How the Professor who fooled Wikipedia got caught by Reddit', *The Atlantic*, 15 May 2012, http://www.mpiwg-berlin.mpg.de/en/research/projects/DeptII_Aronova_Oertzen_Sepkoski_Historicizing/index_html.

76 See Turkel on the importance of smell: William J. Turkel, 'Intervention: Hacking History, From Analogue to Digital and Back Again', *Rethinking History* 15:2 (2011) 287-296. Prescott has used the example of The Beatles' Sergeant Pepper album to illustrate loss of knowledge, see: Andrew Prescott, 'An Electric Current of the Imagination: What the Digital Humanities are and What They might become', *Journal of Digital Humanities* 1:2 (2012), http://journalofdigitalhumanities.org/1-2/an-electric-current-of-the-imagination-by-andrew-prescott/. Some authors also speak about 'technology [...] as intensifying the experience of materiality'. See: Marija Dalbello, 'A Genealogy of Digital Humanities', *Journal of Documentation* 67:3 (2011) 480-506, 494.

and imagination, the question then becomes how the absence of materiality influences our reconstructions of the past.[77] My point here is not that digital reproductions are worse or inevitably lead to partial representations; it is that we need to ask what we might miss when working with them, as much as laud their potential. Yet arguably the most significant and underrated problem facing historical research in the digital age, and conspicuously absent from most discussions, is that of loss of context and the question of how working with digital sources changes our awareness of it. Context is often discussed on the level of collections, the use of digital archives[78] or when dealing with information retrieval strategies.[79] Yet working with digitised materials also profoundly changes how we engage and experience context when working with historical materials themselves. Consider the difference between offline and online newspaper research. The traditional way of using newspapers by browsing a physical copy or microfilm will automatically provide a researcher with the (para-)context in which articles on the particular topic he or she is after should be seen (the context being the totality of the newspaper and its coverage). Moreover, it provides clues as to the 'weight' of an article – its size, the page on which it is printed, its position on a page and its lay-out, which all determine its visual prominence and thus its possible impact and reception. It also provides clues as to how the topic at hand is discursively related to other topics that are covered by a given newspaper.

When using text-searchable digitised newspapers this process is turned around. A full-text search will yield a list of results in seconds, saving significant amounts of time. At the same time though, context gets lost as a researcher is transported to the micro-level and actually has to 'zoom out' to explore how the articles that he/she is interested in relate to the wider coverage of the newspaper concerned. The bigger the set of results, the bigger the issue, and the bigger the risk of ending up with decontextualised analyses. This problem also underscores the importance of involving historians in the process of creating online resources and the design of interfaces that allow for complex querying of data while simultaneously accounting for, and

77 On the historical imagination see Munslow's useful essay in: Alun Munslow, *The Routledge Companion to Historical Studies* (London 2006) 135-140.

78 Raymund Schütz, 'Historical Context and the Information Age: The Diaspora of Holocaust Archives' (unpublished paper, 8 June 2011).

79 This is mostly experimented with in the Europeana project. See: Stefan Gradmann, 'Europeana White Papers - Knowledge = Information in Context', *Europeana White Papers* (2011); http://group.europeana.eu/web/europeana-project/whitepapers; Bernhard Haslhofer, Elaheh Momeni Roochi, Manuel Gay and Rainer Simon, 'Augmenting Europeana Content with Linked Data Resources', in: *Proceedings of the 6th International Conference on Semantic Systems* (Graz 2010); http://eprints.cs.univie.ac.at/26/.

emphasising, an awareness of context.[80] This is not to suggest we should go back to old-fashioned newspaper research. Indeed, recent developments in tools for querying newspaper databases open up the possibility of combining both distant and close reading in the analysis of historical newspapers.[81] Yet it is crucial to realise how using digital sources changes our engagement with and awareness of context and affects the historian's analysis.

Debating historical practice in the digital age

The articles in this special issue of the *BMGN - Low Countries Historical Review* discuss various aspects of changing historical practices in the digital age. In addition to engaging with important questions relating to the changing nature of our source materials and possible analytical approaches, as outlined above, they will also confront the question of how to communicate and represent historical knowledge in other than traditional forms and, by extension, how audiences and 'the public' fit into the picture.[82]

Elaborating on the theme of digitisation and the archive, Charles Jeurgens will discuss current digitisation practices of analogue archival collections. Distinguishing between the digitisation of finding aids and inventories on the one hand, and the archival materials they describe on the other, Jeurgens analyses how digitisation can bring about changes in the ways in which historians access sources. Moreover, he raises the important issue of how digitisation strategies affect heritage institutions, and adresses the question of how the online availability of historical sources affects 'cultural memory'.

Digital historical analysis and the merits of big data in and for historical research are the themes of two articles by Joris van Eijnatten, Toine Pieters and Jaap Verheul and Hinke Piersma and Kees Ribbens. Van Eijnatten, Pieters and Verheul are outspoken proponents of the use of big data and convinced of its transformational potential. They aim to show how quantitative analyses of big data sets can set new agendas in cultural history, particularly the study of public opinion and mentalities. Far from replacing the 'traditional' historian, they recognise and emphasise the need for combining big data analyses with a historian's 'close reading' and thus effectively underline the hybrid

80 For more about this see: 'It's the Context Stupid', 14 July 2013, http://gerbenzaagsma.org/blog/14-07-2013/it's-context-stupid.

81 See: Hinke Piersma and Kees Ribbens' contribution to this issue, 78-102.

82 There is a noticeable difference between the Anglo-Saxon literature, which tends to focus on issues of knowledge (re)presentaton and dissemination and public history, and the German/French literature which tends to focus more on how historical research changes in the digital age. See for example: Cohen et al., 'Interchange'; Haber, *Digital Past*; Patel, 'Zeitgeschichte im Digitalen Zeitalter. Neue und alte Herausforderungen'.

future of historical research in which both (wo)man and machine occupy complementary and mutually reinforcing roles.

Piersma and Ribbens approach the topic from a different angle, both being self-confessed 'traditional' historians who embarked upon two, relatively small and experimental, CLARIN-funded digital historical research projects. Their experiences in working with digitised data and text mining once more underscore the hybrid future of historical research, but at the same time they pose important questions as to the politics of digital humanities and the often utilitarian attitudes towards the humanities that drive its implementation.

Information gathering and analysis, the two principal components of historical research, are not the only aspects of historical practice that are changing in the digital age. How are historical writing and the way in which historians connect to their audiences affected? While much attention has been paid to new forms of (re-)presenting history online, much less has been said about the future of academic history writing, save for alluding to new communication platforms such as blogs and Twitter that academic historians have adopted.[83] Chiel van den Akker aims to reflect on historical understanding in the digital age and proposes the online dialogue as a new alternative to traditional academic history writing in his article.

At the same time this discussion opens up the question of how our relationships to audiences change in an online environment. Indeed, much discussion of digital history has been devoted to presenting history online using new ways of non-linear storytelling and adding various forms of non-textual information.[84] It should come as no surprise that the field of public history has adopted new media and the Internet early on to explore new ways of connecting to and engaging the public. In the final article of this issue this link between public and digital history is explored by Fien Danniau who shows that, even in a case where digital literacy might be taken for granted, much work remains to be done for historians to fully engage with the possibilities of the digital age.

As will be clear from the above, the articles in this special issue on digital history are not so much concerned with describing particular methods or techniques but aim primarily to discuss important meta questions that

83 See for instance: Peter Haber, 'Twitter, Blogs und ein paar Konferenzen in den letzten Tagen': http://weblog.hist.net/archives/6084 (11 December 2012); Mareike König, 'Twitter in der Wissenschaft. Ein Leitfaden für Historiker/innen', http://dhdhi.hypotheses.org/1072.

84 See for instance Cohen and Rosenzweig, *Digital History*.

merit more discussion among professional historians. They ask critical questions, not in order to posit a sceptical view of digital developments but based on the understanding that historical research and writing in the digital age are currently in a hybrid state of flux and can only advance by engaging critically with how historical practice is changing. Digital history as explored in this thematic issue is thus ultimately a way to describe changes in historical practice that should become part and parcel of every historian's training and mindset. ◀

Gerben Zaagsma (1971) studied History at the University of Groningen and Yiddish Studies at the School of Oriental and African Studies (University of London). He wrote his Ph.D. thesis about Jewish volunteers who fought in the International Brigades during the Spanish Civil War at the European University Institute in Florence. Following two years as a postdoctoral researcher at the Department of Hebrew and Jewish Studies of University College London he worked at the Huygens ING/KNHG as lead developer of the new version of the website historici.nl. Since September 2013 he works as a research fellow at the Lichtenberg-Kolleg, the Institute of Advanced Study of the Georg-August-Universität Göttingen, on a new scholarly edition of the diaries of Anne Frank and an accompanying multi-author research monograph. His main research interests are: Modern Jewish history; Yiddish Studies; digital humanities; digital history; social & political history; public history; comparative history; history of transfers; transnational history; migration studies. Recent publications: *Jewish Volunteers, the International Brigades and the Spanish Civil War* (Bloomsbury Academic; London, forthcoming); 'Public History oltre lo Stato: Presentare il passato Yiddish nell'Europa contemporanea' [Public history beyond the State: Presenting the Yiddish Past in Contemporary Europe], *Memoria e Ricerca: Rivista di storia contemporanea* 37 (2011) 129-142 and 'The Local and the International – Jewish Communists in Paris between the Wars', *Simon Dubnow Institute Yearbook* 8 (2009) 345-363. Email: gerben.zaagsma@zentr.uni-goettingen.de. Website: http://gerbenzaagsma.org.