Digitality

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If the ‘aura of the authentic’ has been termed a ‘myth of modernity’ (Sabrow 2016, 30), the aura of the virtual could be qualified as a myth of the digital age. The mass digitization of historical testimonies and their online availability on the internet has led to an upturn in the search for the authentic, the original, and the genuine. Even if the concept of digitality problematizes the intertwining and networking of analogue and digital technologies and lifeworlds (Stalder 2016), the equation of the digital with the ‘non-material’, the ‘virtual’, and thus the ‘non-real’ dominates the vernacular. The omnipresence of the digital – both materially (for example in the form of smartphones or tablets) and symbolically (i.e. as a socially dominant socio-technical imagination) – reinforces the longing for the supposedly authentic, be it in the field of culture, technology, or historical experience. The transition from the ‘age of scarcity’ to the ‘age of abundance’ (Rosenzweig 2003) associated with the digital availability of information and evidence has led to a renaissance of the analogue even on a popular cultural level – ‘retromania’ and ‘technostalgia’ have become buzzwords of this movement (Reynolds 2011). The aim of this essay is to apply the concept of authenticity as a relational concept to the subject of ‘digitality’, which is itself characterized by the duality of digital materiality and the digital as a symbolic form.

Digital source criticism or historiographical data criticism?

In the realm of the symbolic, the question of the authenticity of the digital must be located in the tradition of heuristic and epistemological debates about the ‘truth’, ‘credibility’, and ‘originality’ of historical sources or testimonies. By contrast, questions of material authenticity, i.e. ‘genuineness’, ‘integrity’, ‘exactness’, or ‘consistency’, must be discussed in

the context of technical authentication processes and institutional authentication discourses. In the historical sciences, the question of the authenticity of digital sources – be those retro-digitized archive holdings, 3D reconstructions of museum objects, spatio-temporal simulations of complex historical processes based on relational databases or on large quantities of digitally born formats such as tweets or emails – is part of the hermeneutic tradition of modern source criticism. Even if the clarification of a digital source's claim to reality requires new technical skills and a new methodological awareness, classic questions of source criticism – such as the provenance or credibility of a source – remain of central importance in the digital age. However, the enrichment of the historian's toolbox with digital tools, infrastructures, and working techniques requires an 'update' of classical source criticism: specifically, what is needed is a form of 'historiographical data criticism' that takes into account the 'double referential character' of digital sources as representations of historical events or processes and their medial character as fluid and unstable matter (Fickers 2020). A historical critique of data must therefore not only ask whether digital sources are sound, institutionally trustworthy, and accurately documented, but must also always reflect on the historicity of electronic data carriers and formats. Determining the evidence of digital traces requires a fundamental understanding of the dual identity of digital data (Kirschenbaum et al. 2010). In the sense of historical data criticism, there is no contradiction between, on the one hand, attributions of historical authenticity that are based on classical source-critical questioning, and, on the other hand, authentication techniques of information technology that are based on digital forensics; taken together, both kinds of authenticity form complementary competencies (Föhr 2019).

The layered materiality of the digital

Which authentication strategies – for example, from the field of the archival, library, or information sciences – can be integrated into the practice of historical source criticism for historians to produce fact- and reality-based interpretations of past realities? To answer these questions, it is first necessary to clarify aspects pertaining to the 'materiality' of digital sources, representations, and traces.

From an etymological point of view, the term 'digital' does not refer to the electronic or computer-based processing of information, but to the numerical representation of information in a finite series of discrete, i.e. countable elements – ones and zeros. The measurement of the quantity of data in the defined units of bytes and bits dates back to the 1960s, when the American Standard Code for Information Interchange (ASCII) became internationally accepted. Therefore, data as 'objects' and as historical sources always have mass and momentum, i.e. their material properties determine both the costs and the physical possibilities of storage, retrievability, and use. For rendering the information encoded in bits and bytes readable and usable, transcription and migration are required, i.e. the translation or decoding by computer programs (software) and the transfer of data to different storage media (hardware). When we speak of digital sources or data, we are therefore dealing with a 'layered' or 'distributed' materiality (Blanchette 2011), which is characterized by the interweaving of hardware and software environments. For Johanna Drucker, the principle of 'distributed materiality' refers to the complex interdependencies of technical infrastructures, standards, and protocols, and of data processing and visualization software (Drucker 2013, para. 21).

Is the concept of the 'original' obsolete?

The principle of the distributed materiality of digital data poses a fundamental problem for the criticism of historical sources. For it renders obsolete the value of the ‘original’, whose symbolic capital is so deeply inscribed in the self-image of historical scholarship (Landwehr 2016). When, in the course of retro-digitization measures, archive documents become data content, an ontological change in the ‘source’ takes place; the analogue object (e.g. a postcard) is transformed into a relational data conglomerate. Technical settings (resolution, storage format) and metadata attached to the digital copy determine together which software can be used to read the data in the future, the extent to which it can be retrieved by search algorithms in OPACs, and how much storage and therefore cost is required for long-term storage. This means that with each production of digital sources, multiple coding processes take place, most of which remain invisible to the user. In addition, further manipulation and overwriting of the original data occurs when retrieving digital data sets on one’s own computer and when recontextualizing digital data in online environments.

According to Matthew Kirschenbaum, every storage process, as seen from a forensic perspective, involves digital manipulation: every electronic access to digital data means a de facto duplication, the storage of which means in turn the creation of a new data set. In other words: ‘One can, in a very literal sense, never access the ‘same’ electronic file twice’ (Kirschenbaum 2013, paragraph 16). The same applies to digital documents on the web: the dynamic and relational architecture of the WWW is responsible for the fact that when we retrieve archived web pages, we are dealing with ‘digital reincarnations’ whose informational, content-related, and representational integrity has been corrupted in multiple ways (Brügger 2018). What is depicted as a ‘digital source’ on the computer screen or smartphone is therefore always the result of digital recodings and recontextualizations that are inscribed in the software and hardware of the user technologies. ‘When working with digital objects it’s

essential to remember that what they look like on the screen is a performance' (Owens 2020, 6).

In order to reconstruct the digital life cycle of a document made available online, new concepts are required, but also the tools and skills of digital forensics, which have so far hardly been included in the training of archivists or historians. The determination of what is authentic in the sense of an information authentication of digital sources can, according to Kirschenbaum, only be made by checking the integrity and consistency of data. Kirschenbaum distinguishes here between the 'forensic materiality' and the 'formal materiality' of digital objects. The term 'forensic materiality' refers to an official certification of the 'authenticity' of digital objects, as is common practice for the long-term storage of digital documents in state archives on the basis of the OAIS standard (the 'Reference Model for an Open Archival Information System' was developed in 2002 and certified as an official ISO standard in 2003). By contrast, the term 'formal materiality' reflects the fact that file formats prefigure any possible subsequent uses of the data (Kirschenbaum 2008, 132–156). While the classical questions of source criticism in terms of attributing authentication can be discussed in the context of 'forensic materiality', this is hardly feasible for 'normal historians' in the area of 'formal materiality'. For this dimension of 'external source criticism' lies beyond the classical competencies of the subject (Ries 2019).

For determining data integrity, the shift in knowledge and competence from the historical-critical method to procedures of computer and information science thus leads to fractures in the 'control zones' of archival or historical institutions and disciplines. Just as the emergence of historical hermeneutics can be read as a reflection of the scientification of the discipline of history in the 19th century, the debate ongoing since the 2000s about 'categories of

certification and safeguarding', as these pertain to authentic storage, reproduction, and use of digital historical information, must be interpreted as a professionalization discourse in which archives and historical research are re-exploring and renegotiating fundamental criteria and concepts of scientific practice. The authenticating authority of archival institutions is up for debate, as is the critical competence of historians when dealing with digitized material.

The digital age as a new time regime?

We have mainly dealt up to now with the aspect of 'object authenticity' in the context of digital source criticism – that is, with technically induced change in authentication strategies. In the following, we address other dimensions of the authentic relevant to the digital realm. Specifically, we address the extent to which the specific mediality of digital representations and stagings of the past affect the historical imagination and experience of history; we also examine the extent to which the digital age can be understood as a new regime of time, one which is not only characterized by an unprecedented 'presentism,' but which can also be interpreted as a new era of digital forgetting.

As mentioned at the beginning, the 'age of abundance' (Rosenzweig 2003) is characterized by an unprecedented supply of online evidence from the near and distant past. 'We've become victims of our ever-increasing capacity to store, organize, instantly access, and share vast amounts of cultural data', Simon Reynolds writes in *Retromania* (Reynolds 2011, 21). According to Reynolds, rapid technological change creates feelings of nostalgia and has turned the present into a 'foreign country' alongside the past. This observation accords with the findings of historians and cultural scientists such as François Hartog, Andreas Huyssen, and Aleida Assmann, who ascribe to our present a 'cultural time regime' that is characterized

on the one hand by an extended, even ‘voracious’ simultaneity (‘un présent monstre,’ Hartog 2012, 270), ‘which draws everything into its maw [....], destroying not only the difference of times, but also historical consciousness’ (Huyssen 2012, 228), and on the other hand by an unprecedented ‘reactualization of the past,’ a new chronotopos in which the ‘approaches to the past have multiplied’ (Assmann 2013, 277).

It is surprising that none of these authors cites the digital turn – at least not in a systematic or argumentatively compelling way – as one of the possible causes of this new time regime. While Assmann and Huyssen identify the ‘memory boom’ since the 1980s as the main cause of the new time regime, Hartog points to the crisis of the modern time regime, which has been characterized by its systematic orientation towards the future since the so-called “saddle period” (*Sattelzeit*) between 1750 und 1850. By contrast, media studies and numerous authors from the field of the ‘digital humanities’ blame the ‘digital revolution’ and the ‘big data turn’ for the ‘broad present’ (Gumbrecht 2010). From this perspective, the culture of digitality is characterized by a socio-technical imagination that is determined by the idea of connectivity. According to Andrew Hoskins, one of the leading authors in the field of digital memory studies, the ‘connective turn’ enables a previously unknown and privileged access to the past: ‘The networked self and society foster a view that collapses past and present into an orgy of hyperconnectivity’ (Hoskins 2018, 2).

While Hoskins recognizes in the hyperconnectivity a new culture of memory in real time, others interpret the digital age as a time regime characterized by mass forgetting: ‘In the digital age, in what is perhaps the most fundamental change for humans since our humble beginnings, that balance of remembering and forgetting has become inverted. Committing information to digital memory has become the default, and forgetting the exception,’ says

Viktor Mayer-Schönberger in his essay ‘Delete: The Virtue of Forgetting in the Digital Age’ (2009, 196). Mayer-Schönberger makes a simple calculation for this: Whereas the cost of storing and staging analogue evidence was immensely high, the cost of digital storage has fallen so dramatically that it is economically unviable to invest time in traditional archival work (selection, inventory, and description). Aleida Assmann calls this new form of digital forgetting *Verwahrensvergessen* (roughly, ‘storage as a form of forgetting’) (Assmann 2016): we store thousands of digital photos, videos, and emails on our smartphones or laptops in the naïve hope of digging them out again at some point.

The aura of the digital and the meaning of history

Does digital availability also mean that the mobile availability of the past on tablets and smartphones is capable of changing historical experience and imagination? This hypothesis can be affirmed with little hesitation. As Wulf Kansteiner (2018) and Todd Presner (2016) have shown using the example of Holocaust remembrance, digital media such as Twitter, Facebook, and Instagram as well as the virtual staging of contemporary witnesses in the Shoah Foundation’s Visual History Archive pose an aesthetic and moral challenge for historical education and memory policy, for they can have a direct impact on the perception and experience of authentic witness testimonies or places – for example during a visit to the Auschwitz-Birkenau concentration camp. The ‘selfie debate’ of 2014 – in June of that year, 18-year-old American Breanna Mitchel posted a selfie during her visit to Auschwitz-Birkenau, causing an international outrage (Zalewska 2017) – brought to light in an exemplary way the complex overlapping of an institutionalized remembrance culture and digital media practice: authentic on-site experience and synchronous sharing of one’s own ‘dark tourism’ experiences in social media merge into a shared historical event in the digital culture of

remembrance. To put it more succinctly: In the digital age, the successful staging of the authentic virtually requires the use of digital media (Kansteiner 2018, 119).

If the findings of communication science (Hepp 2019) that our present is characterized by an increasing rhythm and an increased pace of the co-construction of medial reality are accepted, it seems logical that our experience and imagination of the past – which are essentially mediated by the media – are also affected by this development. Where the historical culture of the 19th century was characterized by the 'sensual charm' (Korff 2007) of historical novels or national museums, and that of the 20th century by the auratic effect of sound and image recordings, in the digital age it is historical network visualizations, 'deep mapping' technologies, and multilinear timelines in virtual exhibitions that are stimulating the fantasy and historical imagination of researchers. Interactive interfaces and relational databases, filled with thousands or millions of sources of different genres, create a new historical sense that, according to Alan Liu, rejects the ideology of linearity in historical thinking. Dynamic visualizations of the complex relationship between historical processes and events generate a new historical knowledge, which Liu calls 'hypergraphical knowledge': 'The digital age promotes hypergraphical models of knowledge that conform to a world view in which knowledge is conceived by default to be multiperspectival and multiscalar, distributed in its foci and relations, and (connecting all the disparate nodes and levels) ultimately networked' (Liu 2018, 73).

When we as historians approach these digital visualizations, i.e. computer-based interpretations of the past, we perform a hermeneutic movement that Johanna Drucker calls 'enunciation' (Drucker 2020, 104). This has always been the work of the historian, who asks questions and conducts research: We follow the diagnostic paradigm of the search for traces

and create by means of their montage – now in digital space and increasingly through (graphically processed) narratives – historical meaning within the framework of a ‘retrospective divination’ (Ginzburg 2011). The fact that the information technology and the structural backgrounds in databases (or the ‘back end’) of such digital productions of historical meaning often remain hidden from us is, in Benjamin’s sense, precisely what constitutes their aura: ‘The trace is the appearance of a proximity, however distant that which it left behind may be. The aura is the appearance of a distance, however close that which it evokes may be. In the trace we become aware of the thing; in the aura it takes possession of us’ (Benjamin 1982, 560).

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