CHAPTER 1

Theorizing Digital Archives

Power, Access and New Order

One of my first encounters with archives and collections took place several years ago. I was at a German ethnographic museum and an employee suggested I conduct research on an Indian photographic collection from the 1920s, recently acquired by the museum. Eager to see the collection, I sent a formal request to the head of the museum's collection and archives. However, I received no reply. After a few weeks, I called the head of collection and archives to see if they had received my request. They had, but I was bluntly told by the head that as she did not know me, and did not know what my intentions were, she could not allow a random (junior) academic to access this new and impressive collection. After all, had I ever been to an archive, she asked me, and did I even know how they function?

I subsequently landed a job at the Leipzig Ethnographic Museum in 2010, thereby granting me access to the archive and collections and allowing me to research the material. That meant making appointments with the archivist in charge, a very kind woman in her late fifties. These appointments were conveniently easy to schedule. On my archival days, the archivist would receive me and guide me along the museum's long administration and storage halls towards the large fire door. She would unlock the door and let me in, past numerous cabinets filled with museum objects, into a small, windowless room. The air-conditioned and humidity-controlled room was rather charmless, with bare concrete walls. Cabinets and drawers were lined up along two walls, and in the middle stood a large modern table. I needed to sign in in the visitor's book and was thereafter free to see the negatives and positive prints as I liked, albeit after being advised to handle them with care and ideally with gloves. I took drawers out and spread photographs on the table, always making sure to put them back in their original order. I spent

several long days in this room, looking at the photographs and the corresponding diaries of the so-called Eickstedt collection, taking notes, creating my own inventory, photo-documenting images and diary pages that would be relevant for my research. In the room it was just me and the photographs, no disturbance from the outside world, allowing me to acquaint myself with the photo archive. I would only emerge from this room and my immersion in the material for lunch, or when the archivist wanted to call it a day.[1]

Seven years later, in 2017, the archive became available online. In 2014, the Staatliche Kunstsammlungen Dresden, as the umbrella museum organization housing the collection, allocated funds to digitize the photo collection, along with several other expeditionary photo archives. From 2015 to 2017 they digitized, harnessed and publicized the photographic documents. The photo collection – called the Eickstedt archive and made up of more than twelve thousand photographs, stored in drawers as negatives and positive prints – was turned into a digital archive, with its own order and without access restrictions. Anyone with an internet connection could now see the photographs and access the metadata without asking for permission – yet also without physically immersing themselves in the archive.[2]

These two versions of the same photographic archive illustrate different options for accessing and ordering archives. Digitization not only yields a different format and interface for archival records, but changes modes of access and order. If archival orders face new options when information becomes digitized, how do digital databases stimulate diversified arrangements of information? If digitization offers new ways of accessing stored information, especially when it is tied to online dissemination, what do online archives imply for controlling collections and the knowledge embedded therein? The power related to access and order and its realignment through digital means takes centre stage in this chapter. I analyse modes of access and forms of order in digital and 'conventional' archives and how digital means stimulate diversified arrangements for information. Do digital archives bear the potential to undermine a pre-set order and thereby challenge established archival economies? If digitization offers new ways of accessing stored information, how does archival power executed through controlling access change with digitization and online dissemination?

Analysing these two modes of power in conventional archives and collections and in digital ones also allows me to lay out what a digital archive or online collection is. I draw on the historical development of the term 'archive' to demonstrate its characteristics as institutionalized information use. I use the term 'digital archive' when describing online

collections of information relating to the past because, firstly, a very narrow understanding of archives as paper records created by the government has been historically applied but is no longer appropriate when talking about archives. As I will demonstrate, the term has broadened significantly and can be applied to filed and ordered information in records of various material, to the institution or place preserving this information, or even to everything that can be said. Refraining from using 'archive' as a hollow phrase, I secondly use 'digital archives' to refer to online collections of information relating to the past because heritage actors – which I will examine in more detail in the following chapters – use 'digital archive' or 'online archive' as emic terms. Bringing together the historical broadening of the term, the emic use and digitization of collections, this chapter demonstrates how 'digital archives' refer to established notions of controlling information about the past and scrutiny of such notions.

To do this, I take to contemporary digital archives as well as their analogue predecessors as collected repositories. Investigating ideas of ordering and accessing information in depots and archives, and how they have changed over time, allows us to come to terms with ideas of what an archive is. I will demonstrate that 'archive' is an appropriate term that can be applied to websites that provide a searchable database of information about the past. Tracing the changing understandings of the term, and of archival power through access and order, allows me to carve out differences and commonalities between digital and analogue versions of what we call archives.

Power through Order

An archive or a collection is more than a repository. Records stored are persistent representations of activities (Geoffrey Yeo, in Caswell 2016: 380). They relate to history production through four key moments of fact creation, fact assembly, fact retrieval and retrospective significance (Michel-Rolph Trouillot, in Caswell 2016: 378), of which the creation and assembly of 'facts' comprise ordering activities within an archive or collection. An archival order is determined by technology and materiality of the records, as well as the physical space for storing the records. If we understand an archive as a triad of place, institution and content (Horstmann and Kopp 2010: 9) to preserve and order documents, place encompasses the storage capacities, the rooms and the climatic conditions, the shelves, boxes and labelling devices. Simply put, the sheer quantity of archival material and limited storage space leads to

appraisal and selection and hence to the definition of what becomes an archival record. The architectural context – be it in physical or digital form – also defines what the archive literally looks like, and hence exercises power over what an archive is.

The archival institution – understood here in a wider sense as an acknowledged museum, archive or other *lieu de mémoire* housing a collection of records and equipped with political power, rights, duties and resources – is the most obvious holder and practitioner of archival ordering power. Its ordering processes relate back to historically developed archival standards. One of the main concepts for archives – in a narrow sense of the institution or the body of preserved documents that the state once used as registers but that are now no longer of practical use (Duranti 2001; Mbembe 2002) – was written down in the so called Dutch Manual (Muller et al. 2003). The manual pinned down theoretically substantiated terms for selecting and ordering, formulating a set of rules, regulations and best practices for retrieving archival material. First published in 1898, at a time when government records outpaced church records in importance (as they consolidated rule over vast lands), the Dutch Manual suggested ordering archives according to provenance and the Registratur principle, focusing on the context of the origin of records. Two decades later, the so-called Jenkinson's Manual vehemently stressed the importance and objective character of archives and denied appraisal and subjectivity (Jenkinson 1922). It consolidated the idea of the archivist as a professional, who orders and preserves according to set and objective standards. It took another thirty-five years for archival studies to question this agenda. In 1956, archival theorist T.R. Schellenberg argued in favour of appraisal (Schellenberg 1956). The sheer increase of records needing to be archived made it necessary to find new terms of reference for selection, to maintain the sense of order needed to make archives functional again. The underlying concept of archives, however, remained very much one of objective record-keeping. Even after Schellenberg, archivists remained keepers of truth, who make selected pieces available through their work. Their active role was acknowledged, but – being based on theoretical considerations such as an objective criterion of what to keep – the archive remained an objective institution (Ridener 2009).

This idea still serves as the *de facto* backbone of the on-the-ground reality of archiving. When the Leipzig Ethnographic Museum at first denied me access to the Eickstedt collection, it stemmed from the belief in the objectivity of an archive, of fact creation, fact assembly, fact retrieval and retrospective significance. Museum work as archiving relies on a conceptual framework of necessary tasks and ordering principles

determining decision-making processes of caring for and overseeing archival content, through creating, assembling as well as regulating retrieval of archival information. This applied form of archival record-keeping and protection derives from the notion of an objective archival task. Relying on seemingly objective criteria of what to keep and how to keep it makes a confident workflow possible. In this reading, the archive is acknowledged as a record-keeping, government-related corpus, with archivists performing the task of accepting material and preserving it, based on the recognition that records contain information and that preserving this has its own value. Ordering archives and collections is approved by society and legal mandates, accepted by the professional community and put into practice in individual museums or archives. The individual archivists act according to set standards. Their task is largely subject to intentions outside their sphere of influence, as they file what they receive and are here only marginally in a position to individually select, choose or refuse material. Archivists act in the context of the museum or *lieu de mémoire* and thus within the larger body of a controlling institution that comes with an agenda, a budget and ideally an acquisition strategy. This also provides for standards, which the larger entity sets, and which the professional community and national bodies define. Ultimately, it is policy makers and society at large that accept these standards. The institution exercises its power to more or less directly define what becomes part of an archive and how it is ordered. The single archivist acts in relation to larger bodies that make up the general agenda of archiving.

The Eickstedt photo collection entered the museum because it complements an object collection commissioned by the Leipzig Ethnographic Museum in the 1920s. The artefact collection here – as in many other ethnographic museums – is stored according to geographical provenance. The Eickstedt photo collection, in compliance with archival standards, was ordered according to expedition and photographer. Hence, the photo collection is registered as the 'Eickstedt archive', named after the anthropologist Egon von Eickstedt, who took the photos. When the relevant photo collection entered the museum in the 2000s – after a long odyssey (see Müller 2015) – it arrived in the form of two filing cabinets with negatives and positive prints containing all the photographs from one anthropologist's expeditions to India, which were filed not under 'India' but under 'Eickstedt' (comprising as well a small selection of photographs taken during a later, second journey to India and other South/South East Asian countries).

Arguments can be found for both provenance ordering systems – by geography or creator – as they stress different perspectives on the

artefacts. When looking into a collection or single artefact/photograph, museums or museum archives usually provide a collocation of the time, place and people involved. When executing the principle of provenance, they try to preserve not only the material record, but the information about its generation, production or collection. The Eickstedt photo collection, for example, under the first-grade heading 'Eickstedt', contains a geographical ordering system ('South India', 'Chhota Nagpur', etc.) and a community-based classification ('Toda', 'Kurumba', etc.). The whole photo collection is furthermore divided into ethnographic and type photography, expressed in two numbered sections consecutively labelled E and T.

When tracing the origin of these filing principles of the Eickstedt photo collection, we not only see the ethnographic museum defining the order, but also Eickstedt himself. The different headings were most likely applied by Eickstedt and his archiving assistants at the university where he worked, and were inherited by the ethnographic museum, as they comply with the museum's archiving system. With Eickstedt being a European racial anthropologist working in the 1920s and 1930s on the Indian subcontinent, this archive also serves as an example of colonial dynamics of power through order.

Archival Order and Colonial Power

Power in colonial archives operated as a form of knowledge production, or what Trouillot (2015) calls fact creation. As Nicholas Dirks (2001) and Bernard Cohn (1996) have stated, colonialism in India was made possible by cultural forms of knowledge that were simultaneously produced and enabled by conquest (Dirks 1996: ix). It was, among other things, the surveillance applied by the British on the Indian subcontinent that allowed for the production of knowledge necessary or at least beneficial for ruling vast territories. Whenever the British acquired new territory on the subcontinent, they launched a new survey, which not only geographically mapped the area but described and classified the respective flora and fauna, economy, history and sociology (Cohn 1996). The archives created here in the form of registers and documents fixed and ascribed traditions and customs, ranks and hierarchies, castes and classes, languages and characteristics. They delineate and constitute, and created categories between the colonizers and the colonized, as well as among them. The vast amounts of information gathered were compiled in surveys and encyclopaedias, in museum collections and paper archives. They ordered, fixed, bound and settled India.

Applying this power became explicit in colonial India. Counting and enumerating India in the form of censuses systematized the country for administrative purposes and made colonial rule possible. The census conducted in the aftermath of the Indian revolt in 1857/8 established a system of categorization for the whole population, compiled as statistical information, and became part of the archival corpus that became the primary site of state monumentality (Dirks 2001: 107). *The People of India*, an eight-volume photographic collection of Indians, was produced around the same time and with similar intentions. These archives 'canonize[ ], crystallize[ ], and classif[y] the knowledge required by the state' (ibid.). Producing, ordering, publishing and using these files facilitated the British administrative government of the colony, fixing its history as well as its social structure as canon.

The Eickstedt archive – the 12,000+ photographs – was complemented by a collection of two thousand objects and long lists of body measurements taken with the aim of documenting and classifying in particular the Adivasi, the subcontinent's Indigenous population. Although, due to its German rather than British expedition context, it was never used for ruling the subcontinent directly, the Eickstedt documents were created within this framework of colonial power and its modalities of production demarcate archival power. Even though the explorative character of many of these records could be exerted to create seemingly neutral repositories of the past, today it is recognized that archives are sites of knowledge production and as such monuments to political conditions and hierarchies as well as sites of the rulers' ethnography. 'To understand an archive one needs to understand the institutions that it served', claims Ann Laura Stoler (2002: 107), and one does so by addressing the contexts and contents of archives. Stoler, alongside other authors such as Natalie Zemon Davis (1995), Thomas Richards (1993) and Roberto Echevarria (1990), makes evident the extent of the colonial power exercised through gathering, ordering and storing knowledge in (archival) records. Contemporary (re-)readings of archival material not only scrutinize what can be said on the basis of archival material but question the very idea of archives as preserving authorities (Stoler 2002, 2009).

The third actor in the triad of place, institution and content determining the order in archives is the records themselves, with the content they provide. Collections of photographs, documents or objects do not come as blank sheets, but with inscribed information.

This content is anything but objective. The Eickstedt archive is the result of an only seemingly objective technical process: photography is a mechanical procedure, driven by the 'objective' technical body of the

camera and light. The lens (noticeably also called objective) captures rays of light, 'writing' that light onto a carrier material and making it last via a chemical process. Compared to painting, where the painter chooses and interprets what and how to paint through colours and brushstrokes, it is a less subjective act, and hence fits well with a positivist agenda of knowledge creation. Yet, in the twentieth century the view of photography changed from that of an objective medium to considering the construction of such images: the small adjustments the photographer can make add up to multiple points of interference. Eickstedt, for example, adjusted focal length, aperture and flashlight, and chose his equipment, providing him with a certain amount of control over the process. Even more subjective was his position as arbiter of what, when and how to photograph at all, as well as his position on photography as a social procedure. He arranged subjects, positioned people and attire and relied on status and hierarchy – giving commands and suggesting postures, or taking the liberty of taking a snapshot. Egon von Eickstedt photographed scenes and fixed them on paper, according to his preferences and his technical equipment. He had been commissioned in 1926 by the Leipzig Ethnographic Museum and adjunct research institute to numerically and photographically document the Indigenous people of India and to collect their artefacts. The museum staff, for example, advised him to send only used items for its collection, which Eickstedt did, not least since his funding came from the museum and research institute.[3] His status as a white male German researcher allowed him to photograph in prisons. In consequence, the photographs became recordings of the museum's ambitions, Eickstedt's views and intentions, the technical and political conditions and the *de facto* encounters in India. All this contributes to the making of a photograph as anything but an objective capturing of a given moment. It does refer to reality, capturing what existed in a particular time and place, but needs to be understood as part of a picturing culture (Müller 2017b), an interpretative process. It bears parallels to the process of writing culture, where the author might try to produce written words as neutrally as possible, but will never be able to shed the cultural imprint of him/herself as an individual being (Clifford and Marcus 2010).

The same accounts for artefacts or written paper serving as archival records in collection contexts. They need to be understood as descriptive media aimed at making statements and as records whose content was created in a non-objective production process. Writing, photographing, creating artefacts or putting these together in a collection are all processes of selection and framing, fed by creators' preconceptions and ideas as well as larger societal discourses. Written notes are often

erroneous, and any source can misrepresent events or ideas (Lustig 2019). Any information can be kept in ways deemed more suitable or favourable to the ruler. With a view on archives of organizations, Theo Thomassen (2001: 384–85) notes:

> Records and archives are not surrogates for the real world but not more (and less) than representations of what clerks and secretaries had in mind when documenting their part of the world more or less according to what they thought their masters wished to document. And many times, records and archives are not even such remote representations of reality, but only remnants of representations, mixed up, fragmented and decontextualised.

Individual intentions feed into the writing process (be it with light or pen) and hence the documents. Archives and the ordering systems applied to records are not objective practices. Yet archival content – created on the basis of historically developed methods of appraisal and selection – seems more trustworthy and prestigious than information that is not ordered and preserved by an acknowledged institution. When records enter an archive or museum, they not only enter a new chapter of their cultural biography (Kopytoff 1986), but their character as a record worth preserving comes to the fore, hence they seem to some extent 'objective'. When objects are taken into museum collections, they are treated as representations of the past, as cultural heritage (Kirshenblatt-Gimblett 1995). They are valuated and to some extent fetishized. Similarly, when records enter archives, they become institutional bodies representing a set and acknowledged way of preserving and dealing with the past. In reverse, not only do the records and the content gain relevance as the 'official' informational body referencing the past, but the institution and actors involved in constructing this ordered representation through collections and archival material gain importance (Hallam and Street 2013).

Thus, place, institution as well as content all contribute to power through order in archives. They form spatial and technical limits, historical circumstances inscribed in material, and set rules and regulations determining what and how to enter information into the collections, whether by object or paper, audio or visual. Exercising power in archives is more than an isolated task performed by an archivist. For the Eickstedt archive, the materiality of printed photographs and negatives and the climate-controlled storage conditions constitute the shape of this particular archive. The scenes photographed in India form the corpus of archival information, albeit shaped, interpreted and set in

scene by the photographer. Next to Eickstedt, there is the museum as an institution commissioning and integrating the photographs into the archive. Both appraised and ordered the material and hence, in a Foucauldian sense, exercise power through determining what becomes part of official discourse, that is, what enters the archive, and what can be said. People accessing, reading and interpreting the photographs are confronted with this pre-set structure and are subject to the ordering power of what and how things are included in an institutionalized archival corpus.

Digitizing Archives and New Order

The shift to using digital tools to order archival content has created a space to reconsider these basic concepts of archival architecture. It offered the opportunity to rearrange or scrutinize established ordering principles. Computational data management allows for diversified ordering systems and specific enquiry and targeted data retrieval with an increasing number of variables. Even if the established order is not questioned, computer programmes and software bring about change. Registry books and index cards, often ordered under sequential numbers, or according to a limited set of categories (e.g. author, title, year), could now be significantly enhanced, as computers can handle and rearrange large amounts of data with ease. Full text search has taken data retrieval in document-based archives to the next level, and concurrently the possibilities of digital humanities fundamentally challenge the concepts of stored information.

The Staatliche Kunstsammlungen Dresden digitized all 12,000+ photographs of the Eickstedt archive between 2015 and 2017. It retained provenance categories such as the photographer and places where the pictures were taken, as well as persons portrayed. It added a description, the trustee, size and material of the photograph, and tagged the photograph with further keywords related to what is portrayed. The new order slightly differed from the one established previously, as it eliminates or defers the second- and third-class order. Furthermore, the digital archive does not establish and freeze a primary or secondary order but allows an instant ordering according to the above-mentioned enhanced set of categories. This digital archive also allows the connection of the records with similar categorized records of other collections.[4]

Yet overall, the Eickstedt digital archive displays a rather conventional concept of digital data order and retrieval. Other archivists have debated and developed more unorthodox structures for archival material,

especially its metadata. Designing and implementing digital databases means not only considering the interests of custodians, researchers and an unspecified larger public, but also taking the knowledge systems of 'source communities' or other stakeholders into account, for example India's Adivasi in the case of the Eickstedt archive. By reflecting different ontologies and consequently contesting existing power regimes, digital archives can become – to use James Clifford's (1997) well-known adaptation of Pratt's term for museums – contact zones.[5]

Carl Hogsden and Emma Poulter (2012), for example, have sketched what they call a contact network. Stressing that the stakeholders of the project, the Museum of Archaeology and Anthropology in Cambridge (MAA) and the Maori 'source communities' in New Zealand, deem diverging characteristics of an object important and worth referring to in an archive, Hogsden and Poulter proposed two separate hubs reflecting the ontologies as key, which can manifest in archival systems. Different approaches to ethnographic objects are, according to Hogsden and Poulter, best reflected in such hubs, placing distinct knowledge systems next to each other in an online environment. A network is thus created, where both hubs are part of the contact network, yet each 'is free to work in its own (locally) controlled way, and to make its own decisions about the management of information, the form it will take, and what expertise it will share with, and take in from, the network' (ibid.: 277). This digital archive displays the hubs, and in consequence constructs a digital contact network, shifting the balance of power away from the museum, towards the communities from which the objects originate. The contact network scheme theoretically has strong democratic tendencies, as users can choose between several interpretations offered by the hubs, and are respectively equipped with rights regarding access to the material. Nevertheless, the model still bears potential for reinstalling authoritarian voices.

This is not the case in Kimberly Christen's approach, which takes a stance towards a version of digital archives that forefronts the knowledge systems of communities from which the objects originate. Christen (2005) highlights the possibilities of making Australian aboriginal notions of images and audio recordings the focus in creating digital archives. In her reflections on these concepts, she delineates how the Warumungu, in contrast to English stakeholders, do not refer to a biased either/or proposition when it comes to public/private opposition, but situate objects and information in interaction with people. The Warumungu locate cultural heritage in a constantly negotiated concept of access based on responsibility, accountability and acceptability in relation to knowledge of country and kin (ibid.: 317), making this the

prime ordering principle. These local knowledge regimes have the capacity to influence national and global debates about how to collect and store cultural heritage within archives; the flexibility of digital technology offers a way to display these redefinitions.

Christen (2008) advanced the idea of creating a database rooted in Indigenous knowledge systems, developing the Mukutu archive as a content management system whose structure is substantially informed by these systems. Numerous conversations and test runs led to a database design that reflects the internalization of Indigenous cultural protocols regarding the viewing, reproduction and circulation of information.

Christen, however, in her method of foregrounding Indigenous ontologies, does not say much about the (remaining) influence of museums' information management systems, or how to include them in the creation of digital archives. It was Ramesh Srinivasan and his colleagues (Srinivasan et al. 2010) who developed an approach focused more strongly on museum-incorporated objects and the implications for the ethnographic objects oscillating between the museum's and the 'source community's' appropriations. Their argumentation is in many aspects similar to that of Hogsden and Poulter, and yet comes to different conclusions regarding the arrangement of digital archives. To reach a 'real contact zone' with mutable objects, the authors under the leadership of the Zuni tribal museum in New Mexico developed a digital archive that focuses on narrative meanings and meanings based on use and practice. The archive also includes a European museum's meaning, but what is striking in this case is that the project partners conceptualized a system that has direct access to the digital resources of the Zuni collections at the MAA, while allowing the A:shiwi A:wan Museum and Heritage Center (AAMHC) and the Zuni community to add and organize comments, resources, associations and accounts locally. These resources will be under the control of the AAMHC, and only certain resources will be shared with the MAA. The MAA will not be able to change or modify these resources without the permission of the AAMHC, but they will be associated directly with the objects in the collection at the level of the documentation system, having the same status as museum descriptions and accounts (Srinivasan et al. 2010: 761).

Srinivasan et al. go beyond the idea of separate hubs reflecting the distinct approaches of independent ontologies. They take seriously the demand to address hierarchical structures embedded in museums' institutional paradigms with regard to documentation. Enabling stakeholders with dissenting information management systems to contribute to the heart of immutable objects – their catalogue – not only allows for cultural production (helping to keep the social life of objects moving),

but dissolves, at least in part, the immutability of museum objects. It permits ontologies other than those of the traditional ethnographic museum to construct the digital archive, and thus to contribute to a canon of knowledge without the threat of being subsumed by re-implementing (prevailing) power regimes that privilege one knowledge system over another.

What the new-order digital technology brings about in archives can be closely related to conventional order forms – and hence can reinstall prevailing systems – or it decidedly challenges these power conventions through programming archival software, and granting and denying write and access control. These three unconventional examples show that there are ways to break up the economies embedded in archives. They go beyond writing comments, tagging or creating a particular version of the website's front-end, instead including diverse knowledge systems and archival ontologies in the back-end of digital archives. Considering digital archives as the core of contemporary documentation processes includes here the acceptance of multiple concepts into the programming, and hence provides a gateway for a polyphonic creation of knowledge and data handling. Digital technology shakes up established conventions of ordering records and documents, and the way material is stored and retrieved – it challenges the power of institutions as ordering entities. Digital archives as examples of postcolonial digital humanities highlight the limits and deficiencies of more conventional analogue systems. Still, digital means are not an abrogation of order and power, but denote a modification of the first and a shift in the latter.

A clear advantage of both conventional and progressive computational archiving is the arithmetic operations computers are able to perform. Collection management systems can handle ever-larger quantities of multiply interlinked archival data, making more specialized and faster retrieval possible. Yet the turn to the digital comes at the cost of replacing one ordering system with another, also implying the transformation of information into new format(s). As the new formats mean essentially a binary code of ones and zeros, a reducing tendency inheres in digital archives, where increasing amounts of data implies a tendency to form series. Digital archives thereby unsettle ways of interpreting material that have shaped historical research for a long time. Mechanization influences the cultural operations that historians and other archival users have applied, as they now also use advanced retrieval opportunities, where material is easily adjusted to specific needs. As archival order is accommodated to coded software, so archival data retrieval is subject to this numerical coding. In other words, the technological advancement in archival practice comes with a new impetus

of the technology's relevance, and in consequence with a reduction in the power of archivists in the conventional sense. Once the digital archive is set up, they only indirectly, if at all, determine how data are organized and arranged. These pivotal decision-making principles lay with database construction, and hence also with programmers and machines in charge. As Wolfgang Ernst (2009: 200) put it, 'Henceforth, to write the archive is to programme the archive'.[6] As science can only persist if it develops according to technical transformations (Derrida and Prenowitz 1995), archival science must adapt to new technology, even if that means new cooperation, new protocols and new order.

This requirement to modify and transform bears a contradiction for archives that have conventionally been conceptualized as stable and preserving entities. When viewing records in their material surroundings in the archive, such files generate authenticity from being part of a stable entity. When inhaling dust and preservatives in a brick-and-mortar archival building, visitors also breathe in the notion of perseverance and stability, and hence the trustworthiness of an archival record. Yet, as Cook (2001: 4) notes, this trustworthiness has been challenged: 'At the heart of the new paradigm is a shift away from viewing records as static physical objects, and towards understanding them as dynamic virtual concepts'. Digital technology accentuates the processual character of archives. Not only does digitizing existing archives mean a one-time transformation of archival records that comprises decision-making processes and hence foregrounds the agents involved in this process, but digital archives also require permanent modification in order to persist. Ways of archival ordering, geared in Europe towards provenance and saving, are expanded through a culture of permanent transmission. Ernst (2002) uses the metaphor of a ship for contemporary archives, in that they are always occupied with transport and navigation, that is, migrating data and updating programs.

Ernst (2002) goes even further and envisions the vanishing of conventional knowledge and cultural reservoirs through electronic storage media, and sees this not only in the needed migration of data[7] but also in the internet as the ultimate mutable online archive. Here, everything is filed as information; the internet has developed into a pure expression of both archival, encyclopaedic ambitions, and permanent mutability. According to Ernst, the internet replaces Foucault's historical *a priori* of archives. In the 1960s, Michel Foucault's *The Archaeology of Knowledge and the Discourse on Language* redefined the archive and set the standard for a broader, cultural scientific understanding of archives. Foucault does not see the archive as a place for retrieving facts, but understands the archive also as an active process of stacking, ordering, transforming

and creating facts. The archive does contain the real and hence has a relation to historical truth, and keeps it as a raw material. But Foucault was concerned with the *a priori*, the rules of what can be part of the archive. An archive develops from a set of relationships and according to the set regulations of discourse. There are things that can be said and things that cannot, and hence will never be part of the archive. Foucault (2010: 129) feeds this back into his definition of the archive, being 'first the law of what can be said, the system that governs the appearance of statements as unique events'. But the archive is at the same time the ordering entity, warranting that all the things said do not expand endlessly in linear form but interrelate according to specific regularities. The archive differentiates discourses in their multiple existences (ibid.: 130). However, since nearly every discourse and its order in a particular form can be called an archive, there is no way to describe the archive of a society in total, not even that of one epoch. And being inside, or part of the discourse (and hence the archive) makes any attempt to do so even harder.

Foucault's very broad understanding of the term 'archive' and his sophisticated analysis of societal discourse initiated further research into what archives and discourses really are. In the 1990s, archival theory experienced its heyday, but the term archive slowly developed into a mere metaphor for all kinds of things, leading to an undermining of a term that no longer had anything to do with records or collection keeping (Ernst 2002; Horstmann et al. 2010). Likewise, when Ernst states that the internet replaces Foucault's *a priori* and determines a seemingly non-discursive reality – what can and what cannot be said – 'archive' becomes a term that has little to do with records or collection keeping. The internet should not – as Renée Sentilles (2006) put it – be regarded as the archive of the archive. To do so would imply an all-encompassing redesign of the term archive that obstructs the view from the cardinal changes that digital technology brings about for archival ontologies. The perceived velocity and abundance of digital archives is in stark contrast to conventional ideas of scarcity of resources that need to be saved and preserved for posterity. Yet, when thinking about the impact of digitization, we should not fall into the trap of expanding the frame of what comprises an archive to the point where the term becomes nothing but a popular trope used for any form of gathering or circulating information. The internet epitomizes the wish to gather everything, but its fragility and velocity do indeed distance it conceptually from the notion of an archive. The internet creates a meta-level of information allowing us to search for archival content, but it is not conceptualized as a lasting entity.[8] Its focus is on circulation of information, with

preservation being largely ignored. Digital archives, on the other hand, still strive for filing and ordering records when creating and assembling 'facts', imbuing them with significance and arranging for their retrieval. Conventional knowledge and cultural reservoirs might perish in the internet's noise. Yet the internet is not abrogating the knowledge/power nexus that is expressed in ordered records. Creating, capturing, organizing and pluralizing the archive are parts of a continuous process, done interactively and in a circular fashion (Caswell 2014; Upward and McKemmish 2006), which remain in place with the shift to digital archiving. Records are no longer objects made once and interpreted in the same way ever after. They are a segment of knowledge and power production, as well as a result of it, making digital archives ordering systems that reflect both the wish to preserve, store, appraise and regulate, and the mutability and flexibility of digital technology and the internet.

Power through Access

Information retrieval and access to records is the second major means of exercising archival power. Institutional power is echoed in contemporary practices of granting access to archives. The aforementioned difficulties in seeing the Eickstedt photo archive at the ethnographic museum are not merely a German phenomenon, but resonate with experiences described by other scholars. Aparna Balachandran and Rochelle Pinto (2011), for example, state that the Indian stories they have heard about gaining access against all odds could fill at least a year's worth of newspaper columns. Access policies sometimes seem random at best and discriminative at worst. They are an expression of archival power.

While doing research for this book, I attempted to view several collections of photographs and objects in Indian museums and archives. Being a white foreign female and an outside researcher (i.e. not officially affiliated to an Indian institution), I faced numerous hurdles. On rare occasions, heads or staff of archives responded openly to my request to see and talk about their collections and digitization practices. Mostly, I was required to produce a letter of recommendation. The letter, complete with a letterhead and stamp from my university, explained my research in few words. The letter signed by my employer in his role as professor was often a *sine qua non* for access and interaction. When I attended an appointment with the head of the archive of an East Indian museum, for example, I was allowed to enter the office, but when she realized that I had not brought such a letter with me, I

was not allowed to talk to her. I apologized for my forgetfulness and was asked to come back two days later. I sent the letter the same afternoon via email, and when I returned to her office she printed it out for the director to approve and sign off. It turned out that the director was not in the museum at the time, so I was asked to return the next day. This time, the head of the archive managed to get hold of the director, who signed and approved my request for support and information. I was introduced to him and we used this occasion for an interesting talk about museum politics, including digitization. When we returned to the head of archives' office, I prepared to ask my questions about the museum's digitization programme. However, upon seeing my small recording device, she objected, saying that to record her answers I would need to get separate and explicit permission from the director. I should bring another formal letter the next day, which she would ask the director to approve. I decided to ask my questions anyway, without recording the answers, and to take notes during our conversation and the visit to the digitizing units.

The reasons for restricting access – to information about collections or to archives and collections themselves – while maintaining records and collections lie in political control and the value attributed to legacy, past and tradition. In government institutions like this Indian museum or the Leipzig Ethnographic Museum, there is a banality of power at play, where 'state power … creates through its administrative and bureaucratic practices, a world of meanings all of its own' (Mbembe 1992: 2). Granting or denying access to archives is one of the many power processes that a state can apply. Doing so through its bureaucratic apparatus, it executes control over the circulation of knowledge and over the researchers or other individuals demanding admission. It thereby, in a process of negotiation, forms and transforms society, specifically the way in which society relates to its past. This power mechanism influences not only the content of written history, but also what remains unwritten. It also contributes to the valuation or even fetishization of historical documents. Installed and nurtured mechanisms of power hence contribute to their own functioning (Cheater 2003). Keeping information about what an archive contains within closed circles is still one of the best ways to impede access requests.

While an interpretation of documents happens when ordering them into the rubric of the archive, using and communicating the content is an important means of wielding power through archives. Archival material, even if published in numbers only, becomes the backbone of interpretation. Accumulated data is already a power-driven corpus and its analysis can be subject to scientific reasoning as well as to political aims.

Thus, who accesses the archival material is highly relevant. Through access and interpretation, archives again become, as Joan Schwartz and Terry Cook (2002) put it, part of the knowledge/power nexus. When the general public still accepts archival objectivity, retaining or obtaining sovereignty of interpretation is tantamount to speaking with authority. As Jacques Derrida (Derrida and Prenowitz 1995: 11) put it, 'there is no political power without control of the archive, if not of memory'.

Other reasons to direct how and by whom archival content is accessed are conservational and financial concerns. The sensitivity or contamination of records can justify a restriction in accessing and handling them, as can financial obligations and economic resources. If an archival body invests time and money in preserving material and records, it might as well benefit from this work or obtain some remuneration for it. Political attitudes and moral agendas can play a role when portraying the past in a particular way – and consequently influence the present and the future. Such limitations of access to archives need to be transparent, for example through communicating established laws and obligations. For the Eickstedt photo archive, the laws are comparatively clear – if it is acknowledged as an archive. The state's law on archives declares that anyone who can demonstrate a valid interest has the right to see the archival material of the state (subject to the user regulations of the particular archive). Museums, however, are not subject to the law on archives but define binding regulations in their house rules. The Staatliche Kunstsammlungen Dresden – the umbrella organization for the Eickstedt collection – codifies that they provide archival records for view on the grounds of professional interests, provided that no retention periods, third-party interests or conservational reasons prohibit such access. Yet, besides transparency of power through access, institutions should also aim to extend access. Derrida states in this regard that 'effective democratization can always be measured by this essential criterion: the participation in and the access to the archive, its constitution, and its interpretation' (Derrida and Prenowitz 1995: 11).

Digital Archives and Online Access

While the straightforward democratizing impact of access to archives can be subject to debate, digitizing archives and their online dissemination significantly changes the knowledge/power nexus. Access is – once archives are online – granted on the basis of internet access and (unless password protected) anyone from anywhere in the world can view the archival records on a computer screen. When the Eickstedt collection

went online in 2017, the institution explained its motivation on its website and gave official reasoning for the project:

> Even though these [photographic collections] are first-grade resources, they – as many such collections – live in the shadows. The relevant image repositories are in large part preserved in archives of public institutions, but they are generally not or only insufficiently indexed and therefore hardly accessible for research.
>
> The digital presentation of selected photographic collections improves the structural preconditions for interdisciplinary research. The visual resources are important for the disciplines that once created them, but beyond that also substantial for research related to visual culture. … This applies to research in Germany and Europe as well as to countries and regions once travelled to. The visual resources can be of great interest for researchers of countries of origin as documents of their past, and can now offer the basis for transcontinental discourses.[9]

This is a reasoning for access and encounters, which other institutions also invoke. Museums and archives see that digitizing collections can turn 'this hidden archive into an online resource accessible to people across the world',[10] or 'foster encounters with, and prompt questions about, various kinds of transfer and circulation of ideas, knowledge and values around the globe through space and time'.[11] For collections turning digital and online, circulation of knowledge through access to stored information is a central issue. Digitizing collections and making them available online is also a way to decrease archival power and to allow access centred on internet access as the only criterion.

However, in practice there is still reluctance among many custodians to provide online access to collections. While implemented digitization projects stress the potential of it, it can also be seen as a threat. In numerous conversations with custodians, I heard very similar concerns. Firstly, publishing digital reproductions along with metadata may raise critique. Outsiders may find fault with the provision of incorrect or insufficiently detailed information about the collection. As digitizing often involves making an inventory, it may also involve drawing out obsolete or rudimentary information regarding the collection, its bad condition or fragmentariness. Launching websites with online digital archives hence makes an institution vulnerable. Secondly, expertise and labour are required to determine the appropriate mode of an online archive, to implement programming and data input, as well as update and maintain a digital archive. Doubt remains about whether competence

and resources are sufficient to 'successfully' launch digital archives. The money required for providing online access means digitization has to compete with other tasks that need to be financed – making the decision even harder. Money is also an issue, thirdly, when it comes to envisioning the users of online collections. Digital archives published online may invite digital free-riders who make use of the reproduction, whether they come with copy protection or not. In particular, the illegal use or commercial profit by third parties cause museums and archives quite a headache. When costs are incurred for preserving and maintaining an analogue and/or digital collection, expectations might rise that profits – if at all – are generated to refinance some of these costs. Fourthly, it is not to be forgotten that museums and archives often view their collections as their largest resource, whose dissemination they want to control and profit from, whether through social or economic capital. If museums curate and advertise exhibitions centred on singularity and for the first time, the uncontrolled circulation of the objects' images – even more so when we talk about photographic collections – seems like a threat to this uniqueness. The fifth concern relates to the question of who will use the digital archive. This is not in regard to monetary matters but rather a fear of not reaching the users envisioned with the web portal. Digital gaps and divides persist, making it harder (or impossible) to connect to the internet for some sections of the population. While global mobile phone penetration has been increasing and access to the internet itself may not be an issue, the quality and bandwidth, electricity access, prices of data packages, digital literacy and social factors are certainly relevant for a persistent inequality in accessing online information. As a result, the digital divide may thwart (ethnographic) museums' attempts to digitally return collections to Indigenous communities in the Global South, for example. Additionally, open online access allows for illegitimate or immoral use; custodians cannot prevent the ridicule, misuse or improper appropriation of heritage material.

As most of these concerns can be rebutted or outweighed by other arguments, assessing the assets and drawbacks tends to become a question of interpretation or belief. Online access can raise critique, but fair comments can lead to exchange and enhancement. Costs are always an issue, but digitization can pay off in multiple ways. It must be noted that the internet is and will continue to be an increasingly used medium to access and circulate information on the past. Without overestimating the internet's importance, indications show that keeping a collection offline will lead to missing out on cultural production, as memory and history-making will happen on the basis of more accessible archival resources. It might be an exaggeration to say that if it's not online, it

doesn't exist, but if collections are not disseminated as digital archives on the internet, many will not notice them. The same applies for the housing institution, which usually notices an increase in interest and visibility through providing digital archives, rather than the often-feared decrease in visitor numbers (see Euler and Klimpel 2015).

The concern about improper use takes the discussion about online access back to the very core of archival power. Providing information about collections online is certainly a form of parting with sovereignty of interpretation. It decreases control over the use and appropriation of preserved material. This can be highly problematic if the material is sensitive, if viewing it is considered impious or infringes upon cultural protocols. Human remains, secret/sacred objects and nude pictures are the most prominent of such sensitive objects to be found in museums and archives. Sensitive objects require special consideration before being disseminated in any visible form – whether in exhibitions or as reproductions in digital archives. Yet neither should we refrain from mentioning them as part of collections and archives, nor should their existence prevent institutions from making the majority of non-sensitive material accessible.

Eventually, and more generally speaking, online access to cultural heritage can be subject to a more optimistic or pessimistic take on open access. On the one hand, digital technologies bring about an advance in access in terms of numbers and spread. While analogue archives and collections include several hurdles to consulting documents and objects, their digital copies potentially allow for the largest number of users, from all over the world. Instead of needing social and economic capital to travel and physically enter an archive or depot, such costs are now reduced to internet access, a digital device and digital literacy. Digitization and online dissemination appear as a more democratic mode of using preserved content. The coding of the historical, which has always been an eminent aspect of producing order, is implemented in digital code, which allows for a flattening of previous visual hierarchies. The digital archive can enhance scholarship and broaden perspectives; it allows online access to resources across borders. In other words, cyberspace reduces geographical distances to infrastructural realities. It can foster new encounters and connections between people and across distances. Numerous examples show how the online dissemination of digitized archival material brings about novel interpretations of documents and objects, extended collaborations or new circulation of knowledge.[12] On the other hand, digitization projects pose challenges and do not necessarily democratize access to resources of the past in the anticipated way. With the digital gap persisting, online access may benefit fewer people

than envisioned, and information may circulate with limited reach. Online access to collections and repositories does not necessarily *abolish* archival power through novel access policies, but significantly changes the character of archives and creates new regimes of access.

Digital / Archives

Having seen, worked with and talked about quite a few museum and photo archives, I return to the opening question of what an archive is. While a straightforward 'yes' as an answer to the question 'Do you even know how archives function?' would be an exaggeration, the above investigation allows me to draw some conclusions about what archives, and especially digital archives, are.

We have come a long way from the first systematic considerations of archives, where the term refers to the institution or the body of preserved documents that the state once used as registers but that are now no longer of practical use (Duranti 2001; Mbembe 2002). An archive is no longer only the result of a government agency's or a court's responsibility to document, where documents become archival records in a filing process. Neither is paper the only information carrier. Today we have a broad range of photographic, film and sound archives, with carrier material extending from wax cylinders to celluloid and vinyl. In other words, there is a more liberal understanding of where archival material comes from and what carrier material can be. Museum objects can also fall into the category of archived material, since objects contain information, and acquisition and preservation are two of the four main tasks of museums (International Council of Museums 2009).

With the postmodern questioning of the objectivity of archives and the focus on the characteristics of kept records, the distinction between information carriers of different forms as well as between institutions seems to shrink. Archives, museums and other institutions preserving, ordering and allocating collections with information relating to the past form part of a knowledge/power nexus that regulates and orders how the past is constructed and made sense of. While there are specific characteristics for archives, museums and private collections,[13] as well as individual markers for each and every one of their repositories, a clear demarcation of archives as separate places of collection and ordering has become increasingly difficult. French historian Pierre Nora (1989), for example, highlights the common characteristics of museums, libraries and archives when he talks about *lieux de mémoire* – places that gather references to the past but fail to successfully engage a larger audience

in an active commemoration process. Hence, archives are better understood as a triad of institution, place and content, preserving and ordering documents. These documents – of various formats and material – become archival records in a filing process.

Digital archives are numerically coded and often online repositories of cultural heritage collections. They display information about the past in an ordered form through an electronic database and make it available through the internet. A digital archive's content can be based on a previously existing collection in a museum or archive, or created anew through collecting. A clear advantage of computational archiving is the arithmetic operations computers are able to perform. CMSs' ability to link and reorder archival data instantly, allows faster and more specialized information retrieval.

The basic principle for all digital data is a binary code of zeros and ones, which implies a inclination to forming series and thereby also a tendency for reduction. Digital archives generate new modes of historical research with its ways of interpreting archival material, as multiplied retrieval options influence their cultural operations. Numerical coding facilitates not only an archival practice of data retrieval that gives new relevance to technology, but also flattens the archivist's relevance as regards prescribing order and granting access.

Digitization not only fostered changes in understanding the concept of archive already underway, but transformed archival practices and principles. Imparting archival knowledge in an online form is also a means of imparting power over content. There are good reasons both to do so and to refuse to take these steps. Demands can loom large, not least in ethnographic or colonial archives, to offset or reconcile previous injustices or imbalances. Archives as institutions, on the other hand, argue that preservation is resource intensive and hence should be compensated. They also bring forward the sensitivity of material (both physically and regarding content) and third-party rights. As early as 1994, Cook ([1994] 2007: 399) spoke of a commencing 'revolution in information management and archives' that would change archival work fundamentally. Archives already had to cope with too much rather than too little information, and digital tools had been introduced to help organize archival records. However, digital technology does not only mean supporting storage and retrieval, but comprises changes in all aspects of archival work, 'changing information technologies, changing administrative/organizational structures, new corporate information needs, new legislative frameworks, new perspectives on the value of information as a corporate resource, new awareness of the need for public and democratic accountability' (ibid.: 404).

Yet such a change in the very understanding of archives does not come about easily. Archivists – according to Cook's ([1994] 2007: 409) own experience – tend to be sceptical about drastic realignments. Electronic records imply new workflows and threaten paper-minded people: they worry they might lose their jobs and/or credibility. Shifting from established practices and norms of material or even paper-based archival records to digital versions of the same, and hence to a seemingly machine-generated order, can put the accountability of archives in broader society and their financing at risk (ibid.: 406). The consequence of this threat, Cook argues, needs to be a more fundamental shift: one from the idea of archives as instances of physical record-keeping to conceptual management that necessarily includes digital technology. Only openness to such fundamental conceptual transformations bears the chance to shape the future of archives and archival practices.

It is questionable whether such a fundamental shift is taking place. Granted, the ordering of archival content and restricted access policies are negotiated against the background of the increased turn to digitization. The shift to computerized or computer-supported archiving and file generation has altered practices of archiving and increased reflections on the ontology of archives, leading to de- and reconstruction of the concept. Yet, digital means do not do away with the central archival characteristics of order and power. They rather modify the order and realign the power related to archives. The new order in digital archives can underline conventional order forms or resolutely scrutinize these. But digital archives, too, rely on ideas of access to ordered information. They are constituted as a means to provide resources for memory and history-making, and as such relate to ideas of power and access.

Furthermore, the internet has its own logic and inherent ordering principles, impacting access to archival material and consequently the power structures with which archives are imbued. Risam (2019: 10) urges us to see both sides of the coin:

> Both a blessing and a curse, digital media and technologies have accelerated knowledge production and enhanced access to knowledge creation in digital humanities, producing a space where the digital cultural record can come into being. But because the digital cultural record exists in a media environment that is caught in a battle between corporate interest, academia and the cultural heritage sector, racial and cultural politics, and consumer power, that record itself has become a spoil of war.

New technologies make new forms of search and access possible, which are less restricted by conventional power mechanisms. These power mechanisms have not become extinct, however, but have been

replaced. What we find today are custodians who share archival content and thus also their power, albeit not necessarily with the users of archives. Rather, there are (at least) three stakeholders involved in digital archives today. Firstly, custodians or archivists are still in charge of which parts of the archive become part of its digital counterpart. Some argue for a holistic approach to collection digitization, while others decide to digitize and publish only selected pieces. Thereby the content and the power to decide the meaning, interpretation and use of the archive is shared with the second interest group, the outsiders, be they researchers or the general public who might take an interest in the resources. Defining what a collection or archive comprises through transforming data into narrative is – once the content is published – no longer limited through restricting physical access to records to selected people only. Nevertheless, technically – and this is the third party involved – the ranking and display principles of search engines and algorithms determine what content is accessed. Search engine optimization might improve the quantity of website traffic by raising the site's placing in web search engines, but the increased complexity of non-transparent web search engines limits the potential for individual or archival influence here to a minimum. One can positively argue that internet and archive are complementary to one another, as one is the public and living output for the rather static and preserving other (Assmann 2009). The internet augments the archive in so far as it provides an ever-changing multi-perspectivity on material that is subject to endurance.

However, technology also impairs, or at least directs, perspectives and access to information. Facebook's Free Basics initiative is a textbook example of these tendencies. Mark Zuckerberg introduced the mobile app in India in 2015 as a way of providing free internet access to the several million Indians still disconnected from it. Free Basics was announced as serving local needs and bringing people online for the first time. The app would refit websites to be datalight and provided the option to browse them without paying for mobile data. After running in small pilot projects, Free Basics (not the only such project in India, but the most publicly debated and advertised) was temporarily banned from operation in late 2015 by the Telecom Regulatory Authority of India (TRAI). After massive campaigning by Facebook and an equally vociferous information campaign by several actors in the media and civil society, TRAI banned Free Basics and comparable apps in early 2016. The major problem was that it provided free access to only a few websites, among them www.facebook.com. TRAI rightly identified this as a violation of net neutrality and released the 'Prohibition of Discriminatory Tariffs for Data Service Regulations'.[14]

This case demonstrates that access to information is a valuable good, and the internet is not *per se* a warrant for it. Actors involved in shaping its functioning instead demonstrate that archives, when defined as entities that exercise power through allowing access, need to carefully consider the stakeholders involved in providing the necessary infrastructure to do so. We also need to consider that liberal access policies can foster structural inequalities rather than benefit more marginalized stakeholders. The internet does not necessarily provide for a democratization understood as advancing the whole population, but might privilege only certain (already advantaged) parts of society. When thinking about archives and their renewed access policies, we need to ask about the whereabouts of archives in their digital format and online circulation. Povinelli (2011) urges us to consider the constitutors of these archives. What and who is left out, and what and who is included? Who continues to influence what we can see, and what technologies (programmed by whom with what interest) newly enter the stage? Digital literacy, the digital gap and the archival gap function as selective or exclusive factors. Colonialism and racism continue to play out online, something that can also be seen in archives, as for example white male American writers of the past are well featured in digital archives, while others are not (Singh 2015). This archival gap – the historical dimensions of which are largely out of our control, but its contemporary dimensions very much within our capacity – requires us to expand content and change archival orders and retrieval options.

Postcolonial digital humanities stress the culture-transforming capacity of digital archives, and hence urge for both a hack and a yack in creating them. We need to constantly ask who has an interest and is *de facto* involved in constituting what digital archives comprise and contain. The time is right for such a debate, and numerous digital archive projects are putting pressure on established archives. Digital archives open up a space for redefining what is worth preserving, in what form and order, how such conservation should take place, and how archival data are used to narrate history and transform material with mnemonic capacity into pieces of actively performed acts of remembrance. The following chapters engage these issues by taking a closer look at digitization practices.

Notes

1. The archival recordings and the corresponding museum objects were the foundation for what would become my doctoral thesis (see Müller 2015).
2. Available at http://www.deutschefotothek.de/cms/weltsichten.xml.
3. On the Eickstedt expedition, the archive and collection, see Müller 2015, 2019, 2017a.

4. See http://www.deutschefotothek.de/cms/weltsichten.xml.
5. The following paragraphs comprising the three examples of digital archives have previously been published in a similar form (Müller 2017c).
6. 'Das Archiv zu schreiben heißt fortan, es zu programmieren.'
7. Migration to a different carrier material has happened before – think of microfiche or audio-archives in wax cylinders, tape or CD format – but has reached a new quality and especially velocity with digital file formats and required software adaptability.
8. This becomes obvious in the internet archive (www.internetarchive.org) that tries to periodically preserve all websites, making them permanently available.
9. https://www.slub-dresden.de/ueber-uns/projekte/juengst-abgeschlossene-projekte/weltsichten/ (accessed 16 May 2020), translation from German by the author.
10. Fürer-Haimendorf Archive, https://www.soas.ac.uk/furer-haimendorf (accessed 10 September 2020).
11. Basel Mission Archive, http://www.bmarchives.org/about (accessed 10 September 2020).
12. See the three examples mentioned above; see also chapter 5 of this book. More examples, especially for the Indian subcontinent, are the Citizen's Archive of Pakistan, the South Asian American Digital Archive, the Asian Art Archive and Sahapedia.
13. An archive in the narrow sense is the result of administrations, courts and other institutions responsible for documents generated in the process of governing, ruling and administering. It shares this notion with some of the museums that rulers established as supposedly encyclopaedic collections of a range of objects or as a chamber of wonder, assembling all the spoils a ruler received. Museums have long since internalized the task of exhibiting, which archives and libraries do not understand as a core task. A library, which at times is also referred to as an archive, is the result of a cultural discourse, of the writings, thoughts and ideas of authors who intentionally put those on paper.
14. https://trai.gov.in/sites/default/files/Regulation_Data_Service.pdf (accessed 11 November 2020).

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