Introduction

Digitizing photographic archives and heritage collections has become a common phenomenon. Numerous databases have emerged in the last two decades that present objects and documents from the past in an ordered way, allowing their fast retrieval, usually in the form of a digital photograph or scan alongside metadata. One of the largest archives of historic Asian photography is the Alkazi Collection of Photography, comprising more than 100,000 photographs from nineteenth- and twentieth-century India, Sri Lanka, Burma and beyond. In a 2018 interview, Rahaab Allana, curator of the collection housed in New Delhi, said in response to the question of whether all the photographs of the collection were digitized:

> It's true in one form or the other, the whole archive is digitized. There is someone in the office devoted to just doing that. Though we re-digitize material all the time, because when we have either a publication or an exhibition – which is quite common all the time throughout the year – we have to redo a lot of the work because it has to take various forms, naturally. And I think, as technology also changes, so are the formats that are available to us, so is the quality, so are the formats, which can increase the density of an image, increase the clarity, increase the dimensions, to which you can take it. Of course, we're thinking of using images in multimedia form. So augmented realities is something we're working on with another fora, with the photographs. Projecting heritage histories through apps is something that we're looking at as well, trying to develop our own app with the passage of time. Looking at two or three models for the development of these programmes. So naturally, digitization becomes essential to these processes. For reference purposes, the archive that has started in the 90s with people archiving it from them. Digital cameras

were very very simple. 1.2 Megapixels was considered a big thing. So you can't really zoom into those things. That means, all the work that was done between 1998 and 2006 has to be redone to a great extent. Because the technology was not available and now scholars and artists demand to see things up-close and literally into the photographs.

The Alkazi Collection's concept for digitization, and indeed Allana's answer, is paradigmatic for digitization in museums and archives. Digitization has become a given, albeit in different forms and for multiple reasons. It is a technology 'for reference purposes' that has been around for some decades. In the 1960s and 1970s, UK and US museums first adopted electronic infrastructure and connected databases for collection management, not without initial reluctance and the application of trial and error (Parry 2007). Subsequently, a new professionalism evolved that eventually led to databasing being an essential part of collection organization. In 2013, Ross Parry (2013: 24) even spoke of the 'postdigital' museum (referring to UK museums as examples), in which digital media has acquired a normative presence.

Allana alludes to the postdigital when talking about 'projecting history through apps' and other ideas for multimedia use, indicating that digital media have entered exhibition spaces. Digitizing collection artefacts becomes a prerequisite for everything from interactive tasks in exhibitions, to apps providing additional information for the visit, to virtual museums and digital art (Grau et al. 2017). Yet Allana also notes that they 're-digitize material all the time'. With digitization practically still going on, postdigital practices become difficult.

One reason for the Alkazi Collection's still ongoing digitization process is that 'technology also changes'. In contrast to digitization practices on the ground, academics have been arguing that debates about the merit and form of digitization are resolved (Terras 2010: 425). Programming, financing, protocols and standards for digital libraries have been available in compiled form for more than a decade (Deegan and Tanner 2002), alongside *Strategic Issues for the Information Manager* as a best-practice book for digitizing collections (Hughes 2004), laying out ways to deal with copyright issues, planning, finances and so on. With the increasing number of digitization projects and set standards (Terras [2008] 2016), digital archival studies increasingly turned to impact assessment tools, trying to numerically validate digitization (JISC 2013; Tanner 2012). However, these tools overlook the problems and glitches of digitization processes occurring during implementation. The reality of digitizing heritage is hardly ideal, but a process with hindrances, negotiations, challenges and different forms of execution and usage.

Allana (interview, 2018) describes the issues faced through digitization at the Alkazi Collection of Photography:

> Müller: When you say most of the one lakh [100,000] images is digitized this means usually just the files, the tiff or raw file or whichever format you are using, but then only a very limited set of metadata?
>
> Allana: Yes, the metadata is put together vis-à-vis the projects that we do. It's not that we start a random project and then let it go. And to work towards this, I wanted it to be random and I wanted it to be constant, and the only way I could think around doing that was – works that we do from the archive, including talks that we give. So I teach a course in Bombay at the Bhau Daji Lad [museum] every year. A diploma course on the history of photography. But I wanted those classes to become part of an accreditable course at Delhi University. That would have allowed me as part of an elective course to get students to come and archive the material and make that part of an accreditation that they could get from the university, that means work that they do with me: archive the objects, let's look at that. Sadly that didn't come through. The university grants commission denied us as an accreditable university participant. And they needed on our board of trustees individuals who would be dictated also by them. The other part of the problem was that any material that was going to be available to the university could be used in any way – publishing as well – by the university. Something the trustees would not agree to, not only with our institution but in any institution that runs a private archive and that has to commercialize at least a small part of it in order to sustain things. We're a charitable trust, you know, we're not an organization that has a corporate funding of any kind or government funding of any kind. Without that we're left pretty much to the philanthropy of the individual who started the archive. However, projects and publications are managed on a cost-sharing basis. That means we get in touch with the National Museum where we did a show on Sri Lanka and a book and they shared our costs, they brought out the book.

Digitization always requires a labour force, time and money, which are hardly ever abundant resources in the heritage sector. This leads to a discrepancy between aspiration and implementation. Furthermore, beyond rhetorical acceptance and best-practice books, digitization in its implementation depends on curators, archivists, technicians, museum staff and external stakeholders. They are the ones determining how to set up and introduce digital archives. They negotiate collection management systems (CMSs), not so much because there are no set parameters,

but because the introduction of CMSs confronts curators and archivists with the opportunity – and threat – to rethink established principles. They provide the chance for unconventional database architecture, something that Haidy Geismar and I (Geismar and Müller forthcoming) have identified as one of four postcolonial museum practices regarding the digital. The database becomes a new centre of attention, where Indigenous voices and divergent knowledge systems find their way into classificatory systems, whether in the form of a CMS, or created on top of it. A 'postcolonial databasing' (Verran and Christie 2014) can reorganize collections through the architecture, allowing a writing into the archive (Müller 2017b; Srinivasan et al. 2009). A CMS can prove to be a means to undo the colonial dominance of organization knowledge. Whether this potential is used or not, digital databases replacing analogue registers always require new technical skillsets for a new medium. They also imply shifts in access and control. Creating digital archives means intertwining numerically based ordering systems with established archival management mechanisms, leading to negotiations around what will be encoded and how. Relational mapping of cultural heritage adheres to international standards, yet is, in its status as an individual CMS, always an electronic reproduction of cultural conceptions – whether they are led by postcolonial thinking or not. The Alkazi Collection of Photography chose a comparatively conventional CMS, yet the way they produce metadata is a way of letting outside stakeholders write into the archive:

> And we do it [metadata entry] vis-à-vis our programming. That means if we have a book, which is now coming out for example on Bombay Modernism through Cinema, which is a recent acquisition we made last year, we have asked as we commissioned the book, we have asked the scholars to write the metadata. Which is usually the format we proceed with for any of our collections. (Allana, interview, 2018)

I will analyse this aspect of digital archives – the databank architecture – in more detail in this book's second chapter, 'Deciding on Digital Archives', using the digitization strategies of leading Indian state museums as examples. In a recent government initiative, these museums created a collection management system for use as digital inventories of their collections and for disseminating this information online. This CMS is an example of how ideas of cultural heritage and archives, of development and improvement, are transformed into digital architecture. The idea of development can here be understood as a motivator for the government's push for digitization. However, the construction of this CMS needed to include different concepts of development and

improvement, as well as deal with discrepancies in museum practice. Its eventual architecture reflects the fact that handling museum collections works with comparatively stable grammars for problem solving and recognition, which museum staff perceived as being under threat from digitization. A numerical representation through information and communication technology (ICT) always implies a new order, and the top-down introduction of a CMS can pose a threat to the usual scope of action. In this case study, the stakeholders involved eventually managed to incorporate the national agenda of development, the technological advancement of the heritage sector, a common anxiety about loss of control over heritage material and the anticipated needs of an Indian user in this CMS. They translated these notions into a single database that adheres to international standards and has been equipped with four approval/access roles. The chapter will demonstrate that at present it is not technical determinations that prevail in CMS construction, but sociotechnical considerations. Familiarity with digital databases, good internet coverage and sufficient hardware or data allowance are not necessarily at hand when digital archives are set up and introduced. However, extant expertise can take these parameters into account, responding to pre-digital database-recording schemes, and including current demands of visuality, internet accessibility and the new interlinking of information and data entry into CMS construction.

For the Alkazi Collection of Photography, Allana (interview, 2018) states that digitizing new acquisitions is a sociotechnical question as well as a question of resources:

> I have to think seriously about what are the ramifications of what I will do with it [a to-be-acquired photo collection]. The most I can do with it right now, I know, is going to be a book that I can commission, that can be out there. An exhibition of material that can be out there, can be done in various cities … And of course trigger some kind of a debate. And I think digitization, archiving is a debate that has happened, even last month at the American Institute in Delhi. As they struggle with their collection, we struggle with ours. They have digitized and made things available online, but they don't have programming [i.e. exhibitions, publications, seminars], because they don't have resources for that. So I think we focus a lot on programming and making our archive available through exhibitions, publications and seminars. They focus a lot on their online resources. [A programme] allows us to make a lot more people involved in the process. Curatorially, institutionally and so on. It just allows us to activate things, you know, in a selective way maybe, but in that selection also lies an art and a trajectory that the archive has developed over the last ten years.

Allana (ibid.) hints at priorities for the Alkazi Collection laying with exhibitions and book publishing. This, too, influences their advancement in digitizing the photo collection. Consequently,

> there is a database that is available in house, which archives what is in every box. And then there is a database, which archives individual photographs. But the individual photographs is an ongoing project, it's not done yet completely.

Cultural conceptions like this one – the usual procedure to follow, the trajectory the archive has developed in the last decade – play a central role not only in introducing a CMS, but in all other phases of creating and running a digital archive. A main argument that runs through this book is that digital archives are culture encoded in digital form. Attitudes, preconceptions, habits or political entanglements all determine the different shapes a digital archive takes. How stakeholders are encoding culture into digital archives is of critical importance to understanding computational programming decisions, new order and retrieval options, content creation and curatorial practices, as well as appropriations and use of digital archives. When I say that this book is about encoding culture into digital form, I depart from Lev Manovich's (2001) understanding of culture as 'high culture' or 'popular culture', artistic expressions or human creation that can be received and/or consumed. Manovich's (2001: 69–70) concept of 'culture encoded in digital form' is important in as much as he draws attention to the fact that:

> distribution of all forms of culture becomes computer-based [and] we are increasingly 'interfacing' to predominantly cultural data – texts, photographs, films, music, virtual environment. In short, we are no longer interfacing to a computer but to culture encoded in digital form. I will use the term cultural interface to describe a human-computer-culture interface – the ways in which computers present and allow us to interact with cultural data.

However, when I speak of encoding culture into digital archives, I do not so much refer to the obvious heritage artefacts subject to digitization, or to previously developed forms of 'cultural interfaces' such as film or the printed word (see Manovich 2001: 73–88) – although these are undeniably a resource for digital archives. Rather, 'encoding culture' here signifies the cultural practices within and behind the digitization process. I use culture in the broader sense of what people do, how they act, what determines their situational behaviour and their habits, their contexts and

surroundings – as this is what gets encoded. Digital archives certainly display cultural heritage such as photographs, objects, artefacts or historic texts, encoded in binary form, and written catalogues and card indices are previous interfaces that determine the human-computer interface (HCI) of digital archives. But this book shows that creating, running and appropriating digital archives means encoding political decisions, museum conventions, discontent, access policies, social media use and curatorial valuations. I turn to the complexities embedded herein, to the public and hidden transcripts (Scott 1990), the intertwinement of decision makers, negotiations and directives that all influence decisions on the best way to circulate knowledge through digital archives.

Disentangling archives' or collections' competing interests, ambitions and constraints reveals a conundrum which archival studies thought to be resolved. Institutions worry about a diminishing of verified information and interpretative authority when making their collections available to everyone through the internet, fearing that they won't be able to contribute their expert knowledge to processes of cultural production. Hence, digital databases like the one the Alkazi Collection has been producing are not necessarily turning into online resources with freely circulating content accessible to everyone. For the Alkazi Collection, Allana (interview, 2018) notes that:

> people can access things as I said. Apart from your experience [of finding it hard to get physical access to the archive in Delhi], people are accessing the archive all the time. Today, tomorrow and the day after there are people going to the archive to look at material. Half the people here have looked at the material, so they know the archive well. No, it's based on their… It's based on when they need to find something in the archive that they come. What we do ask of them, and I think this is important for us, is yeah, come to the archives [in person], spend time over there, help us sort of intellectually build our resources as much as we provide the information to you. [If people come and look at the images in house] they look at the digital versions. Very often, they are satisfied with that. But if there is a real need and necessity and they want to spend like a week doing what they need to do, there's not only that, there is a library of books on photography, which is growing. Extensive library. So they don't even need to move out of there. Yeah, we start with digital files and then we go to the original if it is required. Then we give them copies if they need it. That's usually the way in which we go about it.

The Alkazi Collection does not grant online access; its digital archive is not accessible on the website. Reasons for institutions to

refrain from online dissemination range from the risk of misinterpretation, unethical use and the increase of false information to lack of earnings, interpretative power and control. As I will analyse in more detail in chapter 1 of this book, 'Theorizing Digital Archives', digital archives that are accessible worldwide through the internet bear the potential of a wide circulation of museum and archival content, and of increasing range and relevance. Yet, as Anusha Yadav (interview, 2016), head of a digital online archive, says, when thinking about reasons for Indian institutions to *not* disseminate their heritage collections online:

> Because knowledge is power. So they'd rather hold onto that power. If they have nothing to protect, then why are they powerful? They are in powerful positions because they guard these things. And also it's easy to say that it's the property of people but there are all kinds of people who are also destructive and who also might destroy things.

Yadav's assessment and Allana's statement that 'now scholars and artists demand to see things up close' – and online, I would add, as this decreases political, physical and economic barriers to access – relates to what Geismar and I (Geismar and Müller forthcoming) identified as another form of postcolonial digital museum practices: outside stakeholders with increased expectations to use digital heritage material voice their critique about limited access. They do so not only in academic discussions, but also in online communication. Activists' takes on museum politics find a voice in/through online and social media, expressing demands to make use of the advantages of enhanced or extended views of objects or photographs and of the worldwide access potential. In short, the debate around digital connectivity and social media intertwines with activist postcolonial politics (Golding and Modest 2019).

Despite comprehensible concerns about online archives, heritage institutions need to take these requests seriously. They should also consider that in times of interpreting, (re)producing and communicating cultural heritage more and more in online formats and fora, those not participating in digitization and online dissemination may run the risk of sinking into oblivion. Archival theorist Terry Cook ([1994] 2007) raised this point more than two decades ago, drawing attention to the need for post-custodial reorientation, and a change in archival concepts and strategies. But while academics rarely debate the advantages or necessity of digitizing archives any longer (Euler and Klimpel 2015; Terras 2010), archival and museum practices do not always live up to these imperatives.

Established institutions' delay in implementing digitization is one reason for outside actors to create and run digital archives of their own. What I call community-based digital archives engage to an increasing extent in cultural production, as they set up websites that they decidedly call online archives, and that include many of the criteria required for digital archives: when it comes to ordered resources from the past available online – be it photographs, movies, life stories, film posters, fanzines or any other artefacts – community-based archives compete with institution-based ones. While it is debatable where to draw the line between content arranged on a website and digital archives, the administrative load and the above-mentioned concerns and issues make it harder for established museums and archives to release and publicize content online. New agents use this slowness and the perceived lack to set up their own digital archives as alternatives. As a consequence, when looking for digital archives with photographs from or historic references to India, for example, one finds few online archives stemming from established state and private museums, but numerous digital archives as new initiatives, created by amateurs-turned-professionals.[1]

This book introduces, in the third chapter, 'Community-Based Digital Archives', Indian Memory Project (IMP) and the 1947 Partition Archive (1947PA) as two examples of community-based digital archives. They concur with the general trend of cultural production shifting towards online space, and have individual circumstances in their founders' biographies to thank for their moments of creation. In their public statements and self-portraits, these archives make use of three scripts. One is that of lack and necessity, which adheres to a critique of state practices in documenting and distributing India's past. This critique rests firmly on internalized convictions that history can be written more democratically when amassed as a bottom-up oral history project. These digital archivists also assume that documenting and communicating the past can be done through digital memory practices, with the internet supporting participation in newly established archives.

The belief in the internet as a democratizing force also features in their second script of access and sharing. It is internet optimism that substantiates the 1947PA's and IMP's stressing of inclusivity and openness, collecting and distributing from everybody and with everyone. They take for granted the internet as a potentially empowering, equalizing medium, where its advantages clearly outweigh any potential threats. Sharing has become an important characteristic of online action, yet the shifting meaning of the term 'sharing' and its almost hollow, buzzword character is hardly reflected. Both IMP and the 1947PA use access and sharing as a script in verbal arguments, and do successfully manage

to 'share' in the sense of communicating and disseminating information online.

The third script that challenges archival conventions and archival power is less congruent in verbal and practical argumentation. While IMP and the 1947PA see issues with how museums and archives currently work and how history is constructed on their basis, they struggle to convert this criticism into practice. Eventually, both also aim at becoming new, additional actors in the networks of producers, consumers, objects, infrastructure and regulations that constitute heritage production. They express this not least visually through displaying an aura of nostalgia and creating a framework of historicity for their corporate films.

The 1947PA and IMP are but two examples of new agencies in digital collecting. New agencies constitute the third form of postcolonial digital collection practices (Geismar and Müller forthcoming). New technology in combination with diverse forms of content creation (from oral history to computer art) has evoked disputes about curatorial authority, collections in motion, and established standards. As Allana stated, 'digitization, archiving is a debate that has happened, even last month at the American Institute in Delhi'. Community-based initiatives take their place in cultural production, where the World Wide Web has become a conspicuous location. It is a space to interfere with 'a structurally neocolonial institution and profession' (Boast 2011: 66), where museum professionals – despite their intention to achieve meaningful and inclusive co-narratives through collaborative programmes – operate. The Alkazi Collection of Photography adheres to established structures when focusing on liaising with big heritage players from the Global North, both in exhibiting and in digitizing:

> What we found is that there was this watershed in programming around nineteenth-century material, and so we tried to focus on that in the last ten years. Maybe the next ten years will be about just ways in which we can find resources to make things digital and online. As I said, Cambridge was interested in helping us do this. The Royal Ontario Museum has kindly offered scholars to come to us every year … something which we'd like to explore. (Allana, interview, 2018)

By contrast, new actors encourage the rethinking of archival and museum authority, compelling more established heritage actors like the Alkazi Collection or governmental museums to negotiate established norms of collecting, accessing and exhibiting, reaching beyond the understanding of objects and the importance of materiality and

preservation, to the limits of social media and user-generated content (Geismar and Müller forthcoming).

These new actors in digital archiving are also at the centre of this book's fourth chapter, 'Creating and Curating Digital Archives', in which I investigate the active practices and motivation of those performing content creation at the 1947PA. The archive's Delhi office located at Cybercity is here symbolic for the way community-based digital archives work: physically situated at the centre of the IT business, yet also working at its fringes, both economically and thematically, when organized as a charitable trust concerned with cultural heritage.

The staff of digital archives are often part of a young, IT-savvy generation, and here they similarly belong to the so-called new Indian middle class. They are embedded in a new memory ecology, within which they create personal and work-related memories. They stress that they are doing something relevant for society, but are also embedded in conventions of success and class expectations. For their work, the staff draw on a narrative of eliciting and storing memories, but within a larger concept of 'creating history'. The archive format promises not single, free-floating accounts of the past, but the establishment of a large stock of memories assembled to impact how the past is perceived collectively. Here the idea of online, social and crowdsourced work intersects with the creation of something more permanent and political. On the one hand, community-based archives can be viewed as being created and structured horizontally. On the other hand, a vertical structure is displayed in the ambition to 'create history'.

The vertical structure also crystallizes in the editing processes undertaken as part of this archive's everyday practice. Before publishing content online, the staff summarize, cut, correct, check and edit the memories that have been collected and recorded. This vertically structured part of a digital archive's work can be compared to ample curatorial practices. As a result, the work of digital archives such as the 1947PA can be understood as dealing with both memories and the idea of a more permanent repository of the past. It is a digital context where everything is potentially a future memory, drawing heavily on individual narratives, which are presently important instances of the past, collaboratively created and heavily edited.

When subsequently turning to actual use of digital archives, I examine the fourth category of postcolonial digital practice termed 'digital objects and mimetic returns' (Geismar and Müller forthcoming). Digitizing existing collections permits not only a more open-ended online dissemination, but also a directional return of the digital representation of an object to, for example, 'source communities'. Most often,

ethnographic museums and archives in the Global North develop ambitions for such a return. Ethnographic collections embody the interests and points of view of at least two different stakeholders and can be located in at least two different contexts, due to their past relocation from mostly colonized to colonizing states. When objects and records originate from areas outside the present holding institutions, ethnographic collections pose questions of historical injustice and eurocentrism, of legitimate stakeholders and modes of remediation, return or repatriation. Digitization projects at heritage institutions have attempted to remediate the collections and to digitally return objects (Hennessy and Turner 2019; Hogsden and Poulter 2012), which contains the potential for a 'respectful repatriation' (Christen 2011), the ability to overcome political constraints and national borders. Digital archives may be a new form of multiple stakeholder interaction, taking the idea of the museum as a contact zone into the digital realm (Hogsden and Poulter 2012; Srinivasan et al. 2010). However, digital returns have also been subject to extensive critique, because the ideals of circulating and sharing can mask the upkeep of colonially grounded ownership over objects and an unwillingness or inability to repatriate the physical object itself.[2]

In the fifth chapter, 'Using Digital Archives', I hence include European ethnographic collections – here exemplified through the Basel Mission Archive, the Eickstedt Archive and Frankfurt's Weltkulturen Open Lab – as digital archives that manifest encoded postcolonial visions of a digital return. European museums envision online archives as a way to foster encounters between current holding institutions and 'source communities'. Different architectures are expected to facilitate online engagement with heritage material. However, relating these examples to IMP and the 1947PA allows an identification of users' emotional involvement and social relations as relevant factors in online engagement. Similar architectural outlines of digital archives can produce very unequal results, and do not guarantee the production of 'real contact zones' (Hogsden and Poulter 2012). Taking Boast's (2011) critique on museum institutions seriously, I juxtapose digital archives as postcolonial practices in established institutions with those appearing outside established institutions. The latter generate stories of impact, but the named examples fail to produce anticipated digital returns, while the former engender empathic exchanges and approving comments. Analysing the use of digital archives that are as diverse as the ones juxtaposed here consequently requires a rethinking of the postcolonial agenda of digital archives. It seems to fit less with the concept of digital return than with overcoming in-country heritage restrictions that stem from colonial times.

While incorporating European digital archives, the book's focus is on Indian examples. This is for several reasons. For one, archival and museum studies have largely ignored digitization taking place outside the Euro-American context and the Global North. This can be explained by the digital developments taking place in the heritage sector in the US, the UK and Canada, but seems inappropriate given the worldwide rise of online access and the international dispersal of museums and archives. The historic entanglement of colonizers and colonized – resonating here in collections linking holding institutions to 'source communities' – requires postcolonial digital humanities. Digital humanities provide 'the opportunity to intervene in the digital cultural record – to tell new stories, shed light on counter-histories, and create spaces for communities to produce and share their own knowledges should they wish' (Risam 2019: 5). As digital humanities scholar Roopika Risam (ibid.: 6–13) states, there is a danger of the Global North alone telling new, digitally framed narratives about humanity, and hence there is an urgent need for postcolonial digital humanities to shed light on these blind spots in practice and theory. We need to critically think about the divergences and build the objects that make up the digital record. Or, as Elizabeth Povinelli (2011: 152–53) puts it:

> the postcolonial archive cannot be merely a collection of new artifacts reflecting a different, subjugated history. Instead, the postcolonial archive must directly address the problem of the endurance of the otherwise within – or distinct from – this form of power. In other words, the task of the postcolonial archivist is not merely to collect subaltern histories. It is also to investigate the compositional logics of the archive as such: the material conditions that allow something to be archived and archivable; the compulsions and desires that conjure the appearance and disappearance of objects, knowledges, and socialities within an archive; the cultures of circulation, manipulation, and management that allow an object to enter the archive and thus contribute to the endurance of specific social formations.

Combining Povinelli's appeal to engage with archives (in general) from a postcolonial point of view with Risam's urge to bring postcolonial thought and practice into digital humanities, I argue that an engagement with digital archives must include archives in the post-colony. We need to point to the blind spots, and bring postcolonial practice – both the investigation of prevailing logics and the postcolonial stakeholders' take on digital archives – into focus.

In the last ten to fifteen years, we have seen some remarkable contributions of digital anthropology to postcolonial thinking for archives and museums. Important impulses have come from, among others, Jane Anderson and Kimberly Christen (2013) on legal considerations, Christen (2008) on database structuring, and the 2013 double issue of *Museum Anthropology Review* (Bell et al. 2013), which investigated means and theories of digitization for ethnographic collections. Faye Ginsburg (2008) rightly argued that 'rethinking the digital age' from a postcolonial point of view needs to include Indigenous interests and knowledge systems. Ten years later, Geismar (2018: 11) urges us to question digital objects in museums as novel, stand-alone formats. Rather, their contexts and materialities 'exist in a long-standing continuum or process of mediation, technological mimesis and objectification'.

To show these processes in a post-colony, rather than the better-represented settler colonies, I investigate Indian digital archives. Contemporary India is a key context when considering digitization as and for sociopolitical change. The colonial provenance of ruling people still resonates in the now independent nation. This can, for example, be traced in jurisdiction, where copyright rules have been amended several times since their formulation in 1957, but date back to British rule and are a colonial legacy of British/European concepts of intellectual property. Historical interlinkages between Europe and the subcontinent also resonate in the contemporary formulation and implementation of administrative ideals (see chapter 2).

At the same time, India has become a leading nation for the IT industry. Indian information and communication technology (ICT) industries have, particularly in the 1990s and 2000s, provided a highly valued export commodity, making India a global player in the information economy (Sen 2016). The country's economic liberation after 1991 also led to widespread construction of IT infrastructure, allowing more than 718 million Indians today to be connected to the internet (TRAI 2020). India's extensive digitization is governmentally supported, to the extent that it can be criticized as a hype about the power of digital media to transform all aspects of society (Sneha 2016: 4). India's ICT success story has also prepared the ground for the country's ICT for development (ICT4D) ambitions, culminating in the national government's push for the digital distribution of government services and the introduction of Aadhaar, the unique identification number storing residents' biometric and personal data in a digital citizenship archive. With Aadhaar being only the most prominent of its digitization projects, the Indian government has demonstrated that it intends to implement state power over its citizenry through digital technology, which is at the same

time a new market, a form of communication, access, surveillance and control (Nair 2018). As the Indian nation increasingly went online, the internet has had a serious effect on political, social and cultural life, as studies of social media in South India, or of the internet's role in the 2014 elections that brought Narendra Modi to power, demonstrate (Schroeder 2018; Venkatraman 2017).

This context compels us to think of postcolonial digital archives anthropologically, beyond Indigenous ontologies and knowledge systems, and outside leading heritage institutions. Despite India's nationwide efforts and developments in ICT, it still remains subject to the digital divide. Access to the internet and digital device penetration is significantly lower in rural areas (Kumar 2014; Pathak-Shelat and DeShano 2013), and Indigenous takes on digital heritage are sparse.[3] It comes as no surprise that digitization in India has a stronghold in the metropolises of the country. Despite not originating from the most marginalized places of Indian society, digital archives based in Delhi or Mumbai still qualify as postcolonial practice, albeit coercing us to attune our understanding of postcolonial demands from being foreign affairs or Indigenous issues to stressing national and heritage sector politics and its deficits (see chapter 5).

Anthropological accounts on archives are sparse, even more so on digital ones, which is surprising given the popularity of the archive as a trope and the continuous expansion of internet studies. Anthropologist Antoinette Burton (2006) edited archive stories, stressing that archival work is an embodied experience shaped by national identity, gender, race, class and professional training, and that ethnographic archival accounts have the capacity to move 'beyond naïve positivism and utopian deconstructionism, beyond secrecy and revelation, toward a robust, imaginative and interpretively responsible method of critical engagement with the past' (ibid.: 21). However, Burton (ibid.: 9) also agrees with Achille Mbembe that the archive needs a physical, architectural dimension to claim power and status, an idea I rebut.[4] Digital archives very much lay claim to power, as their contributions influence debates on the past – directed to the present and the future – in online and offline form, and partake in the production of 'history'. Anthropologically analysing them can help unravel these claims, a point that archival science supports through appeals for more ethnographic work in digital archives (Gracy 2004; Shankar 2004).

What we do find, however, are anthropological accounts of the internet. Heather Horst and Daniel Miller (2012), for example, brought together anthropological takes on how online engagement and interaction frame everyday life, influence politics, gaming, communication

and social networking. Concerning the digitization of heritage material, internet studies' interest in the sociocultural impact of the internet on individuals and society at large, and archival and museum studies' notion of how order and access to collections change, still need to come together. There is a need for 'a broader inquiry and theorization based on an encounter with the diverse field of curatorial practices, knowledge regimes and communities of agency operating "in the wild" [of non-institutionally bound digital curation]' (Dallas 2016: 449). We still need to find answers to questions of how heritage institutions actually implement digitization processes and how digital cultural heritage is 'curated', answers that go beyond statistical enquiries and mapping endeavours. This is where this book comes in, as it brings the process of curating digital heritage into view. In this reading, curating is comprised of (digital) archival practices, from collecting, preserving and creating order, to online dissemination, exhibiting and accessing archival material. This reading thus differs from archival studies' more narrow understanding of curating as collecting and preserving a collection (Dallas 2016). The broader definition of curating is more in line with museum practice, where a curator's 'curare' – her care for the collection – comprises collecting, preserving, researching, interpreting, exhibiting and enhancing.[5]

Digitization in heritage collections has also altered the understanding of what constitutes an archive. In chapter 1 of this book, I examine these understandings of museum and archival collections as storing, preserving and digitizing their photographs and objects.[6] I reflect upon the current stage of research concerning archives, and show archival mechanisms of exercising power through order and access. I conceptualize archives in a wider sense as repositories of collected items, focusing on representations of museum objects and photographic collections. The concepts of archives and museum collections have been in a state of flux (not only) since digitization entered the scene, requiring in consequence an examination of what power mechanisms of knowledge production are scrutinized through digitization and which ones re-emerge.

Furthermore, and returning to a more theoretical take on digital archives, the sixth chapter of this book, 'Digital Archives' Objects', explores the transformation of objects through digital technology. Digital objects also become rematerialized when used, so that online photographs, for example, function in digital archives as the basis for paintings, art installations and printed publications. As a matter of fact, the digital archives I analysed in this regard – the India Photo Archive/Aditya Arya Archive, Indian Memory Project and the 1947 Partition Archive – all convey a longing for analogue prints, books or buildings. This longing relates

digital cultural heritage to Indian concepts of materialism and legacy building. However, they also raise copyright concerns that evolve into moral questions, which cannot currently be satisfactorily answered for all stakeholders. Furthermore, such (re)appropriations open up questions about the materiality and durability of digital objects. They scrutinize the assumption of defined borders for material objects and of the immateriality of digital objects, and digitized (more than born-digital) objects function as border crossers, fostering the permeability of lines drawn between material and 'immaterial' objects. They also blur the distinction between copy and original, which in times of digital reproduction no longer exists in a rigid form.

This scrutinizing of the duality of copy and original provoked by digitization has a precursor in photographic reproduction. This is most fitting for this book, because digitization in the heritage sector usually means creating a digital photograph along with additional information as metadata. Photographs are thus a backdrop of this book; their different valuations as three-dimensional objects, memory devices, records, originals or reproductions inform the chapters. The fact that digital archives focus on historical photographs is also a result of the human-computer interface of the internet being in large part visually based. This favours photographs' quality as aesthetic and historical records. Roland Barthes (2009; Müller 2017a), in his well-known account of photographs as 'studium' and 'punctum', describes how we can not only trace information in a photograph, but also that seeing something – a person, a situation, fixed on celluloid or any other carrier material – that has been there at a particular place in time and is now here with the beholder can have a huge emotional impact. Photographs can and should be examined for their content and historical context, as Elizabeth Edwards (1992, 2011) demonstrates with her anthropological analyses of historical photographs. Photographs convey information, but are by no means objective visual representations of the past. Their position between reality (only something real can be 'written with light') and intention (the photographer decides how to frame and shoot) makes them easily graspable yet highly complicated at the same time. Taking different visual systems into account (Wendl 1996), photographs disclose themselves as more than mechanical reproductions. They are complex carriers of information, which in India, as Christopher Pinney (1997) argues, can also encapsulate visualizations of a dream world, applied in layers. Contemporary Indian photography still follows the visual systems Pinney noted in Indian photo studios, but has also developed massively along with the options that digital photography presents (Shah and Blaney 2018).

The digital archives that this book analyses operate everything from digitized historical photographs taken in India, to digital photographs taken of historical objects in Indian museums, to photographs of people taken during video interviews. All of these could be examined in detail as regards their form, function, relatedness to Indian visual systems and their online presence, which might substantiate Pinney's (2012) claim that all photography is part of a world system of photography. However, in these digital archives, the photographs do not stand alone, but are intertwined with extensive narratives or linked to a set of metadata used to search through the archive, and enmeshed in the networks that the internet is able to span. Their aesthetic value and functioning as a potential punctum are without doubt, but the following chapters explore digital archives as online databases. This includes their position between copy and original, between binary code and materiality.

I undertook field research for this book primarily in Mumbai and Delhi's National Capital Region (NCR), grounding my analysis on a total of more than twelve months of anthropological fieldwork between 2015 and 2019. This fieldwork included participant observation in museums and archives in India (and complementary participant observation in Germany) in the form of internships and visits, as well as formal interviews and informal conversations with heritage practitioners, experts and users – again mostly in India, and additionally in Germany and the UK. In this way – always introducing myself as a university researcher and being female, German and white – I talked to more than four dozen directors and digitization stakeholders in the Indian heritage sector, and worked for several consecutive months helping three digital archives in Delhi and Bombay with their daily routines. I was an intern with the 1947 Partition Archive, Indian Memory Project and the India Photo Archive, being entrusted with everything from researching and visiting potential funding bodies, to proofreading. The internships allowed insights into the practical implementation and everyday challenges of making digital archives, of keeping them up and running, but also into the day-to-day challenges of working in small teams or individually in an area that sits at the fringes of both IT work and archival work. The semi-structured interviews and informal conversations provide more focused accounts of digitizing museum and archival material, albeit in an orally reproduced manner that allows narrators to interpret performed action before describing it, and also to modify or alter action through careful wording. Working anthropologically on the ground with digital archives sheds light on the rationale and established scripts as well as the glitches when actually digitizing and disseminating online.

Furthermore, this book is based on digital ethnography, which I conducted between 2015 and 2019.[7] This is less oriented around Tom Boellstorff's (2015) participant observation in an online environment, because I rarely actively participated in online conversations, but read and observed them instead. However, I examined online archives and used them as information repositories, and closely monitored new entries and the comments and conversation that emerged here and on social network sites. As digital media practices are inseparable from 'offline' practices (Pink et al. 2016), reading the online archives as shown on the websites allowed me to correlate their front-end appearance to the creators' work. The applied method is thus geared towards John Postill and Sarah Pink's (2012: 128) social media ethnography, as I traversed online/offline contexts and developed everyday online routines, yet without actually 'participating and collaborating in social media discussions'.

Overall, the book provides a novel account of what archives in digital times entail. While also dwelling on the questions of the effects of digitization in regard to a varied materiality, the book goes beyond philosophical theorizing of archives as a digital medium. It departs from the reasoning for, objections to and best-practice guidelines for digitization in the cultural heritage sector, and turns to the *practices* of digital archives. It understands digital archives as a medium in the making and consequently tries to understand the actors and processes involved in their creation, set-up, curation and use. With a focus on archives from India and born-digital, community-based archives, it broadens a view of digital archives that has for too long been centred on North America, Europe or a few remarkable examples in societies with strong Indigenous communities. Turning to India allows us to see both global tendencies as well as regional characteristics in digital archives, and the way cultural heritage in online repositories changes our ways of dealing with the past.

The book's chapters can be read individually, as each deals with a different aspect of arguing for, conceptualizing, implementing and using digital archives. However, as chapters 3 to 5 draw on the same case studies, reading these together provides a thicker description and a deeper understanding of Indian digital archives. Drawing on examples from the Indian subcontinent, and enhancing or contrasting these with European ones, the book neither provides a mapping nor functions as a best-practice manual. It rather investigates selected examples in depth, conceptualizes these as part of digital archival practices, and thus assists in building a more profound understanding of digital archives, portrayed as a means of encoding culture in digital form.

Notes

1. For a list, see https://www.indianmemoryproject.com/archivedirectory/ (accessed 16 May 2020).
2. This led Robin Boast and Jim Enote (2013) to argue against the term 'virtual repatriation'.
3. However, some digital archives include Indigenous topics, for example www.sahapedia.org.
4. Unless we include the programming of a digital archive as an architectural dimension.
5. See also the museum definition by the International Council of Museums, https://icom.museum/en/activities/standards-guidelines/museum-definition/ (accessed 28 October 2019).
6. Digital archives can also refer to written documents or other formats, and many of the findings of this book can be applied to those. However, I will not draw on examples from text archives, and will omit particular features like full text search or the relation to libraries.
7. Here, again, my status as a female white German researcher played a role. Despite the idea of the anonymity of the internet (most prominently illustrated by Peter Steiner's cartoon 'On the Internet, Nobody Knows You're a Dog', published in *The New Yorker* on 5 July 1993), online interaction – not only in the context of research – inevitably requires a revelation of (parts of) your identity.

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