
FAIRPHONE

CURATING DIGITAL IMAGES: ETHNOGRAPHIC PERSPECTIVES ON THE AFFORDANCES OF DIGITAL IMAGES IN MUSEUM AND HERITAGE CONTEXTS

CHRISTOPH BAREITHER, SHARON MACDONALD, ELKE GREIFENEDER, KATHARINA GEIS, SARAH ULLRICH, VERA HILLEBRAND

ABSTRACT | This paper provides an overview of the DFG-funded research project Curating Digital Images: Ethnographic Perspectives on the Affordances of Digital Images in Museum and Heritage Contexts, part of the DFG Priority Program The Digital Image. First, we outline the project's theoretical grounding in affordance theories and its attention to practices of curating digital images before providing two ethnographic examples from our project's main areas of work. These examples show how lay users shape their encounters with museum objects by employing digital image technologies and social media, creating new relationships between museums and everyday life. Next, we describe a new methodological approach that brings together ethnography, eye-tracking technology, and information science to study visual perception and practices of looking in digital curation. In our outlook, we indicate five key affordances of digital images for curatorial practices that we consider over the course of our project.

KEYWORDS | contemporary visual culture, digital/digitized, photography, ethnography, eye-tracking

"#museum" has appeared over 20 million times to date on Instagram alone,[1] Google's "arts and culture" project cooperates with over 2000 institutions,[2] and the web portal Europeana[3] contains more than 58 million digitized artefacts from museum collections—the ubiquity of art images online is transforming the ways in which visitors encounter and experience museum spaces and objects. The research project Curating Digital Images: Ethnographic Perspectives on the Affordances of Digital Images in Museum and Heritage Contexts examines this transformation, bringing ethnographic perspectives to bear on practices of digital curation. The project is based at the Centre for Anthropological Research on Museums and Heritage (CARMAH) at the Humboldt-Universität zu Berlin and is part of the DFG Priority Program The Digital Image. Led by Christoph Bareither, Sharon Macdonald, and Elke Greifeneder, the project combines the expertise of CARMAH with approaches from media studies, digital anthropology, and information science.[4]

The project draws on affordance theories to explore how the digital image, through its specific potentials and limitations, enables particular practices of digital curation, especially among laypeople. What is allowed or encouraged by images in digital form? Two interconnected empirical studies explore these practices ethnographically. The first, by Katharina Geis, examines how and to what ends users of digital image archives view, search, sort, alter, and rearrange

digital images. The second, by Sarah Ullrich, concentrates on the digital image practices and social media activities of museum and heritage visitors. The two ethnographic studies are complemented by an innovative eye-tracking study conducted by Vera Hillebrand and other PhD researchers at the iLab at the Berlin School of Library and Information Science.

Besides collecting valuable new empirical data for research and practice, the project aims to contribute to the conceptual and theoretical debates arising from The Digital Image program funded by the German Research Foundation. From an ethnographic perspective, the particularities of the digital image can be understood only in relation to the practices in which they are embedded. The answers to the questions "What is the digital image?" and "How does it differ from the non-digital image?" cannot be found, therefore, in theoretical reflection alone but, crucially, by examination and analysis of their lives in use.

On the Affordances of Digital Image Technologies and the Practices of Digital Curation

Our project draws on affordance theories in examining the interrelations between digital images, museum spaces, and practices of digital curation. Developed by the evolutionary psychologist James W. Gibson, affordances describe the possibilities and limitations of material environments and digital technologies that make particular practices available with or within them.[5] Donald Norman explains the concept with a much-cited example: "A chair affords ('is for') support and, therefore, affords sitting".[6] Anthropological approaches to affordances, like the one we take in our project, highlight their relational nature. For instance, in Norman's example, the chair affords sitting only for humans (or, in some cases, for animals) whose bodies know what sitting is and how to sit. In effect, affordances always depend on the incorporated knowledge of living beings. What Pierre Bourdieu famously called the "practical sense"[7] shapes what particular environments or objects afford to us. Ultimately, affordances are never independent of practice.[8]

We use this relational concept of affordances on two levels. The one level looks at material affordances to identify what museum and heritage spaces and their objects afford to human actors.[9] For example, museum spaces can afford practices of learning; practices of remembrance; practices of enacting sensory, aesthetic, and emotional experiences; practices of engaging in social exchange; and many more. To clarify, the affordance-practice relationship is neither linear nor static. What particular museum spaces and objects afford depends on the visitors' particular situation and their understanding of how to engage in museum and heritage spaces. The second level looks at how the affordances of the digital image shape the relationships between visitors and museum spaces.[10] We use the term "digital image" not simply to denote images based on binary code, but as a shorthand for a wide range of digital technologies encountered in the field of museum and heritage, including devices (smartphones, cameras, computers), platforms (digital archives, social media, forums), and contextualization tools (captions and texts, hashtags, metadata). We ask how these digital image technologies create new potentials and limitations for visitor and user practices, and we follow these practices to study the lives of digital images in use.

The most crucial among these practices are practices of digital image curation. By this we mean both the curation *of* digital images and curatorial practices enacted *through* digital images—that is, what digital images allow or encourage people to do with them. Though we use the term "curation" to refer to the activities of lay users, we do not assume a precise equivalent to professional practices. Instead, the term allows us to ask whether lay practices follow similar principles and routines as those of professionals, as well as whether they adopt their meanings and values. Accordingly, we begin from a broad understanding of curation.[11] Curation is a practice whose task "is to make junctions, to allow different elements to touch",[12] an "activity of putting together" that involves selecting, organizing as well as "enabling, making public, educating, analyzing, criticizing, theorizing, editing, staging".[13] Such practices of curation are not restricted to museum spaces. As many scholars have pointed out, they have long become an integral part of our everyday lives—especially within digital societies.[14] By looking at what laypeople in the field of museums and heritage do with digital images and at what they say about it, we will be better able to define what constitutes curation as well as what it means to those who engage in it.

Our initial empirical work has identified several practices that are key to curation: (1) practices of looking, which include browsing and searching in digital spaces, visual perception, and its accompanying bodily movements in physical spaces; (2) practices of creating, selecting, and collecting, which include taking pictures in physical spaces and downloading, capturing, or bookmarking images online; (3) practices of editing and contextualizing, such as the use of professional editing software or social media apps; (4) practices of displaying and sharing on online forums, personal archives, and social media platforms; and (5) practices of networking and circulating through shares, reposts, comments, hashtags, up/downvotes, and like. As will become clear below, we regard these practices not as distinct but as enmeshed elements in the curatorial process.

Work Area 1: Digital Image Archives

For several years now, many museums and heritage institutions have heavily invested in digitizing their collections and making them publicly accessible online. Now, people can browse museum collections from all over the world any time they want. Millions of images are available to explore and view on museum websites and web portals such as Europeana, the largest European digital archive for museum and heritage objects and a partner of our project. Many institutions provide open access to their resources, but the question of who uses the archives and what they actually do with the digital images remain largely unexplored. Our project aims to help find answers beyond user demographics and general usage data, offering ethnographic insights into how digital archives afford new kinds of museum experiences and how digital images become part of the daily life of their users.

Our ethnographic research in this work area has mainly been conducted online and, so far, includes participant observation, qualitative interviews, and the analysis of social media posts and other images and texts. Participant observation has consisted in active participation in the curatorial practices specific to each platform and website, with the aim of better understanding its affordances and communities. We have also contacted users via messenger systems or email to ask how digital curation became a part of their everyday lives.

The exploratory phase of our ethnographic fieldwork followed the paths of digital curation through the Web, leading us to social media platforms such as Instagram, Reddit, Facebook, Pinterest, Tumblr, and Twitter. Many users on these sites share visual museum content as they post accompanying texts and connect with other users. But the websites are only a starting point for understanding lived curatorial practices. While there are some practices that are enacted solely online, many also find their way into physical environments. Because "our online and offline lives [are blended] into an inseparable mesh of connections," Christine Hine writes, "fieldsites are not easily located either online or offline but involve tracing networks of connection through online and offline spaces".[15] The interconnectedness of the digital and physical spheres is of particular interest for our project. How exactly does this entanglement occur? How do users interact with and talk about digital images with others?

Let us consider an example of the interconnections between digital and physical environments created through curatorial practices. One interviewee, Anya, told us that she browses digital archives for patterns to use in her work with textiles. Below is an artefact from the British Museum (fig. 1) that Anya drew in her sketchbook (fig. 2), one of many elaborate pen drawings it contains. By returning the digital representation of a material artefact to its physical form, her curation transcends the boundary between digital and physical space. "Sometimes," Anya explains, "I will pick things just because they are pretty and interesting, and the story behind objects is good to know…because it can give inspiration in a more general sense." For Anya, the digital archive of the British Museum is more than just a museum display case; it allows users to browse objects, zoom in on details, and collect background information.

In addition to making drawings from her museum collections, Anya posts her work under the hashtag "inspiration" on Tumblr. With its options for collecting and sharing digital artwork, the platform is popular among art and history enthusiasts, who use it to create shared archives of exciting images. This complex system of exchanging, downloading and identifying images, transforming them into knowledge, and creating new art exemplifies the surprising journeys that digital images can undertake through practices of digital curation.

Figure 1. An Iznik dish at the British Museum, ca. 1625–1650 © The Trustees of the British Museum.

Anya's are just one of many curatorial practices afforded by digital image archives that we have observed during the first few months of fieldwork. The other practices we came across include making digital art, using images as inspiration for creative works, lending support to historical arguments, expressing feelings, and sharing knowledge with an interested community. We also observed educational practices, such as teachers who use digital images in lessons and hobbyists who create tutorials for making GIFs and recreating historical costumes or artefacts from archival images. The digital image technologies we study in this work area afford the creation of personal archives of inspirational or useful images, the enacting of aesthetic experiences, the gaining and sharing of knowledge, and connecting on shared interests through posting, liking, and commenting.

Work Area 2: Social Media and Visitor Practices

Another area where the affordances of digital image technologies are having a transformational effect is the experience of visitors in physical museum and heritage spaces. Digital photography and editing apps now allow museumgoers to capture, select, change, optimize, and sort what they see. Later they can contextualize the digital images on social media platforms with comments, hashtags, hyperlinks, and emojis. Our second project work area brings together two interrelated studies to illuminate very different dimensions within these practices.

The first study draws on ethnographic work examining practices of digital curation at Berlin's Memorial to the Murdered Jews of Europe.[16] It sheds light on how digital image technologies allow visitors to curate their "emotional knowledge of the historical".[17] Here, digital image technologies afford the presencing of the past[18] through the merging of epistemic and emotional practices that draw connections to the memory of the Holocaust. The published results of this research are the basis for a larger and still ongoing study of visitors' practices of digital curation in art museums and galleries.

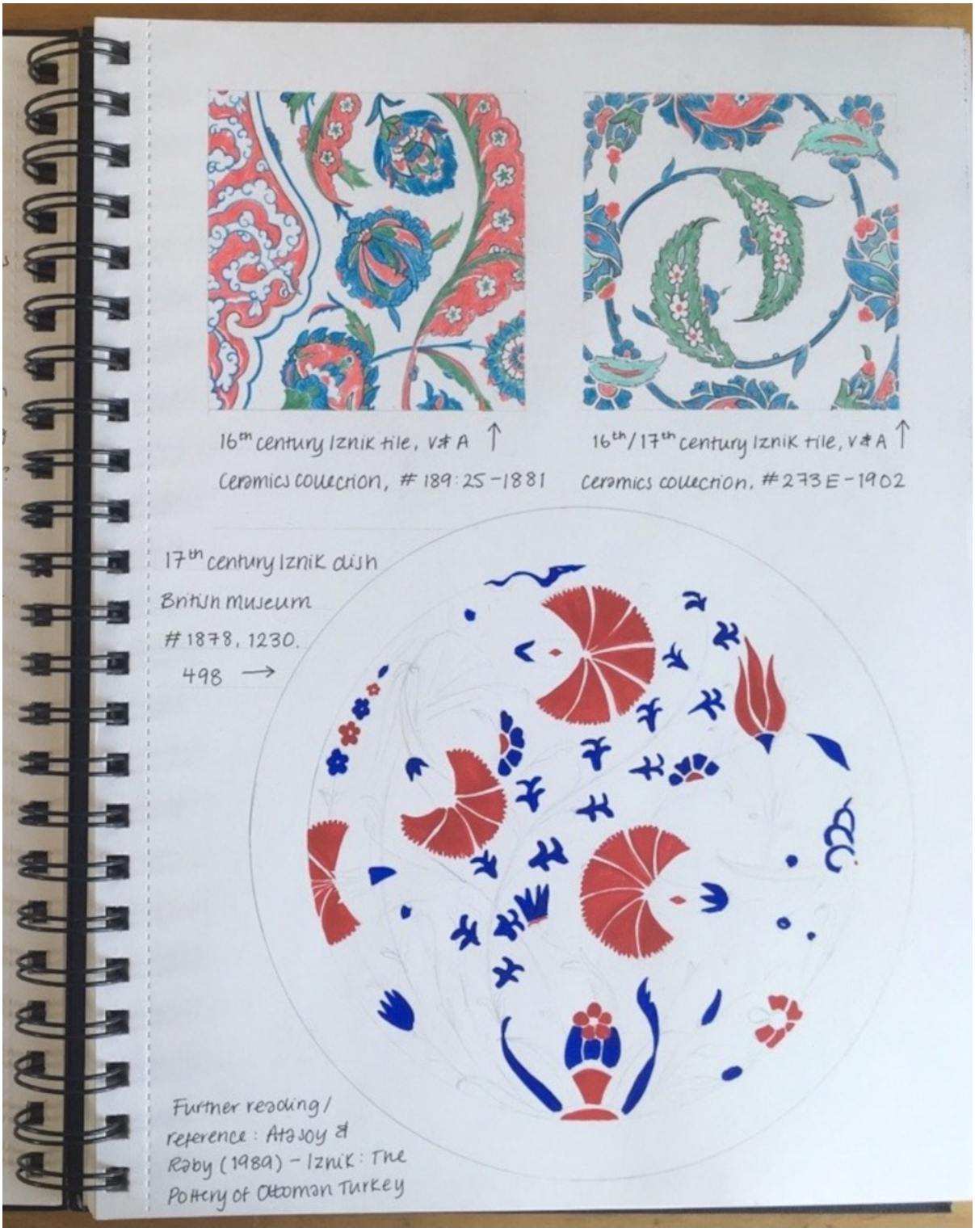

Figure 2. A page from Anya's sketchbook inspired by the above Iznik dish.

So far, this second study has considered social media practices that "[build] socially acceptable profiles and behaviors within each platform" via sharing pictures, liking, commenting, and participating in virtual museums so as to establish a "co-presence".[19] The exploratory phase of the project found that the lay curation of artwork from museums is strongly shaped by the affordances of social media platforms. By focusing on Instagram, in particular, we were able to target the collection and analysis of social media posts to complement our detailed interviews with museum visitors.

One notable early finding is that museum visitors often curate their experiences with on-site digital self-portraits, which point to the role of bodily positioning and movement in lay curation.[20] Through sharing images of their bodies with others on social media platforms, the visitors join a "language of online belonging"[21] that articulates everyday experiences in dialogue with digital publics. The finding raises many questions: Do images in which visitors position their bodies in proximity to artworks change their perception of art and, if so, do they value the art more – because, say, their sense of personal connection or ownership is greater? How are exhibited objects made meaningful through the physical presence of visitors? How does the curation of museum self-portraits on social media platforms place art in personal narratives and alternative contexts? And how is value renegotiated by photographs that interweave museum spaces with everyday contexts?

One interesting practice of physical engagement that we have identified is the engagement with museum spaces and exhibits through "dressed-to-match" fashion. Figure 3 provides an example: a museum visitor poses in front of artworks dressed to reflect their aesthetic qualities. As a cultural practice, of course, fashion is not merely about clothes and accessories; it is a product of complex synergies between material, discourse, and action.[22] The dressed-to-match practice disrupts or breaches the boundaries between different forms of cultural expression: between high art and the more quotidian world of fashion, between generations, and between the spaces of the gallery and popular online sites. As one interviewee told us:

> *For me fashion and traditional art forms are two of the same kind. I use both to express myself and I try to carry the art that I see into the real world and I do so by wearing certain clothes. Not many young people go to art galleries these days, but almost everyone uses Instagram, I have always dealt with art and I went to a luxury school, so I know my way around the artistic world very well…I want to share my experiences.*

While museums and art galleries are places whose complexity is thought to be graspable only if visitors have acquired a deep understanding of art and art history, fashion and media use are understood as areas of participation limited only by an individual's everyday knowledge. Accordingly, dressing to match can be seen to enact the transition from an exclusive to a generally accessible form of art experience.

Highlighting the similarities between artworks and clothing creates new connections between museum spaces and visitors' everyday lives. The digital image practices that result communicate artistic knowledge, aesthetic preferences, shared ideas of taste, and value attributions. The digital curation of art exhibits and their photographic depiction and online display in relation to visitors' bodies are more than mere self-representation against a pleasing backdrop. Instead, by drawing connections to museum spaces and visitors' bodies, digital image technologies afford the generation of visual meaning and renegotiate the value of art experiences.

An Innovative Methodology Combining Ethnography and Eye Tracking

If curation is a practice enacted through bodies and their incorporated knowledge, we also need to account for practices of looking.[23] How individuals look at the material environments of museums and heritage, and how they look at and through the user interfaces of digital image technologies, is integral to the digital curatorial process. Likewise, the ways in which bodies are trained to perceive, appreciate, or ignore particular aspects of the world shape the connections made in curatorial practices. But fieldwork, interviews, and other ethnographic approaches have a "blind spot." Ethnographers are unable to directly observe practices of looking in their detail and complexity. To address this, our project has designed an innovative methodology that combines approaches from ethnography

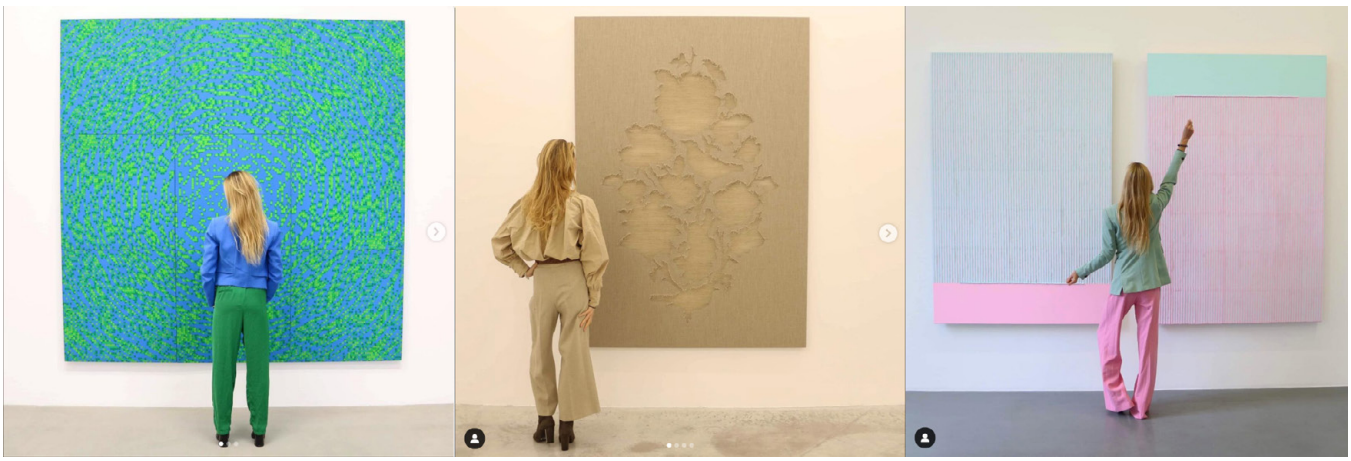

Figure 3. Salomé Montpetit; matchwithart; https://www.instagram.com/matchwithart; screenshots of matchwithart (2019–2020); engaging with exhibits and museum spaces through fash-ion.

and the eye-tracking technology used in library and information science. The latter discipline has deployed eye tracking in studies of digital libraries, in analyses of affordances, and in research on museum visitors' perception of museum spaces.[24]

In Curating Digital Images, the iLab at the Berlin School of Library and Information Science (IBI)[25] brings in a range of modern eye-tracking technologies capable of giving insights into sensory perception and facial reactions during practices of digital curation. Modern eye-trackers work with infrared light that creates a reflection in the eye and a camera that records the reflection. Eye-tracking researchers collect data on eye movements (known as saccades) and identify points of fixation. Described as the "process of determining where someone is looking",[26] eye-tracking can provide information on visual awareness and perception. As Sumartojo et al. argue, combining eye-tracking with ethnography can help "reveal a process of contextual and embodied looking, in which people make sense of the visual aspects of their surroundings using much more than visual information".[27] Eye-tracking adds a new layer of sensory analysis to ethnography, while ethnography contextualizes the results from the eye-tracking. The combination represents a new approach for understanding practices of looking in the curation of digital images.

For our research on digital image archives (work area 1), we will work with a 60 Hz eye tracker model by Smart Eye called the Aurora Remote Tracker. This device records the eye movements of individuals as they scroll through digital archives for artefact or artwork images. Besides determining how long a person gazes at different points on the screen, the software can generate heatmaps indicating the areas of a website on which users focus the most attention. By considering the pupil movements and relating them to our ethnographic findings, we hope to acquire more knowledge about which practices of looking are afforded by digital image archives, and how they relate to digital curation.

For the study of visitor photography and social media practices in physical museum spaces (work area 2), we will use Pupil Invisible, an open-source mobile eye tracker introduced in 2019 that looks like a regular pair of glasses but is connected to a camera and a smartphone. The device will allow us to capture videos of how visitors visually perceive the museum space, and how they interact with it as their attention shifts from their digital device to exhibited objects and back. This mobile eye tracker records the museum environment and then superimposes the points of fixation on the video. In contrast to older head-mounted trackers, for which participants had to carry backpacks with heavy notebooks, the Pupil Invisible device is unobtrusive, causing minimal obstruction and allowing visitors to engage in routine practices at the museum.

Drawing on affordance theories, we will use the eye-tracking data to consider how digital devices potentially reshape image perception. We also plan to expand our approach to include photo and film elicitation.[28] Using these techniques, we will examine the captured videos together with study participants after their museum visits, allowing

Figure 4. Vera Hillebrand explaining eye-tracking heatmaps; the red areas indicate eye fixations.

them to see their own looking behavior while asking them about their reactions. In this way, we hope to bridge the gap between ethnographic research and information science in order to gain new insights into visual perception as an integral part of lay curation.

Implications and Outlook

While we are still at an early stage of our research, we have already determined a number of affordances emerging from digital images. As a tentative outlook, we present below a selection of the affordances we have identified, together with a brief consideration of their potentials for the theory and practice of museums and heritage.

1. The digital image affords *personal* curation. That is, it allows laypeople to customize their experience of museums and heritage through the selection, combination, and arrangement of particular artworks or other museum artefacts, sometimes in virtual environments of their own design. Within museum practice, a movement arose some years ago to provide visitors with a more personalized experience.[29] Various technologies have been deployed to that end, such as electronic tablets for visitors that provide alternative exhibition routes and information. A better understanding of the ways in which laypeople curate museum contents can surely contribute to more effective and interesting museum offerings, both online and on-site. But efforts to personalize the museum experience have elicited some criticisms. One is that it serves more to limit than to expand educational impact.[30] If visitors get to determine what they see, the argument goes, then they will be less likely to encounter content that challenges them and broadens their horizons. More empirical research is needed to determine whether this is the case, though some recently published studies do not seem to support the argument.[31] The reason for this may lie in a tenet of pedagogy, namely that learning is more effective when it is active. This concept has been widely discussed in museum studies,[32] and has been put into practice in a variety of ways.

Figure 5. left: Sarah Ullrich wearing the mobile eye tracker while taking a picture of an artwork; middle: the smartphone picture; right: a still from the video footage captured by the eye tracker, indicating the current focus of the eye.

2. The digital image affords *active* engagement. While personal curation may be said to be a form of active engagement, the degrees and forms of engagement afforded by the digital exceed what is typically associated with personalization. In particular, digital technologies enable numerous forms of active engagement, such as the possibility of nuanced practices of looking—zooming in closely to artworks, focusing on brush strokes and other details.[33] Bligh and Lorenz have noted how some technologies afford what they see as the central "Art Historical practice of *comparative viewing*".[34] They do not discuss the technologies that we cover here—these were still emerging when the article appeared—but such technologies clearly have an enhanced capacity to bring different images into proximity with one another. How far users engage in such activities, and the knowledge and expertise they develop in the process, has implications for museums and heritage both in terms of what they provide online—the resolution of images in online archives, say—and the digital technology they introduce on-site. This is also true for more extensive forms of active user engagement, particularly the manipulation of images. With digital technologies, users can cut up, recolor, expand, blur, draw, or superimpose other images on what they have taken from museums. While this is not entirely impossible by analogue means, it is much easier with digital technologies. The popularity of playfully reimagined digital images—which has grown even more during the COVID pandemic[35] —clearly shows that users relish this form of active engagement. An important question for theory and practice is the extent to which reimaginings encourage learning and interest in art.

3. The digital image affords *bodily* engagement. This affordance may seem paradoxical in that the digital is often regarded as standing in opposition to the material, as disconnected from the physical and embodied. But as noted earlier, bodies are very much present in digital images made in museum settings and in some of the archival digital images shared creatively online.[36] "Embodied experiences," Olga Hubard, in an essay from 2007, writes, "not only aid in the construction of knowledge, they also help make this knowledge more meaningful...[I]t is the body and the emotions that enable people to empathize to... lend their lives to a work of art...humanizing their aesthetic encounters... [Embodiment means that] the works they see will enter their lives in more significant and memorable ways".[37] Though Hubard does not mention the digital—she focuses on drawing and the corporeal emulation of sculptures or figures in paintings—our work strongly suggests that digital technologies produce new possibilities

for similar forms of bodily engagement. In the future, we will explore the emotional, humanizing, and memorable aspects of digitally mediated bodily engagement for individual and collective experiences.

4. The digital image affords "*socially distributed curation*".[38] As our work has shown, digital images enable lay curators to share, discuss, tag, and collectively arrange or manipulate images online. Through these activities, they create and curate not only digital images but also networks, groups, and communities of users with shared interests. Some have criticized technologies of personalization used in museums, arguing that they inhibit sociality.[39] But our findings so far indicate that the curation of digital images, far from limiting social interaction in museums, creates new forms of it. More knowledge about what encourages users to form and join networks, or the kinds of content they like to share and with whom can provide important insights to museums as they develop strategies for enhancing digital sociality.

5. The digital image affords the *disrupting and reshaping* of the status quo. Far from simply being reproductions of physical artefacts and artworks, digital images give users new forms of control and, in the process, allow them to transcend boundaries and hierarchies. How far such processes afford the crafting of genuinely new modes of apprehending and engaging with images is one of the key questions to which Curating Digital Images will contribute.

NOTES

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[2] "Partner with Us," Google Arts & Culture, Last Modified December 1, 2020. https://about.artsandculture.google.com/partners/.

[3] "Our Mission," Europeana, Last Modified December 1, 2020. https://pro.europeana.eu/about-us/mission.

[4] Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) – GZ: BA 6440/2-1 AOBJ: 660775.

[5] See James W. Gibson, *The Ecological Approach to Visual Perception: Resources for Ecological Psychology* (Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 1986). For an overview on the topic, see Christoph Bareither, "Affordanz," in *Kulturtheoretisch Argumentieren: Ein Arbeitsbuch*, ed. Timo Heimerdinger and Markus Tauschek (Münster: Waxmann, 2020), 32–55.

[6] Donald A. Norman, *The Design of Everyday Things, Revised and Expanded edition* (New York: Basic Books, 2013), 11.

[7] Pierre Bourdieu, *The Logic of Practice* (Cambridge: Polity Press, 1990), 66.

[8] Elisabetta Costa has coined the useful term "affordances-in-practice". See her "Affordances-in-Practice: An Ethnographic Critique of Social Media Logic and Context Collapse," *New Media & Society* 22, no. 1 (2018): 1–16.

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[11] See Sharon Macdonald, "Curatorship," in *Dictionary of Museology*, ed. Francois Mairesse (ICOM, Forthcoming).

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[13] Beatrice von Bismarck, Jörn Schafaff, and Thomas Weski, "Introduction," in *Cultures of the Curatorial*, ed. Beatrice von Bismarck, Jörn Schafaff, and Thomas Weski (Berlin: SternbergPress, 2012), 8–15, 8.

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[21] Meghan Lundrigan, "#Holocaust #Auschwitz: Performing Holocaust Memory on Social Media," in *A Companion to the Holocaust*, ed. Simone Gigliotti and Hilary Earl, 1st ed. (Wiley, 2020), 639–55.

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CHRISTOPH BAREITHER is Junior Professor of European Ethnology & Media Anthropology at the Institute of European Ethnology at the Humboldt-Universität zu Berlin and project leader of the DFG-funded project Curating Digital Images at the Centre for Anthropological Research on Museums and Heritage (CARMAH). His work focuses on the transformations of everyday practices and experiences enabled by digital technologies. He is especially interested in the fields of media and digital anthropology, museum and heritage studies, popular culture research and the ethnography of emotions. Currently he is working on and leading several research projects, in which he applies the approaches of media and digital anthropology to foster our understand-ing of media practices in the field of museums and heritage.

Correspondence e-mail: christoph.bareither@hu-berlin.de

SHARON MACDONALD is Alexander von Humboldt Professor of Social Anthropology in the Institute of European Ethnology at the Humboldt-Universität zu Berlin, where she directs the Centre for Anthropological Research on Museums and Heritage (CARMAH) and acts as project leader of the DFG-funded project Curating Digital Images. Her research focuses on questions of so-cial and cultural transformation, especially in relation to museums and heritage, about which she has published widely. In various projects she works closely with other academic colleagues in Berlin and elsewhere, as well as with a range of museums and other heritage organizations. Her most recent monograph is the co-authored Heritage Futures. Comparative Approaches to Nat-ural and Cultural Heritage Practices (UCL Press, 2020).

Correspondence e-mail: sharon.macdonald@hu-berlin.de

ELKE GREIFENEDER is Professor for Information Behavior at the Berlin School of Library and In-formation Science at Humboldt-Universität zu Berlin and co-leader of the DFG-funded project Curating Digital Images at CARMAH. Formerly, she was an Assistant Professor for Infor-mation Science at the University of Copenhagen. Her research focusses on the development of methodological standards for information behavior studies in digital information environments. She has been involved in a wide variety of information behavior projects from use and satisfaction surveys in libraries to user experience assessment in digital twins.

Correspondence e-mail: greifeneder@ibi.hu-erblin.de

KATHARINA GEIS is a PhD student at the Institute for European Ethnology at the Humboldt Uni-versität zu Berlin (HU) and a researcher in the DFG-funded project Curating Digital Images at CARMAH. Her research focuses on the use of digital images of artefacts and artwork from online museum archives.

Correspondence e-mail: katharina.geis@hu-berlin.de

SARAH ULLRICH is a PhD student at the Institute for European Ethnology at the Humboldt Univer-sität zu Berlin (HU) and a researcher in the DFG-funded project Curating Digital Images at CARMAH, where she studies digital image curation in visitor photography and social media practices.

Correspondence e-mail: sarah.maria.ullrich@hu-berlin.de

VERA HILLEBRAND is a research assistant at the research group Information Behavior at the Berlin School of Library and Information Science, where she has been doing her doctorate. She is re-sponsible for methods of human computer interaction in the iLab and the DFG-funded project Curating Digital Images. Her research interests relate to sociological topics in science, such as the international mobility of information scientists or the influence of age on user experience research.

Correspondence e-mail: vera.hillebrand@hu-berlin.de