From Digital (Art) Curation to Networked Co-Curating

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Digital Curating

In the mid-1990s I started working as a curator with an interest in digital art (at the time better known as media art, new media art, computer art, internet art, net art or net.art, software art, or time-based media art). Over the years, I came to see myself as a digital curator organizing all sorts of events with artworks that shared similar characteristics: They were performative, processual, networked, and/or ambiguous (Dekker 2018). I described digital art as a process of creation that is heterogeneous and involves incompatibilities, constraints, rules, and a certain amount of improvisation in which its own structures can be continuously re-negotiated. As such, digital art shifts from art as a discrete, stabilized, original, and/or authorial object to an artform that is performative, where the material properties must be in perpetual motion to be kept alive because they usually become obsolete and have to be migrated or emulated to continue functioning. It is also often distributed: With various parts of the artwork scattered across different spatial, temporal, and property regimes, different elements can be found in various collections or networks. Another characteristic is that they can be or are easily replicated or reproduced in different contexts and do not culminate in a final product or form. Instead, these artworks resemble a process (or network) in which the process provides value to what the artwork is or means. In this sense, parts of the artwork may also be regenerated, where fragments or details from one artwork may lead to new artworks. Finally, and perhaps as a consequence of these traits, these artworks shift from authorial artworks to art projects that are multi-authored or where authorship is obfuscated. While these characteristics have interesting consequences for notions such as authorship, authenticity, and ownership, they also have implications for the roles and functions of curators.[1]

[1] For more information about the shifts and their complexities within the context of digital

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Indeed, approaching digital art from this perspective, Gaia Tedone and I noticed shifts in the role of the curator, particularly in online environments, and considered the transformation from digital art curation to networked co-curating (Dekker and Tedone 2019). The notion of networked curating is characteristic of

> a collision of different interests driven by economic, cultural, and socio-political agendas, and can be framed as a new space of performativity: signalling a move from objects to processes. […] In other words, "networked co-curation" shifts the attention from what is produced to how it is performed under the socio-technical conditions and relations that characterise the current state of the Web. (Dekker and Tedone 2019.)[2]

In our article we explained how networked co-curating is a decentralized and collaborative alternative to the dynamics of cultural gatekeeping that are often part of art-world systems and many online platforms by analyzing how the role of the online curator moved from a figure of authority to being just one node in a complex socio-technical assemblage of human and nonhuman agents: A space where new relations between aesthetics and politics are possible, that acknowledges the increasing influence of algorithms and technology and the effects they produce on the structures of power and governance.

Digital Curation

A few years after the turn of the century, the terms *curator*, *curating*, and *digital curation* had become a hype: Everyone was a "curator" and anything could be "curated," from online marketing to coffee shops and energy bars. Of course, information science also dipped in to rebrand conventional terms such as *archiving* or *recordkeeping* as *digital curation*.

When I started working at the University of Amsterdam in 2016 in archival and information studies, I was surprised when my colleague, Charles Jeurgens, professor in archival studies, proposed developing a course on digital curation. His interest was triggered by the book *Curation* by Michael Bhaskar. But I was confused at the same time: Why would someone in archival studies be interested in or knowledgeable about digital curation? My confusion was due to my understanding of digital *art* curating, which I

curating, among others for notions like authenticity, authorship, and ownership, see Dekker 2018. In the current article, I focus on the function and agency of a digital art curator.

[2] The notion of networked curation is developed in depth by Tedone (Tedone 2019).

had considered to be my field of practice and expertise since the mid-1990s. Moreover, this was a field that I had always regarded and experienced as distinct from archival practices, albeit with interesting overlaps (for instance, in systems thinking and preservation practices). It wasn't until later that I started to see that there could be more productive overlaps and even synergies between these different types (or fields) of digital curating. This insight grew when working together with Tedone and curator/researcher Marialaura Ghidini on the project *The Broken Timeline*.

The Broken Timeline arose from an interest in sharing more information about online art exhibitions, in particular, born-digital art exhibitions. About ten years before we started our project in 2018, I had organized a working conference about collecting and presenting born-digital art in museums, posing the question: Why it was easier for museums to get an entire museum collection on the internet than to get a single work of internet-based art in a museum space?

As a prelude to the conference, I interviewed curators and artists who I thought were making interesting online exhibitions. I asked them all the same set of questions about their practice. I wanted to understand how they used these different spaces and how this affected their art, as well as the way they related to the users or visitors, and how they saw their own role as curators.

After the conference ended and the Web site stopped working, my interest in these online practices remained. Every now and then when I noticed interesting projects and had some time, I would send the same questionnaire to those involved. Over the years, my interview collection grew substantially, in tandem with the quantity and diversity of online exhibitions. In 2019, I approached a publisher, Valiz in Amsterdam, about printing the series of interviews as a book that included an analysis of the history of online curating (Dekker 2021). In this process, Tedone helped me sort out the final production phase of the book, and while collecting images from defunct or disappearing online exhibitions, we came up with the idea of including a historical timeline, something our friend and colleague, Marialaura Ghidini, had already started a few years earlier (Ghidini 2015).

We combined our efforts, knowledge, and experiences, and we started to fill online XLS templates with all the information about the exhibitions we could find, during which process we came up with archival descriptions, categorizations and metadata. Hence, I noticed the synergies between different types of digital (art) curations. We selected around 200 online

exhibitions and turned all the data into a Web site that was developed by the publisher.

As for the selection of exhibitions, we formulated several criteria: Prioritize projects that are Web-specific, for instance, which relied on intricate navigation or interaction modes or misuse existing platforms; disregard exhibitions that follow the conventional logic of "vitrine," archival repository, or straightforward display, and instead focus on attempts that challenge how online art is experienced; exclude collaborative projects that resemble artworks, even though the boundary is often fuzzy; list organizations engaged in a series of curatorial projects by the organization's name rather than as individual projects. Moreover, and based on these criteria, we thought it was important to emphasize the technical and social context in which these exhibitions were created and existed, because many reflected specific systems, platforms, and, therefore, aesthetics and tactics. To enable people to make connections between technical and social development, curatorial strategies and exhibition aesthetics, we added an extra column next to the exhibition's metadata for this particular information.

We were pleased with the publisher's willingness to publish *The Broken Timeline* as a book and create a dedicated Web site. We were less excited about the restrictions of the Web site, which allowed very little experimentation with the characteristics of the Web that we had focused on in the book and the timeline. Whereas we had imagined seeing all the information in an intricately layered construction in which the user could zoom in and through different levels of information, what remained was a replica of the two-dimensional book. It was useful and well designed, but it didn't reflect the practice we were proposing.

A few months after the release, another opportunity arose to emphasize the interrelations between the socio-technical constraints of the Web. Constant Dullaart, a Dutch artist who I also interviewed in the book, asked if we were interested in presenting *The Broken Timeline* on his online platform *distant.gallery* (Dullaart, n.d.). With only six weeks to go, there was little time, and many technical challenges, such as trying to embed existing Web sites on the platform or get older Web sites to function again in contemporary browsers. Yet these challenges became productive impediments. Intrigued by all the fragments we could find on the Web and on people's hard drives, and following a networked co-curating method, we wanted to see whether these slivers would still make enough sense to understand what was once there. The fragments that we collected and rearranged provided space: Figuratively, it opened a space to (re)imagine what was there when it all worked, and literally, the construction was similar to how

users tend to move around the web, i.e., via hyperlinks (Dekker, Ghidini, and Tedone 2023).

Curating Cultural Digital Heritage

In an attempt to better understand the impact of how cultural heritage in online spaces can be understood as a form of networked co-curating, and consequently may lead toward a transformation in the way cultural digital heritage performs online, I analyzed three projects that developed specific practices around the challenges and opportunities of preserving digital heritage. In particular, I focused on how conventional archival methods – or digital curation – such as standardization and contextualization of information as well as collaboration with or the involvement of users are influenced by technology, as well as how these systems can be used in a sustainable way. Moreover, recent literature on using machine learning or AI systems in archival practices (Colavizza et al. 2020), highlighted several topics. Because making use of AI is becoming increasingly important in archival practices, I decided to insert these topics in the AI system ChatGPT (ChatGPT#3) to see what would happen when juxtaposing these notions: Will they reinforce my ideas or propose new readings and approaches?

ChatGPT made three suggestions (August 2023). The first focused on *leveraging AI and machine learning*, describing how "these technologies can accelerate the availability of digitized content, improve search capabilities, and ultimately enhance accessibility." However, does this mean that "these technologies" also shift from standardization and normativity to enhance multiplicity and provide contextualization? What happens during the contamination process between humans and machines? The second suggestion related to *user-centric design*. ChatGPT responded that by "prioritizing user experience and conducting user research, archival organizations can tailor their digital platforms to meet the needs and preferences of diverse users." Indeed, intuitive navigation, responsive design, and personalized features can enhance accessibility and engagement, but in what ways does this truly involve users? Moreover, while heritage is technically being regenerated, does it really lead to an engagement and user involvement that brings about a fundamental change in the relationship between users and archivists/curators? Finally, *narrative exploration*: Here, ChatGPT mentioned how "instead of providing unstructured access, archives can offer guided narratives that lead users through curated journeys. These narratives may help users uncover specific themes, events, or perspectives within the archive, making the information more accessible and engaging."

Replicating the general belief in using AI to enable better access, it remained unclear how, where, and whose agency is accounted for in these processes. For instance, will these "narratives," as formulated by Saidiya Hartman quoting Fred Moten, enable a "resistance of the object" (Hartman 2008, 11)? With these questions in mind, I explored the evolving landscape of cultural heritage within the digital realm through three examples: *Dark Archives* (Erica Scourti, 2014), the fire at the National Museum in Rio de Janeiro (2018), and *Project Iceworm* (Anastasia Mityukova 2020).

Automated Digital Curation, or Leveraging AI and Machine Learning

Every millisecond, large numbers of digital documents are being shared on social platforms or distributed through e-mail servers. Aided by cheap data storage, easy access. and distribution mechanisms, these acts of blogorrhea – the excessive, compulsive, or stream-of-consciousness blogging about trivial things – provide unprecedented access to private lives, but they also offer opportunities to assemble large digital collections. What was once an expensive and to some extent privileged act of archiving has become the norm, at least for many.

Curious about the consequences of these changes, in 2014, I was asked by The New Institute (HNI) in Rotterdam to reflect on the ways their collection could be made more accessible. They were interested in two things: How to best visualize their digitized collections, which at the time was less than 10 percent of their holdings, and what to do with the born-digital archives they were receiving from architects. At the time, I was less interested in the various visualizations of digital collections, however, because generally these are subordinate to the technology used and the designer or the programmer. Instead, I proposed focusing on the challenges of online archiving, as in digital curation. One of the first issues I wanted to explore was whether, and how, conventional archival methods such as standardization and contextualization of information as well as collaboration with or the involvement of users were influenced by "new" technologies such as algorithmically automated archival systems. I approached the Greek-English artist Erica Scourti, who had a strong interest in the way archives, as data collections, are constructed and how those constructions tell a specific story.

For some time, Scourti had been investigating different types of automated programs as well as what it would mean to outsource her autobiography (Dekker 2019). As part of the project at HNI, I invited her to create a work around digital online archiving. She took up the challenge and

started working on *Dark Archives* (2014). She was particularly interested in how visibility and invisibility – or darkness – relate to online archiving. Aiming to see what escapes classification in an era of increasingly intelligent auto-classification systems, Scourti wanted to explore the ways in which online storage vaults, such as Google Photo, YouTube, or Flickr, and their auto-editing software and data-processing algorithms, affect the data of individual users.

Dark Archives consisted of two phases. In the first, she uploaded her entire fifteen-year personal media archive of daily (digitized) photos and images, videos, and drawings to Magisto, an online auto-editing and archiving app. Magisto's algorithms analyzed all the uploaded videos and photos on three levels, visual analysis, audio analysis, and storytelling. Based on the "results," it edited everything together in a short video animation. As a user, you don't really know how these algorithms search and categorize the images, what the exact parameters are, or what the algorithm is looking for. Scourti was interested in this ambiguity, or randomness, of tracing, retrieving, and creating new content, and during the second phase of the project, she used Google Photo on her data, which employs a similar algorithm. In an attempt to address the "missing media," she asked five female authors to search her Google Photo page with keywords of their choice and then speculate on and write captions for what they imagined to be the missing set of media for that search term. By asking the writers to imagine the way an algorithm works, the project tried to get at the core of what a nonhuman thought process or logic may be. Scourti then matched their captions with media from her archive and created a final series of videos.

Dark Archives shows how online archiving is never stable – at least when using automated editing systems or even certain platforms. Content moves between different systems, sometimes resurfacing, while at other times it may present itself in a completely changed context. The semiautomatic algorithms insert an additional, unfinished, and semifictional quality, yet how they retrieve their input is unknown, unpredictable, and invisible to most of us. *Dark Archives* points to the issues that arise when image archives can be parsed, and potentially monetized, once in the hands of corporate platforms. It also explores how new technologies inscribe knowledge in different ways and how they narrate the lives of their users. It also alternates between human and machine logic and agency, in the process creating a form of human/machine storytelling.

Networked Co-Curating, or User-Centric Design

On September 2, 2018, a fire destroyed the National Museum in Rio de Janeiro and with it the museum's valuable collections. In this case, automated systems weren't utilized to rebuild the collections of the museum, but rather the networked labor of many users. This happened in different ways. On December 13, 2018, Google Arts&Culture sent out a press release about their virtual recreation of the National Museum, which they had made in 2016 but never presented. Under the guidance of Google Street View Camera, people could have a digital experience of some parts of the museum. On September 2, while the fire was still raging, various individual users, later helped by Wikimedians, published calls on social networks asking people to upload images to Wikimedia Commons. In just three days, several thousands of images were uploaded to a generic category on Commons, where a group of experienced users curated the content and discussed categorization strategies. This eclectic digital collection provides new opportunities. As artist and researcher Ofri Cnaani summarized:

> The remaining collection erases and highlights simultaneously, remembers and forgets at the same time, and offers its own logic as a site of collective witnessing. The personal file system goes against any grand attempt at classification and joins a whole media archaeology of failed classification, whether the failure is acknowledged or not. The surviving digital collection encapsulates an emancipatory potential that refuses known indexing and offers an "uncivilised" body of images. (Cnaani 2023, 92.)

Indeed, being stored on Wikimedia, each image came with an "ecology of images": Objects photographed under glass contained reflections of its camera-wielding owner. Strange details in the background revealed the intimate features of their owners. A girl with a purple stuffed monkey around her neck (dino e sofia) became a new protagonist of the museum. Moreover, every file was created using methods that drifted far from institutional archival standards. While these images are broken and partial, they are now also connected – they form a network that is co-curated between humans and technologies. As argued by Cnaani, the "digital residues" of the museum can be understood as two modes of documentation:

> The first, GA&C's tour of the museum, is a large-scale, semi-automated digitization system that is developed and owned by [a] mega corporation using the same devices and algorithmic mapping techniques to document cities, tourist sites, and museums. It shows how collections are read by forms of algorithmic governmentality. The second is a user-generated documentation system that

> represents the institution and its holdings via the eyes of museum visitors. The images are a portal to other metadata as they are slowly aggregating into an ecology or network of other data points. (Cnaani 2023, 88.)

Cnaani concludes that this distinction highlights two other shifts: A shift from a visitor/the audience to the user and a shift in the abstraction of the "collection," which no longer has to be understood as a closed system that can be indexed but rather as a set of interfaces between many collected artifacts that are forming new sets of relations, often activated by users (Cnaani 2023, 88). Finally, Cnaani herself, as the artist, made a video installation, using the digital remains as a site of artistic intervention. This is a third mode of documentation that takes an artistic and speculative approach toward an event in which she narrates and provides an imaginary about these fragments and what their depictions, systems, and users may convey.

Contextualisation, or Narrative Exploration

The notion of speculation or imaginary is also taken up in Anastasia Mityukova's ongoing *Project Iceworm* (2018–). Mityukova's story starts in 1951, when Denmark and the United States of America signed the so-called Greenland Defense Treaty. The USA would assist Denmark – the colonizer of Greenland – in the necessary defense of the territory. In 1959, during the Cold War, the USA built Camp Century in northwest Greenland. This large military/scientific research base was situated approximately 200 kilometres east of Thule, where the main U.S. airbase in Greenland was located. Under the pretext of building an Arctic research laboratory, large tunnels were dug to house laboratories, a hospital, a cinema, and a church – all powered by a first-generation portable nuclear reactor. Yet the site was really a network of tunnels to store around 600 missiles.

Three years after work began, the engineers realized that the glacier supporting the tunnels was moving much faster than predicted and that the structures under the permafrost were collapsing. In 1967, the project was completely abandoned. The nuclear generator was removed, but the nuclear waste, PCBs, and other organic waste remained.

On January 30, 2020, I met Mityukova at Fotodok in Utrecht where her *Project Iceworm* was part of the exhibition *Joint Memory: Photographic Fragments*. In addition to her exposing Camp Century, its history, and current and potential future impact on the environment, I was intrigued by her infiltrations in closed Facebook groups to question the people who

had worked at the base and by how the platform allowed her to gain access to photographs and personal stories. By emphasizing the constructed nature of photography as a medium as well as its contemporary circulation and positioning herself as a storyteller who uses archival material to refigure the past into the present, she turned fragmented data into a tangible performance that visitors could read and experience in various ways. With the project, she shows how collective memories of historical events are also formed through the systems in which they are created (a camera) and distributed (social-media platforms), each imbued with its own agency. To emphasize the performative and unstable character of this method, she uses the metaphor of ice as a medium of memory, because ice preserves information about the world for tens of thousands of years. The outcome of her project in the gallery can be seen as a form of digital art curation. However, her layered process of constructing the (ongoing) project is closer to networked co-curating, a mode of doing that is dependent on but also collaborates with the systems that are used whether these are humans or technical infrastructures.

Similar to the examples described, by understanding the working of the system, and hence by embracing the incompleteness and fragmentary nature of the systems she relies upon, Mityukova molds them to fit her goals. Doing so is not merely as an act of defiance but rather as a political act to emphasize the instability and malleability of what it means to co-curate, as well as the destructive power it has when the system's nature, construction, and use remain unquestioned. This is close to how Saidiya Hartman has framed her way of reconstructing the past:

> By playing with and rearranging the basic elements of the story, by re-presenting the sequence of events in divergent stories and from contested points of view, I have attempted to jeopardize the status of the event, to displace the received or authorized account, and to imagine what might have happened or might have been said or might have been done. By throwing into crisis "what happened when" and by exploiting the "transparency of sources" as fictions of history, I wanted to make visible the production of disposable lives … to describe "the resistance of the object," if only by first imagining it. (Hartman 2008, 11–12.)

Hartman talks about the importance of "narrative restraint," the refusal to fill in the gaps and provide closure. A method that does not *give voice* to the enslaved, but rather imagines what cannot be verified – the realm of experience that is situated between various zones. Her approach therefore provides a history of an unrecoverable past. It is a narrative of what might

have been or could have been. It is a history written with and against the archive, a counter-history at the intersection of the fictive and the historical.

Conclusion

What are the implications for cultural heritage practices in online spaces when acknowledging the notion of networked co-curating as the entanglement of humans and nonhumans, in which contamination, shifting forms of agency and regeneration are key concepts? Scourti tried to open the hidden space, or dark archive, and showed how content moves between systems, sometimes resurfacing, while at other times presenting itself in a completely changed context. Showing how new technologies inscribe knowledge in different ways and how they narrate the lives of their users, by alternating between human and machine logic and agency, the project also emphasizes how the inherent human/machine relations can be made productive. Cnaani explored how this relation shifts the notion of the "collection" from a closed system that can be indexed to a set of interfaces between many collected artifacts in which new sets of relations are formed and in which users play a key role, shifting agency and authority from the institution toward its audience. Mityukova embraced the notion of loss and regenerated fragments to co-curate alternative storylines, which can be performed in various ways depending on the space, whether it is a book, an exhibition or a Web site. With *The Broken Timeline*, we experimented with several different forms: a two-dimensional representation in a book and a subsequent online version with a tiny bit more interactivity, to the latest experiment in *distant.garden*.

The latter confronted us with the brief lifespan of the digital as well as it present-ness: In some cases, the technology that was used was reflected in the exhibition's aesthetics, but there were others where it was unclear when something happened, whether it was still active or whether it was merely a fragment, or a documentation of something that once happened. In this process, it became clear that online space provides an enduring present in which cultural heritage is performed in various ways as an interplay between humans, different types of technologies and socio-historic relations that affect curatorial roles and the way digital heritage is presented. Accepting this present-ness also emphasizes the inherent unsustainability of the digital: In the technical sense, hardware and software become obsolete, and bugs and glitches are normal. In other words, the digital doesn't last long, is fragmentary, and keeps changing. As such, it is "broken by default," emphasizing that one is not always in control of everything

that happens or may happen. Accepting and working within these limitations – or, perhaps, advantages – of the medium implies that methods must adapt. Such alternatives may be found in the projects I have described.

What these projects share is an acceptance and a desire to use technology as a tool to make visible and open up content or conduct that is neglected, forgotten, discarded, or deliberately concealed. Instead of following the route of technical positivism to find solutions with(in) digital (art) curation, these projects focus on alternative examples and methods that center on forms of networked co-curating by leveraging AI and machine learning in which user-centric design is emphasized, and by prioritizing narrative exploration and stressing the importance of contextualizations in digital curation. Key to such a rethinking are the acceptance of messiness and uncertainty, as well as being transparent about the probabilistic nature and corresponding uncertainty of preservation methods, whether undertaken by humans or machines. Such a method of exchange will reveal conflicting versions of the past, inspire thinking about new values, and shape decision-making. This process is not merely focused on sustaining what has been made but also supports speculation and unrestricted remaking. Finally, stepping away from maintaining what once was, including the contemporary digital-curation methods that are focused on technologies with high energy demands, may lead to more sustainable ways of curating digital heritage.

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