



Anthropocenic Objects. Collecting Practices from the Age of Humans

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Table of content

Anthropocenic Objects. Collecting Practices from the Age of Humans	3
Workshop participants	3
Introduction	4
Key results and Discussion	6
Inequality and Multiperspectivism	7
Research cultures, epistemologies and institutional perspectives	8
Object and Objectification	9
Connections and Absence	10
Places of knowledge production	11
Digital Collections: Media Affordances, Transdisciplinary and Ethical Perspectives	12
Open Data: Data Sovereignty and Sustainability	13
Conclusion	14
Literature and projects tips 1st workshop	14
Literature and projects tips 2nd workshop	15
Objects	17
Corrosion Cast of a Pigeon (<i>Columba livia</i>) from 2004 by Gunther von Hagens, Museum für Naturkunde Berlin - Elisabeth Heyne, Museum für Naturkunde Berlin	17
Taxidermy ocelot (<i>Leopardus pardalis</i>) from 1819, Museum für Naturkunde Berlin - Ulrike Sturm, Museum für Naturkunde Berlin	17
Lampyridae Rafinesque, 1815, The Trustees of the Natural History Museum, London found on Europeana - Elisa Herrmann, Museum für Naturkunde Berlin	18
Bibliography	18

Anthropocenic Objects. Collecting Practices from the Age of Humans

A series of interdisciplinary workshops on material culture in the Anthropocene and the changing role of museums, archives, digital and participatory collections

Abstract

Knowledge for the environmental and societal challenges of the future can only be created through exchange between society and research. In the Anthropocene, the distinction between natural and cultural heritage in museums and other institutions does not fit. We have to rethink the social and cultural dimensions of existing museum collections and reinvent the organisation of knowledge production for our present. In three workshops museum experts, practitioners and interdisciplinary theorists discussed the concept of “Anthropocenic objects”. Together, we asked how such objects can point us towards new collection practices involving participatory research and open exchange between research, society and conservational institutions.

Workshop participants

Participants are listed by alphabet for each workshop.

Workshop 1: Bergit Arends (British Academy Postdoctoral Fellow, Courtauld Institute of Art), Milena Chorna (Museum and Monuments Studies Institute), Nils Güttler (ETH Zürich), Lynn Harles (Fraunhofer IAO/CeRRI), Nicole Heller (Carnegie Museum of Natural History), Elisa Herrmann (Museum für Naturkunde Berlin), Elisabeth Heyne (Museum für Naturkunde Berlin), Marianne Huang (Aarhus University), Dominik Hünninger (University of Hamburg), Franz Maelshagen (Bielefeld University), Sandra Maß (Ruhr-Universität Bochum), Gregg Mitman (University of Wisconsin–Madison, Rachel Carson Center), Solvejg Nitzke (TU Dresden), Nina Neunzig (Museum für Naturkunde Berlin), Gil Oliveira (Musée d'histoire post-naturelle), Victoria Pickering (Natural History Museum, London), Simon Probst (University of Vechta), Benjamin Steininger (MPIWG Berlin), Ulrike Sturm (Museum für Naturkunde Berlin), Myrto Theocharidou (Cyprus University of Technology), Noa Turgeman (Bar Ilan University), Mareike Vennen (Humboldt University Berlin), Lorella Viola (Centre for Contemporary and Digital History - C²DH, University of Luxembourg), Sarah Wagner (Helmholtz-Zentrum für Kulturtechnik, HU Berlin), Mira Witte (Museum für Naturkunde Berlin)

Workshop 2: Frederik Berger (Museum für Naturkunde Berlin), Frank Drauschke (Facts & Files), Chantal Eschenfelder (Städel Museum Frankfurt), Susanne Hecker (Museum für Naturkunde Berlin), Elisa Herrmann (Museum für Naturkunde Berlin), Elisabeth Heyne (Museum für Naturkunde Berlin), Dominik Hünninger (University of Hamburg), Juliana Ivar do Sul (Leibniz Institute for Baltic Sea Research), Rebecca Kahn (University of Vienna), Katja Kaiser (Museum für Naturkunde Berlin), Alicia Mansilla Sanchez (Musée national d'histoire naturelle Paris), Mareike Petersen (Museum für Naturkunde Berlin), Ulrike Sturm (Museum für Naturkunde Berlin), Sarah Wagner (Hermann von Helmholtz-Zentrum für Kulturtechnik), Mira Witte (Museum für Naturkunde Berlin)

Workshop 3: Frédérique Chlous (Muséum National d'Histoire Naturelle), Anna-Lisa Dieter (BIOTOPIA - Naturkundemuseum Bayern), Eric Dorfman (North Carolina Museum of Natural Sciences), Elisa Herrmann (Museum für Naturkunde Berlin), Elisabeth Heyne (Museum für Naturkunde Berlin), Dominik Hünninger (University of Hamburg), Rebecca Kahn (University of Vienna), Nicolas Kramar (Musée de la nature du Valais), Tahani Nadim (Museum für Naturkunde Berlin, Humboldt University Berlin), Gil Oliveira (Musée d'histoire post-naturelle), Richard Pell (Center for PostNatural History), Katharina Schmidt-Loske (Leibniz Institute for the Analysis of Biodiversity Change), Henning Scholz (Europeana Foundation), Colin Sterling (University of Amsterdam), Ulrike Sturm (Museum für Naturkunde Berlin), Helmuth Trischler (Deutsches Museum München, Rachel Carson Center for Environment and Society), Mareike Vennen (Humboldt University Berlin), Mira Witte (Museum für Naturkunde Berlin)

1. Introduction

The Anthropocene, the "Age of Humankind", calls for new impulses for the reorganisation of knowledge for our present (Wark 2015; Dorfman 2018; Mitman G, Armiero M, Emmet 2018; Harrison & Sterling 2020, Renn 2020). A closer connection between society, research and multiple disciplines is needed to address the environmental and societal challenges of the future. Thus, we have to reconsider the social and cultural dimensions of existing museum collections and rethink our concept of knowledge transfer in museums and archives.

The Anthropocene and the debates around it have concerned museums and archives in recent years, as evidenced by pioneering impulses such as exhibitions at the Deutsches Museum in Munich in 2014, and by the Center for PostNatural History in Pittsburgh; the establishment of the *Anthropocene Studies* section at the Carnegie Museum of Natural History in Pittsburgh in 2018, or the *Anthropocene Project* and *Anthropocene Curriculum* at the Haus der Kulturen der Welt in Berlin. In 2018 the Anthropocene Working group at the International Committee for Museums and Collections of Natural History of the International Council of Museums was established. All these initiatives follow an interdisciplinary approach that brings together the natural sciences, humanities and the arts. They all share a special interest in material aspects. The narrative materials of the Anthropocene—from nutmeg (Ghosh) and mushrooms (Tsing) to coal, petroleum

(Steininger), and rubber (Mitman)—reveal the intertwining of social, colonial, and political issues with questions of technology, energy regimes, or biogeochemistry.

The close connection between material culture and the Anthropocene indicates that preservation institutions such as archives and museums have a special role to play here. The discussion of Anthropocenic Objects, their characteristics, and their significance encourages reflection on the traditional division of museums by discipline, collection practices, and knowledge transfer, and points to new directions for science, preservation practices, and the self-image and mission of museums and archives. Above all, however, the concept of the Anthropocene challenges institutions and practices to address questions of representation in the context of collections and museums: which "humanity" is addressed here, how can the discourse of responsibility be conducted in a more differentiated way, and exclusions do the institution of the museum and the term Anthropocene generate in equal measure?

The series consisted of three workshops, each with a thematic focus and different invited speakers (see also appendix 1 for the agendas and list of speakers). Each workshop started with a short presentation of objects as examples of the invited speakers' perspective on what characterises an Anthropocenic Object. These inputs were followed by a different method of discussion adapted to each topic. The first online workshop "What is an Anthropocenic Object? Transdisciplinary perspectives on natural, cultural and hybrid objects" (17 February 2022) was attended by 52 people. The following questions were discussed at three roundtables:

1. What new categories do we need to deal with objects in the Anthropocene if the distinction between natural and cultural heritage no longer fits? Of course, this distinction was never precise. But beyond a reactualisation of the two cultures debate, however, the question now is: how could or should we describe Anthropocene Objects?
2. How can we rethink our relationship to the global environmental transformations that confront us with unprecedented challenges? How can looking at the material culture and objects of the Anthropocene help us to understand global environmental transformations in their intangible scales and interdependencies? How can this help to tell the story of and display/visualise or imagine the Anthropocene in new ways? Is the focus on the individual and collective practices of collecting helpful here? Or is collecting itself a problem, because it is in turn an accumulation of new material things - and the Anthropocene consists, to a certain extent, of the human excess of the accumulation of ever new objects and things? Beyond that, various agents start criticising the practice of collecting, especially for political reasons, and call for deaccession or the "empty museum" (Lange 2019) - hence the (exaggerated) question: is collecting still appropriate in the Anthropocene?
3. What new institutional and political perspectives result from a revised status of the Anthropocenic object? What is the role of conservational institutions, archives and especially natural history museums in the Anthropocene? How must institutions change if we assume that Anthropocene objects can no longer be clearly assigned to art, science, cultural or natural heritage? And what

institutional and (cultural) political changes are needed for future collecting in the Anthropocene: who has access to objects, for example? Who does not? How do museums engage with the public or foster transdisciplinary research? Which institutions and projects are funded and why?

The second workshop “How to collect, store and curate objects in the Anthropocene? On participatory and digital collections” (17 March 2022) took place as an online event with a total of 24 people attending. Two working groups discussed the following questions:

1. What are the benefits and challenges related to crowdsourcing projects and participatory collections? How to collect, digitise or visualise memories, atmospheres and relationality? What is the “Anthropocenic object” between material and immaterial heritage?
2. How to enable transdisciplinary and multi-perspective views on digital objects? What data and standards are needed to link community-generated data and research perspectives with multiple meta-levels?

In the third workshop “Anthropocenic objects: Perspectives for the future of conservational institutions and collection practices” (14 April 2022) was held at the Museum für Naturkunde Berlin, Germany and via Zoom with a total of 34 participants. In three rounds of small-group discussions, participants exchanged their perspectives and ideas on the following questions:

1. How do museums, collections, research and science need to open up in the face of the Anthropocene? What does a framework for the reorganisation of collections and collective knowledge would need to look like in the face of the Anthropocene? Which overall conditions need to be changed? What new contexts are needed?
 - a. How to connect natural and cultural heritage on an institutional level?
 - b. How to connect research and society, digital and analogue practices?
 - c. How to combine local and global perspectives?

In the following, the results, theses and open questions of the three workshops are summarised and structured by central lines of argumentation. Thus, this summary does not automatically represent the views and positions of individual participants. In addition, there is a list of literature and project tips that were contributed by participants during the workshops at the end of this report.

2. Key results and Discussion

The discussions on the Anthropocenic Object proved the importance of this debate for the future and role of museums and archives. From questions of how to create adequate knowledge transfer in exhibitions (see keynote Helmut Trischler, appendix X) to the critical discussion of the exclusions and new borders generated by the concept of

Anthropocene and how museums should focus in their future preservation on the externalised rest of their practices (see keynote Tahani Nadim, appendix X), it leads back to the question of which institutions are needed by science and society. But towering above it all is the pressing question: how much time do we have left to even ask these questions in the face of the climate emergency?

Inequality and Multiperspectivism

In discussions on the Anthropocene and Anthropocenic Objects, it is crucial to reflect on the European-centric biases and implications not only of these discussions but also of the notion of “Anthropocene” itself. Therefore, the need was emphasised to discuss what it means to think about the Anthropocene from another perspective than the Global North. Is it really a question of finding new categories for the description of Anthropocenic objects, or is the act of categorising a pure reflection of European knowledge orders that stand at the beginning of the Anthropocene? A significant question for Anthropocene objects is the one of representation: Who collects? Whose stories are told? Whose objects are considered valuable for research and preservation? There is a need for reflection, transparency and reorientation of the current practices. Overall, a deeper debate of the question of transcultural transformation is needed, that challenges the dynamics of objects and discussions that include, encompass, or combine elements of more than one culture. In this sense, it is important to acknowledge ambiguity and different perspectives. This approach could help to show the difficulties and complexity of the Anthropocene. But it is also to be expected that people are not prepared to deal with this ambiguity and it may create new challenges in knowledge transfer (see also *Places of knowledge production*).

A sense of the relationality between anthropocenic actors, infrastructures and objects is important and the historical, economic and postcolonial dimension of the Anthropocene concept always needs to be taken into account. In this regard, the notion of the “Black Anthropocenes” (Yusoff 2019) introduces a productive position of critique of the Anthropocene by drawing attention to the plurality of the concept that needs to be constantly negotiated. Ruth Wilson Gilmore’s “Geographies of Racial Capitalism” (2020) was also discussed as a significant basis for the contextualisation of Anthropocene objects.

Digital collections might be an opportunity to change current collection practices in the sense of opening them up, including other perspectives and rethinking questions of representation and ownership. It could be questioned which objects are really needed physically for research and which role digital representations could play. Nevertheless, digital collections can also continue to continue and proliferate epistemic violence if they lack a reflection of underlying hierarchies and ownership (see Odumosu 2020). Simply adopting existing practices and digitising objects will not change or improve inequality and representation. A new attitude and approach are needed, based on

co-creation and co-curation and respecting the affordances of the digital medium to use them, for example, relational networks or for multilayered description.

Overall, there is the need to raise people's awareness to reflect and expand the notion of who is part of the global and from whose perspective something is defined as local or global - both in science and society.

Research cultures, epistemologies and institutional perspectives

These discussions on how to deal with research cultures, categories and terminologies also led to the question of whether we need new museums and what should be preserved in these museums. As perspectives and notions change, how to decide what to consider as valuable in the future and what to consider as waste? It's a big question for museums, what kind of future are they preparing for to stay relevant? It was argued for a more political history in natural history museums, in a systematic sense. But at the same time, museums are trusted institutions and therefore have to be careful to keep this trust while taking on a new role in society and politics. It, therefore, appears to be a significant question to what extent museums are willing to let go of their interpretative power and how these institutions reflect on the brutal practices their collections stem from. A change in epistemic regimes and an adaptation of new and open practices is needed.. These changes have to include new approaches like hiring a diverse staff with different backgrounds, both from different scientific practices and, in particular, more diverse cultural contexts. First steps are already taking place in natural history museums to work together beyond the borders of individual disciplines (e.g. <https://takingcareproject.eu>). An idea for a deeper level of transdisciplinarity could be to establish an exchange of curators between different kinds of museums. However, it is at least as important to foster exchange between universities and museums regarding the reassessment of the Anthropocene discourse.

This discourse has so far been rather science-driven. Therefore, there is a need to diversify and open the debate. But the term "Anthropocene" illustrates that it is often difficult to translate complex concepts into everyday terms. In order to create dialogue in science and society, we need to explore and create ownership for terms and keywords and learn how they might differ in different contexts. Crowdsourcing projects and platforms could contribute to this process by inviting people to enrich scientific vocabulary. It was also suggested to shift the discussion to different notions of politics of objects and stories in order to open the debate to a new way of thinking. Overall, there is a need for new constructive debates and critiques that are built on trust and mutual understanding. Therefore, new ways and formats of exchange have to be established that still allow maintaining friction, rather than trying to resolve it.

Language is an important component for participatory projects in terms of meaning and understanding of words. The use of scientific vocabulary can be very exclusionary, but at the same time, an oversimplified language can lead to misunderstanding, misconceptions or even the loss of meaning and linkage to science. Therefore, the

language also shows if participatory processes are taken seriously as research. This relates directly to their influence on scientific debates as there is still a huge gap in how data from experts and data from citizen scientists is perceived and it is an open question of how to close this gap.

It is an open question of how to create and establish new categories for Anthropocenic Objects - and a doubt whether we really need *more* categories. It was stated that there is also a need for recategorising the process of knowledge production and connecting it to infrastructures, places of knowledge production and different scales. It has been argued that continuing to use "Nature" as a concept creates conflicts with the Anthropocene, because the distinction between nature and culture is no longer (or was never) valid: there is always something natural (and cultural) about every object. However, this assumption is also viewed critically and questioned (Malm 2019). Historicizing the concept/idea of nature (and environment) has been proposed as an approach to gain a deeper understanding and refine the concept of nature. As a counter-proposal, it was also suggested to look more closely at non-western ontologies and to understand the western distinction between nature and culture as a special case that has always been used to exclude something by declaring it to be nature. This is still illustrated by the hangover of ethnographic exhibits that treated indigenous cultural heritage as natural and a less-human other.

In terms of multiperspectivism, it is crucial to reflect on the historical, individual and cultural usage of words in different contexts and different historical epochs. The use of certain words provides a certain framework for debates and introduces certain moral, epistemic or ethical standards. For example, the metadata (object descriptions, documentation, catalogues) of historical collections often contain racist or offensive language. Instead of simply erasing historical wordings, multilayered descriptions from different perspectives are needed to contextualise, challenge, open up and deconstruct historical knowledge production in collections.

Museums and archives need a dedicated ongoing self-reflection based on the historical development of organisations, collections and their connectedness to various political, economic and epistemic contexts, resources, agents and institutions.

Object and Objectification

In a general sense, there was a plea to critically rethink what is an object and the different roles of objects. How objects appear changes with the context of other objects and different interpretations. Thus, the dimension of constant transformation needs to be included in collections. Objects can be understood as an invitation to think together with things. These reflections include not only the relationship of objects to nature and culture, but also to the technosphere, a new sphere of the earth in which natural and technical forces form together a new and almost independent entity.

The question arose about whether to distinguish between collection processes and an object itself, and how to deal with the connection between the two. Moreover, it was questioned how to decide which object to collect in the Anthropocene as every object could potentially be an Anthropocenic object based on the stories it is connected to: in this perspective, every household is a natural history museum and combines digital, local and global dimensions. Thus who decides and on the basis of what criteria? And how to collect something that is not an object, but a hyperobject (Morton 2016)? Or how to deal with things that are widely distributed through time and space, e.g. styrofoam or plastic?

There were different positions as to whether materialities should be taken seriously and discussed even more or if discussions should focus less on materialities but on contexts: it was stated that objects should not be overestimated as they are just one part of the Anthropocenic story. Objects are key to sampling and telling new stories, but do not speak for themselves and always need an interpretation. These added layers of interpretation might differ between research and knowledge transfer e.g. in exhibitions. At the same time, there was the counter-position, which emphasised that we must look even more closely at the objects and be guided by their materiality, because only then can the necessary knowledge about the connections in the Anthropocene be produced via multilayered reactions and multiple perspectives on these objects.

The example of Städl digital collection (<https://sammlung.staedelmuseum.de/en>) shows how subjective keywords are used to describe the atmosphere that is created within an artwork. Using emotion as well as atmosphere as metadata that is created by the artwork in order to help to introduce diverse entry points for people without scientific knowledge and as well as to create new connections between artworks of different historical and cultural contexts. In this example, the keywords were based on different diverse perspectives of the team (university students with knowledge of systematic databases, guides who know visitors, literature reviews). Open tagging by the public - a plan for the future of the collection - could make the collection even more accessible but could also create biases.

The questions remain: how many objects do we need to collect in the Anthropocene? Could it be enough to have five objects with numerous layers of stories instead of 500 objects? What are the consequences for research and knowledge transfer? Do museums need to collect more objects or do they need to add new interpretations to objects, their connections and socio-political dimensions instead? The Anthropocene and Anthropocenic objects also challenge the current approach and ethics of displaying non-humans.

Connections and Absence

The debate and especially knowledge transfer about the Anthropocene is pushed to grand narratives. It is often used as a concept to connect not only topics but also disciplines and institutional ways of working. Museums often use it as a cross-collection

approach to overcome separations of departments and to create connections: on an informational but also in parts with an emphasis on an emotional level. Connections could act as a form of labels for anthropocenic objects. But there is still an unresolved question of the significance of these connections. In the discussion it was proposed that it might not be important to connect all objects: In a contrary line of argument, it was therefore emphasised that multiplicity might be an important strategy to fracture the grand narrative. For this position, it would be more important to address and explore the different and contradictory meanings of objects and their connections. In museums, the question is how objects are connected by being together in a room/the museum. Thinking even further, the natural history museum could be discussed as a big Anthropocene object itself.

Besides connections between objects, the role of absence was discussed, and how to make non-knowledge visible. How can we deal on a scientific, emotional and political level with the absence of representation and gaps in knowledge? How can we ensure multiperspectivism but also be transparent in the absence of perspectives and missing data e.g. geographical blind spots and eurocentrism?

Places of knowledge production

The debate showed the overall need to rethink the often narrow definition in academia of places of knowledge production and to include non-institutionalised places as well. Moreover, traditional institutions of knowledge production like museums need to open up to new knowledge practices and so far excluded agents. They need to change in order to serve as places of research and knowledge transfer for our shared more-than-human history on this planet in a broader cultural context. Furthermore, the relationship between tools of science and the environment was addressed with the example of airport ecology. In this regard, the research field of urban ecology illustrates that there is rather no exclusive connection between tools of science and a certain environment.

In order to realise real participation and a change of practices, museums have to be humble and let go of their power to a certain extent. This would allow for changes in the hierarchy as people will give something voluntarily to the museum (example: Participation in the Anthropocene exhibition at Carnegie of Natural History Museum). This led to the question of how participation can become part of museums' practice. It was asked how participation is connected to the museum's expertise and how to ensure truth in participatory research. Art museums were mentioned as an example to traditionally include different voices and results. Overall, developing dialogue, creating community engagement and incorporating new ideas into museums takes time. Experience shows how challenging it is as museums have to change in all areas. For example, it will need a stronger and extensive connection between exhibitions and different collections.

In terms of knowledge transfer, the Anthropocene debate creates ambiguity. This ambiguity also includes the challenge if one should focus more on grand or more fragmented narratives of the Anthropocene. As it was viewed differently among the participants also its consequences for knowledge transfer remained open. Nevertheless, the importance of storytelling became clear and it was proposed that it should not be left to climate researchers and economics alone. Overall, knowledge transfers, e.g. exhibitions, need to be supported by programs as one object and a label of 50 words is not enough to comprehend the Anthropocene. Additionally, unidirectional communication will fail as people need to be brought together to create a deeper understanding. Experiences were shared on the difficulty for people (academics) to write their stories and play more freely with ideas and things.

Knowledge production and transfer in the Anthropocene must be opened up to create a global dialogue that includes multiple perspectives. However, to achieve this, appropriate tools must be developed and a cultural change is needed. We must therefore think creatively, broadly and inclusively. Both online, in-person and hybrid formats can help in bringing people together and generate exchange and (institutional) partnerships. Science needs to be engaging: scientific institutions and actors need to communicate, which is centrally linked to language. Participation needs openness. This means to be less centred on accuracy and accept errors and mistakes made by participants as these “mistakes” might be less important than the value that is created by adding different perspectives, expertise and knowledge.

We need to make more impactful investments to ensure genuine and honest exchanges between different perspectives as an intrinsic part of knowledge production.

Digital Collections: Media Affordances, Transdisciplinary and Ethical Perspectives

Digital collections and linked data create new possibilities to make collections accessible more broadly and allow us to enhance existing information with various types of information material and multiple perspectives on one object. But compared to physical collections they are limited when it comes to conveying experiences of the materiality of objects. Furthermore, connections between objects are currently not made visible and accessible enough in digital collections. Using events in CIDOC-CRM may help to disentangle the network from the object and also allows one to see several facts at the same time.

Overall, it seems that digital collections are often still rather static, mimicking physical galleries or museum buildings instead of making full use of opportunities of the digital medium. The digital representation of objects and their display in the digital sphere often lack interaction and objects remain one-dimensional and might feel less “real” or “special”. It seems more difficult to capture attention with a digital object. For digital collections, it is, therefore, crucial to reflect on the affordances of the medium that is used. Institutions should make more use of the possibilities to open new tools and ways to explore an object and interact with it. There is also a need to reflect on whether the

digital medium is always the best choice, as there are many unanswered questions about how technologies change and become obsolete, for example, for long-term preservation.

In order to tap the full potential, we need to link data between the disciplines and establish terms that can be used to create these connections. On the technical side, the lack of suitable transdisciplinary data standards and data models creates a huge barrier for linked data. For example, often only parts of metadata can be linked to disciplinary collections and data standards. The question, therefore, arises whether partial linking can create bias and information loss above a basic level, as the value of the complete metadata is lost. Existing linked data models (like EDM (Europeana Data Model)) can appear quite resource-intensive and create a hurdle for institutions with limited resources.

Furthermore, participation may lead to partial undetected biases: A certain number of interested participants, size and recognition of a collection and institution are crucial to how a participatory process and contributions might look like. These activities are often connected to a capitalisation of attention and require reflection on this. This also raises the question of gamification approaches and their impact on the quality of participation and the engagement of different perspectives. This calls for careful consideration of goals and methods.

Overall, it requires constant ethical reflection on collections and their context. It is an important ethical question if we should make connections between objects only because it is technically possible or if we always have to share data for reuse. Standard ontologies reflect western concepts and the context of the data creation should be documented and preserved as well. The question of for whom collections are digitised is also important and the role of digitisation for documentary reasons. Facing fast processes and development institutions and researchers need to constantly take a step back and reflect on new practices.

Open Data: Data Sovereignty and Sustainability

Participatory collections open up questions of ownership and data sovereignty that also have legal implications that need to be further addressed. CC-Licenses provide a good option for managing this. Nevertheless, there might be a tension between data sharing and ownership of Citizen Science participants. Therefore, it must be communicated in an understandable and transparent way under which conditions participatory contributions are shared, even if this may initially represent an obstacle for people to share for example memories. Additionally, current practices of digital reuse could be reimagined. For example, institutions could adapt the legal framework from physical objects in the direction of loaning a digital object. Overall, open data requires institutions that ensure long-term storage. Shared, general databases are helpful in regard to sustainability, accessibility and long-term support.

Digital collections can provide new and open access, but they must also give people their right to control and access their data, i.e. by and follow the FAIR and CARE Principles (see Carroll et al. 2021).

3. Conclusion

It appears that a new type of museum and archive is urgently needed that unites natural and cultural objects in a radical transdisciplinary approach without erasing all distinctions. Natural history museums must be institutions that recognise and embrace cultural contexts and the public not just as an add-on but as an important component of their practices. This requires new approaches and practices that question the known and test the new in constant reflection. Also, the question of the meaning of connecting, for example, local and global perspectives. The value of digitisation needs constant reflection as well, and adaptation of practices based on the impact achieved intentionally and unintentionally.

This development can only take place in a novel form of funding, as this is one, if not the most decisive factor. This is not necessarily and exclusively about more funding, but rather about funding that takes transdisciplinarity seriously, allows experimentation and enables long-term transformation processes. Only in a shared, multi-perspective debate and transformation can the ambition of an Anthropocenic Object be realised. It is therefore important to continue and expand the dialogue to other perspectives and on different levels. The Anthropocenic Object can be a conversation opener to build a common understanding and language and deepen debates that go beyond the European-centric bias of the Anthropocene.

Literature and projects tips 1st workshop

- Art project on Anthropocene Chicken and its geological materiality:
<https://nonhuman-nonsense.com/pink-chicken-project>
- Andreas Greiner's Monument to the 380, broiler as a technofossil:
<http://www.andreasgreiner.com/works/monument-for-the-308/>
- Max Liboiron: Pollution is Colonialism
<https://www.dukeupress.edu/pollution-is-colonialism>
- Commodity Flows seminar at "Mississippi. An Anthropocene River" Campus, New Orleans, 2019:
<https://www.anthropocene-curriculum.org/contribution/going-against-the-flow-object-stories>
- Annual Anthropocene Conference (German language):
<https://www.forum-anthropozoen.com/de/>
- Etienne S. Benson: Surroundings A History of Environments and Environmentalisms
<https://press.uchicago.edu/ucp/books/book/chicago/S/bo50271092.html>

- Examples for cultural analysis: Bal, M. (1992). Telling, Showing, Showing off. *Critical Inquiry*, 18(3), 556–594. <http://www.jstor.org/stable/1343816>
- <https://takingcareproject.eu/>
- Aesthetics of grand narratives: <https://www.e-flux.com/architecture/oceans/331865/monster-a-fugue-in-fire-and-ice/>
- Peaking of fugue: <https://furnaceandfugue.org/> This is a great resource for understanding nature/culture „objects“ / objectifications / understanding nature/culture in pre-modern Europe.
- Project in London: Museums exchanged objects
- <https://griotmag.com/en/the-prophecy-fabrice-monteiros-new-apocalyptic-work-urges-the-world-to-wake-up/>
- Temi Odumosu’s terrific and terrifying article: The Crying Child On Colonial Archives, Digitization, and Ethics of Care in the Cultural Commons <https://www.journals.uchicago.edu/doi/10.1086/710062>
- sculptor David Brooks used geological cores at uni Austin <https://utvac.org/event/david-brooks-repositioned-core>
- On Participation and co-curation / co-archiving, <https://www.routledge.com/The-Digital-Future-of-Museums-Conversations-and-Provocations/Winesmith-Anderson/p/book/9781138589544> also has some great examples from PoC and Indigenous museum workers / archivists
- The German maritime museum is doing an interesting experiment : <https://www.dsm.museum/en/exhibition/exhibitions/special-exhibition-raum-fuer-vermutungen-of-finding-and-inventing:> <https://www.dsm.museum/en/exhibition/exhibitions/special-exhibition-raum-fuer-vermutungen-of-finding-and-inventing#c13648>
- Museum für Naturkunde Berlin has a project experimenting with a new citizens collection of everyday objects and connected stories: <https://www.museumfuernaturkunde.berlin/en/science/towards-a-collection-anthropocene>
- paper about the Anthropocene in natural history museums and their role <https://onlinelibrary.wiley.com/doi/10.1111/cura.12374>
- very interesting study on non-museal Collections and absences: Elizabeth Callaway "Eden's Endemics. Narratives of Biodiversity on Earth and Beyond" <https://www.upress.virginia.edu/title/5402>
- “Seeds of Empire” (2021), first in a series of exhibition projects by the artist Joy Gregory and composer Philip Miller, no direct reference as a self-description to a “black Anthropocene”

Literature and projects tips 2nd workshop

- Zoe Todd: Indigenizing the Anthropocene https://law.unimelb.edu.au/_data/assets/pdf_file/0005/3118244/7-Todd,-Zoe,-Indigenizing-the-Anthropocene.pdf

- Berlin Cabinet of Curiosity Project: <http://berlinerkunstkammer.de/> , <https://www.museumfuernaturkunde.berlin/de/wissenschaft/das-fenster-zur-natur-und-kunst>
- Ashby, J. (2021). The political platypus and colonial koala – decolonising the way we talk about Australian animals. *Journal of Natural Science Collections*, 9, 35-45.
- Ashby, J., & Machin, R. (2021). Legacies of colonial violence in natural history collections. *Journal of Natural Science Collections*, 8, 44-55.
- Open Up Project included common names: <https://pro.europeana.eu/project/openup>
- Planned project to share data on common names with wiki data -> Mareike Petersen & Gerda Koch: <https://www.theartnewspaper.com/2021/11/24/tate-britain-director-defends-museum-against-accusations-of-cancelling-hogarth>
- Sebastian Chan, Powerhouse Museum, Australia: Tagging and Searching – Serendipity and museum collection databases: <https://www.archimuse.com/mw2007/papers/chan/chan.html>
- The Anthropocene in The Sun, 2016: <https://www.thesun.co.uk/news/1693388/earth-enters-a-new-era-triggered-by-human-impact-which-has-changed-the-planet/>
- UNESCO Lexicon of the Anthropocene: <https://en.unesco.org/courier/2018-2/lexicon-anthropocene>
- Wellcome Collection on mental health, infectious disease and climate: <https://wellcomecollection.org/>
- Transcribathon Europeana 1914-1918: <https://www.transcribathon.com/en/>
- artigo: <https://www.kunstgeschichte.uni-muenchen.de/forschung/digitalekg/laufende-projekte/artigo/index.html>
- The Labelling Matters project at the Pitt-Rivers Museum: <https://www.prm.ox.ac.uk/labelling-matters>
- Exhibition “our broken planet” (NHM London): <https://www.nhm.ac.uk/visit/our-broken-planet.html>
- Legal framework requirements for digital cultural object restitution: https://www.jipitec.eu/issues/jipitec-10-2-2019/4910/JIPITEC_10_2_2019_115_Pavis_and_Wallace_Statement
- Hidden in Plain Sight, Weltkulturen Museum (Frankfurt): <https://www.museumsfernsehen.de/vom-unsichtbarmachen-und-sichtbarwerden-hidden-in-plain-sight-im-weltkulturen-museum/>

Objects

Corrosion Cast of a Pigeon (*Columba livia*) from 2004 by Gunther von Hagens, Museum für Naturkunde Berlin - Elisabeth Heyne, Museum für Naturkunde Berlin

This corrosion cast was created by German physician and anatomist Gunther von Hagens, who is best known for his provocative and ethically questionable shows featuring animal and human bodies preserved in spectacular lifelike poses. This object is a synthetic cast of the vascular system of a pigeon, created by injecting a plastic (polyacrylate) into the vascular system so that it is distributed throughout the system right down to the tiniest capillaries. Once this plastic has hardened, the surrounding soft tissue is corroded away using an enzyme solution. For me, this bird-turned-plastic represents an Anthropocenic object. Its blood has been replaced with human-made material, it has solidified into an object.

As a literary and cultural scientist, I am interested in the question of how the understanding of science, collecting practices and our relationship to nature are connected. This object was created to make the otherwise invisible vascular structures of the bird visible and to display them in a spectacular way. Looking at the particularly cruel production method of this object, it is linked for me to a discussion that can be traced back at least to German Romanticism: The critique of science, which must dissect its object in order to study it. For me, this ambivalence can be seen in the pigeon: The scientific gaze, which here is perhaps more of a voyeuristic one, aiming at the appropriation and display of a natural object - but destroying it in the process, of course. This ambivalence between scientific curiosity and destructiveness, biological animal and synthetic material, desire for knowledge and voyeurism, is for me an important characteristic to describe the relationship between humans and objects in the Anthropocene.

Taxidermy ocelot (*Leopardus pardalis*) from 1819, Museum für Naturkunde Berlin - Ulrike Sturm, Museum für Naturkunde Berlin

This ocelot was collected by Friedrich Sellow in South America in 1819. It is displayed in the exhibition on taxidermy at Museum für Naturkunde Berlin. In combination with an ocelot taxidermy from 1934, it impressively demonstrates the history of mammal taxidermy. The taxidermist in 1819 stuffed the specimen and had to relay his work only on the skin and sketches of the animals as he has very likely never seen a live ocelot. From my perspective this object classifies for various reasons as an Anthropocenic object as its preserved condition is only made possible by modification by humans as well as it relates to questions of collection practices, particularly to colonial contexts.

I selected this object based on my research interests in participatory science and knowledge transfer. The object was created using the techniques and the best knowledge of the expert in charge at the time. It was intended to represent the animal lifelike and show people in Berlin how nature looks in South America. Even today, we often base our ideas of nature on what others present. I, for example, have never seen an ocelot in freedom and know this animal only from museums, zoos and documentaries. That means always mediated by the selection and design of others. These questions of where and by whom knowledge was produced and transferred in the past and will be in the present and future are, for me, an important part of an Anthropocene object.

Lampyridae Rafinesque, 1815, The Trustees of the Natural History Museum, London found on Europeana - Elisa Herrmann, Museum für Naturkunde Berlin

Thinking about the Anthropocene I quickly come to the aspect of declining biodiversity and to me fireflies (lampyridae) are symbolic of biodiversity loss that I have experienced. As a child, I was fascinated by fireflies although I only knew them from fairy tale books. When I asked my parents and grandparents about them, they replied that seeing fireflies was very common in their childhood. At this point, I had not seen any myself and as of today, I saw them only once. The encounter felt somewhat magical as I had never seen light that was not based on electricity, except for fire, lightning and the sun. Electricity enabled humans to shape the earth as we know it today and artificial light has made our lives more independent from nature thus resulting in the belief that we can make the world our own or control it. Ironically the artificial man-made light obscures the view of our surroundings as it creates light pollution, which is a threat to fireflies as they use their light for communication and attraction for mating. The moment I saw fireflies was also so unique as I don't know if I will ever see this light again. We can preserve the bodies of fireflies in museum collections, but the light itself cannot be preserved. Furthermore, in some cultures fireflies resemble the souls of the deceased, so what happens to this belief if you never witnessed fireflies or their light? In conclusion, the firefly represents my self-experience decline of biodiversity that is often related to human activity and the belief to control nature. They show us the difficulty of preserving intangible objects in collections and raise questions about the impact of species extinction on our cultural heritage.

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