

Cultural Heritage Mediascapes: Innovation in Knowledge and Mediation Practices

Background and aims

Producing, archiving, and mediating digital cultural heritage in ways that are relevant for a changing European population is a vital mission and an important societal challenge (Horizon 2020, 2014). The project *Cultural Heritage Mediascapes: Innovation in Knowledge and Communication Practices (Mediascapes)* has studied key transformations in how knowledge is produced and mediated by experts in museums and archives using digital technologies, as well as the ways in which different publics participate in, contribute to, and learn from this knowledge. The overall aim of *Mediascapes* has been to contribute to research-based policy in the cultural sector that can account for, anticipate, and support future communicative developments and knowledge practices in the field of digital cultural heritage.

Mediascapes research has been framed by the overarching question: In which ways are digitization and participatory models transforming knowledge production and mediation practices in museums and archives of cultural heritage? To address this question, case studies were developed in collaborative partnership with museum leaders, researchers and educators. Such partnerships are increasingly viewed as key means of demonstrating the societal relevance of both research and practice in the cultural heritage sector (galleries, libraries, archives and museums). A partnership model has also informed the research design for studies in *Mediascapes*' different thematic areas: Citizen Science/Citizen Humanities, Digital Media in Museum Exhibition Practices, and Visitor Research.

Central Studies and Partners

I. Citizen Science / Citizen Humanities

Science communication models that foster trust and participation have never been more important than in 2020. This research theme has focused on issues related to knowledge practices in 'citizen science' and 'citizen humanities' projects in natural history museums, in environmental organizations, and in 'narrative' archives of cultural memory (Figure 1). Specifically, the studies have theoretically and empirically explored conditions for participation, cultural identity and cultural citizenship in memory institutions' digital communication and knowledge practices.

Case studies in this theme were led by Research Fellow Emily Oswald (IPED, UV), with Associate Professor Line Esborg (IKOS, HF) and Professor Per Hetland (IPED, UV) participating. Methodological coherence across the case studies was achieved through an analytic focus on the communicative contexts in which institutions and publics interact; a design-based research collaboration with partner institutions; implemented interventions in institutional knowledge practices; and the recruitment of participants in longer term studies (3–12 months). Oswald will submit her doctoral thesis for evaluation in December, 2020. In addition to the case studies, Hetland conducted interviews in Australia and Norway and carried out a national survey of SABIMA users to analyze user perspectives in science communication and to develop models for digital infrastructures that support reciprocity in citizen science projects. The findings were a key part of Hetland's doctoral thesis, which was successfully defended in 2017.

Unique contributions by the Mediascapes project to research in the field include: a *cross-domain approach* to cultural heritage research; an analytic focus on *communicative contexts*; and studies of citizen projects situated in the specific context of *museums and archives*. In addition to extensive participation in international conferences, eight publications in peer-reviewed journals and books, an edited book, and two doctoral theses are featured outcomes for this theme (Figure 1).

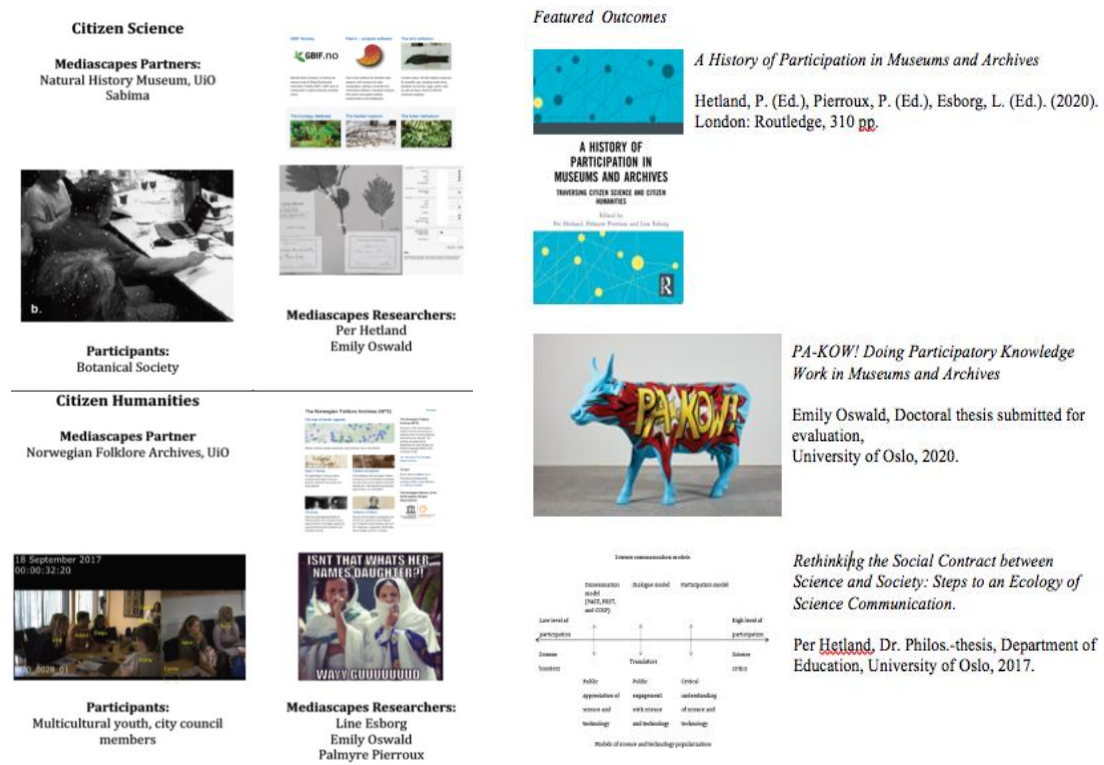


Figure 1. Citizen Science/Citizen Humanities: Partners, studies and featured outcomes

II. *Architecture Museums and Digital Design Media*

Research in this theme has focused on digital media and new knowledge practices in museum exhibitions, including the development of innovative visitor research tools and methods led by Postdoc Dimitra Christidou. The studies were organized as a ‘collaborative research space’ to accommodate overlapping interests of project partners coming from different research traditions and practices (Figure 2).

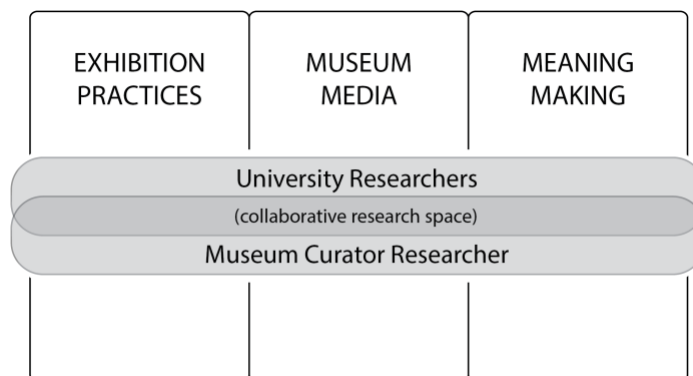


Figure 2. Model of Collaborative Research Space for University-Museum Partnerships

The main research partners were Senior Curator Birgitte Sauge at the National Museum, Architecture and University of Oslo researchers Rolf Steier and Palmyre Pierroux. Thomas Liu, architect and partner at Atelier Oslo, and Anne Qvale, Senior Education Curator at the museum, also formally contributed the research as Mediascapes ‘practice’ partners. Focused on the museum exhibition setting, the research explored media use, for example, in a study that contrasted existing textual practices in twelve Norwegian art museums with digital communication resources planned for galleries in the new national art museum (Pierroux & Qvale, 2019).

However, the main thrust of the studies explored what has been identified as a gap between, on the one hand, contemporary ‘born digital’ architectural design practices (e.g., virtual reality tools) and, on the other hand, architecture museum exhibitions that still mainly rely on the display of analogue models, drawings and photos. Digital technology has for decades been viewed as a democratizing potential in architecture but has not had the same communicative impact in architecture museum practices. A national survey of Norwegian architects’ digital design practices (Sauge, 2019), and a study of Atelier Oslo’s three ‘born-digital’ works for architecture museum exhibitions, are project publications that explore this gap (Pierroux, Steier & Sauge, 2019).

The main collaborative work and featured outcome from this research theme involved the design and implementation of a full-scale ‘blended reality’ exhibition experiment in the national architecture museum (Figure 3a). The digital design components included a full soundscape and two virtual environments that visitor toggled between as they physically moved through the landscape. Five weeks of visitor studies (observational video recordings, interviews, questionnaires) provided a rich data corpus to explore research questions related to digital design media, immersive exhibition practices and visitors’ experiences. Postdoc Dimitra Christidou was central to the development of a new visitor studies interview method (Social Meaning Mapping – SMM) and in supporting museum staff in developing new evaluation skills.

The exhibition experiment *Forest in the House* was well-attended and received enthusiastic reviews in the press. A revised version of the installation, titled *Transcribed Nature*, has been included in the exhibition *The Architecture Machine. The Role of Computers in Architecture*, Architekturmuseum der TU München (Figure 3b). Visitor studies will continue there until June 6, 2021. To date, one book chapter, one Master’s thesis and nine presentations at international conferences have been published based on this data.

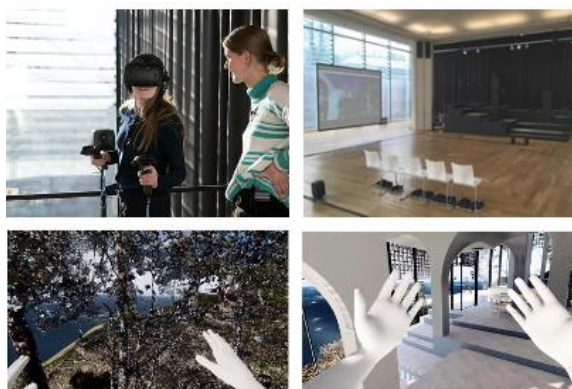


Figure 3a. *Forest in the House*, National Museum

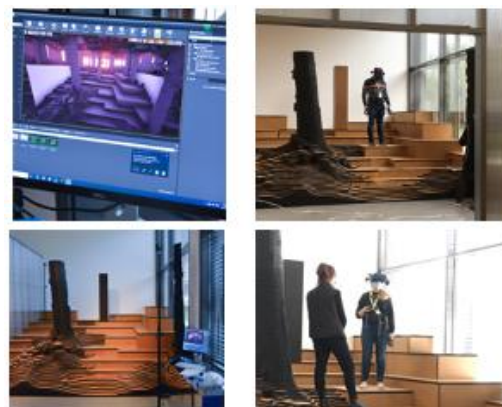


Figure 3b. *Transcribed Nature* at Architekturmuseum der TU München

Impact

The *Mediascapes* model of university-museum research collaboration has advanced knowledge practices through the co-development of citizen projects, and through the co-design of innovative exhibition technologies. Specifically, the *Mediascapes* model of research collaboration has been acknowledged by the Norwegian project partners as transforming existing practices in the following concrete respects.

First, in relation to Citizen Humanities, new practices, policies and initiatives are in place in a national memory institution for increasing multicultural youth participation in narrative archives. In Citizen Science, new interdisciplinary research networks and models have been established to advance designs for greater reciprocity between citizens, scientific institutions and organizations. Together, the research findings are relevant for policy in the cultural sector in terms of new participatory models: *in archives* to support the development of young people's civic identities and cultural citizenship; and *in museums* to produce reciprocally meaningful outcomes for organizers and volunteers in citizen projects.

Second, *Mediascapes* research on digital design media and tools have impacted knowledge practices in the National Museum: the adoption of 'in-house' evaluation processes, including the use of an improved digital research tool (*Visitracker*) for questionnaires, interviews and observations; plans for increased integration of virtual reality and other digital media in future exhibition designs; and an increased number of individual and co-authored research publications on topics that represent an expansion on staff's disciplinary expertise. Together, the research findings are relevant for policy in the cultural sector in terms of how to account for, anticipate and support participatory knowledge work in the field of digital cultural heritage, including the ways in which citizens contribute to and learn from this heritage.

Research Stays Abroad

Postdoc Dimitra Christidou had a two-month stay at The Laboratory for Cognitive Research in Art History (CReA) at the University of Vienna in 2018. The stay contributed to interdisciplinary development of audience perspectives based on CReA research, which specializes in eye-tracking methods. During her stay, Christidou conducted a large-scale study at the Austrian Gallery Belvedere on visitor group interactions using the *Visitracker* app, among other tools. Three co-authored conference papers and three scientific papers are published or in progress with Dr. Luise Reitstätter, head of CreA laboratory as *Mediascapes* outcomes.

Professor Per Hetland was visiting fellow at the Centre for Public Awareness of Science (CPAS) at the Australian National University for seven months in 2015-2016. This is a leading environment for citizen science practice and research, including the Australian Museum Centre for Citizen Science and leaders in the Network for the Public Communication of Science and Technology. In addition to strengthening UiO's research network, Hetland produced six conference papers, three journal articles, and finalized his doctoral thesis as *Mediascapes* outcomes.

Professor Palmyre Pierroux had a three-month stay as visiting scholar at ZBW (Leibniz Information Centre for Economics) in Hamburg in 2018. ZBW conducts research on open science and citizen science, studying the impact of the involvement of the non-academic public in scientific research that is both community-driven or led as global

investigations. The stay supported Pierroux in producing three chapters and the first draft of the book *A History of Participation in Museums and Archives. Traversing Citizen Science and Citizen Humanities*, a key outcome of the Mediascapes project.

Project management and resources

The interdisciplinary and inter-faculty model has been very successful in managing research teams but also in knowledge building across teams. The main three teams have involved close collaboration between core researchers at IPED (UV, UiO) and, respectively, Associate Professor Line Esborg, Head of Norwegian Folklore Archives (HF, UiO); Chief Engineer Dag Endresen, Manager of the Norwegian participant node of the Global Biodiversity Information Facility (Natural History Museum, UiO); and Senior Curator Birgitte Sauge at the National Museum of Art, Architecture. The project has not been impacted by some minor changes in partners and personnel. These changes included an extended project period due to PhD candidate Emily Oswald's maternity leave, the early retirement of one architect firm originally included in the project, and the early departure of Postdoc Christidou, who accepted a new position at NTNU. Project resources were sufficient to allow for hiring Associate Professor Rolf Steier and research assistants to work with Senior Curator Birgitte Sauge on the virtual reality exhibition studies. Resources originally budgeted for EngageLab (UiO) for technical design services in this study were re-allocated to allow for the purchase of these services from external firms when EngageLab was reorganized. All of the guest researcher stays were executed as planned and contributed to the overall quality of research outcomes.

Plans for dissemination and use of project outcomes

As research results continue to be produced and published, dissemination at key conferences and seminars are already planned for 2021-2022. In addition to practice and potential policy impacts described above, the project has established cultural citizenship, civic identities, and participatory models for citizen humanities and citizen science projects as an area of expertise at IPED, which is highly relevant for future leadership of Horizon Europe projects with this focus. A second area of expertise is in virtual reality research, which is highly relevant for both education and cultural sectors, and this topic will similarly be pursued in future research projects at IPED. A third plan for exploiting project results is the potential commercial development of *Visitracker* as a post-occupancy evaluation tool for architects and building developers, currently being explored at the initiative of *Mediascapes* partner firm Atelier Oslo. Finally, a revised version of the exhibition experiment, titled *Transcribed Nature*, is being shown and studied at the exhibition *The Architecture Machine. The Role of Computers in Architecture*, Architekturmuseum der TU München. In keeping with the overall *Mediascapes* publication plan, four articles (in progress) will be submitted to scientific journals in 2021 based on visitor data collected from these studies.