Co-Design within and between Communities in Cultural Heritage: Current and Open Questions

Laura Maye ¹,* and Caroline Claisse ²

¹ School of Computer Science and Information Technology, University College Cork, T12 XF62 Cork, Ireland
² Open Lab, School of Computing, Newcastle University, Newcastle upon Tyne NE1 7RU, UK
* Correspondence: laura.maye@ucc.ie

1. Introduction

In this Special Issue, we explore emerging theories, methods, and case studies focusing on co-design activities within and between communities in cultural heritage contexts. The motivation for this Special Issue stems from our involvement in heritage work in the last ten years. Maye’s experience in the Material Encounters with Digital Cultural Heritage (meSch) project [1] involved the collaborative design of tangible technologies for museum exhibitions. The project was a large-scale, co-design effort including designers, researchers, technologists, as well as cultural heritage professionals (such as curators and exhibition designers) across three museums in Europe. Building relationships between the different communities of stakeholders required navigating the diversity of values and experiences each stakeholder had with technology, its role in heritage and exhibition design, and their own practices. Even among different groups of cultural heritage professionals, we noticed that their goals, values and practices were also nuanced throughout the process (e.g., [2]). However, through participating in and reflecting on co-design activities, each stakeholder community began to formulate a shared understanding of what was being designed and how it reflected their values, experiences and practices in heritage.

Claisse’s PhD research explored working with artists, designers, and museum volunteers to co-design smart exhibits in a small historic house museum in the UK [3]. The museum escaped closure through the efforts of local volunteers, who have kept the place open to the public. Since then, the volunteers have acted as gatekeepers and storytellers of heritage onsite. In her practice-based research, Claisse explored the potential of interactive exhibitions for the local community by engaging museum volunteers in the creative process of co-envisioning interactive and tangible exhibition designs. The engagement was scaffolded by art-based interventions and design-based methods, which played an essential role in supporting volunteers’ engagement, particularly in terms of sense-making and storytelling over time. Learnings from this process showed that each community volunteer made a unique contribution based on their interests and stories to share about the house. Developing a critical, situated and craft-based approach contributed to the co-creation of interactive exhibits that brought to life volunteers’ unique contributions, which came together through design [4], in the creation of an interactive experience that was perceived as rewarding and meaningful to the community.

Notwithstanding, we are aware of the opportunities and challenges that technology could also play to enable and inhibit participation. Particularly Maye’s recent work on a project called Isle-stories, which involves supporting Island community members in recording their own stories using handheld devices. While telecommunication technologies could facilitate participation, they could also limit participation in areas where internet connectivity is intermittent. Further, in contexts where telecommunication is not typically utilized to support collaborative activities, there are risks of creating considerable barriers toward participation in co-design activities.
Through our experiences, we have witnessed co-design in heritage manifest in various ways. The shared consensus is that co-design involves design processes that are “with” rather than “for” different people, communities, and stakeholders. We understand that such activities require a reflection on the processes in place to support collaboration, reflexivity, relationship building, and trust. To date, co-design in heritage projects has varied across time (e.g., [2,5]), the networks of heritage communities involved synchronously or at different stages of the design (e.g., [6]), and in terms of how relationships initiated and evolved (for example, whether they stemmed from academic projects [7] or from institutions and communities where more research is needed [8,9]). Thus, the presentation of co-design in the initial Special Issue call remained broad, intending to capture the various ways co-design is implemented in heritage contexts.

Additionally, we are cognizant of the various viewpoints on what constitutes a community. For instance, Wegner defines a “community of practice” as one where its members regularly come together collectively to learn or engage in a common concern, which will inevitably impact their practice [10]. Through the lens of a “communities of place”, people may connect, form, and sustain communities at a particular place, which may be geographical, but also digitally constructed or sustained due to technological advances. Communities may also be socially constructed; for instance, Anderson defines the concept of an “imagined community”, where people may formulate communities based on their beliefs or influenced by media constructs [11]. In the context of heritage, one may consider the distinction between citizen-led groups, i.e., groups of people who have a foundational interest in documenting, preserving, and co-constructing local heritage knowledge of value to them, and professional groups, such as those connected to institutions. Our argument was to capture as much conversation surrounding the types of communities engaging in heritage co-design as possible. Further, technological advances and changes during COVID-19 may have also extended opportunities for communities to form and connect (for example, online or through telecommunication tools). In this way, our goal was to keep the definition of community open for prospective authors. Our goal was to generate conversations around new and emerging communities involved in co-design activities in heritage contexts.

We also widened our definition and referral to heritage. Heritage has been used across different disciplines and manifested in many forms. In some cases, heritage may refer to tangible and intangible connections to the past; however, we must also account for “living heritage”, whereby everyday practices and living memories are considered imperative as part of a community’s heritage [12]. Indeed, there are institutions (e.g., those state or community-run-and-owned) encompassing museums, libraries, galleries, and art institutions that also engage in heritage holdings, artefacts, or stories. Nonetheless, we should also acknowledge the past and living heritage that lives among and is shared between citizen-led groups. These citizen-led groups—not tied to institutional goals—may have different values, needs and motivations. Instead, their focus may be on preserving or eliminating undesirable memories and understanding how their heritage can be shaped to support the future of their communities.

Our Special Issue contributes to emerging collections of work surrounding community participation in heritage through the lens of technology. While collections focus on recent advances in heritage technologies (see e.g., in mixed-reality and virtual environments [13,14], games [15], artefact preservation and restoration using technology [16]), few works explore the growing co-design activities occurring within and between communities integrating new technologies. Some collections investigate the participation of heritage communities (e.g., Higgins and Douglas [17]); nonetheless, more work is needed to stimulate conversations surrounding co-design among heritage communities with and around technology. Ciolfi et al. [18] have explored the multifaceted involvement of cultural heritage communities in projects encompassing a broad range of digital technologies. Their edited book brings together acute cases to highlight relationships between technology, heritage, and communities. Despite extensive work on co-designing with communities,
there needs to be more work on those emerging conversations unfolding between the different communities involved in co-design projects in heritage that include technology. Additionally, we must also account for plurality of voices within a community, where, even in these cases, people may have divergent needs and values. With this in mind, this Special Issue aims to shed light on how relationships within and between different heritage communities emerge, how they are sustained, and how these are balanced and fostered during co-design activities. Through those co-design cases, we explore how technology mediates and facilitates those conversations and relationships.

In the next section, we detail how the call for papers was presented to potential authors. We also provide a snapshot of all articles submitted to the Special Issue, explaining how they contributed to the different questions posed within the call.

2. Landscaping Co-Design within and between Cultural Heritage Communities

In this Special Issue, we invited authors to submit articles that explored co-design in heritage contexts. We were particularly interested in work that presented multifaceted opportunities that informed theory, new methods and approaches, practical case studies, and technological advances to support co-design within and between communities. Therefore, it is imperative to capture work that focuses on and connects between theory, practice, and approaches, as each is not mutually exclusive. We see in the literature that theory can often drive practice; similarly, case studies can often inform theories for co-design. Presenting case studies enables us to explore how different contexts and applications of co-design bring about new challenges, which can enhance our theoretical understanding and approach toward co-design in heritage contexts.

Our initial call aimed to capture a wide range of conversations emerging from recent research while providing guidance for authors. We aimed to capture a wide range of conversations emerging within the scope of the call. However, the questions we posed underneath each category (as listed below) were not exhaustive:

- Methods and approaches to empower collaborative design within and between communities in cultural heritage: here, we were interested in methods that support design collaboration, including reflective and reflexive practices and approaches that consider relationships, trust building and communities’ ownership.
- Multimodal, multi-sensory, augmented, connected and other forms of technologies to facilitate co-design and co-creation of heritage: there are also means in which technologies are being used to support collaboration on heritage topics, or means to connect to grassroots communities. We were interested in capturing how people were adopting or appropriating technologies for those purposes and how co-design could be supported in those contexts.
- Co-creating technologies within and between communities in cultural heritage: as we design technologies with and between other forms of communities, we wanted to capture how co-design processes unfolded in the context of heritage and technology projects. We also sought new models, guidelines or frameworks that could be employed and transferred across heritage projects.
- Theoretical and position papers: we were eager to bridge the gap between theory and practice of cultural heritage and sought examples where new theoretical frameworks, positions, and approaches could support us in understanding how heritage projects evolved in the context of co-design.
- Case studies of practicing co-design within and between communities in cultural heritage settings: we were interested in papers that described and critiqued particular cases of co-design around heritage technologies, that provided lessons learned to the community.

For this Special Issue, we selected nine papers that capture at least one of these perspectives of co-design. In these papers, the authors presented their own stance on co-design. The papers capture the breadth of conversations unfolding in heritage contexts such as museums, rural communities and citizen-led case studies.
Blaschitz, et al. present four case studies reflecting the opportunities and challenges of co-creating heritage in museum settings with local communities. They define the participatory process of co-curation in terms of identifying artifacts, preparing cultural content, and interpreting cultural heritage. Challenges associated with authority and motivation were found to be most prevalent across all cases; as such, the authors suggest a framework for supporting co-curation processes and the use of technology in museum settings.

Calvi et al. put forward a multi-stakeholder approach for supporting communities’ multifaceted and multi-layered involvement in designing digital cultural heritage assets. In their work, they include a broad range of non-institutional stakeholders such as heritage professionals, developers, policymakers, designers, tourists and local communities. Like Blaschitz et al., they focus on the collaborative involvement of stakeholders in developing digital technologies; however, the scope is focused on multiple stages of ideation, design, development and realization of tools and not solely curation.

Kelly and Taffe report on how a rural community responded to developing and implementing digital technology as part of an exhibition in an indigenous Community Museum in Malaysia. Their article draws out tensions between urban values of heritage, which may contrast indigenous needs and practices enacted by the rural community. Like other articles in the Special Issue, this case study demonstrates co-design as a longitudinal and iterative process. Findings from this article encourage further thinking on how to sustain engagement and agency of the community, particularly when co-designing with digital technology in rural contexts.

Koutsabasis et al. propose design-based methods for supporting the co-curation of location-based games across a network of museums in Greece. Their work focuses on co-designing within communities across the museum network, including researchers, cultural heritage professionals, developers, local communities and visitors. Their article offers a detailed account of how Fieldwork and Design Thinking can be used over time for developing interactive systems and supporting the deployment of routine participatory design activities at each site.

Mason critically reflects on the role of Design Thinking and Human-Centred Design in encouraging a more holistic and collaborative approach between museum professionals, digital and design experts, and visitors. He contextualizes his reflection within the context of museums’ digital transformation, which has been accelerated by measures taken during the COVID-19 pandemic. In his article, he frames co-design as a human-oriented approach with qualities such as empathy, which is central to understand visitors’ experiences.

Senior et al. provide a case study that explores the uncertain future of rural communities and their churches through design. Their cross-disciplinary team engages the local community through a conversation about how historic places of worship can be repurposed to address local needs and rural values. This conversation unfolds through a creative, situated and co-design process where technology is used to channel participation over time.

Tsenova et al. collaborate with a Historic House Museum in the UK where they engage staff members and volunteers in the co-design of interactive experiences that explore the concept of polyvocality. Insights from their work suggest the importance for designers to be reflexive and critical throughout the creative process. Informed by their practice-based work, a new approach is proposed for supporting designers to develop a reflexive and sensitive practice, in which both values of designers and stakeholders are critically considered and negotiated, and how these may be translated into design.

Morris and Rodriguez-Amat shift our attention toward safeguarding and capturing intangible cultural heritage, particularly the practice of playing the Uilleann Pipes. Uilleann Pipes are an instrument traditionally controlled by the player’s elbow and are a keystone to many traditional Irish music performances. The authors present a collaboration with one Uilleann Pipes player, indicating how the data generated from the motion capture system impacted the player’s practice in playing the instrument. Finally, they highlight how the
data acted as a tool for reflection on playing practice, as well as a means for developing playing style.

Di Lenardo describes the co-design process of a search engine—the Morphograph—targeted toward art history researchers. The search system aims to connect art history researchers with other photographs or archival content of interest based on related visual patterns. The system employs machine learning techniques to formulate connections between the archival works. Elements of the system, including the scanner for archiving content and the development process, were co-designed with art history researchers.

As demonstrated, each article in the Special Issue reflects on different opportunities and challenges relating to co-design activities within and between cultural heritage communities. The diversity of insights captured from co-designing with and between various forms of communities with disparate values and needs opened up conversations regarding how activities surrounding co-design in those spaces can be fostered moving forward.

3. Considerations and Open Questions for Future Work

This section describes key insights emerging from the articles regarding how co-design activities can be fostered and maintained. In our review of these articles, we identified five themes that center around current and future considerations for community participation in the co-design of heritage: Pandemic, Past, Present and Future; Authority, Ownership within and between Communities; Plurality and Polyvocality; The Role of Design as a Structure and Reflexivity, and Technology as Mediator/Facilitator of Cultural Heritage Knowledge. These themes have emerged in work surrounding co-design and cultural heritage (see, e.g., [6,18,19]; nonetheless, their emergence in the articles presented in the Special Issue highlights the need for further research in those areas. Informed by these themes, we raise open questions that may prompt future exploration for co-designing within and between communities in heritage contexts. We do not expect these questions to be an exhaustive list; instead, we hope they inspire conversations surrounding how co-design may be facilitated in cultural heritage contexts, particularly in collaboration with communities of different needs, values and interests.

3.1. Pandemic, Past, Present and Future

A number of the article submissions highlight how the pandemic impacted design activities and visitor experiences within and between professional museum communities, researchers, and local citizens. Koutsabasis et al. emphasize how implementing digital technologies as a communication mechanism for design activities could impede participation. Moreover, restrictions (such as those imposed during the COVID-19 pandemic) could lead to museums considering how to cater for visitor groups not generally targeted (such as local citizens in the case presented). Mason indicates that the pandemic amplified museums’ need to be responsive to change, which is properly implemented in the museum’s digital strategy. Mason argues that human-centered design practices can be employed to explore digital transformation, which embeds the values of museum staff, visitors, and all other stakeholders involved in the design process.

Reflecting on the challenges of the accelerated and dynamic changes described in both articles, we refer to Falk’s notion of the museum visit [20]. Falk argues that the visitor experience begins before one enters the museum. The visitors’ decision is not solely based on their demographic, but rather, their needs and desires for their leisure and how the museum visit may complement those. If the visit meets those expectations, the visitor will likely be satisfied. We argue that Falk’s notions of the museum visit have strong implications for moving forward on co-design processes and understanding how to support unprecedented changes in visitor demographics. Since the model is focused on the motivations and needs which are shaped by visitor’s prior experiences, the physical set up of the museum and exhibition, and the interactions that occur in the museum space, there is a strong emphasis on the dynamic nature of the museum visit. Therefore, identifying strategies to respond to the changing motivations of visitors may support museums in
responding to unexpected changes moving forward. In response to these challenges, we ask the following open questions to prompt further exploration:

- When designing digitally-mediated experiences of heritage, how might we consider the dynamic needs and values of visitors in co-design processes, particularly for those who may be local and regular visitors?
- How might we support museums, heritage institutions, and other heritage communities in navigating changes that emerge through human-centered design in a sustainable way?

3.2. Authority, Ownership within and between Communities

Another theme focuses on the notions of authority and ownership of heritage knowledge, especially once it is shared among communities. Sharing heritage information and knowledge is an essential aspect of heritage, which is often embedded within, e.g., co-design [2,21], co-curation [22], and crowdsourcing [23] activities around heritage. Naturally, discussions surrounding ownership and authority of heritage content emerge, which have traditionally raised questions on who is encouraged to take ownership of heritage projects, who is responsible for sharing heritage knowledge, and who owns it once it is shared. In the articles presented, challenges of authority were particularly common between heritage institutions and local citizens themselves. Blaschitz et al. discuss the challenges of authority, indicating that it can sometimes be difficult to provide authority and ownership to local communities as curatorial experts. This may be due to the power dynamics and values embedded in heritage institutions, but also the technical barriers that hinder participation in heritage projects. Responding to those challenges, Blaschitz et al. highlight the imperative role that younger people or those who have the technical expertise or interest may play as intermediaries. In their case, intermediaries are responsible for obtaining heritage information from local community members and are entrusted to use technological tools to share heritage data.

The technological barrier to ownership of sharing heritage information is also raised by Calvi et al., who argue for minimizing the specialized technical knowledge required to share heritage knowledge. From these two articles, a consideration arises where people (i.e., humans) and technology (non-human stakeholders) act as intermediaries for sharing heritage content and information. Both human and non-human intermediaries influence authority and ownership. In the context of setting up community radio stations in rural areas, Cibin et al. [24] discuss how the values and goals of human intermediaries could influence the direction of the project outcome. While technologies are becoming more available for those with limited technical knowledge to co-curate heritage knowledge, the specific features that can be adapted or modified often determine what people have authority over (for example, adding/changing co-curated content [22]). It could be useful to consider what impact human and non-human intermediaries have on the ownership of heritage content. With this in mind, we argue for more qualitative studies that assess how lowering technological barriers to participation fosters ownership and authority on heritage knowledge. Therefore, we pose the following open questions:

- How could we address conversations around ownership of heritage content in the design process, considering the role of human and non-human intermediaries in that process?
- How do we support conversations and collaborations between communities, and who has authority over what?
- What methods and reflection practices could be adopted in co-design processes in heritage activities to consider ownership and authority across all stakeholders involved and at each stage of the process?

3.3. Plurality and Polyvocality

This theme is mainly present in works by Tsenova et al. and Senior et al., who present two case studies that exemplify ways to co-design for maximizing plural voices and polyvo-
cal experiences. The concept of polyvocality has recently gained traction in critical heritage studies to diversify the established knowledge and stories told [25]. Interactive technology (like those reported in both articles), demonstrates opportunities for plurality to present not one, but multiple perspectives and stories on heritage, with the potential for challenging established discourses that may not be representative of local communities or not inclusive of marginalized groups. Tsenova et al. report on a research through design process where they demonstrate how to engage with authorized heritage discourses, which leads to the development of a bespoke approach titled “Designing with Genius Loci”. Their approach encourages designers to work with polyvocality critically by identifying authorized narratives already present and enacted onsite and supporting them in understanding how these may be negotiated during the co-design process. Senior et al. connect plurality of voices to co-design with rural communities to imagine new solutions for the future of community assets (i.e., churches). Like Tsenova et al., they develop a bespoke approach that considers a plurality of perspectives and rationales for finding shared understanding and effective solutions that can appeal to a broad range of stakeholders whilst staying open to change. Both case studies demonstrate new approaches for using digital technology to scaffold situated and dialogical inquiry in co-design with the intention to stay open and cultivate openness and awareness of place through design. We found that both approaches raise questions around scalability with a potential impact on the sustainability of co-design outputs. Furthermore, designers working with polyvocality and plurality of voices in design could explore the following:

- When co-designing with multiple communities, how might the plurality of values, goals and needs be shared and negotiated through design?
- What approach or strategy can be put in place to address individual differences, which may result in conflicting interests and needs during the co-design process?

3.4. The Role of Design as Structure and Reflexivity

The work of Tsenova et al. demonstrates the agency and role designers play in the co-design process, particularly when working with stories as materials for design. They emphasize the importance for designers to have space to be reflexive about the choices they make and, in turn, to foresee any potential impact their choices might have on the audience’s sense-making and broader experience of heritage. Their work also highlights the value of long-term engagement with heritage sites and communities and shows how design can serve as a way to synthesize practitioners’ sensitivity and learning about a place and its community, to iteratively inform and further structure the steps of the creative process. Co-design practitioners are increasingly dealing with “wicked problems”. In the case of Senior et al., Design Thinking is found helpful for crafting new approaches to deal with complex problem spaces where there is no “one size fits all” solution. Non-linear thinking, flexibility and responsiveness are shown to be critical in practitioners’ toolkits, supported by design outputs and materials (i.e., probes, prototypes) that further help structure co-design processes and engagement in reflexivity. Mason offers a more general reflection on the role of Design Thinking in museums in the context of digital transformation. He unpacks some of the opportunities and challenges, thus making a case for a more holistic and human-oriented approach. He advocates for museums to adopt human-centered design practices to support the development of innovative and meaningful visitor experiences. However, this also brings new implications for museums and their staff, which need to be considered. Following our review of this theme, we pose the following open questions:

- How are conversations, interactions, and exchanges facilitated so that all important actors/stakeholders have an opportunity to be included?
- How might Design Thinking support or shape new practices among communities in cultural heritage, and how can cultural heritage communities be supported in adopting Design Thinking processes?
3.5. Technology as Mediator/Facilitator of Cultural Heritage Knowledge

In some cases, what is learned is the means by which technology acts as a facilitator or mediator for collaborative exchange. Indeed, the notion that tools can be referred to as things or “actors” in the co-design process is not new. For instance, Ehn [26] notably emphasizes how materials, tools, and other things mediate the participatory relationship between different stakeholders in design. Giaccardi et al. [27] discuss a thing perspective in design, emphasizing how ethnography centered through objects, materials and other artifacts can provide means for humans to see and interpret the world in ways otherwise not possible. We see particularly in the work of di Lenardo and Morris how this perspective—through the lens of technology, data, and artificial intelligence—could be brought forward. Morris reflects on how the use of motion capture technologies impacted the practice of the Uilleann Pipes performer, both in terms of their embodied engagement with the instrument and as a reflection on their own style of playing. In the Replica Project, di Lenardo speaks about how a particular tool for archiving historical photographs can facilitate researchers, particularly art history researchers, in co-constructing heritage knowledge. In this article, we see machine learning techniques being used within the archival system to draw links between photographs shared between art history researchers, which in turn impacts their practice and knowledge of heritage. With the growing influence of technology on art and performance practice in heritage, we raise the following questions:

- Can multimodal data, such as gestures and motion captured data, be used as part of the co-design process for performance, craft-making, or other embodied forms of intangible cultural heritage?
- How can such data be used or presented to support sense-making of a communities’ practices? In turn, how might this data be incorporated to inform individuals’ practice?
- What is the role of Artificial Intelligence in mediating conversations within and between different communities and how they collaborate during the co-design process?

The above themes and open questions provide a flavor of the types of conversations that are unfolding around communities, co-design and heritage brought forward from the articles included in the Special Issue. By raising these questions, our goal is to draw attention to open topics for discussion and further research. We hope the questions posed in this editorial will act as a catalyst for further discussions and contributions surrounding co-design activities within and between heritage communities.

Author Contributions: Writing—original draft preparation: L.M. writing—reviewing and editing: L.M. and C.C.; theme development: L.M. and C.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: This editorial article required no primary research. We referred to articles in the “Co-Design Within and Between Communities in Cultural Heritage” Special Issue.

Acknowledgments: We would like to thank the authors for the individual articles for their contributions to this special issue. Their work brought interesting discussions in the landscape of co-design in heritage settings.
Conflicts of Interest: The authors declare no conflict of interest.

References


Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.