

POLYVOCAL HISTORIES THROUGH AUGMENTED REALITY

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Abstract

Empire Retold reassessed Glasgow's 1938 Empire Exhibition through a decolonial lens, with the aim of surfacing diverse perspectives and counter-narratives. Through participatory design, three location-based augmented reality (AR) audio stories were created. This paper focusses on the methodological and ethical dimensions of polyvocal approaches to history and heritage. Findings reveal how polyvocality and inclusive design can disrupt authorized heritage discourses, and enable multiple perspectives to coexist within creative, place-based, technological outputs. We reflect on this case study for ethical and dialogic engagement with contested histories and the enduring legacies of empire, and present lessons learned and recommendations for future polyvocal heritage projects.

Keywords: Decolonisation, augmented reality, mobile technology, minorities inclusion, polyvocality, place-based learning, history education.

1 INTRODUCTION

The Empire Exhibition of 1938 was the last of the large, British imperial-themed exhibitions held between The Great Exhibition (1851, Crystal Palace, London) and the outbreak of WW2 in 1939. It took place in Bellahouston Park in Glasgow, with the stated purpose to illustrate the progress of the British Empire, demonstrate the potential of UK (and specifically Scottish) industry and production, foster trade and relationships within the Commonwealth, and finally, “emphasize to the world the peaceful aspirations of the peoples of the British Empire.” [1]

The Glasgow School of Art (GSA) has significant prior investigations into this event, producing immersive 3D models, digitized cultural artefacts, and creative co-designed responses [2], [3], [4], [5]. Whilst overshadowed by WW2, the Exhibition remains significant and relevant to the study of British social, cultural, economic, industrial, and political history. However, there is now a crucial need to reassess narratives of the Exhibition using a decolonial lens. Whilst earlier research focused on architecture [2] or using the buildings as inspiration for cross-disciplinary learning [4], a recent project had the explicit aim of highlighting the voices of people of Minoritized Ethnic heritage whose cultures have been represented through the imperialist lens of the Exhibition. We also aimed to enable decolonial re-readings of the Exhibition and its legacies through both conceptual and geographical links between the (now-unrecognizable) site of the Exhibition, GSA's digital archive (3D models, photographs, ephemera, radio, etc.), and contemporary narratives from local communities.

Today, the 1938 Empire Exhibition occupies a paradoxical position in Glasgow's cultural memory. Once an event of global scale that attracted nearly 13 million visitors, it is now scarcely visible in the physical or collective conceptual landscape of the city. Absence of lasting markers in Bellahouston Park mirrors a wider tendency to overlook (or selectively remember) the imperial past, yet Glasgow's industrial prosperity was deeply entangled with colonial trade, migration, and slavery, and these legacies continue to shape contemporary inequalities. Recent public debates in Scotland – from Black Lives Matter to discussions about decolonizing museums and university curricula [6] – have renewed attention on how colonial histories are represented and contested. Re-examining the Exhibition using inclusive research design and innovative technologies provides an opportunity to confront these silences, to surface counter-narratives, and to engage diverse communities in critical reflection on Scotland's imperial past.

1.1 Aims and objectives of the research

“Decolonising the British Empire Exhibition of 1938 through Augmented Reality Narratives” [7] was a research project funded by the UK Arts and Humanities Research Council in 2024. Its key aim was to deepen knowledge of local history and provide a ‘decolonized’ view of the British Empire and its complex legacies. Relevant to this paper, the project's objectives were to:

- Undertake participatory design with marginalized communities, local residents, schools, and experts in Empire/colonialism;
- Co-design three audio-driven, augmented reality narratives to highlight diverse historical and contemporary interpretations of the Exhibition;
- Deliver narratives in Bellahouston Park using location-based Augmented Reality (AR);
- Disseminate project as a model for decolonial re-readings of heritage.

In this paper we foreground the methodological and ethical dimensions of the research. Specifically, we focus on how decolonial approaches informed workshop design, how polyvocality was enabled through participatory co-production, and how facilitation practices were adapted to support diverse groups to engage with sensitive or contested heritage. As one research participant observed, “*Decolonization is not about telling an alternate narrative but about creating a space for multiple narratives*” [7]. We argue that polyvocal methodologies, when combined with creative technologies such as augmented reality, can offer powerful ways of engaging with legacies of empire. This situates the paper at the intersection of decolonial scholarship, participatory design, history education, and innovative technologies contributing to broader debates about inclusive, place-based learning. (Creative methods for geo-located AR are covered in a separate forthcoming book chapter.)

2 BACKGROUND AND CONTEXT: DECOLONIAL APPROACHES

Decolonial approaches require the reassessment of assumptions about the past and the making explicit of hidden agendas [8]. Within heritage studies, this involves interrogating Eurocentric framings that have historically prioritized imperial perspectives while silencing or marginalizing colonized voices. At the time of these exhibitions, critiques of imperialism were voiced both within Britain (*cf.* [9]) and across its colonies, through what has been described as “reverse tutelage,” where colonial voices actively influenced metropolitan debates [10]. This challenges the idea that opposition to empire was a late or purely academic phenomenon, highlighting instead the dissent and resistance embedded in historical contexts.

More broadly, decolonizing heritage involves recognizing that exhibitions, museums, and archives have functioned as sites of imperial authority. Research has shown how imperial exhibitions often displayed colonized peoples and cultures through racialized and hierarchical frameworks [11], and how postcolonial critiques can reconfigure the politics of display [12]. These interventions call for practices that surface forgotten or invisible perspectives and make space for multiple ways of knowing the past.

2.1 Polyvocality

Polyvocality is a central strategy for decolonial practice, emphasizing the value of multiple, sometimes contradictory, perspectives in re-narrating history. In heritage contexts, it has been framed as an alternative to heritage discourse that privileges institutional voices [13]. Polyvocal approaches emphasize that lived experience, community knowledge, and minority perspectives are equally valid, even when they question or diverge from dominant narratives. It embraces tensions and contradictions as opportunities for learning, helping to build a more representative account of complex pasts. Polyvocality can also open up inclusive and participatory forms of engagement, creating space for different communities to encounter and learn from one another [14] in informal contexts. This can support multicultural inclusion by enabling participants from diverse backgrounds to bring their perspectives and lived experiences into dialogue with historical narratives. Hale *et al.* [18] highlight the “rich and fruitful opportunities that counter-archaeologies present when embedded in collaborative projects from the outset,” showing how forms of *counter-mapping* that include non-mainstream social geographies can make visible previously marginalized forms of heritage. Within digital heritage, technologies such as 3D reconstruction and immersive storytelling have been used to re-stage past exhibitions, supporting plural interpretations through layered narratives and interactive engagement [15]. This demonstrates how polyvocality is not only a methodological choice but also a way of understanding knowledge itself, recognizing that history is never singular but continually contested, negotiated, and reinterpreted [16]. By situating the 1938 Exhibition within this context, the project demonstrates how polyvocal methods can be tools for both critical heritage scholarship and inclusive, informal education.

However, academic research carries with it the inherent risk of reproducing power imbalances (shaped by colonialism) under a performative ‘mask’ of diversity and inclusion. Decolonization is never simple [17]. Whilst it is impossible to completely avoid the risks to polyvocality embedded in existing power dynamics, we took an active approach to anti-racist and ‘inclusive by design’ methods from the very

start, including, crucially, self-reflective positioning of the researchers within the project framework. Acknowledging the limitations of reassessing empire whilst working within contexts fundamentally shaped by it, this paper proposes polyvocal, interactive storytelling as a particularly appropriate methodology for contributing to the critical interrogation of historic events and re-presenting them in outdoor augmented reality. It provides a tangible example of how decolonial practices can be undertaken in academic discourse and also in everyday encounters with place, memory, and community.

3 PARTICIPATORY METHODOLOGY

The polyvocal conceptual framework allowed the highlighting of diverse perspectives from participatory methods, and also informed our focused research into some of the counter-narratives, wider contexts, and different interpretations of the Exhibition, from 1938 to today (e.g., [9]). Polyvocality is resonant with co-design practices, as both emphasize plurality, collaboration, and the recognition of multiple forms of expertise [18]. Co-design involves design practices that are carried out with rather than for communities [19] and can promote deeply relational and reflective forms of engagement and self-actualization [20]. Beyond conventional trust-building, contemporary decolonial participatory design foregrounds relational accountability and cultural sovereignty, drawing on strands of anticolonial, postcolonial, decolonial, and pluriversal practices [21]. This approach encourages deeper consideration of whose knowledge counts and how power shapes design. Furthermore, participatory arts-based methods can be especially effective for decolonizing learning processes, as they challenge hierarchies, foster pluralism, and facilitate dialogue across difference [8]. Such practices also align with broader ideas of learning as a social process where knowledge emerges through participation in communities of practice rather than being transmitted from experts to learners [22]. Our approach aimed to be inherently equitable and impactful and committed to contextually sensitive methods to support “nurturing and cherishing the space in-between relationships” [23].

Participatory workshops were central to this methodology, with an emphasis on retaining authentic voices from the initial stages of engagement through to the final immersive audio narratives. Bringing together diverse communities, academic researchers, media designers, and programmers and working within established best-practice guidelines [24] creates the conditions for meaningful co-creation. The value of this process lies not only in the production of innovative outputs, but also in the trust, shared ownership, and mutual understanding developed across all participants in the process [25].

3.1 Active anti-racism measures

Collaboration with community organizations and anti-racism specialists began prior to project design, reflecting a broader commitment to care, reflexivity, and accountability when working with potentially sensitive topics. Anti-racism training was delivered by a specialist external consultant and focused on responsibility for risks when working with racially minoritized communities, techniques for minimizing harm, and the continuous and ongoing process of embedding active self-reflection in research practices.

3.2 Designing participatory workshops

Ethical approval for the study was granted by The Glasgow School of Art, with particular care given to ensuring the workshops were supportive and respectful whilst preserving the authentic voices of participants. Participants were compensated with vouchers, and specialist anti-racism counselling was made available. Consulting best practice for working with racially minoritized communities [24], [26] also led us to reconsider our initial plan of maximizing participant numbers. Rather than prioritizing scale, the design pivoted to a paired workshop model, enabling deeper engagement with fewer communities over a longer period of time. Each pair of workshops was separated by a two-week interval, during which participants were given optional prompts for asynchronous reflection and further contributions. Although guidelines recommend longer periods of engagement *cf.* [26], this structure supported continuity, trust, and more thoughtful responses, within the small scope of this project.

The first workshop opened with an ice-breaker designed to provoke binary disagreement on a ‘safe’ topic unrelated to colonialism (“Are you a cat person or a dog person?”) which was used to collaboratively agree a code of practice for behavior that respected differences across the cohort (explicitly including the facilitators.) Workshop 1 was designed to frame existing data from earlier GSA research as *cultural probes* [27]. Archival images, artefacts, maps, and timelines were used as open-ended prompts to elicit personal reactions to the 1938 Empire Exhibition, reflections on its legacies, and contemporary perspectives on race, colonization, and identity (Figure 1). Probes are particularly effective for surfacing latent or unexpected insights and eliciting responses that go beyond conventional

interviews, precisely because they leave space for ambiguity and open interpretation [28] and provoke reflection and dialogue. Alongside visual probes, participants were invited to respond to interviews (recorded in 2007) with Glaswegians who had attended the Exhibition as children. This provided authentic memories from a generation no longer accessible for direct involvement. We ensured that seating and the way in which prompts were presented was non-hierarchical. Mapping exercises were incorporated to connect these memories and reflections to the geographical site of Bellahouston Park, encouraging participants to situate their stories within both local and global contexts.



Figure 1 – a map and timeline were used to draw out individual knowledges and personal events

The second workshop focused on personal narratives. It opened with an invitation for participants to share a story about their own name (which often organically led to reflections about identity and race.) Participants then developed structured story outlines on topics of their choice, which were discussed and refined collectively, considering theme, audience, structure, and emotion. These accounts and questions helped to identify key themes to inspire and inform the AR audio narratives, as well as strategies and formats for sharing participants' contributions. Templates for both workshops and all worksheets are available from the project website: [7].

Data were collected through direct participant notes, facilitator notes on discussions, photographing physical artefacts, and a shared digital whiteboard where participants captured reflections/comments in real time. Importantly, participants were later invited to revisit and approve their contributions, ensuring accuracy and ongoing consent. Together, this dataset evidenced mutual learning, shared ownership, and the production of creative artefacts that combined multiple forms of knowledge.

3.3 Participant recruitment and demographics

Recruitment required careful collaboration with community partners and anti-racist trainers to ensure that racially minoritized groups were meaningfully included. Recruitment focused on specific local communities of interest, including those living near the site of BEE1938, recent immigrants/refugees, and racially minoritized Glasgow residents. Partner organizations were involved from the very start of the project. These included: local refugee integration networks; a city-wide refugee support charity, Facebook groups of communities local to Bellahouston; arts, culture and sport providers local to Bellahouston; a youth social justice education organization; and local and national anti-racism organizations. These partners were asked to advise (within their capacity) on the overall approach and send the invitation to participate in workshops to their networks.

Three pairs of workshops were attended by 22 participants (described below as Cohorts 1, 2, and 3.) Cohort 1 consisted mostly of refugees and asylum seekers. Cohort 2 entirely consisted of residents local to Bellahouston Park, none of whom were from racially minoritized backgrounds. Cohort 3 entirely consisted of people from racially-minoritized backgrounds. The differences in demographics led to different knowledge, perspectives, and interactions within the workshops, discussed below.

Workshops were evaluated using brief prompt cards focusing on benefit, learning, and suggestions for improvement. Feedback was extremely positive, validating the approach described above: several

racially minoritized participants specifically praised the methodology, stating that the workshops “don’t feel extractive” (Cohort 3). The broad variety of views expressed by participants coupled with strong intra-participant discussions further vindicated this approach.

4 KEY FINDINGS: NARRATIVES FROM THE WORKSHOPS

Workshops generated a rich body of reflections, stories, and creative contributions. Analysis of these materials revealed a number of recurring themes, presented below. The themes do not represent a single or definitive account of the 1938 Empire Exhibition, rather they illustrate the diversity of perspectives and the value of holding together different, sometimes contradictory, viewpoints. Direct quotations have been anonymized and are used to highlight the range of participant voices.

4.1 Prior awareness of the Exhibition

The vast majority of participants were unaware of the 1938 Empire Exhibition until the workshops, although three demonstrated a specialized interest in this event as amateur historians. Participants expressed surprise at both the scale of the 1938 Empire Exhibition and its relative absence from collective memory. *“I use this park all the time and I had no idea!”* (Cohort 3). Several questioned why their families, who lived locally, had never spoken of it: *“Divisions... was it just for rich people? Surely my dad would have told me, he lived in Govan.”* (Cohort 2). Others noted the exhibition’s physical traces in the park or remembered artefacts passed down through families but remarked that the event itself was rarely taught or publicly acknowledged. Several participants had no shared cultural background with local residents and expressed surprise or new reflections on British imperialism in general: *“The Queen and Canada and other places were involved in Iranian revolution because of the price of oil. Power and policy make a lot of differences in people’s lives.”* (Cohort 1).

4.2 Critical reflections on empire, colonialism, and Glasgow’s role

The workshops prompted reflections on the complex entanglement of Glaswegian, Scottish, and British identities with empire. A key theme was the unfair, extractive nature of colonialism. One participant connected the grandeur of the pavilions to exploitative wealth: *“Built on the work of enslaved people. We don’t have those resources now, we should never have had them.”* (Cohort 2), however another had a positive perception of British colonialism in her home country, prompting others to respond: *“It’s not often you hear about a colonized people liking it and saying it was fair.”* (Cohort 3).

Another key theme was accuracy of representation. Outlined in the quotes below, this covered race, gender, class, and the general ways in which historical narratives are selective both in terms of this specific event and personal experiences. *“If the countries had any say in how they were presented then it wouldn’t be so problematic, because maybe it was the British colonists making those decisions and presenting the colonies in a certain way.”* (Cohort 3); *“What a twee image of Scottishness!”* (Cohort 2); *“[An artefact] belongs to Iran but the sign says it belongs to Roman Empire who stole it! I told them but they wouldn’t change the sign!”* (Cohort 1); *“One of the cigarette cards says that Thomas Tait designed the Women of Empire pavilion when in fact it was Margaret Brodie! Talk about erasure of women!”* (Cohort 2); *“Were local people allowed to go? Could they afford it?”* (Cohort 2); *“The photographs don’t show it raining all the time! Photos were expensive, you wouldn’t waste it on a dud.”* (Cohort 2); *“We don’t know anything about our culture before [political upheaval]. They change the books, the education, the history. The new generation they only know the government who came now, it’s very bad for the country.”* (Cohort 1)

Participants also linked the Exhibition to wider patterns of propaganda and control: *“This was a huge propaganda machine, and there’s a huge propaganda machine now.”* (Cohort 3). Workshops also prompted significant comparisons between the staging of empire in 1938 and related issues across history such as anti-Semitism, the rise of fascism, class and worker’s rights, suffrage, race riots, censorship, and inclusion. During the Cohort 3 second workshop, one participant proposed *“someone taking a journey through the exhibition and recognizing where the patterns reoccur in micro and macro ways... a journey of self-discovery.”* Such comments situate the Exhibition within a lineage of empire-building practices that extend into present-day politics.

4.3 Personal and emotional responses

Responses were often affective, ranging from pride in Glasgow’s civic identity *“[As recent immigrants] in Glasgow we feel that all the different cultures have come together and be in a community.”* (Cohort

1) to discomfort at confronting imperial legacies: *"I never ever thought until now about the colonial nature of it all [...] now I've found out more I feel kind of ashamed about it."* (Cohort 2). For some, the images of 'clean' modernist architecture seemed alienating: *"My wee granny from Govan would have felt quite intimidated"* (Cohort 2). Others described the shame and anger of recognizing how colonialism has shaped their identities: *"Half of my identity colonized the other half"* (Cohort 3).

It was also gratifying that the project not only gathered perspectives but provided space for participants to grow and change their views, with many participants reflecting on how their understanding had evolved as a result of the workshops.

4.4 Counternarratives

Another recurring theme was the desire to surface silenced or hidden perspectives. Participants asked why the voices of workers, women, or children were largely absent: *"Stories relating to people who worked here, waitresses etc. Children's voices? Why aren't people taught about this in school?"* (Cohort 2), there was also widespread surprise and curiosity about the contemporaneous counter-exhibition [9] which is a, largely forgotten, example of the multifaceted nature of history. Other participants drew connections to resistance practices, from hidden forms of cultural transfer to creative acts: *"Creativity is an act of resistance... our music, our food"* (Cohort 3). These counternarratives highlighted the importance of reclaiming agency and recognizing multiplicity.

4.5 Visions for re-telling

Participants engaged imaginatively with how the Exhibition might be retold via Augmented Reality, as well as other means. Specific stories were told through storyboard prompt sheets, or submitted as text or audio recordings. Suggestions for future engagement ranged from playful reinterpretations – *"get kids to build the interiors of the pavilions inside a shoebox"* (Cohort 2) – to calls for more critical storytelling: *"I hope that people talk about the real stories and not just the constructed ones"* (Cohort 3). Furthermore, participants noted ways in which the inherent value of the narrative outputs of the project could be used for current benefit in understanding multiplicity of experience: *"This story should be told back to the home office!"* (Cohort 1). The principle that decolonization does not mean substituting one narrative for another, but enabling multiple perspectives to coexist, was strongly echoed.

5 DISCUSSION: FROM ERASURE TO MULTIPLICITY

Findings illustrate how decolonial approaches are necessary to platform the untold stories of the 1938 Empire Exhibition. The sense of *not knowing* (whether through gaps in family histories or formal education) reflects what Smith [13] frames as the persistence of an "authorised heritage discourse." Participants' surprise that the Exhibition had been erased from collective memory underscores the urgency of reassessing narratives that have historically prioritized imperial perspectives while marginalizing others. Participants articulated critiques of colonialism and propaganda that resonate with historical and scholarly accounts, comparing the Exhibition and contemporary forms of political messaging, mirroring Gopal's argument about "reverse tutelage" [10]. Similarly, reflections on Glasgow's wealth being rooted in exploitation connected discussions around the racialized representation of colonized peoples and the postcolonial politics of display *cf.* [10], [11], [12].

The strongly affective dimension of participant responses – shame, anger, pride, discomfort – highlights polyvocality as encompassing both cognitive interpretations and the emotions and embodied experiences that shape how people engage with the past. This aligns with Seppälä *et al.*'s observation that arts-based methods can surface deeply personal responses and destabilize hierarchical relations [8]. Counternarratives were both offered by participants, from stories of workers and children to acts of cultural resistance, and suggested as topics of curiosity for further investigations. Participants' visions for retelling reinforce that nuanced understanding of history and heritage involves making room for multiple, layered interpretations.

These ideas and perspectives are maintained into the final AR narratives. Story writing, sound design, and technical approach for the smartphone app are discussed in a forthcoming publication, however, in summary, *Empire Retold: Bellahouston AR* [29] is a free mobile app for Android and iOS which presents three distinct (fictionalized) geolocated AR stories of difference and dissent, each drawing directly from both the historical archive and the quotes and stories of workshop participants. "Interference" is a time-bending story that contrasts an 'official' BBC radio broadcast of the time with a grassroots anti-colonialist movement who 'hack' the signal, and makes powerful use of direct quotes from contemporary asylum

seekers. “Branches and Roots” imagines an inter-generational argument on the merits and ethics of the Exhibition as seen through the eyes of two trees, who ultimately come to accept their differences on how we should remember the past. “Reunion of Stone” offers a personal reflection through the eyes of a statue who has returned to Bellahouston Park in modern times. The overall aim of the AR app was to allow an exploration of multiplicity, increase tolerance of different viewpoints on a controversial topic, and encourage both critical and playful re-readings of history, whilst walking around the actual park in which the Exhibition took place. This ‘layering’ of digital audio and visual media onto meaningful real places is a particularly appropriate means to deliver polyvocal narratives.

We noted during both workshops and testing that our unusually diverse audience had markedly different prior understandings of British Imperialism, Glasgow’s urban geography, and racial identities. Furthermore, the smartphones used had a range of technical capabilities, and users had widely disparate familiarity with location-based apps. Therefore, polyvocality extends to the immersive experience itself, and users’ engagement with it; positioning our audiences within the ‘messy’ polyvocal content in order to encourage deep reflection was a key project goal.

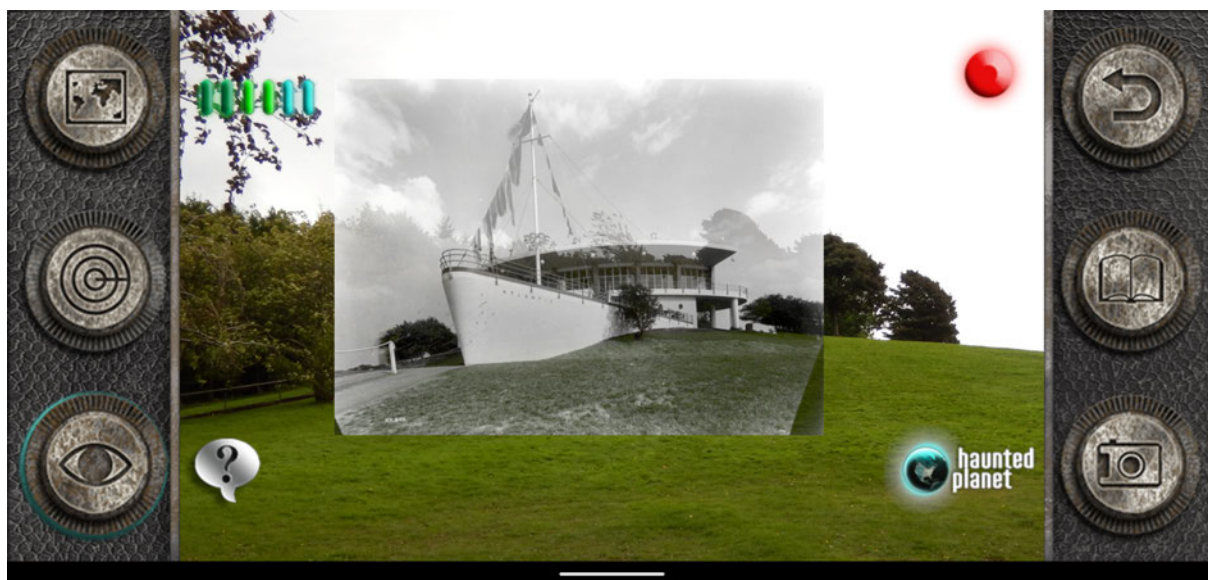


Figure 2 - Empire Retold screenshot showing archival imagery overlaid onto contemporary landscape



Figure 3 - four characters and four quote cards from the Polyvocality Card Deck.

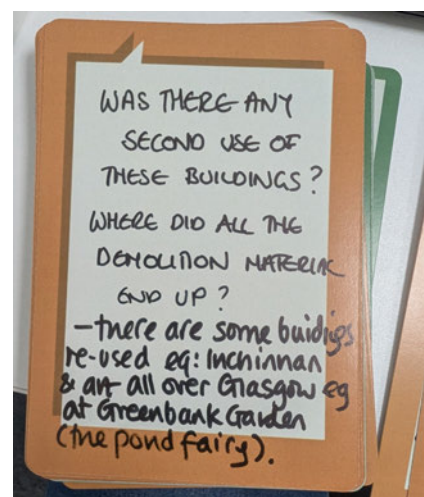


Figure 4 - members of the public created collective knowledge at an exhibition.

This principle was embedded in other project outputs, rethinking how key findings could be expressed similarly, not as an individual ‘correct’ narrative but as a kaleidoscope of nuanced and potentially contradictory ideas. A deck of cards was created that included a variety of characters based on real historical figures, first-hand witnesses of the exhibition, anonymized versions of workshop participants,

Bellahouston residents, and public figures. The characters are positioned alongside quotes from a wide variety of sources including: the workshops; 1938 newspapers; scholarly works; oral histories; Exhibition brochures; and modern news sources. All cards are presented with equal weighting (Figure 3). The card decks include blanks which form an interactive, dialogic aspect for their use in exhibitions, schools, and other workshops subsequent to the project (see Figure 4.)

The design and delivery of the workshops revealed a number of challenges that speak to wider debates in decolonial and participatory design. The shift from maximizing numbers to longitudinal engagement reflects a broader principle of depth over breadth, prioritizing continuity and trust over scale. Representing diverse and sometimes conflicting perspectives raised tensions that could not be easily resolved. In some instances, expressions of civic pride sat alongside anger at colonial exploitation but rather than treating these contradictions as obstacles, the project approached them as integral. This reflects Boehner *et al.*'s argument that probes and related methods should be seen as interpretive rather than neutral tools: the role of the researcher is not simply to collect data but to facilitate conditions where multiple and even contradictory forms of knowledge can emerge [30].

A further challenge lay in balancing the project's educational ambitions with sensitivity to participants' lived experiences. There was an obligation to produce outputs that were accessible to communities, while simultaneously respecting the emotional and political weight of the issues raised. This required infrastructures of care, from providing counselling to embedding anti-racist training, echoing calls for design justice [31] and relational and respectful co-design [23]. Therefore, workshops and the project outputs they inspired embodied polyvocality as a future-oriented practice, where multiple perspectives are not reconciled into consensus but allowed to coexist.

6 CONCLUSIONS AND RECOMMENDATIONS

The project has resulted in a range of tangible and intangible outcomes including: AR smartphone app, geo-located within Bellahouston Park; interactive 'guided tours' around a 3D model of the Exhibition as it looked in 1938 incorporating multimedia annotations of archival materials, oral histories, and data collected during the workshops; polyvocality card decks; and lesson plans for schools which guide engagement with this complex topic. All outputs are freely available on the project website [7].

Taken together, project outcomes provide significant opportunities for sharing knowledge and best practice for informal, place-based learning and critical approaches to complex and contested history. The methodology which is the focus of this paper, along with the guidance and workshop templates, have relevance far beyond this specific case study and demonstrate one way in which polyvocal, participatory approaches can be applied in other heritage contexts. This key contribution is further detailed below.

6.1 Lessons for future decolonial and participatory heritage projects

We do not claim that our approach was perfect or appropriate for every context, however, several key lessons can be drawn that may inform future initiatives in contested heritage contexts. First, investing time to build trust, reflection, and continuity is both more ethical and a more valuable approach than attempting larger-scale recruitment as it is more likely to lead to deeper, impactful engagement. This is clearly supported by existing best practice guidelines for working with marginalized communities and anti-racist approaches. One key insight is that cohorts with different demographics have markedly different starting positions, interpretations, and approaches, and whilst this is key to the polyvocal approach, it may also result in tension within groups, or with some participants feeling less able to honestly contribute. Facilitators require a nuanced understanding of anti-racism approaches *before* workshop design is finalized. We also recommend a consideration of the relative language skills within cohorts and to produce plain English versions of all workshop resources where needed.

Second, the flexibility and creativity of workshop methods enabled participants to respond on their own terms, generating diverse and sometimes unexpected perspectives. However, this also highlights the interpretive role of the researchers and narrative writers in deciding how to curate and represent these contributions, reinforcing the need for ongoing reflexivity. An appropriate advisory board, including community partners, is vital in shaping sensitive and contextually appropriate activities in participatory projects. Strong and ethical relationships with stakeholders at all stages of the project not only allows well-informed and apt change but considerably improves the reach and impact of outcomes. Furthermore, it can mitigate the risk of academic research being 'extractive'.

Finally, the project outputs should be seen less as endpoints and more as dialogic tools. The AR app, exhibitions, and website create opportunities for continued conversation and reinterpretation. Future projects should therefore consider embedding legacies of participation, capacity-building with community partners, and infrastructures of care from the outset. Crucially, these should acknowledge that contradictions and tensions are not problems to be smoothed over, but integral to the complex work of decolonial and polyvocal heritage practice.

This paper has considered how one project approached the design and implementation of ethical and inclusive methods to reassess understandings of a historic event from a decolonial perspective. Future directions for this work that are currently in progress include: 1) the extension of the workshop model into a wider consideration of local histories, focussing on racially minoritized groups in particular. This work is intended to result in insights for policymakers. 2) Embedding the topic and decolonial approach into school-based education in Scotland. 3) Ongoing public engagement with informal learning. Contributions applicable to other heritage projects are: the use of workshop templates and card decks in similar projects; and the re-use of insights in projects related to other local heritage sites.

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REFERENCES

- [1] *Empire Exhibition Scotland 1938 - Official Catalogue*. Glasgow, UK: National Art Library, 1938.
- [2] I. Johnston, 'British Empire Exhibition 1938'. Accessed: Aug. 19, 2025. [Online]. Available: <http://empireexhibition.com/>
- [3] A. Gouseti, D. Abbott, K. Burden, and S. Jeffrey, 'Adopting the use of a legacy digital artefact in formal educational settings: opportunities and challenges', *Technol. Pedagogy Educ.*, vol. 29, no. 5, pp. 613–629, Oct. 2020, doi: 10.1080/1475939X.2020.1822435.
- [4] D. Abbott, S. Jeffrey, A. Gouseti, K. Burden, and M. Maxwell, 'Development of Cross-Curricular Key Skills Using a 3D Immersive Learning Environment in Schools', in *Immersive Learning Research Network*, D. Beck, C. Allison, L. Morgado, J. Pirker, F. Khosmood, J. Richter, and C. Gütl, Eds, in Communications in Computer and Information Science. Cham: Springer International Publishing, 2017, pp. 60–74. doi: 10.1007/978-3-319-60633-0_6.
- [5] D. Abbott, K. Bale, R. Gowigati, D. Pritchard, and P. Chapman, 'Empire 3D: A Collaborative Semantic Annotation Tool for Virtual Environments', *Proc. 2011 World Congr. Comput. Sci. Comput. Eng. Appl. Comput. WORLDCOMP11 July 18-21 2011 USA*, pp. 47–52, Nov. 2011.
- [6] Scottish Government, 'Empire, Slavery and Scotland's Museums'. Accessed: Sept. 04, 2025. [Online]. Available: <https://www.gov.scot/news/empire-slavery-and-scotlands-museums/>
- [7] D. Abbott, 'Decolonising the British Empire Exhibition of 1938 through Augmented Reality Narratives'. Accessed: Aug. 19, 2025. [Online]. Available: <https://sit.gsa.ac.uk/project/decolonising-augmented-reality>
- [8] T. Seppälä, M. Sarantou, and S. Miettinen, *Arts-Based Methods for Decolonising Participatory Research*, 1st edn. New York: Routledge, 2021. doi: 10.4324/9781003053408.
- [9] S. Britton, "'Come and See the Empire by the All Red Route!': Anti-Imperialism and Exhibitions in Interwar Britain', *Hist. Workshop J.*, no. 69, pp. 68–89, 2010.
- [10] P. Gopal, *Insurgent Empire: Anticolonial Resistance and British Dissent*. Verso Books, 2019.
- [11] S. Qureshi, 'Peopling the landscape: Showmen, displayed peoples and travel illustration in nineteenth-century Britain', *Early Pop. Vis. Cult.*, vol. 10, no. 1, pp. 23–36, Feb. 2012, doi: 10.1080/17460654.2012.638804.
- [12] R. Mason, C. Whitehead, and H. Graham, 'One voice to many voices? Displaying polyvocality in an art gallery', *Mus. Communities Curators Collect. Collab.*, pp. 163–177, 2013.

- [13] L. Smith, *Uses of Heritage*. Routledge, 2006. [Online]. Available: <https://doi.org/10.4324/9780203602263>
- [14] E. Sitzia, 'Multiple Narratives and Polyvocality as Strategies of Inclusive Public Participation: Challenges and Disruption in the History Museum', *Muséologies Cah. Détudes Supér.*, vol. 10, no. 2, pp. 51–62, 2023, doi: 10.7202/1108037ar.
- [15] L. M. Snyder, 'Research, Process, Publication, and Pedagogy: Reconstructing the World's Columbian Exposition of 1893', in *The Routledge Companion to Digital Humanities and Art History*, Routledge, 2020.
- [16] V. Tsenova, G. Wood, and D. Kirk, 'Designing with Genius Loci: An Approach to Polyvocality in Interactive Heritage Interpretation', *Multimodal Technol. Interact.*, vol. 6, no. 6, p. 41, June 2022, doi: 10.3390/mti6060041.
- [17] P. Iyer, 'Do Not Colonize Decolonization', *The Peace Chronicle*, no. Summer, 2020. [Online]. Available: <https://www.peacejusticestudies.org/chronicle/do-not-colonize-decolonization/>
- [18] L. Maye and C. Claisse, 'Co-Design within and between Communities in Cultural Heritage: Current and Open Questions', *Multimodal Technol. Interact.*, vol. 7, no. 1, p. 1, Jan. 2023, doi: 10.3390/mti7010001.
- [19] L. Maye and C. Claisse, 'Co-Design within and between Communities in Cultural Heritage: Current and Open Questions', *Multimodal Technol. Interact.*, vol. 7, no. 1, p. 1, Jan. 2023, doi: 10.3390/mti7010001.
- [20] C. Broadley, 'Advancing Asset-Based Practice: Engagement, Ownership, and Outcomes in Participatory Design', *Des. J.*, vol. 24, no. 2, pp. 253–275, Dec. 2020, doi: 10.1080/14606925.2020.1857050.
- [21] H. Winschiers-Theophilus, R. C. Smith, F. M. C. van Amstel, and A. Botero, 'Decolonisation and Participatory Design', in *Routledge International Handbook of Contemporary Participatory Design*, Routledge, 2025.
- [22] E. Wenger, *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press, 1999.
- [23] M. Muliaumaseali'i and Y. Akama, 'Teu le vā: "Nurture the space in-between" when designing with communities', in *Entanglements of Designing Social Innovation in the Asia-Pacific*, Routledge, 2023.
- [24] M. Wong, T. Peacock, R. Porteous, and L. Watson, 'Video Game Research Innovation Starter Toolkit: A Beginners' Guide for Innovation and Industry and Community Engagement', University of Glasgow, Research Reports or Papers, Sept. 2023. Accessed: Aug. 18, 2025. [Online]. Available: <https://eprints.gla.ac.uk/305795/>
- [25] G. Avram, L. Ciolfi, and L. Maye, 'Creating tangible interactions with cultural heritage: lessons learned from a large scale, long term co-design project', *CoDesign*, vol. 16, no. 3, pp. 251–266, July 2020, doi: 10.1080/15710882.2019.1596288.
- [26] Museums Galleries Scotland, 'Delivering Change', Museums Galleries Scotland. Accessed: Sept. 04, 2025. [Online]. Available: <https://www.museumsgalleriesscotland.org.uk/project/delivering-change/>
- [27] B. Gaver, T. Dunne, and E. Pacenti, 'Design: Cultural probes', *interactions*, vol. 6, no. 1, pp. 21–29, Jan. 1999, doi: 10.1145/291224.291235.
- [28] W. W. Gaver, A. Boucher, S. Pennington, and B. Walker, 'Cultural probes and the value of uncertainty', *interactions*, vol. 11, no. 5, pp. 53–56, Sept. 2004, doi: 10.1145/1015530.1015555.
- [29] Haunted Planet, *Empire Retold: Bellahouston AR*. (2025). [Android; iOs]. Available: <https://play.google.com/store/apps/details?id=com.hauntedplanet.branded.bellahouston;> <https://apps.apple.com/uk/app/empire-retold-bellahouston-ar/id6747273755>
- [30] K. Boehner, J. Vertesi, P. Sengers, and P. Dourish, 'How HCI interprets the probes', in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, in CHI '07. New York, NY, USA: Association for Computing Machinery, Apr. 2007, pp. 1077–1086. doi: 10.1145/1240624.1240789.

- [31] S. Costanza-Chock, 'Design Justice: Towards an Intersectional Feminist Framework for Design Theory and Practice', June 03, 2018, *Social Science Research Network, Rochester, NY*: 3189696. Accessed: Sept. 04, 2025. [Online]. Available: <https://papers.ssrn.com/abstract=3189696>