COLONIALITY, COLLECTIONS AND THE RESPONSIBLE USE OF AI IN MUSEUMS AND HERITAGE

A Toolkit and Workbook

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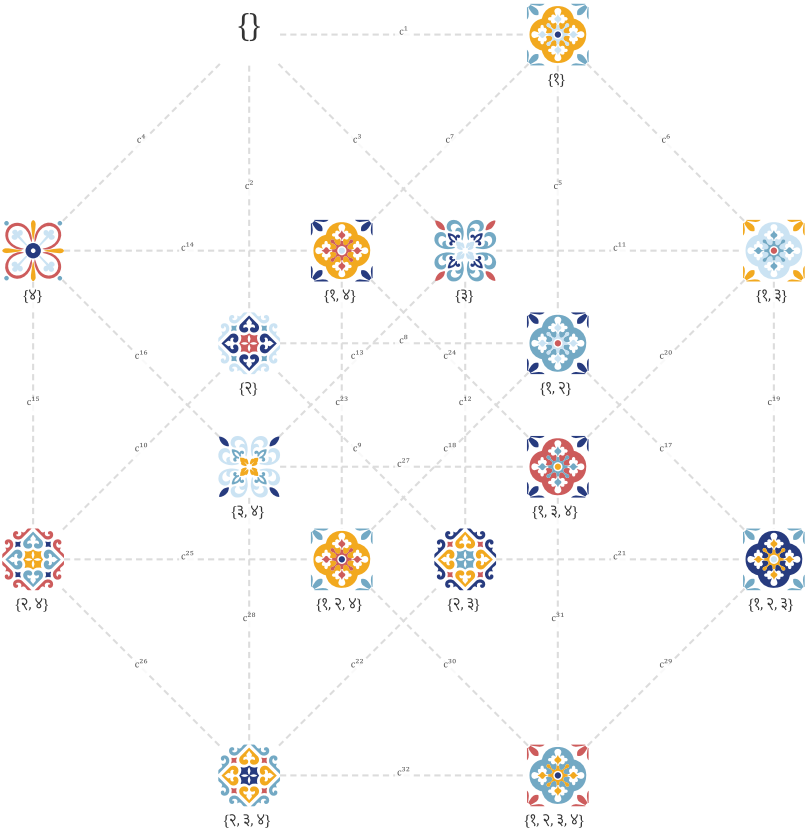
Many people contributed their time, expertise, and energy to the project and to the creation of this resource. The project team were Joanna Tidy, Sam Smith, Alison Needham and Benedict Barrow at the University of Sheffield, Marjory Da Costa-Abreu at Sheffield Hallam University, Amy Gaeta and Beryl Pong at the University of Cambridge, and Richard A Carter at the University of York. Mark Bennett joined all the dots at the Royal Armouries Museum and staff from across the museum were generous with their time, ideas, and knowledge. The project team talked to and learned from many people working in museums and heritage institutions throughout the UK, including the 50 museum and heritage professionals who took part in a workshop on colonially acquired collections and AI use at the Royal Armouries Museum in June 2024. Livi Adu (muchaduabout.com) and Tania Duarte from We and AI (weandai.org) provided expertise, input into workshop design, and contributed to running the workshop. Livi advised extensively on this resource. The project was guided and made possible by the prior and ongoing work of many others in relation both to museum decolonisation and AI ethics.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1. INTRODUCTION

The use of Artificial Intelligence (AI) by museums and heritage institutions is in direct tension with their efforts to address the colonial histories and presents of their organisations, and ultimately work towards decolonisation. Museums and heritage institutions are increasingly using AI to assist with cataloguing, with collections research, and with telling the stories of their collections to visitors. Museums and heritage institutions often feel under pressure to integrate AI tools that are touted as 'fix-all' solutions to challenges that the sector faces, whether this is insufficient staff time and resources, or the pressure to offer a novel and engaging visitor experience. However, AI is enmeshed with and maintains historic and ongoing colonial power relations, biases, and harms. Given the momentum around AI integration both within and beyond the sector, museums and heritage institutions face a complicated and potentially fraught process of navigation in which they attempt to reconcile AI use with their educative, social, and cultural mission and ethic. This is not a challenge faced only by the museums and heritage sector: a recent survey found 73% of nonprofit and grassroots organisations had no official guidelines in place for using generative AI.[1]

Designed with decolonial values in mind, the aim of this guidance is to help organisations, those who work within them, and broader museum communities, define on an ongoing basis what a responsible use of AI should look like for their specific setting, ambitions, and projects. In particular, this resource aims to address AI use as it relates to processes of museum decolonisation that address museum collections which were acquired as part of colonial expansion.

Guidance on best practice and 'one size fits all' approaches promise easy solutions, but the reality is that every institution requires different AI approaches and policies that align with their broader mission and the communities they serve. Decolonisation is neither straightforward nor comfortable. As such, this toolkit does not seek to provide a neat, contained set of tick boxes for a project-based engagement that is based on compliance.[2] It is built on the principle that critical engagement with AI needs to move beyond identifying and mitigating the risks of AI. The problems of AI are beyond what one person or project can tackle and, as Tomasz Hollinek and Maya Indira Ganesh observe, we should be wary of routes through AI's ethical conundrums that promise to make this challenging work 'frictionless, modular' and 'convenient'.[3] The aim of this guidance is therefore to equip readers to engage in collective and unfurling processes of envisioning, defining, and working towards ethically conscious decisions about AI use and applications, decisions that support rather than undermine efforts to dismantle the colonially-created world.

It is important to note from the start that 'responsible AI' is not a panacea and that a 'navigation' of AI ethics should not assume that some form of AI use will result. Deciding not to use AI, whether in a specific context or across an organisation, is a valid response to the ethical problems posed by AI. Not using AI should be 'on the table' in any discussion about what is right for a setting, and opting out of AI should be safeguarded as a viable path for individuals and organisations.

Whilst this resource has been created with museums and heritage organisations primarily in mind, it also draws on lessons from the wider GLAM (Galleries, Libraries, Archives, and Museums) sector and aspects of it are therefore likely to be relevant within these settings.

How to Use this Toolkit

This toolkit is divided into sections which provide background and useful definitions and perspectives related to the tension between AI use by museums and heritage institutions and their decolonial practice. The final section sketches a pathway for critically engaging with AI and developing situated approaches to responsible AI use. A glossary of AI terms is at the end of the document so that readers can consult definitions as needed.

Links to relevant resources are provided throughout the sections. These resources support an ongoing programme of work and the development of connections and relationships to underpin a person, place, and culture-based view of what responsible AI use can and should look like. We suggest that this toolkit be used by the wider 'museum community', including as part of your organisation's participatory practice and community engagement. This can provide visitors and communities with a publicly accessible space for critical discourse on AI design and usage[4] and it is also central to the decolonisation of institutions and society by including those historically excluded from processes of designing and implementing new technologies and their infrastructures.

Each part of the toolkit is accompanied by opportunities for solo or collective reflection or exploration in a workbook format. They are designed to help you to begin to apply and think through the ideas in relation to your own organisation. The included topics and prompts for creative reflection and discussion are designed to support you to imagine responsible AI for your setting and purpose and how you might design for it. These prompts are based on a speculative design exercise we ran with fifty participants from the museum and heritage sector.

Due to the nature of the work we are doing and need to do, we must find sustainable ways to work ethically with uncomfortable histories. For this reason, we encourage you to take time to reflect, practise self-care and emotionally regulate as you work through this resource. It is essential we embed wellbeing practices in our lives, both professionally and personally if we are to make positive impacts for our communities.

Explore Further and Connect

Read the AI Decolonial Manyfesto

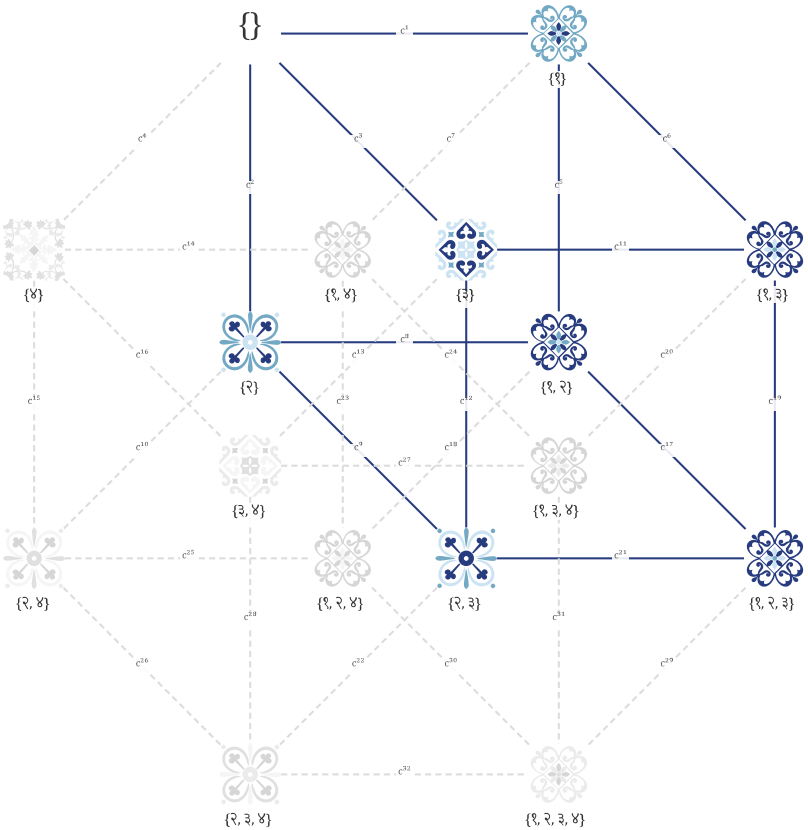
Read the CARE Principles for Indigenous Data Governance

Explore the We and AI website - a non-profit organisation working to encourage, enable, and empower critical thinking about AI

Connect through the AI for Libraries, Archives, and Museums community - AI4LAM is an international, participatory community focused on advancing the use of artificial intelligence in, for and by libraries, archives and museums

Workbook

What are your hopes and fears about AI?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Workbook

If you had to summarize your understanding of AI using an image, what image would it be? (you might create your own image or search for one that represents your view).

Where does your understanding of AI come from? In other words, what influences the way you think about AI?

2. DEFINING AI

AI is an umbrella term used to describe a variety of technologies that attempt to mimic human and non-human learning and decision-making processes using algorithms. It also covers techniques that attempt to model worlds, such as animal and/or human behaviour. Whilst, as the name suggests, the aim of AI is to synthesise 'intelligence' in some way, it is arguably more the case that it mimics certain imaginations of intelligence because intelligence is itself poorly understood and culturally situated.[5]

Whilst the principles of today's AI go back to at least the 1950s, the full implications have become more realisable with recent advancements in digital hardware and infrastructure. The current AI 'era' is defined by publicly available generative AI products and widespread and rapid adoption and integration of AI models.

However, you will hear so many competing and sometimes vague definitions of AI that some have asked, is AI more like a brand? In this sense AI is a term used to describe a set of technologies that are amorphous and ever changing, and at the same time it is a term used to sell products in a cultural context that fetishizes technology, and the things AI seems to promise, such as 'rational intelligence'.[6]

Types of Technologies

Some definitions serve particular purposes better than others. Here, we suggest some distinctions and definitions that are especially relevant to responsible AI in museums and heritage settings. These differences encompass the type of AI, how it is developed, and how it is used. Each difference has significant implications in terms of whether communities and users can be involved in the AI design process, the extent of transparency concerning the

building of the dataset, how it is used in the application, the extent to which an AI product is primarily a mechanism for corporate profit, and so on. For these reasons we think it is useful to ask:

Is it off the shelf or bespoke AI?

- Off-the-shelf AI denotes ready-made, 'out of the box' AI applications, which can be deployed immediately but may have constraints regarding privacy, flexibility, and bias. Their use tends to be on the terms set by the company that supplies them to the user.
- Bespoke AI applications are custom-built to user specifications, but this entails added costs and time to build.

Is it trained locally or on external datasets?

- Machine learning, a type of AI, can be locally or externally trained on datasets. Locally trained AI systems use local hardware and information such as a museum's catalogue. This enables the developer and user to have control over the training process, data privacy and security protocols.
- Externally trained models are provided by third-party services and draw on data from remote servers and platforms. The training process and origin of the dataset may be opaque (often referred to as 'black box') which can raise questions about data security, consent, and bias.

Is it generative or analytical AI?

- Generative AI generates new content such as images, video, audio, text or programming code. Generative AI is usually based on text or verbal prompts that a human user gives to an AI system (for instance, a large language model such as Chat GPT) which then generates content based on the prompt.
- Analytical AI uses data to identify patterns or provide another form of data output analysis, for instance, word clouds and graphs. This type of AI can be used to analyse large amounts of data, such as museum catalogues, to search for similarities and comparisons. AI systems can be programmed to perform both generative and analytical tasks at once or separately.

Is it explainable or unexplainable AI?

- Explainable AI (XAI) is an AI system where a non-expert can understand why and how the system arrives at a given output.
- Unexplainable AI will operate within a 'black box' in which the processes involved are not transparent nor easily explainable to non-experts.

Is it open source or closed source?

- In open-source applications the code is in the public domain and can be freely used, adapted, and distributed.
- In closed-source applications the code is kept private and is proprietary.

Explore Further and Connect

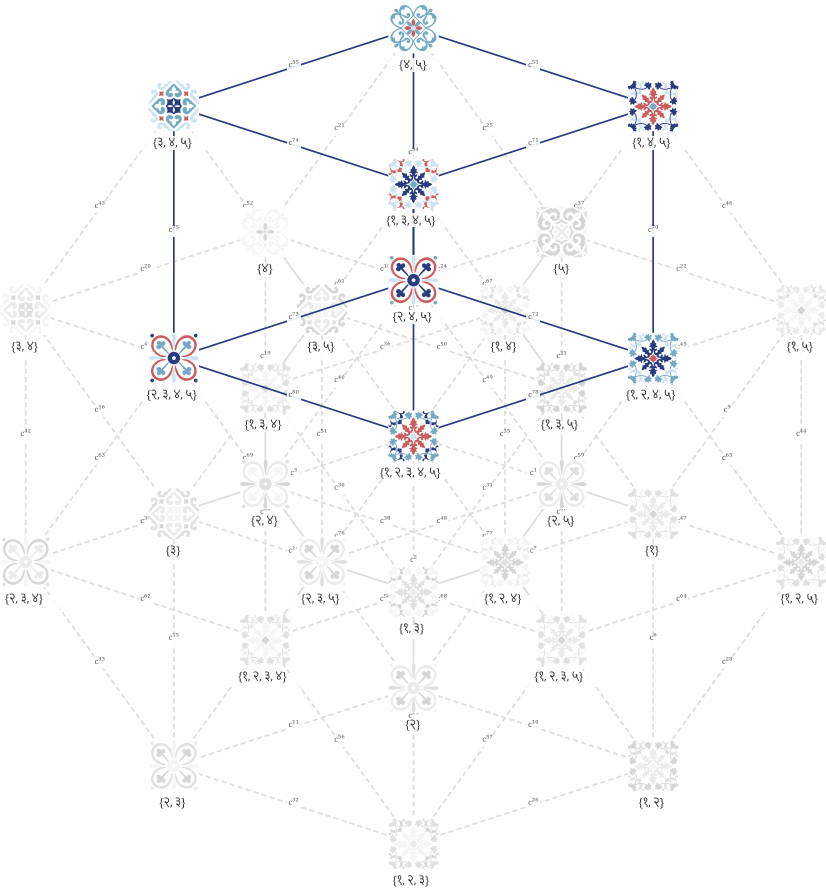
Take We and AI's quiz and learn about how you might be using AI in everyday activities

Sign up for the Living With AI online course

Read our Glossary

Workbook

What AI tools have you or your organisation used?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3. AI USE IN MUSEUMS AND HERITAGE SETTINGS

Museums have been using AI since the late 1990s. The Museums + AI Network, for instance, found 122 examples of AI projects in museum settings between 1997 and 2021.[7] These projects largely centred on collections management and visitor experience and often involved major institutions with the money and staff to work on large-scale projects with AI companies and developers. However, as certain types of AI have become increasingly mainstream, affordable, and ubiquitous, AI has started to be used more widely within the sector and is often seen as a solution to budgetary and staffing constraints. A UK national survey in 2023 suggests a quarter of museum and heritage organisations have used AI, with ChatGPT being the most well-known AI tool.[8]

More recent and current museum and heritage engagement with AI can be divided into three main categories: collections management, visitor experience, and business management.[9] Across these areas museums are using AI to facilitate critical discourse about digital technology (we consider this further in Section 6) and to address challenges that the sector faces (such as resourcing).[10] However, each of these areas comes with significant ethical concerns.

Collections management and research

In many museums, the collections on display only account for a fraction of the collections they hold, limiting the public's access to these collections as well as the museum's capacity to utilize their resources for public good and education. Some see AI as a solution to this problem. Computer vision, which can be both analytical and generative, can be utilised to analyse digitised collections, and has been used in a variety of ways for classification, detection, clustering and reconstruction.[11] For instance, automated computer vision has been used to analyse large data sets in museum collections to find similarities and differences between artefacts, and to examine different use of colours and shapes in collections.[12] Computer vision has also been used with natural history collections to assist ecological research. For instance, one study used AI to test hypotheses about biotic responses to climate change by looking at butterfly specimens and changes in their wing sizes.[13] Optical Character Recognition (OCR) has also been used in museums to, for instance, extract handwritten text from medieval manuscripts,[14] or text from natural history specimen images.[15]

The use of AI tools such as computer vision comes with a number of challenges and ethical issues. The development of computer vision itself is closely connected to colonial ways of seeing, categorising and ordering the world including the people within it[16] and to historical and contemporary processes of racialisation and oppression.[17] It is therefore important to ask in relation to computer vision whose vision is being synthesised in the interpretation of museum collections. In addition, the complexity of meaning associated with museum artefacts often reveals the technical limitations of computer vision as it can struggle to synthesise subtle human interpretations such as those intrinsic to abstract and conceptual art.[18] Additionally, as with all AI models, underlying biases in the data they learn with and process (which here would include a museum collection and how collections data was recorded) will be amplified by computer vision.

Visitor experience

AI has been integrated in a range of ways

within museum visitor experiences, often by using Natural Language Processing (NLP), Large Language Models (LLM) and deep learning in chatbots that synthesise human conversations and interactions with museum visitors. Examples include a text conversation with a character on Facebook Messenger to plan a visit and find out more about the museum (as used at the Anne Frank House in Amsterdam)[19] and a video screen chatbot of Salvador Dali which utilises deep fake technology at the Dali Museum in Florida.[20] Chatbots have also been used to target and engage teenage audiences through a gamified treasure hunt and storytelling techniques such as those at the House Museums of Milan,[21] or for multimodal language translation, as at the Qingpu District Museum in Shanghai.[22] Topic modelling has also been used within NLP to identify keywords and phrases which can then be grouped together as topics. This has been used for analysing online visitor reviews of museums,[23] and for linking museum collection records with oral histories.[24]

The use of chatbots in this way raises a number of challenges and ethical issues. The use of the likenesses of deceased individuals within virtual guides is deeply problematic in terms of consent and respect for individuals and their descendants. The fact that some chatbots have successfully passed the Turing test and can therefore convincingly mimic human conversations can create an illusion of integrity to their outputs. However, they are unreliable for museum guidance and interpretation given their propensity to generate factual and technical errors.[25] More fundamentally still, these models can reproduce biases and erasures within the data on which they are trained. In the case of topic modelling and museum collections records, the connections made will always be within the terms on which a collection is categorised. In the case of objects acquired by museums through processes of colonisation, knowledge from an object's community of origin is often entirely absent from records.

Business management

Large Language Models are now regularly used by museums and heritage organisations for summarising reports, writing emails and producing marketing materials. A recent report surveying grassroots and non-profit organisations found that 63% use generative AI tools for administrational tasks.[26] They offer a time-efficient method for carrying out these tasks, if they are checked by humans for errors. There are also several AI transcription Automatic Speech Recognition (ASR) packages that are being used by museums to transcribe meetings, for translating audio guides, and for oral history projects.

Many of the ethical issues raised by these uses overlap with those related to collections management and research and visitor experience, including those stemming from biases in training data. Transcription tools raise some more specific issues, including consent and data privacy.

Explore Further and Connect

Browse Awesome AI for LAM: "A list of awesome AI in libraries, archives, and museum collections from around the world"

Subscribe to the AI in Cultural Heritage discussion group mailing list

Explore how a computer sees art: The Harvard Art Museums project reveals how computers interpret paintings, photographs, and sculptures

Join the Museums Computer Group

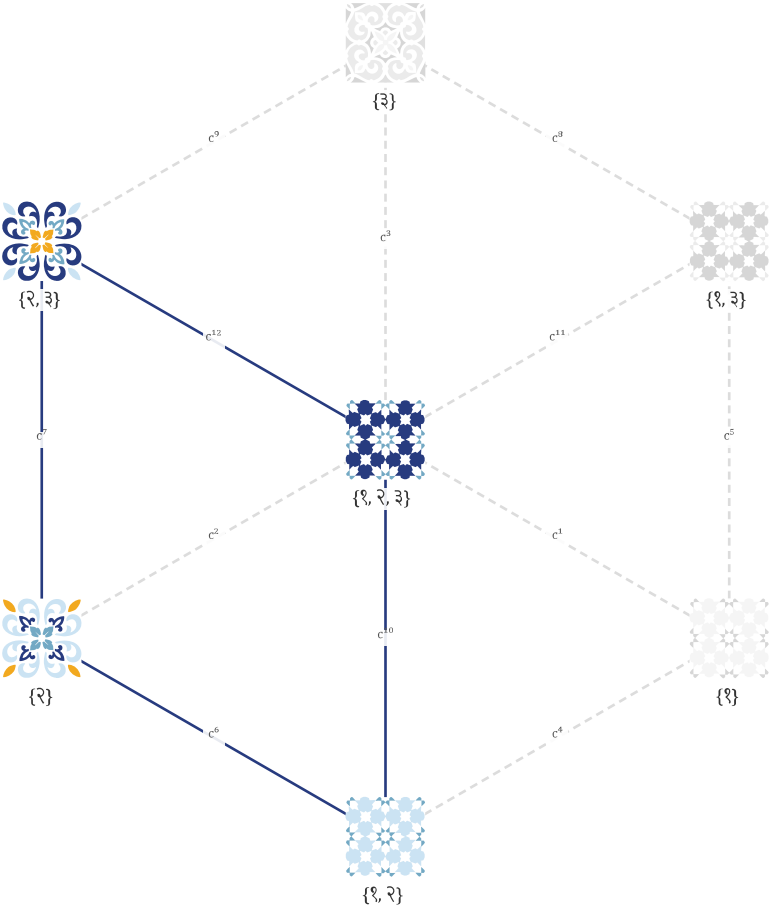
Explore The Responsible AI Afterlives Workbook

Workbook

New uses of AI in the museum and heritage context are being developed all the time. What recent examples are you aware of?

What types of AI-driven tools might you be interested in using and for what purpose?

Design a hypothetical AI tool to help you! You might find it useful to draw your tool. Remember to consider CARE principles when coming up with your ideas.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Workbook

Reflect on the word 'colonialism'. Write down your thoughts and feelings (you might also want to draw or use your preferred creative medium).

Reflect on the word 'decolonisation'. Write down your thoughts and feelings. (you might also want to draw or use any other creative medium you like).

4. COLONIALISM AND AI IN AND BEYOND MUSEUMS AND HERITAGE SETTINGS

In the context of this toolkit, colonialism is a term used to describe various forms of conquest, settlement, and political, economic, and social control by European countries over people and land across the globe. This colonial expansion was underpinned by the establishment of race as a supposedly natural biological principle to differentiate human superiority and inferiority, enforcing and justifying the division of the world into conquerors and conquered.[27] Pseudoscientific principles that underpinned scientific racism and eugenics were developed by white European academics to establish the 'natural' supremacy of whiteness by linking it to ideas such as intelligence and rationality. Eurocentric epistemologies were established as the norm, universal, and indisputable and Indigenous epistemologies were subordinated or erased. European museums were a part of the process of producing colonial knowledge, including systems of racial classification. This included the way in which colonised cultures and people were reduced to a spectacle for white European audiences.[28]

The coloniality of AI relates both to the approaches to and histories of knowledge production and colonial oppression in which AI is grounded, and how this translates into AI's reliance on and entrenchment of contemporary, colonially forged inequalities and harms. AI is built upon colonial epistemologies through ideas of the rationality and universal neutrality of European science, notions of linear scientific progression, the practice of statistically enumerating people and their bodies, and the concept of 'intelligence' as a mode of differentiation

and hierarchy that was central to scientific racism and eugenics.[29] The 'Intelligence' in 'Artificial Intelligence' is often assumed to be a culmination of (European) rational scientific progress.[30] Many AI ethicists and historians have noted that AI is coded as white.[31] This manifests in the ubiquitous images of white robots being used to represent AI. As Stephen Cave and Kanta Dihal put it, 'Images of AI are not generic representations of human-like machines, but avatars of a particular rank within the hierarchy of the human.'[32] The whiteness of AI represents a continuation of colonial racial hierarchies through the authority it has been awarded, the language used by and around AI, and the data sets originating in internet content which continues to be dominated by the English language.[33] As Ournaima Hajri observes, 'our word choices and language are generally never neutral, but instead inherently value-laden and political.'[34] AI is therefore built on and fundamentally bound to colonial structures of knowledge, power, and violence.[35] Based largely in Silicon Valley in the US, 'the design, architecture, and governance of the internet's "global" platforms and tools rarely include women, people of colour, and people from the Global South…'[36] As such, AI as an instrument, an infrastructure, and an ideology is a mechanism for maintaining the dominance of Eurocentred knowledge and power.[37]

AI technologies rely on various forms of labour exploitation. This includes the exploitation of people on low wages in the Global South whose labour is used to extract the raw materials for making new technology, and the exploitation of those who work in 'digital sweatshops', annotating and evaluating AI training data.[38] This exploitation relies on a differentiation of labour value rooted in colonial racial divisions of the world.[39] AI can also be understood as being bound to colonial logics, practices and power in how it relies on the extraction and exploitation of personal data, something that has been termed data or digital colonialism.[40] An example of this is the capture of public data. With AI being used in public settings including 'healthcare, city administration, policing, and education', knowledge and data are being transferred from public interests to private commercial interests.[41] In addition, the relationships between big technology companies and their customers (product users) is likened by some to a colonial one; by training AI, the public become colonised: 'workers who are not tech specialists are being treated worldwide as an Indigenous population in the process of developing AI tools at their workplaces.'[42]

There are significant environmental costs associated with the AI industry connected both to resource extraction and to the energy use that exacerbates anthropogenic climate change. The harms of extractivism and those of climate change fall unevenly, affecting the Global South disproportionately and they amplifying colonially forged global inequalities. Generative AI in particular requires significant amounts of water, energy and raw minerals:

> 'It's estimated that a search driven by generative AI uses four to five times the energy of a conventional web search. Within years, large AI systems are likely to need as much energy as entire nations.'[43]

Similar estimates have discussed AI's vast water consumption used for cooling processors, suggesting that by 2027 this could be equivalent to half of the UK's water use.[44] While big technology companies could build more energy-efficient AI, this would not address the

fundamental underlying structure of harms and inequalities.[45]

Two aspects of the coloniality of AI sketched above are particularly significant within museums and heritage settings. The first is what we can broadly term 'bias' (albeit with the caveat that neutrality is neither possible nor desirable), and the second data and ownership.

As described above, the outputs of an AI system depend on its data inputs and how that data has been used in its training. Museums are intensely political spaces albeit in ways that have traditionally been submerged within claims to authoritative and universal knowledge. Bias therefore exists in both museum collections and AI datasets; both collections and the datasets used for machine learning are organised by categories that reproduce norms that are central to European colonialism.[46] For instance, the vast majority of artists and historical figures represented and honoured in European galleries and museums have the same characteristics as the people usually in positions of power and management within those institutions. The bias found in AI is a continuation of these hegemonic norms. In the words of Bruno Moreschi, Amanda Jurno and Giselle Beiguelman:

> '.. AI algorithms imbricated in their codes the values and power relations of those who program them and who created the datasets that served as the basis for their learning. When an algorithm learns what to see, how to see it and why to see it, it learns from a particular worldview that, in turn, is loaded with symbolic, political and power dimensions. And therefore, when the algorithm acts, it reproduces that vision and shapes the world around it.'[47]

There is, therefore, the potential for multiple biases to intersect and compound when AI is used in a museum or heritage setting, given the ways in which their collections and digitised content are situated in projects of colonial knowledge production.

As described above, big technology companies have built their AI products on the extraction and exploitation of huge volumes of data. The use of LLMs and other generative AI has significant implications for privacy, intellectual property ownership and potential copyright infringement. As of autumn 2025, there was no specific legal framework in the UK for generative AI usage, however the government plans to introduce a comprehensive bill in the longer term.[48] However, in practice some areas of existing law do pertain to AI use. For instance, if an LLM discloses personal or classified information this could infringe General Data Protection Regulation. This includes anything that provides identification that might cause substantial damage or distress to a living person.[49] Using a LLM provides training data for the LLM to use in the future and whether content then becomes the intellectual property of the technology provider is a grey area. Further, it is currently unclear who owns the media generated by a given LLM.

Although legal frameworks and regulation are important measures, regulation alone cannot curb the coloniality of AI. Further, the western legal system is itself a mechanism of coloniality, having its origin within and being part of the means of establishing and upholding the colonially configured world.[50] For instance, much of what a museum may consider its 'property', including its data, is not theirs to share. What might be legal and what might be ethical do not always neatly align.

Responding to the coloniality of AI there have been urgent calls to approach AI in ways that dismantle rather than perpetuate current hierarchies. As Rachel Adams argues:

> 'Decolonial thought is far more than a tool to problematize AI. It is an invocation to make intelligible, to critique, and to seek to undo the logics and politics of race and coloniality that continue to operate in technologies and imaginaries associated with AI in ways that exclude, delimit, and degrade other ways of knowing, living, and being that do not align with the hegemony of Western reason.'[51]

The next section considers decolonial values and principles in detail.

Explore Further and Connect

Watch the British Columbia Museums Association: Artificial Intelligence (AI) and Museums Webinar

Explore the Transforming Collections project

Read and reflect on the We and AI Race and AI toolkit

Explore and use images from the Better Images of AI library

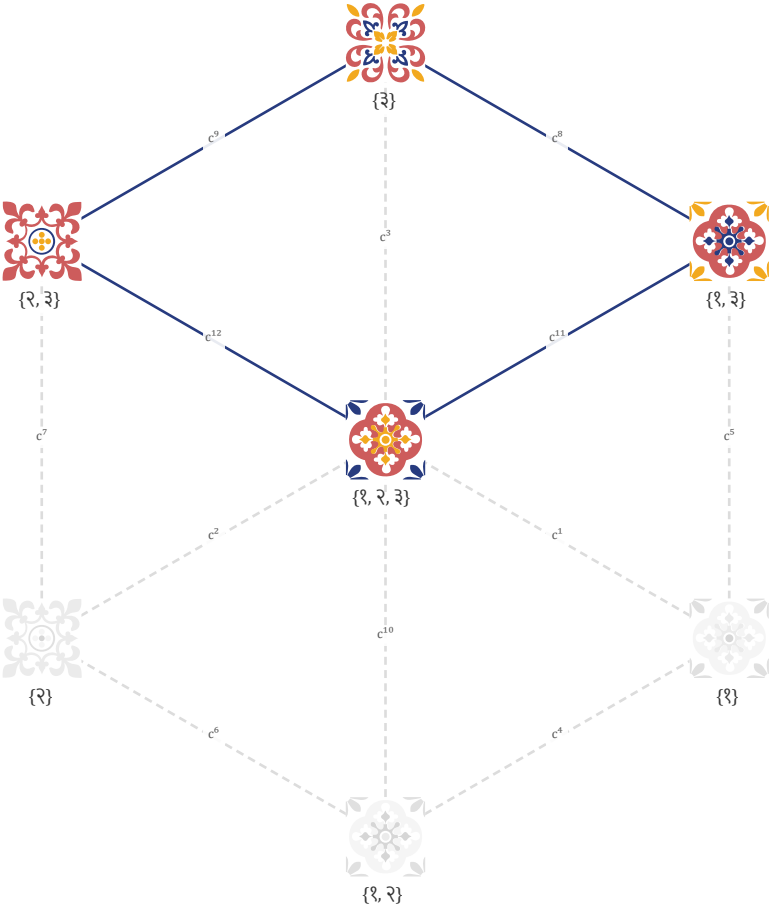
Read more about the current regulatory approaches to AI in the UK and abroad in: Artificial Intelligence: a digital heritage leadership briefing | The National Lottery Heritage Fund

Workbook

Does your organisation have an AI policy or guideline in place?

What challenges do you think you and/or your organisation faces in thinking and communicating critically about AI?

Thinking back to your design for a hypothetical tool, appraise your design in relation to the points raised in the preceding section (you might want to think about the broader coloniality of AI and how this specifically manifests within your design, such as through the knowledge hierarchies and asymmetries of underlying data you would use).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5. THE DECOLONISATION OF MUSEUMS AND HERITAGE INSTITUTIONS

Decolonisation is a collective process that occurs on multiple scales. It is rooted in histories of anticolonial struggle and efforts to end colonial rule and extends to addressing and unlearning the colonial ways of understanding and structuring the world that permeate contemporary affairs and mindsets. This includes addressing how colonial structures and relations of power continue to order the world, socially, culturally, psychologically, and economically. Grounded in an 'understanding that colonialism has not only displaced particular communities, but also knowledges', decolonisation, as Gurminder K Bhambra describes, encompasses 'the recovery and re-articulation of those knowledges.'[52]

To be able to use AI responsibly in museums and heritage settings, it is critical to understand the impact colonialism has had on our histories and culture and how we can apply decolonial practices within our contemporary spaces. Museums in the UK can be understood 'as sites of *ongoing* colonial power'[53] in numerous ways. First, many museums were founded and established during the British Empire with money extracted via colonial exploitation, including through the Transatlantic slave trade. Many museums continue to house and celebrate colonially acquired collections without providing their full context. More indirectly, but having implications for a wider range of organisations, the very logics of 'the museum' as an institution, of the concept of 'heritage', and the medium of 'the exhibition', have their origins within European colonialism and the naturalisation of claims to white superiority and the universalism and authority of European knowledge. As Joanna Tidy and Joe Turner describe, 'within the imperial and colonial mindset, museums are the civilised counterpoint to cultures which cannot tell their own history...imperial powers have long used local populations' alleged inability to care for material culture as a sign of their 'infancy' and underdevelopment'.[54] 'The exhibit, as with the museum, was a particular optic of imperial power through which colonised people were made into a spectacle...to be objectified and examined'.[55]

British museum catalogue records and interpretations have tended to represent European knowledges and exclude Indigenous and non-European knowledges, meanings, and histories. Stories of colonial plunder and brutality have largely been omitted from museum collections and exhibitions, and the histories of objects and the places and people they were taken from before museum accession are erased or marginalised. Interpretations have mostly reproduced colonial narratives whilst serving to present a positive national identity, placing the UK as the forebearer of internationalism, benign power and civilised society. As Dan Hicks argues in his book *The Brutish Museums*[56],'[t]hrough the medium of loot, museums became a device to make the remembrance of colonial violence and cultural destruction.'[57] Hicks suggests that the museum should be understood as a weapon for the continuation of colonial rule; 'Museums are devices for extending events across time: in this case extending, repeating and intensifying the violence.'[58] The museum operates as a powerful medium for shaping national identity and instilling western narratives including prejudice and racism, as Hicks describes:

> '...as the border is to the nation state so the museum is to empire. Like the border uses space to classify, making

distinctions between different kinds of human, so the museum uses time.'[59]

While many institutions are structured by the histories of empire, museums and heritage organisations are unique in that they function as public sources of authoritative knowledge about the past and present. During the last decade, as social movements including Black Lives Matter have gained traction, there has been increased interest in decolonisation in the wider GLAM sector. Whilst many museums have begun to address decolonisation, others have been less willing,[60] and 'the museum sector is still a long way from resolving issues of social inclusion and cultural diversity in its practices.'[61]

Explore Further and Connect

Browse The Decolonial Dictionary

Read: What does it mean to decolonise design?

A Decolonised Museum

The Museums Association's *Supporting Decolonisation in Museums* toolkit[62] outlines 10 principles for decolonising practice, whilst at the same time emphasising that museums can never be completely neutral. Museum professionals can support more transparent social justice by being aware of existing power structures and inequalities, building relationships with marginalised communities, and being open to scrutiny and accountability. Decolonisation is an ongoing and open-ended process and project that involves all aspects of the museum, its communities, and its practices.

The MA's toolkit describes a decolonising museum as one that is:

- a genuinely open and inclusive space
- a safe and comfortable space
- a place where all the senses are engaged
- a place to which everyone can bring their whole selves
- a place where people are encouraged to share their experiences and their creativity
- a place where everyone's stories can be told.

Whilst what decolonisation means in practice will be differently situated (to each organisation and even down to each object in its collection), two key aspects of decolonisation in the museums and heritage context are repatriation and restitution. These concepts are often used interchangeably, however, repatriation can be understood to relate to the legalities and formalities of returning a cultural object to its place of origin, whereas restitution can be taken to mean the return of a cultural object to its original owner, embodying the sensitivities and emotional work involved in performing this action.[63] The Collections Trust has resources supporting processes of repatriation and restitution, including template forms, which can be used when recording claims.[64]

Changing the terminology used in collections records, labels, and interpretation panels is another way that museums and heritage organisations progress decolonising work. Research has highlighted some of the issues in museum terminology in collection records, interpretation, acquisition registers, and policy documents.[65] The *Words Matter*

resource,[66] compiled by the National Museum for World Cultures in Amsterdam, addresses racist, culturally insensitive, and outdated terminology that might arise in a museum setting and presents an A to Z of words, their connotations, and recommended alternatives.

However, the alteration of language is far from straightforward. Museums and their records can be understood as artefacts in themselves and changing the terminology risks losing a valuable record of past social and cultural attitudes, further obscuring violent colonial histories. Museum catalogues are, for instance, important evidence of how objects within museums came to be associated with narrow slices of a universalised European knowledge. As articulated by Tehmina Goskar:

> 'Far from serving historical and community memories, the architecture of museum documentation is designed to forget, remodel, smooth out, and misremember. The habits of catalogers across generations have been customary in the way particular rituals and habits are within families and small communities.'[67]

Goskar's work has highlighted how museum catalogues often consist of poorly written records that are reproduced over time. Those responsible for indexing likely had little understanding of the background of the artefacts. This issue is then compounded by early digitisation models with set field requirements, repetitive indexing, and increased accessibility to records. Goskar argues that the museum's institutional history is inseparable from object provenance and interpretation, and as such, the museum catalogue is an 'active chronicle' in which notes should be made of any changes, including biographical information about the people involved in updating museum records.

Explore Further and Connect

Engage with the Museums Association's guidance Supporting Decolonisation in Museums

Explore the Collections Trust's Restitution and Repatriation Resources

Consider the Museums Association's Power to the People framework

Read the National Museum of World Culture's Words Matter guide

Workbook

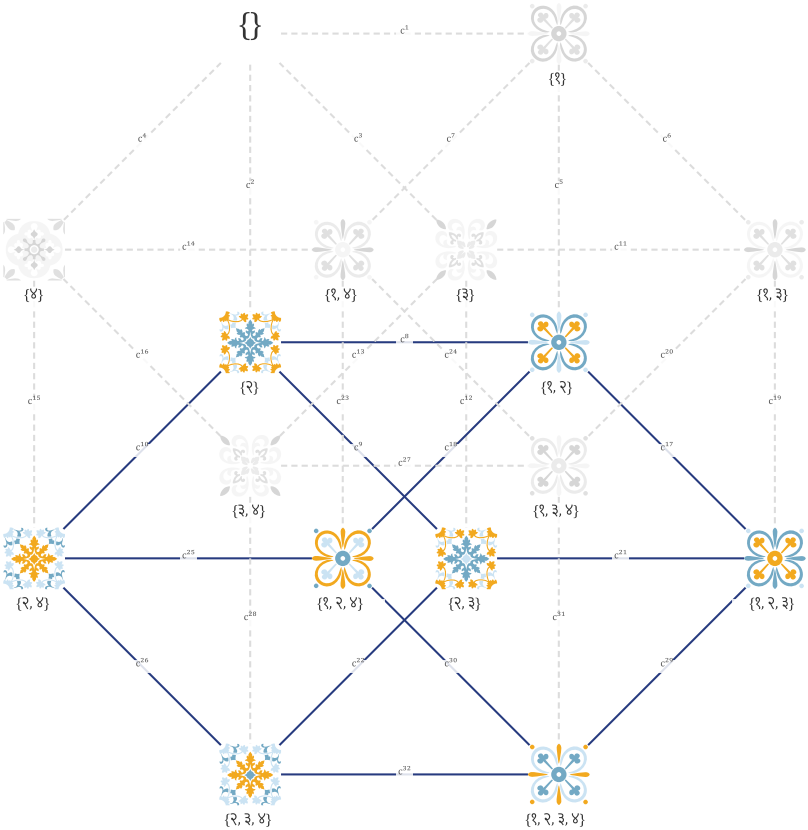
What might your organisation look like if it were decolonised?

What do you think it means to say that 'decolonisation is not a metaphor'?[68]

Thinking back to the AI tool you designed in the last section, what might decolonisation mean in relation to the organisational goal, process or intervention you designed it for?

Choose an object in your organisation's collection - you might want to walk through a gallery or use an online catalogue. Reflect on the following:

- What knowledge and whose knowledge is represented in the object label or catalogue entry? Whose story is told? What other stories might be untold?
- What do we know about who wrote the label or entry and when?
- What might a process of decolonisation look like for this particular object?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6. A RESPONSIBLE AI APPROACH IN MUSEUMS AND HERITAGE SETTINGS?

Given AI's extensive ethical problems, how might it be used responsibly in a museum and heritage setting? The notion of 'responsible AI' (RAI) refers to the principles and practices that come from the study of AI ethics, with these ethical discussions embedded within legal, social, and philosophical conversations and ideas such as human rights, justice, and sustainability. RAI principles and frameworks can offer useful routes to navigate AI use, although they are not an easy fix for the problems of AI. At their most transformative, these approaches can support us to imagine and work towards better futures than the ones we seem to currently be headed for. This must be a future in which technology is used to support the dismantling of coloniality. Depending on your view this might include a future with less or no AI, as Rachel Adams notes:

> '…can AI, as currently imagined, ever be 'good,' 'benevolent,' or 'decolonial'? To speak of decolonizing AI not only then contains the imperative to collectively reimagine a multifarious world space and ask whether AI can be ascribed a role within, and conducive to, this new imagining – but also to be imaginative enough to conceive of a future without AI.'[69]

Whilst many are working to determine what AI can and should mean for our present and future, most attention has been directed towards the 'AI safety debate' that has taken place between big technology company leaders and government officials. This debate centres on AI being used by malicious actors and concerns about operational capacity, but less about data set transparency,[70] the inequalities on which AI is built and which it maintains, and AI's environmental impacts. Media headlines have followed this pattern as well, focusing on imagining catastrophic risks associated with AI, which 'critics say… distracts from more immediate issues like copyright infringement, bias and reliability.'[71]

Museums and heritage organisations are uniquely placed to facilitate critical public discourse about AI, moving the debate forwards. By exploring fundamental questions such as '*What is the motivation for using this technology? What impact will it have? How can we refine our adoption of this technology?*'[72] the sector can reconfigure and reinforce their social meaning as purveyors of cultural discourse, as Oonagh Murphy argues:

> '…taking a purely operational approach means missing out on a potentially greater calling, the strategic and curatorial vision needed to show the contemporary relevance of museums as a place where ideas, culture, and society are made, not simply displayed.'[73]

Digital literacy amongst museum staff and community underpins such critical engagement with AI and RAI design, deployment and governance. For instance, it has been suggested that skills in prompt engineering will become more ubiquitous across museum and heritage roles.[74] In turn, museums and heritage institutions can have an important role to play in the development of wider public digital literacy:

> 'By being transparent about the technologies they are using and developing, museums can encourage members of the public, their visitors, and users to develop their digital literacy so that they can be more confident and, when necessary, critical

of how they use digital technologies, as well as regarding the data they share in their everyday lives.'[75]

The cultural sector therefore can have an important role in challenging big tech narratives, facilitating critical discourse and increasing digital literacy and inclusion through AI design and deployment. RAI frameworks and principles, which vary depending on context, can be a useful starting point when developing what RAI means for you and your setting. These should not be used as an ethics checklist but as starting points for the development of approaches to RAI that are place, person and culture-based. Earlier we suggested that what museum decolonisation means in practice will be situated, so accordingly will a RAI informed by decolonial principles.

These are the principles that we suggest as starting points for the development of situated RAI in museums and heritage settings:

AI use codesigned, developed, and deployed to best serve the envisioning of greater equity, inclusion, and human and non-human flourishing.

Simply put, AI must be used as a tool to support your projects and your values rather than AI use being a (desirable) end in and of itself. This might involve, for instance, developing examples that clarify what 'better futures' means to your organisation. You will need to consider whether AI can help you build these futures, and how this might be done. In the context of your decolonial practice, can AI actually help with this?

AI design, deployment, governance and oversight that empowers users, publics, and communities (who have been historically silenced from designing and implementing new technologies) to shape the AI use affecting them.

An example of an alternative set of non-western principles about the decolonisation of AI has been put forth by Mhlambi et al,[76] who, by emphasising technology and society as inseparable and relational, argue for the rights of marginalised communities to shape their own realities and ethics, untethered by hegemonic western narratives. This might mean involving museum publics and communities in envisioning and making decisions about how AI is used in the museum. A way of doing this is through codesign, in which museum staff and the broader museum community are collaborators in a design process from the beginning. A useful concept to inform the involvement of broader museum communities is that of 'cultural humility',[77] which describes openness to and valuing of the knowledge of those who are marginalised to achieve "mutual empowerment, respect, [and] partnerships".[78] The CARE principles for Indigenous data governance provide a framework within which Indigenous Peoples can be 'vibrant contributors to data policies, practices, ethics, and innovation'.[79]

AI design, deployment, governance and oversight that recognises how 'big tech' is tightly bound to the coloniality of AI and critically navigates reliance on their products.

This might include, for instance, the independent development of AI tools, critical engagement and negotiation with big tech companies regarding their products and the agreements that are entered into with them,[80] the involvement of users, publics, and communities in decision-making about the use of 'big tech' AI products, and/or the commitment to use less or no AI. Earlier we highlighted the issue of ownership of AI generated content.

As there is no legal framework that governs who owns what and how it can be used, it is a contractual matter between the user and each company. Mathilde Pavis suggests that:

> 'Before using off-the-shelf or open-source AI tools, organisations should ask the provider of the tool to confirm that the tool was developed using content free of rights or with the appropriate permissions; and, check that the provider's terms of use comply with the organisation's privacy and data management duties, where relevant.'[81]

Although not perfect, using open-source AI models is one option that circumvents some of the ethical issues regarding data, consent, and ownership. AI models produced through open-source development tools enable transparency of development and delivery and rely on localised storage of data. Numerous open-access models are increasingly sophisticated.[82]

AI design and procurement are grounded in an awareness of AI's environmental impacts and how those impacts map onto global colonially forged inequalities.

This might include, for instance, the design or procurement of smaller, lower-power AI tools, or using less AI. An example of an AI project which incorporates low-power and budget machine learning is a tool for visitor engagement at the Regency Town House in Brighton and Hove. This tool includes interactive wall projections of interior designs which can be revealed by visitor's hand gestures. This did not require specialist equipment, but used "pre-trained ML [machine learning] models and runs on a mid-range computer with a webcam.'[83] This sort of AI use is also more amenable to the budgets and resources of smaller museums.

Thorough evaluation of the data on which any AI tool was trained and that it will process.

This might involve, for instance, considering and questioning transparency concerning training data during procurement of AI tools, and mapping and understanding the biases within data that an AI model will process. However, there are no unbiased methodologies, datasets, collections, algorithms or tools.[84] But, there are more or less fair ones. In the context of collections data, it is critical to ask: How was the data created and interpreted? What logics of classification are structuring this data? Whose knowledge does this data represent and whose is excluded? In the context of art history, Lukas Fuchsgruber suggests that:

> 'Being aware of the problems of classification in art history—keywords, Eurocentrism, et cetera—we should develop a critical methodology for .....examining the existing black boxes in art history. Who produced the data, and how does that determine classification and visual computing? These are new art-historical questions.'[85]

Both the museum as an institution and technologies including AI have been positioned as authoritative sources of supposedly universal knowledge. Such positioning makes transparency about the situatedness and bias of data imperative, for instance through the use of positionality statements.[86] An example of work to address the biases within digital collection records is the Transforming Collections project,[87] part of the Towards a National Collection initiative,[88] which aims to enable searches across digitised museum collections:

'...the project seeks to surface suppressed histories, amplify marginalised voices, and re-evaluate artists and artworks long ignored or side-lined by dominant narratives and institutional practices. We want to imagine an inclusive, evolving, (re)distributed 'national collection' that builds on and enriches existing knowledge with multiple and multivocal narratives, to critically connect and imaginatively disrupt collections, and transform them.'[89]

Explore Further and Connect

Learn more about the Data and AI Civil Society Network and read advice on organisational AI policy making

Use the Open Data Institute's Data Ethics Canvas to consider some of the ethical issues involved in data projects

Consider the potential consequences for people, communities and the planet when planning an AI project with Doteveryone's Consequence Scanning Kit

Consider how this AI Refusal Starter Guide for Libraries might support conscious AI refusal in museums and heritage

Learn more about the CARE Principles for Digital Governance

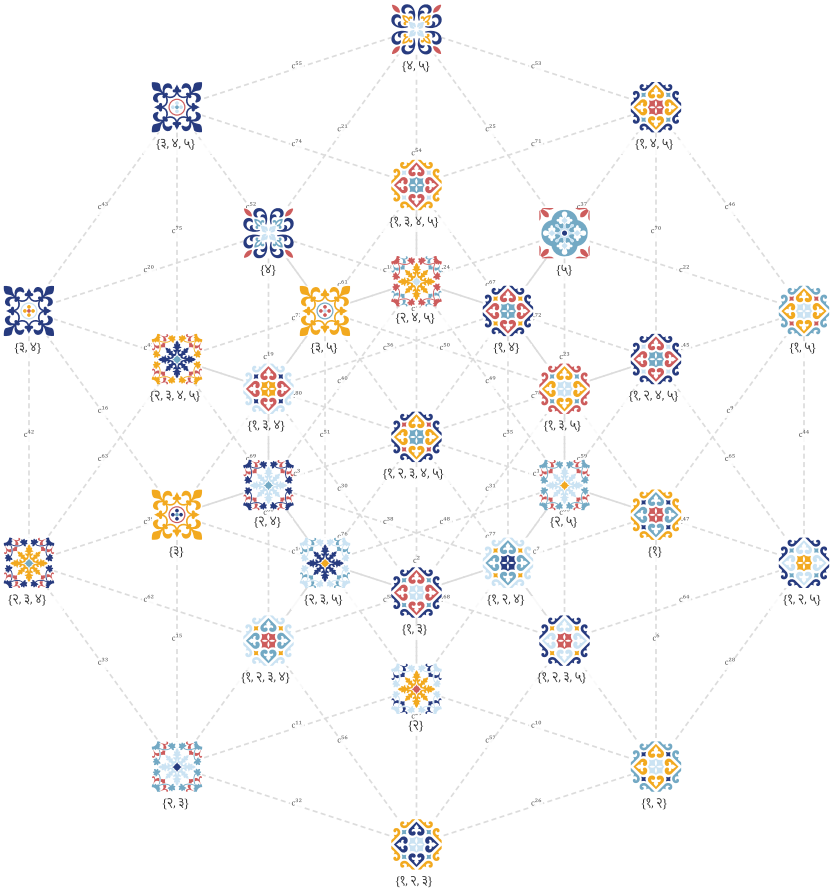
Workbook

Regarding RAI and what it can mean, consider:

- How do we communicate ideas about AI and to whom?
- What is the most just design process for an AI system?
- Who is accountable for a given AI system's actions and outputs?
- Who decides what is ethical and under what conditions?

Regarding the development of RAI for your organisation consider:

- What do ideas such as 'equity', 'inclusion' and 'flourishing' mean for your organisation? What sort of future are you trying to build? Could AI help you do this?
- How might you involve users, communities, and publics in the design and implementation of AI?
- How might you decide whether or how your organisation should use 'big tech' AI products?
- How might your organisation reduce the environmental impacts of its AI use?
- What might an audit of the data involved in AI training and other processes look like for your organisation?
- Thinking back to your design for a hypothetical tool, how might you revise the design to reflect your view of what RAI could and should look like?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7. CONCLUSION

AI can be in direct conflict with the educative, social, and cultural mission and ethic of museums and heritage institutions, particularly if they have a decolonial practice. Our hope for this resource is that it can support those working within museum and heritage organisations with some of the ideas and skills needed to navigate AI use critically and to envision a positive future of AI use that serves the dismantling of the colonially structured and mandated world. We have therefore not set out to discourage AI use (although we strongly believe that not using AI or limiting AI use should be safeguarded as viable and achievable options), and neither have we focused only on the mitigation of 'AI problems.'

Fundamentally we want to invite museums and heritage organisations and their communities to build their own approach to what RAI can and should mean for them, one that genuinely serves them and their mission and enables them to contribute to important conversations on wider issues surrounding decoloniality, AI, and human-tech relations. To support this process, we have suggested starting points to incite your approach to responsible AI use.

Firstly, the fundamental starting point of any RAI use must be how this technology serves and advances your projects, your values and your commitments. AI needs to help you to get to where you want to be, for instance, in your decolonising practice. AI use is not an end in itself.

Secondly, RAI design, deployment, governance and oversight should involve those users, publics, and communities who are affected by AI use but who have previously been marginalised in decision-making about technology.

Thirdly, with 'big tech' so tightly bound with the coloniality of AI, an approach to RAI will need to critically navigate the use of 'big tech'.

Fourthly, AI design and procurement should consider AI's environmental impacts and how to mitigate them.

Finally, all data involved in AI processes will need to be carefully evaluated within your broader decolonising practice.

AI Glossary

Algorithm

A set of rules for instructing a computer to execute predefined mathematical steps.

Augmented Reality

An interactive method in which computer-generated 3D content is combined with reality.

Automatic Speech Recognition (ASR)

A signal-based computer process, usually involving ML, of converting speech into text. Also used for text recognition in translation work.

Computer Vision

An area of computing where images/ videos are analysed for automatization. The classical approaches are related to image processing and computer graphics and the most recent approaches are related to using ML and neural networks.

Convolutional Neural Network (CNN)

A type of deep learning network mainly characterised by having a complex multi-layered architecture. This approach was originally proposed to be used in computer vision and has been particularly useful for object detection, but now is used in a wide variety of applications.

Deep Fake

Image, audio or video material that has been digitally altered to convincingly represent someone saying or doing something that has not actually happened.

Deep Learning

A type of ML that uses deep neural networks which are characterised by having a number of layers.

Hallucinations

When AI such as LLMs provide misinformation, making it seem like the LLM 'made up' information that is not based in reality, i.e., a hallucination. Hallucinations occur due to the predictive outputs which are partly based on the data scraped from the Internet, often in an opaque way and from unreliable sources. There are examples of LLMs fabricating answers based on probability, for example when searching for literature on a topic and producing false titles which do not exist.

Large Language Model (LLM)

An AI system capable of generating human language by processing vast amounts of data and learning the statistical relationships within it.

Machine Learning (ML)

A form of AI that can learn and improve internally from data and algorithms.

Multimodal

This concept is related to data availability and is used when a combination of sources is available such as text, images, audio and video.

Natural Language Processing (NLP)

A type of AI that enables computers to understand human language, both written and spoken.

Neural Networks

A ML model based on the same principles as the biological neural networks of humans (and other animals). They consist of interconnected artificial neurons (nodes) organised in layers that work together in decision-making.

Deep Neural Networks (DNN)

Neural networks with multiple layers.

Optical Character Recognition (OCR)

A collection of techniques based on computer vision and image processing for converting text from images and documents into ASCII text that can then be used in Natural Language Processing.

Prompt Engineering

The process of refining the prompts given to generative AI applications to improve accuracy and effectiveness.

Sentiment Analysis

A process using NLP and ML to analyse subjective information and sentiments expressed, primarily to determine whether they are positive, negative or neutral.

Topic Modelling

A text mining tool used within NLP to discover and group semantic topics within documents.

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