Anticipating Futures for Heritage

ICCROM Foresight Initiative
Horizon Scan Study 2021

Alison Heritage, Amy Iwasaki and Gustav Wollentz

Anticipating Futures for Heritage

Alison Heritage, Amy Iwasaki and Gustav Wollentz

Published by the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), Via di San Michele 13, 00153 Rome, Italy.

ISBN 978-92-9077-339-9

Anticipating Futures for Heritage
Alison Heritage, Amy Iwasaki & Gustav Wollentz

Written and compiled: Alison Heritage, Amy Iwasaki, Gustav Wollentz
Cover artwork: Del Hambre
Typesetting: ePage Imaging Services
Coordination: Jennifer Copithorne, Miranda Mullings

Table of Contents

Acknowledgements

This study would not have been possible without the generous and valuable inputs of the following researchers and advisers who contributed to its making, to whom ICCROM expresses its sincere thanks:

- Dr **Tokie Laotan-Brown**, FRSA, Heritage Architect/Developer & Cultural Economist, Merging Ecologies Studio, Nigeria.
- Dr **Ranit Chatterjee**, Visiting Associate Professor, Keio University, Japan.
- Dr **Stavroula Golfomitsou**, Head of Collections, Getty Conservation Institute, the United States.
- **Beatriz Haspo**, Collections Officer, Collections Management Division, Preservation Directorate, Library of Congress, the United States.
- Dr **Cornelius Holtorf**, Professor of Archaeology & UNESCO Chair on Heritage Futures, Linnaeus University, Sweden.
- Dr **Hirofumi Ikawa**, Project Manager at ICCROM, working on secondment from the Agency for Cultural Affairs, Japan.
- Dr **Samia Kirchner**, Associate Professor, Morgan State University School of Architecture and Planning & Chair of the Internationalization of Education, Morgan Division of International Affairs, the United States.
- Dr **Sophia Labadi**, Professor of Heritage, University of Kent, the United Kingdom.
- Dr **Adala Leeson**, Head of Social and Economic Analysis and Evaluation, Historic England, the United Kingdom.
- Dr **Thabo Manetsi**, Chief Director for Heritage and Tourism Integration at the National Department of Tourism, South Africa.
- **Helen McCracken**, Principal Adviser in the Delivery Group of Manatū Taonga Ministry for Culture and Heritage (MCH), New Zealand.
- **Henry McGhie**, Curating Tomorrow, Independent Consultant specializing in museums and sustainable development, the United Kingdom.
- **Stefan Michalski**, Heritage Conservation Scientist, Canada.
- Dr **Johan Oomen**, Manager of the Department of Research and Heritage at the Netherlands Institute for Sound and Vision, the Netherlands.
- Dr **Richard Sandford**, Professor of Heritage Evidence, Foresight and Policy, University College London, the United Kingdom.
- Dr **Renata Schneider**, Senior Cultural Heritage Conservator, Instituto Nacional de Antropología e Historia (INAH), Coordinación Nacional de Conservación del Patrimonio Cultural (CNCPC), Mexico.
- Dr **Matija Strlič**, Professor of Analytical Chemistry at University of Ljubljana, Slovenia & Professor of Heritage Science at University College London, the United Kingdom.
- Dr **Pascall Taruvinga**, Chief Heritage Officer, Robben Island World Heritage Site, Cape Town, South Africa.
- Dr **Ibrahima Thiaw**, Professor of Archaeology at the University Cheikh Anta Diop of Dakar, Senegal.

Thanks are also due to **Abdullah Halawa**, Manager, Policy Projects and Studies, ICCROM-Sharjah Regional Office for his inputs to this report, and to **José Luiz Pederzoli Jr.**, Unit Manager, Strategic Planning, ICCROM, for his support and guidance throughout.

Foreword

Since inception, ICCROM has always looked to the future and anticipated how the heritage sector might evolve. This report on strategic foresight presents a new approach to such forward thinking. From the ICCROM Council's perspective, which I have chaired since October 2021, this publication is both relevant and timely. Each planning cycle, Council members have the responsibility to reset ICCROM's strategic directions by identifying where the Organization should focus its efforts to deliver the best services to its Member States.

Given the scope of ICCROM's mandate – to promote the conservation of heritage in all its forms for the benefit of all people – strategic planning is not an easy task, as culture and heritage evolve and needs change. Throughout its more than 60 years, ICCROM has witnessed recurring periods of political, social and economic upheaval in the world, and today, we also face climate crises and breathtakingly fast technology developments. *Everything*, *everywhere*, *all at once*, describes the scale, pace and complexity of change today. As a result, the remit of heritage conservation is widening, taking on new dimensions, such as sustainability and well-being. Meanwhile, budgets tighten, and time is short. Discerning a clear path ahead is difficult, so the new foresight initiative is an important contribution that supports the work of the ICCROM Council and the global heritage community.

At the intersection of its Member States' historical and cultural perspectives, ICCROM reflects the global heritage sector in all its diversity and is uniquely positioned to tap into the current consciousness. The Organization is well placed to summon new thinking regarding what might lie ahead. We must be proactive in these times of change. In focusing on foresight, we take a new and much-needed step to support the heritage sector's becoming more future-ready. For the ICCROM Council, the work behind this publication will help to shape ICCROM's future strategy. I recommend this publication to all of us who are interested in exploring the future and what new roles and meanings heritage might have in our changing world.

John Robbins
Chairperson
ICCROM Council

Preface

In these times of rapid change, much depends on our ability to collaborate successfully as a global community. As the embodiment of our collective memories, cultures and values, cultural heritage not only provides knowledge and resources to help us address the challenges ahead, but also in many ways the very reasoning for doing so, through underpinning a sense of shared values and common purpose. Hence, the future of our communities will depend not solely on our ability to find technical solutions but also on carrying forward our heritage and values so that they can sustain us in times to come – albeit with new and different meanings to those of today. Indeed, from a *Futures* perspective, the potentiality of cultural heritage is key.

In an uncertain environment, where conditions are likely to become more precarious for many, to meet the challenge of conserving cultural heritage, we must get better at looking ahead. Hence, we need Foresight. ICCROM undertook this study as an exercise in strategic planning to gather heritage-relevant intelligence as an evidence base for developing future orientations for the organization. Although the study was primarily for internal purposes, nevertheless in light of the potential usefulness of this approach for other organizations, we decided to publish this report. It is our sincere hope that this may inspire other groups and organizations working in the cultural heritage field to embark upon their own Foresight journey.

Executive Summary

What is Strategic Foresight?

Strategic Foresight describes a set of approaches, tools and skills that help organizations explore, envision and shape the future. Foresight does not attempt to predict the future per se, but rather seeks to build an awareness of different possible futures for an organization or sector – challenging assumptions and expanding horizons. Conventional strategic planning tends to take a "business-as-usual" approach, extrapolating likely futures from past trends over a short-term horizon. Foresight, by contrast, looks out over a longer horizon – anything from ten to more than 50 years ahead – and engages with change in a more creative way to map out future contexts.

Through provoking deeper thinking about the nature, drivers and implications of change, Foresight uses the future to help surface critical decisions to take in the present. This helps to strengthen anticipation, enabling organizations to develop more "future proof" forward-thinking strategies, thus building adaptability and resilience.

ICCROM Horizon Scan Study 2021

In July 2021, as part of its *Foresight Initiative*, ICCROM launched a horizon scan study to gather intelligence about possible macro-environmental changes that might affect cultural heritage in the future. To undertake this work, the project engaged an interdisciplinary team of 18 researchers and two advisors from different world regions who collectively generated over 60 research reports looking out over a 15-year horizon.

The study intends to serve as a starting point for an ongoing foresight process to inform the development of ICCROM's longer-term strategy, and particularly its strategic orientations for the next planning cycle (2026–2031).

Working Method

The Horizon Scan project commenced with a team workshop to unpack thematic areas for focus. Following this, researchers were tasked with researching possible future changes in different topic areas, responding to the following question:

> *What emerging issues might affect heritage, heritage conservation and ICCROM in the future (2036)?*

Each researcher undertook one to five topic scans, producing a short scan report for each using a provided template (see Appendix 3). To ensure a breadth of scope, topics were organized using a modified STEEP framework to provide situational analyses of Social, Technological, Environmental, Economic and Political factors (presented here in the order PESTE), with an additional category created for trends specific to the conservation sector. For further information on STEEP and other frameworks for macro-environmental analysis, see, for example, Smart *et al.* (2022).

After reviewing the reports, the research team came together at a workshop. Together they examined the scan findings, and ways in which the heritage sector and ICCROM might respond to these various futures. These discussions culminated in a **statement of purpose for cultural heritage**, which outlines proactive orientations for each macro-environmental dimension explored, emphasizing heritage as a tool for shaping a better future.

Within this report, the statement of purpose is taken as the starting point for a series of **key messages** that summarize the main findings of the research reports and the final workshop discussions. Building on these, Chapter 3 develops each key message, in turn, to provide greater depth and analysis, each section beginning with an outline of possible future "mega trends" along with their potential implications for heritage. Potential "game-changers" gleaned from the research reports are discussed, and from these, a number of key opportunities for action are highlighted.

Statement of Purpose

Cultural heritage, in all its diverse forms and interpretations, should serve to enhance the well-being of people and the sustainability of our planet.

It can inspire new ways of thinking and acting to

***protect human rights** and deliver equity and social justice; **combat climate change** and environmental degradation; **acknowledge diverse perspectives**, knowledge and expertise; **strengthen communities** to be adaptable and resilient to future changes; **develop new technologies** that are ethical and humane; and **promote inclusive wealth for all**.*

Key Messages

Political

Geopolitical shifts in the world order witnessed since the end of the Cold War are gathering pace, with the rise of new power brokers particularly in Asia. Tensions between Western and non-Western powers are likely to rise in the future, challenging and replacing Eurocentric worldviews, and triggering new conflicts. Meanwhile, multiple forms of inequalities are likely to increase – access to physical resources, wealth, healthcare, education, information and culture – both within countries and between those of the Global North and South, in turn driving mass transnational migration. As globalization ramps up, populist nationalism may also increase in some parts of the world – driven by changing demographics and resource shortages – seen by many as signalling a deeper struggle between liberal democracy and authoritarianism. Combined with a declining interest in multilateralism, these trends are likely to challenge the values and pillars of liberalism, namely, human rights and the United Nations.

Against this backdrop, possible future trends affecting cultural heritage include:

1. increasing **inequality** threatening marginalized and oppressed peoples' rights of access to culture and heritage;
2. the **politicization of heritage** as part of nationalist agendas, and also in connection with the identity politics of minority groups;
3. **diminishment of the Eurocentricity** within so-called "universal" ideals for heritage in favor of greater pluralism of recognized knowledge and approaches;
4. decreasing **multilateralism** in favor of minilateralism and diminished engagement of state parties within international organizations; and

5. the **marginalization of cultural heritage** from future sustainable development frameworks following the UN Agenda 2030.

For cultural heritage to remain relevant within a changing and increasingly unequal world, it must move beyond rhetoric and deliver on its claim to be a driver of sustainable development. Heritage and culture are powerful means of both legitimization and subjugation, particularly in multicultural contexts, and thus the politicization of heritage is unavoidable. Rights-based approaches that center delivering on cultural and other rights for all – especially those that are oppressed, marginalized and underserved, and decolonial practices that challenge Eurocentric narratives and acknowledge that heritage can be a painful reminder of injustice, are ways to push back against historic and systemic oppression. Observing rights is, however, a bare minimum. Desirable futures are those in which inequalities and marginalization are redressed, and heritage actively contributes to the capabilities of all persons to achieve well-being. Centering sustainability and privileging local and Indigenous voices, knowledge and practices through community-based actions, and building partnerships at all levels to strengthen community resilience and international cooperation are ways to work towards such futures.

Environmental

Predictions are clear that in the near future, climate change will pose existential threats to the world's ecosystems, affecting people, societies and economies in all parts of the globe. This negative trend is likely to continue to worsen for many decades. Although the heritage sector has historically played a minor role in climate discussions, there may be opportunities for cultural heritage to feature more prominently in climate solutions.

Possible future environmental trends affecting the cultural heritage sector include:

1. increasing pressure on the heritage sector to **reduce its environmental impact** and proactively **contribute to sustainability**;
2. greater focus on **recognizing, collecting and conserving natural heritage** as the natural and the cultural converge;
3. mounting threats to communities and their heritage in the face of **sea level rise and extreme weather events**; and
4. greater acceptance of the inevitability of **heritage loss**.

As cultural institutions and tourism face increased scrutiny of unsustainable practices, the heritage sector can be proactive in evidencing and enhancing its contribution to sustainability through reporting and reducing its footprint, promoting sustainable practices, such as adaptive reuse and traditional ways of consumption, and influencing greener behaviors and mindsets among its vast community of users. The dissolution of the natural/cultural divide may present opportunities for partnerships with Indigenous communities and other sectors with the common goal of conserving natural heritage under threat. Finally, communities may soon need to embed climate adaptation into heritage planning and make decisions about what heritage to protect or abandon. Through transformative adaptation and disaster risk management of heritage – informed through traditional and Indigenous knowledge and foresight and supported through multiparty partnerships – the heritage sector can enhance the resilience of communities and ensure their cultural continuity.

Societal

The future will likely be increasingly transnational, with large-scale migratory flows mostly moving from the Global South to the Global North, dictated by histories of colonization. This may challenge conceptions of heritage, broadening what heritage is and can do in society. To

meet these changing roles and conceptions of heritage, it will be essential for the heritage sector to work from the ground up, utilizing heritage for increased social justice and gender equality.

Possible future trends affecting the cultural heritage sector include:

1. ongoing **rural to urban migration**, leading to loss of heritage through development and abandonment, prompting heritage declassification;
2. **ageing populations** may result in new roles for heritage, particularly around healthcare, memory and inclusion, with heritage workforce gaps filled through volunteering;
3. increased **transnational movements of people** resulting in large diasporic communities challenging national conceptions of heritage;
4. **broadening notions of heritage**, as so-called "universal" values of heritage are increasingly be augmented by more diverse and inclusive values reflecting the perspectives of underserved communities; and
5. growth of **grassroots initiatives** assuming new roles in the recognition and care of heritage.

To meet the future needs of society, the heritage sector must become more proactive in promoting and using heritage as a tool for positive social change. This demands greater emphasis on rights-based approaches to reduce inequalities and new methods to trace the societal impacts of heritage to evidence who benefits and in what ways. In some regions, responding to the needs of an ageing population could provide opportunities for heritage to become more meaningful and useful in innovative ways, such as in stimulating memories through co-creation. Increased transnational movement is expected to challenge the concept of national heritage, the emphasis shifting away from exclusionary notions of heritage towards greater interconnectivity and hybridity in heritage storytelling. As a result, the very concept of heritage will likely become diversified, incorporating more inclusive alternatives in which multiple senses (polysensory) and a pluriversity of knowledge systems are acknowledged. For the heritage sector to take a lead in all this, building trust is essential through community engagement that is rights-based, people-centered and bottom-up to facilitate active, free and meaningful interactions that enable communities to drive change towards a more just world. For this to happen, the heritage sector must recognize the knowledge and expertise of local communities, and acknowledge underrepresented perspectives. Accordingly, there is an imperative of accountability to include local voices in decision-making processes, where partnerships across sectors in society are built to facilitate a sense of local ownership and participation. To achieve this will require training to develop skill-sets and expertise within heritage related to promoting health, well-being and lifelong learning (LLL), and facilitating meaningful participation in an increasingly diverse society.

Technological

The rapid advance of technology will bring new opportunities and challenges to the increasingly digital world of the future and fundamentally alter the ways in which we live, work and interact. New cyber threats may impact personal and national security and democratic processes, with mounting conflicts between private-sector technologies and public values. While technological breakthroughs may offer new ways to tackle global challenges, such as climate change and ageing, at the same, new technologies are likely to have a disruptive impact, raising new security threats, and challenging industries, societies and the very notion of what it is to be human.

Possible future trends affecting the cultural heritage sector include:

1. the development of **new technological tools** for conserving, managing and consuming cultural heritage;
2. a proliferation in the volume and diversity of **born and hybrid digital heritage** as society moves towards a metaversal digital sphere;

3. increasing threats to **cybersecurity** as sector operations and heritage itself assume digital forms; and
4. misalignment between private-sector technologies and the public missions of cultural institutions.

Technological innovations, for example, in artificial intelligence (AI), immersive technologies and DAMS, will likely offer new tools for preserving and managing heritage, facilitating collaboration and enabling broader access and engagement. There are opportunities for heritage sector leaders to embrace these technologies and develop discourse and training around digital heritage preservation. Heritage organizations must also prepare for cybersecurity attacks that are likely to threaten the integrity of digital data and institutional operations by investing in more robust cybersecurity systems and staff training. To challenge the lack of accountability often seen in technologies created and controlled by the private sector, the heritage sector can help evolve technological models driven not by profit nor surveillance but by public values, such as transparency, accountability, accessibility and co-creation. However, to ensure that all are able to benefit, the heritage sector must also play its part to help bridge the digital divide between those with access to technologies and data, and those without.

Economic

Faced with the imperative of delivering on the sustainable development agenda in the face of increasing global economic uncertainty and rising inequality, government economic policies (and, with this, funding for heritage) are likely to undergo significant upheaval, with significant reductions in available public funds.

Possible future economic trends within the cultural heritage sector include:

1. a shift away from public funding and reliance on tourism as main income streams for heritage towards **adaptive reuse** to serve contemporary socioeconomic purposes;
2. uptake of **business model innovation** and **innovative financing** instruments based on social impact as a means to leverage funding;
3. increasing adoption of new economic models based on **regenerative and inclusive wealth** (see UNEP, 2018), such as circular, doughnut and well-being economics; and
4. increasing demand from governments and other funders for quantitative and qualitative evidence of the **socioeconomic benefits** of heritage.

Increasing political acceptance of well-being as currency and adoption of regenerative economic models present important opportunities for cultural heritage, allowing the expression of the value of heritage as cultural capital in economic terms that are more compatible with its essential qualities and recognizing the socioeconomic benefits it provides. This will require participatory methods to document how people value and use heritage in order to evidence its benefits and identify how these may be preserved and enhanced. Models for heritage financing may also incorporate diverse methods of income generation based on participatory approaches and adaptive reuse in particular, replacing traditional inputs from public funds and tourism. These trends may lead to a rethinking of heritage policies and, by necessity, the modus operandi of heritage organizations. In doing so, cultural heritage can champion a wider paradigm shift towards economic models centered on well-being.

1 Introduction

The Need for Futures Literacy

Foresight broadens the horizon of alternative futures. It can help identify potential paths of actions and pinpoint consequences, and increases adaptation and resilience, through embracing uncertainty and identifying steps and strategies for the present. Foresight does not predict the future; instead, it creates opportunities for leading rather than reacting to change. Through making futures more tangible, present and actionable, rather than abstract, distant and beyond influence, an open, co-creative and collaborative foresight exercise can pinpoint necessary steps, actions and strategies in the present to move towards a more desirable future. The heritage sector is motivated by an expressed responsibility towards the future, yet it does not engage with different kinds of futures. This makes foresight and anticipation a key priority for the sector (Taylor, 2021; Högberg *et al.*, 2017; Harrison *et al.*, 2020).

The future exists in the present in the form of anticipation (Miller, 2018); it is through anticipation that the future becomes actionable. Futures Literacy (FL) is a learned capability to "use the future" through anticipation, which is likely to become increasingly essential in a changing world. FL imparts an increased understanding of how the future affects the present, and consequently how actions today affect the future. The primary purpose of foresight is to develop FL, thereby increasing resilience, adaptivity and preparedness to deal with uncertainty and change. Here, it is important to make a distinction between *forecasting* and *foresight*. Forecasting is *predictive* in the sense that it aims to determine the future. Forecasting is most often quantitative and based on the assumption of continuity, extrapolating visible trends into the future.[1] Examples of common tools for forecasting are econometric models and climate change models. Foresight, in contrast, is *nonpredictive*. Foresight exercises aim to expand the horizon of imagined futures, including wild cards that may seem improbable today.[2] Wild cards are futures with low probability but high impact – futures with the potential to be game-changers. These futures are significant in a foresight exercise, because they help us prepare for the unexpected (Miller, 2006).

Successful foresight exercises challenge participants' mindsets to think in new and creative ways. Furthermore, a successful exercise will reveal core assumptions about how the future is anticipated (Inayatullah, 2020), helping participants approach and act on the future with an increased awareness of both consequences and possibilities for guiding change.

ICCROM Foresight Initiative

In 2021, ICCROM launched the *Foresight Initiative* trialling foresight methods to understand better potential future changes that might affect cultural heritage; render the organization better able to respond to arising challenges in the global conservation sector; and contribute positively to shaping its future. A further objective is to improve FL within the heritage sector

[1] Sociologists Barbara Adam and Chris Groves have argued that this risks "colonizing the future" by projecting contemporary norms and values onto future generations (Adams and Groves, 2007).
[2] Foresight will only increase resilience and adaptation "if participants understand the hypothetical character of results and the illusion of predictability and controllability is relatively low." (Schatzmann *et al.*, 2013, p. 2)

to build greater resilience to future change.[3] A horizon scanning study was undertaken in 2021 to gather intelligence about environmental influences that might affect cultural heritage in the future. Horizon scanning is a recognized foresight technique for gathering intelligence about the future by looking for signals of change in the external environment.

The research explored a wide variety of topic areas, organized according to a framework of macro-environmental factors that may have an impact on heritage. The project engaged an interdisciplinary team of 18 researchers from all world regions who collectively generated over 60 research reports looking out over a 15-year horizon.

The study is a starting point for an ongoing foresight process to inform the development of ICCROM's longer-term strategy, and particularly its strategic orientations for the next planning cycle (2026–2031).

This report presents its findings.

[3] For an in-depth discussion of Futures Literacy and how this can be surfaced to enhance organizational foresight capacity, see Miller (2018).

2 Methodology

Horizon Scanning

Horizon scanning is a foresight exercise that systematically investigates evidence about future trends to inform strategic planning. Unlike informal environmental scanning that is often conducted in day-to-day work, horizon scanning involves an intentional and systematic search beyond a sector's internal environment, emphasizing external macro-trends that may have an impact on a more targeted area. A key objective is to detect weak signals of change that might otherwise be overlooked but could lead to surprising developments (Hines, Bengston and Dockry, 2019).

A diverse array of sources, both mainstream and fringe, are examined to identify new and emerging trends that may affect the longer-term future of a sector or an organization (Conway, 2016). Researchers use their compiled research to extrapolate potential future trajectories and impacts on the targeted area. In this way, horizon scanning exemplifies the pairing of evidence-based research and open-minded creativity that fore-sight demands:

> *Horizon Scanning is relatively straightforward but does rely on intuition and insight – which can feel counterintuitive to those who are more practiced in evidence based strategic thinking. The hardest part for many authors is knowing whether something they have read is interesting or different enough to include in the scan. Scanners should always err on the side of being irrelevant.* (UK Cabinet Office, 2017, p. 28)

Preparing for the Horizon Scanning Study

The design for the horizon scanning study drew on a number of resources (e.g., see Appendix 2), including the *Futures Toolkit* published by the UK Government (UK Cabinet Office, 2017) and the US Forest Service's (USFS) *Forest Futures Horizon Scanning Project* (Hines, Bengston and Dockry, 2019). In addition, two experts on heritage foresight provided further guidance: Professor Richard Sandford, the Chair of Heritage Evidence, Foresight and Policy at the UCL Institute for Sustainable Heritage, and Professor Cornelius Holtorf, the United Nations Educational Scientific and Cultural Organization (UNESCO) Chair on Heritage Futures at Linnaeus University in Sweden.

ICCROM's launched a call for researchers through its network of colleagues in April 2021, asking for help identify reflective, curious and open-minded individuals who were available to undertake foresight research in their area of expertise. A key criterion was diversity: potential researchers should be from different geo-graphic and disciplinary backgrounds and be familiar with cultural heritage conservation but need not work exclusively within the field. From this resulted a team of 18 researchers covering diverse areas of expertise and hailing from universities, governments and heritage institutions across world regions.

In June 2021, a workshop was held during which the horizon scan research team mapped potential topic areas on which scan reports might be written. To ensure a breadth of scope, the topics were organized along the PESTLE framework for situational analyses – collectively covering Political, Economic, Societal, Technological, Legal and Environmental trends (for a description of

Figure 1 Horizon Scan topic areas

PESTLE framework analyses, see, for example, University of Sydney Library, 2022). An additional category for conservation-specific trends was also included (see Figure 1).

The Horizon Scans

To get the team started, ICCROM provided a "*Scanner's Guide*" produced especially for this purpose, containing a general introduction to horizon scanning and the task at hand, a reporting template, and some scanning tips and links to resources. Following this, ICCROM liaised with each team member to identify up to five topic areas on which to conduct individual research, responding to this guiding question:

> *What emerging issues might affect heritage, heritage conservation and ICCROM in the future (2036)?*

Researchers submitted their findings in the form of a one-page horizon scan report for each subject. Between August and October 2021, the research team delivered 62 scan reports, each describing a potential future trend, and its possible implications for cultural heritage and the conservation field.

The submitted reports were gathered and shared with all team members for their individual review, in which they rated each scan along five criteria adapted from the USFS horizon scanning system (adapted from Hines *et al.*, 2019, pp. 10–11). Ultimately, the review criteria and scale adopted

Table 1 Review criteria and rating scale adopted for scan report evaluations

Criterion	Question	1	2	3	4
Novelty	*How new is this scan topic to heritage?*	Not/rarely discussed	Discussed in few specialized circles	Discussed in large parts of the sector	Already widely discussed
Likelihood	*How likely is this topic to impact heritage?*	Impact is inevitable	Impact is probable	Impact is unlikely	Impact is highly unlikely
Significance	*How significant might the impact on heritage be?*	Immense impact	Considerable impact	Small impact	Negligible impact
Timescale	*How soon might it impact heritage?*	~5 years	10–15 years	20–25 years	30+ years
Distribution	*How widespread might the impact on heritage be?*	Global and universal impact	Impact on many regions/ activities	Impact on some regions/ activities	Very localized and limited impact

(see Table 1) proved imperfect.[1] Nevertheless, this review stage served to prepare researchers for an engaging group discussion in the final workshop having individually read through and critically assessed the scan reports.

All scan reports are collected in Appendix A3.

The Workshop

On 23 and 26 November 2021, two 3-hour workshop sessions with the research team were held over Zoom to surface key insights from the horizon scans as well as general reflections regarding the study process. Day 1 began with participants sharing their overall thoughts on the scan reports. Splitting into breakout rooms based on their areas of expertise, participants deliberated key themes emerging out of each PESTLE category that might affect the future of cultural heritage. Finally, these themes were shared and discussed in plenary.

On Day 2, participants drew upon the findings of Day 1 to define key challenges and opportunities moving forward and develop recommendations for the heritage sector. In breakout rooms, they explored three tools for change identified on Day 1: well-being economic models, facilitating local action and using digital tools as a force for good. In plenary, participants discussed how to mobilize the heritage sector to engage with these themes for the future, and shared their reflections on the value of the foresight process undertaken for this project.

Data Analysis

For the purposes of generating this report, the audio recordings of the two workshop sessions were transcribed for coding. Coding is a method of qualitative data analysis that involves labelling coherent portions of a textual document with various "codes," or thematic categories. This technique systematically sorts and structures large amounts of qualitative data to ease the mining of

[1] For example, the criteria 'likelihood' is somewhat problematic in this context as trends with a high likelihood of occurrence do not necessarily merit greater priority for the purposes of a horizon scan. Also, the 4-point scale produced similar averages across most scans, and so a 6-point scale may have produced more informative results.

key insights, increase analytical validity through continuous interaction with participants' perspectives, minimize biases, and ensure the transparency of the research (Skjott Linneberg and Korsgaard, 2019).

The workshop transcripts and scan reports were coded using an abductive approach in NVivo, a qualitative data analysis software. This analysis was guided by a STEEP (Societal, Technological, Economic, Environmental and Political) framework – Legal trends were absorbed into Political due to substantial thematic overlap, and the content of the conservation-specific scans was dispersed into the most appropriate STEEP category. The STEEP categories were assigned as top-level codes, with sub-codes iteratively generated for key themes emerging under each STEEP category (e.g., *Population Growth & Decline* under *Societal*). Text under each sub-code was further organized into descriptions of the trends and corresponding opportunities for the heritage sector. Additional top-level codes were generated for general comments from the workshop, participants' reflections on the foresight exercise and reflections on the Statement of Purpose (see this report, Executive Summary) developed during the workshop. ICCROM has used the coded data to guide the content of this report and glean insightful quotes from the project participants. The compilers of this report found this method particularly advantageous in supporting a close reading of the material produced by the research team while ensuring adequate representation of arising themes and viewpoints.

3 Trends, Game-changers and Opportunities

The futures presented here are not necessarily certain, and different trajectories are possible. Nevertheless, the purpose of presenting these is to open up organizational thinking and planning towards developing more informed and long-term actions and strategies in the present that consider a range of possible futures, rather than relying on a single assumed prediction of the future.

In the following sections, themes arising from the study are arranged to provide a general description of "mega trends" (about which we generally are already aware and for which there is a good basis of evidence), and their possible implications for heritage. In light of these trends, potential "game-changers" are identified, which may be more speculative but could potentially prove influential. Finally, possibilities for proactively engaging with the future are included as "opportunities for action".

Political

Political

The Mega Trend

The next 15 years are expected to see significant changes in the world order. In addition to China and India, other emerging economies, such as Brazil, Mexico, Indonesia, Turkey and Egypt, may start to surpass developed economies. China is predicted to transcend the United States as the world's largest economy by the mid-2030s, and with this is likely to challenge its position as the world's leading geopolitical power. The historical centrality of Europe within global geopolitics will likely shift towards the Pacific, with numerous new regional actors playing increasingly important roles. In the future, this region, in particular, is likely to play a role similar to the European "balance of power" of the eighteenth and nineteenth centuries.

At the same time, allegiances will likely migrate: Europe may shift its long-standing position as a steadfast ally to the United States towards a stance of strategic autonomy. Such a reshuffling of global superpowers, their alliances and their spheres of influence may have profound consequences for international politics and effectively end unipolar Eurocentrism. These transitions would create tensions leading to armed conflicts, driven also by climate change, food insecurity and other resource shortages, resulting in changes to both national geographical boundaries and regimes, with the main areas of conflict expected to be in the Middle East, Indo-Pacific area and Europe. This may trigger increased migration and in turn rising internal tensions within countries. In response, rising populist nationalism, hate speech and conspiracy theories may threaten civic trust and further erode liberal democracy and human rights.

As wealth is increasingly concentrated in the hands of a shrinking proportion of people, inequalities, both within and between countries, are expected to continue to deepen. In developed countries, increasing numbers may slip further into poverty, while the new-found wealth of developing countries will likely not be redistributed. This trend, compounded by climate change, the economic ramifications of the COVID-19 pandemic, war and technological developments, may generate greater tensions between the "haves" and 'have nots," as well as political instability in some regions. Despite the increasing need for global cooperation, the capacity of countries to act collaboratively will likely diminish. The mutual distrust between East and West sown by the pandemic and the war in Ukraine may increasingly paralyze international institutions, making it hard to reach consensus on their reform so that they are fit to respond to the arising challenges of the twenty-first century. These changes will likely impact societies and the environment, with conflicting views and actions taken by different countries as the coordinating role of the United Nations fails, creating an age of multipolarity without multilateralism.

Nevertheless, in face of the failure of national governments to deliver on promises made regarding the Agenda 2030 and other future development frameworks, sustainable development efforts may instead progress through minilateral direct actions between regions, cities and communities, with local authorities taking the lead (Engelke, 2022).

Implications for Heritage

Future geopolitical shifts may have a profound effect on cultural heritage. The predicted deepening of inequalities within and between countries means that heritage may become increasingly politicized: as a tool of soft power between nations, and as a means to influence popular opinion in favour of political agendas. Meanwhile, in response to historic and systemic injustice, demands by marginalized communities and groupings for their right to cultural representation may become louder and more forceful. Contributing to sustainable development through rights-based approaches will become imperative.

Rising inequality

> *Although there is a large body of intelligent proposals on why and how to slowly move to a better society, there is little-to-no literature projecting optimism for the next few decades – rather, the corpus suggests it will probably get worse.* (A3: scan report P11)

Rising inequalities among various groupings (race, gender, sexuality and class) and multidimensional poverty (wealth, healthcare, education, employment and attainment) may further reduce disadvantaged peoples' rights of access to culture and heritage. This could lead to tensions, contestations and conflict over access and use of cultural heritage – sometimes even resulting in its loss. Challenges to the hegemonic group(s) and histories might increase, as excluded groups increase their demands for greater cultural representation. This, in turn, could place increasing pressure on cultural heritage institutions (CHIs) to adapt and respond.

Gender equality gains over past decades could slow or even reverse (A3: scan report P13). For some, the gender pay gap will likely continue (albeit slowly) to improve. However, climate change and the fallout of future pandemics, to which the cultural heritage sector is also vulnerable, is likely to disproportionately impact women – as well as transgender and nonbinary people – at the intersections of class and race discrimination.

Further, as automation increasingly replaces people in the workplace, particularly in middle-tier roles associated with industrial production and administrative bureaucracy, a new underclass of long-term unemployed may emerge for whom there are no jobs (A3: scan report P11). Culture, and with it cultural heritage, may come to occupy a new space in society, in providing ways to help people create lives of meaning in the absence of work and other opportunities – leading to a profound reinterpretation by heritageinstitutions of their purpose. As inequalities deepen, this may lead to a greater fracturing of society, with a growing underclass of poorly educated and unskilled people whose lives are increasingly remote from the better off. Interaction between those of different groupings may become progressively rare, as people seek consensual validation through concurring social networks and media. The resulting lack of exposure to different perspectives and life experiences, in turn, threatens to reduce empathy and create further division. The challenge for cultural heritage institutions will be to ensure fair representation of minority and marginalized communities, while, at the same time, attracting those of other backgrounds and viewpoints to create spaces of exchange between different groupings.

> *Increasing separation between "haves" and "have-nots" may lead to calls for more representative institutions and leadership of institutions, or the emergence of a splintered field, with existing institutions being associated with wealth, and grassroots institutions reflecting the aspirations and identities of underserved/marginalized groups and communities.* (A3: scan report P6)

Diminishment of eurocentricity

> *…the whole process of dismantling colonization – which is at the root of all inequalities that we see in the world: political, social, economic, societal, environmental – how to dismantle it is not going to happen in one or two years. It will take as long as it took Europe to colonize the world.* (Workshop transcript, day 1)

As emerging superpowers seek to exercise greater political influence on the international stage through playing a more central role within intergovernmental organizations, this will likely change the way these organizations are structured and operated. In turn, this may affect the ways in which cultural heritage is viewed, used and preserved, with increasing incorporation of a broader range of perspectives within so-called universal concepts, and greater pluralism of recognized knowledge and approaches. In the realm of World Heritage, Eurocentric definitions of Outstanding Universal Values and the recognized typologies of cultural heritage may become more contested as decolonization efforts become more pervasive. At the same time, the dominance of Europe and America as primary producers of knowledge will likely continue to shift towards new centres in Asia – already witnessed in the meteoric rise of China as a centre for scientific research – as increasing numbers of developing countries invest more heavily in education and research.

This paradigm shift will potentially reshape the politics of heritage in diverse and sometimes contradictory ways. In challenging the established hegemonic structures and narratives, and particularly in contexts of rising nationalism and populism, decolonial agendas may provoke a backlash, leading in some parts to repressive legislations, and even violent racist attacks. Heritage organizations, particularly those funded through the public purse, could find themselves in an increasingly tight space in balancing conflicting demands from the public and the state government. Meanwhile, long-established organizations steeped in their own entrenched cultures and ways of doing, may find it difficult to evolve at pace. As the world moves on, institutions that previously served as global reference points may come to be seen as anachronistic, with the role of international experts increasingly questioned.

> *So whose nostalgia are we sustaining, whose culture are we sustaining? Because that's coming from an African perspective, right?*
>
> *… and so things like economy are a huge thing for Africans because it comes from an area of who will fund what we're trying to do. Where is the money coming from? Who's going to get the jobs? Is it somebody international that's getting the job and still doing the work in Africa?* (Workshop transcript, day 2)

Politicization of heritage

> *What we today consider to be politically extreme has become normalized and accepted as the norm in society at large. On the other hand, political neutrality is an extreme position, which means that it is very seldom put forward as a viable option. This means that everyday life has become a political arena where consumption patterns are also political manifestations – the things you buy and the stores you buy them at showcase your political beliefs.* (A3: scan report P9)

Heritage is inherently political, and in times of significant changes within the global power order, countries will inevitably become more intensely engaged in the politics of heritage as a tool of soft power to extend spheres of influence. Beyond the politics of nation states, the politicization

of heritage among populations is also intensifying, as different groups organize politically to defend their interests and promote social change. Beyond the usual societal fault lines of race, ethnicity, gender, class, sexuality and religion, other elective connections are also rising related to common concerns, such as environmentalism.

As a means of legitimizing rights and authority, heritage has always been used as a tool to support the hierarchic status quo. In times of intense social change, and as gaps in wealth and opportunity between different social tiers widen, it is likely that debates surrounding contested heritage narratives will intensify. As already seen in the Black Lives Matter (BLM) protests of 2020–2021 and associated debates around colonial heritage – and, in particular, regarding the placement of statues of slavers and colonizers in public spaces – cultural activism is taking a new turn as people unite to demand equal rights and justice. This trend is set to continue but with corresponding and sometimes violent counter-attacks from groups opposed to liberal anti-racist demands. As governments may take an increasingly hard line, seeking to quell disorder with repressive legislation to criminalize acts deemed vandalism and limit the rights of people to protest, heritage organizations may increasingly find themselves caught between serving the interests of authority and of marginalized communities. The heritage conservation community is by and large unprepared for situations where heritage is in the political spotlight – preferring nearly always to view their work as nonpolitical. Such a stance in the future will be difficult to maintain, and public heritage institutions will have to walk an increasingly fine tightrope between diverse interest groups for the sake of promoting equal cultural rights.

This may, in turn, precipitate counter trends, possibly through grassroots movements focusing on individual narratives and concerns outside politics – a shared heritage of experiences that resonate with diverse persons and speak to the lived reality of people's lives on a smaller, more intimate scale:

> *However, a counter trend to the public politicization of heritage has occurred and made a large impact on society. It is a trend that has developed from the bottom up through people who do not necessarily have a degree in a heritage-related field but have started to create heritage experiences focusing on the messiness of everyday life through small-scale museums or initiatives.* (A3: scan report P9)

Decreasing multilateralism, increasing minilateralism

Since its inception at the end of World War II, the notion of a world in which countries collaborate to solve common problems while striving for liberal values, such as democracy and human rights, has been the dominant ethos behind the founding of the United Nations. However, despite liberal optimism, the postCold War period failed to deliver on this promise, and the ideal of multilateral liberalism is increasingly faltering.

The majority of economic predictions state that within the next decade, China will likely overtake America as the world's largest economy – with these two superpowers remaining the main players in the geopolitical arena for the near to mid-term future. It is, therefore, clear that the foreign policy positions and, importantly, the relationship between these two countries, will have an immense impact on the future of multilateral collaboration, and in particular the United Nations family of organizations. In recent years, America's foreign policy position has shifted towards a less maximalist stance, while China's external influence has grown steadily. The future of global multilateralism is likely to hang on the willingness of the United States and China to collaborate, the chances of which look increasingly slim.

This has significant implications for international heritage organizations, such as UNESCO and ICCROM, as it points to a future in which major funding countries have decreasing interest in participating in multilateral projects and increasing ambivalence towards the role

of these organizations. This could result in a concomitant loss of credibility and influence of those organizations that previously served as global reference points in international heritage governance – the resulting space filled by minilateral initiatives between smaller groups of countries keen to pursue a vision more closely aligned to their world views and ambitions:

> *The groups of nations which share similar values, rules and socio-political structures will process much faster. Major international organizations will lose credibility and capacity to take action, making room for new regional bodies.* (A3: scan report P4)

Marginalization of cultural heritage in future sustainable development frameworks

> *[There is] a perceived expectation that heritage can serve as a panacea for societal problems and that it can engender a culture of social justice, social cohesion, and tolerance amongst others. However, there is little evidence to show that heritage can address and respond adequately to societal problems.* (McGhie, 2021)

There has been much comment, mostly from within the cultural sector, that culture and heritage were largely overlooked within the Agenda 2030 for sustainable development, since cultural heritage receives specific mention in only one sub goal (11.4 Strengthen efforts to protect and safeguard cultural and natural heritage). This, however, displays a lack of awareness of the Agenda 2030, the sheer scope of its goals and targets, and their interrelationships:

> *…few people would argue that mental health is not important, yet mental health and well-being are the subject of one SDG target (3.4), thus with an equal prominence among the targets as heritage…* (McGhie, 2021)

Cultural heritage may well be left out of future development frameworks if it cannot earn its place. UNESCO and other international organizations may advocate for its future inclusion, but what is more important is providing robust evidence of the ways in which cultural heritage does contribute to sustainable development. That said, with the economic fallout of the COVID-19 pandemic set to cast a lingering shadow over the next decade, and in a future context of increasing food and energy insecurity and climate instability, cultural heritage is unlikely to be seen as a specific priority by governments.

The trend towards a more multipolar, less multilateral world (in terms of collaboration between states – see above) and the visible failure of governments to follow through on promises made on the international stage, suggest that the task of building a more sustainable future will be carried forward by local governments, civil society organizations and economic sectors. Global development frameworks aside, in the future, societal demands may cause sustainable development to become a major influencing factor governing the activities of most sectors – cultural heritage included:

> *Increasing emphasis on inclusive decision-making is likely to continue and to be a requirement of good governance, transparency and accountability. These approaches are likely to influence the activity of sectors, through increasing participation in shaping policies and agendas, rather than delivering the agreements made between states but with little follow-up or accountability.* (A3: scan report P14)

Moreover, unless the sector does more to address the perceived negative impacts of heritage (e.g., the carbon footprint of tourism, perpetuation of gender inequality and colonialism), rather than a driver of sustainable development, heritage may instead be seen as part of the problem.

Therefore, the specific mention of cultural heritage within future international development agendas may, to some extent, be immaterial – what will matter more is how the sector responds. This will mean working in greater partnership with other sectors to instrumentalize heritage for purposes beyond the preservation of its substance:

> *With greater familiarity with sustainable development, the principles of sustainable development (rights, full range of costs and benefits) will likely become part of the expectation upon cultural heritage institutions, both within and from outside the sector. Failure of heritage institutions to address their negative impacts may result in increasing tension with special interest groups and broader society…*
>
> *…Heritage is likely to be at least partly instrumentalized, and directed more towards future-making than documenting the past.* (A3: scan report P14)

Potential Game-changers

While a more equitable, peaceful and sustainable world may seem unlikely in the near future; this should remain the goal for all sectors. For cultural heritage, potential game-changers lie in addressing injustice through centering rights-based approaches within inclusive and accountable governance, wider partnership with other sectors and community-based participatory actions.

Rights-based approaches centered on pluriversality and decoloniality

> *Fulfilling people's human rights should not be an aspiration, it should be a basic floor of any publicly funded institution.* (Workshop transcript, day 2)

Addressing inequalities – and, in particular, acknowledging where cultural heritage is culpable in perpetuating these – is fundamental for building a better world. To do so, the cultural heritage sector must adopt rights-based approaches as the foundation of its work so that heritage institutions are better able to serve all their communities and fulfil their duty to society. Within this, emphasizing pluriversality and decolonial practices could provide ways to recognize and include under represented perspectives, acknowledge hurtful pasts, build trust with marginalized and underserved groups, and address historic and systemic injustices. This means that concepts of heritage collection, conservation, management and interpretation may need to be revisited to correct Western-centric frameworks and elitist attitudes in order to fairly incorporate local/Indigenous/alternative perspectives.

Inclusive, adaptable and accountable governance

> *We need to be flexible and look for more adaptive governance, whether we are talking about regional governance, we are talking about global governance, or organizational governance. I think that adaptability is the keyword here.* (Workshop transcript, day 1)

All public institutions, from IGOs, including ICCROM, to national and local cultural heritage institutions need to be accountable to their communities and serve everybody's rights through inclusive governance. Therefore, IGOs and other heritage institutions also need to change how they operate. Flexible, adaptive governance is key, with emphasis on plurilateral approaches, shared leadership and smaller centers with regional focus (Chatham House, 2021).

In certain contexts, such governance will also require measures – such as transparent reporting, performance monitoring and even legislative frameworks – to ensure that public institutions remain accountable and meet their obligations to society.

Cooperation with other sectors

> *Contributions to partnerships and beyond institutions' own interests are likely to become increasingly important as a measure of value creation.* (A3: scan report P14)

Public attitudes are shifting, and there is growing consciousness of the imperative to live more sustainably. Even if governments fail to fulfil their commitments to the Agenda 2030 (and future frameworks), public opinion will likely demand that local authorities and sectors act in line with the principles of sustainable development. At its core, the Agenda 2030 is about delivering on human rights, and culture and cultural heritage are implicitly present in many of its goals and targets. Hence, a rights-based approach to heritage implies that institutions seek a broader contribution to sustainable development. This will require the heritage sector to prioritize contributing to sustainable development and seeking partnership with outside sectors, in particular those identified as major groups and other relevant parties in sustainable development (for further information, see: https://sustainabledevelopment.un.org/aboutmajorgroups.html).

Community-based participatory actions

Community-based participatory actions are the foundation for effecting rights-based approaches in which communities are included in decision-making concerning their heritage. Many institutions seek to do this voluntarily as part of their moral duty to society; however, in the case of public bodies, these efforts could benefit from further support through policies and legislation. Moreover, such approaches are sometimes only superficially participatory and can cause harm if not executed well. Here, greater practice exchange and research could benefit participatory efforts. Beyond the functioning of individual institutions, the principle of polyvocal inclusion should receive wider uptake across the sector and as a foundation for heritage research.

Opportunities for Action

Regardless of the near-term prognosis of increasing poverty, conflict and environmental degradation, the cultural heritage sector must take action to build proactively futures that are more desirable. Despite this gloomy outlook, heritage will be needed more than ever before as a source of hope and meaning – particularly as societies come to need fewer workers in the future. Recent years have seen a marked shift (at least rhetorically) towards championing people-centered approaches, but this needs to go much further so that heritage can play a meaningful role in improving people's lives.

Possible ways to work towards this include:

Recognize human rights as central to heritage conservation. Placing the fulfilment of human rights front and center within the purpose of conserving heritage is essential. Accordingly, public institutions and the wider heritage sector should be explicit in adopting a rights-based approach to heritage – and undertake the necessary work to establish what this looks like in practice. Fulfilling everybody's cultural rights can also help address other rights and needs.

Develop and embrace decolonial heritage practices. For rights-based approaches to be meaningful, the heritage sector must embrace decoloniality in both its principles and practices. Taking greater account of non-European models of heritage and its conservation, acknowledging the rights of those who have been excluded, and dealing openly and honestly with painful pasts are paths to redressing historic and ongoing injustice. This will require significant and systemic change: in institutional policies and practices, and also through education and staff recruitment programmes. The sector must become more diverse in the future.

Diversify knowledge. International organizations, such as UNESCO and ICCROM, should place greater emphasis on a wider diversity of knowledge and perspectives – in particular, the value of local and Indigenous knowledge and non-European approaches to heritage. This requires concerted efforts to promote knowledge production centres outside Europe and North America to counterbalance the dominance of these regions in academic research and publishing.

Adopt community-based actions. To ensure a greater diversity of perspectives within heritage decision-making so that underrepresented voices are heard and acknowledged to create different desired futures, drawing on deeper knowledge to build community than resilience.

Promote gender equality and LGBTQIA+ rights. Worldwide, gender-based violence affects an estimated one in three women and girls in their lifetimes (World Bank, 2019). Levels of violence against LGBTQIA+ people are even higher (Inter-American Commission, 2015; Flores *et al.*, 2020).[1,2] Heritage is deeply implicated in reinforcing male supremacy and the dynamics of social exclusion, and yet the international heritage sector has been notably silent on this issue. The sustainable development goals (SDGs) are founded on the basis that they apply to everyone, everywhere. The rights of women and girls are explicitly the focus of Goal 5; nevertheless, the principle of "leave no one behind" is also especially relevant for LGBTQIA+ people who face severe discrimination, repression and violence (Stonewall, 2016). Rights-based approaches should by default address gender equality and LGBTQIA+ rights, in line with future development frameworks.

Centre sustainability. A commitment to contribute to sustainable development should be visible within the mission and activities of all cultural heritage institutions. In line with public expectations and accountability and transparency requirements, this suggests that sustainability reporting by institutions of their impacts – both positive and negative – will become the norm.

Plan for post-2030. Rather than wait for the consultation process for the next development framework to come around, there is much to do in the meantime. Two areas of focus come to the fore: first, to take advantage of the current "decade of action" to use heritage to deliver as much as possible on the existing agenda; second, to start planning what contributing to sustainable development might look like post-2030. Hopefully, the outcome of this and other foresight activities will start to find answers to this question. Nevertheless, the message is already clear: keep looking ahead, start acting now.

Seek partnerships with other sectors. Greater partnership and participation in the sustainable development agendas of other sectors is needed to realize these goals, particularly at local and national levels. Cross-sector participation is a trend that is likely to continue, but will need active promotion and institutions extending their goals beyond narrowly-defined heritage interests.

[1]The average life expectancy of trans women in Latin America is estimated at 35 years (Inter-American Commission, 2015).
[2]Even in the United States, LGBTQIA+ people are four times more likely non-LGBTQIA+ people to experience violent victimization (Flores et al., 2020).

Environmental

Environmental

The Mega Trend

> A *succinct summary is in the 2020 report of the World Meteorological Organization: "All key climate indicators and associated impact information…highlight relentless, continuing climate change, an increasing occurrence and intensification of extreme events, and severe losses and damage, affecting people, societies and economies…The negative trend in climate will continue for the coming decades independent of our success in mitigation" (World Meteorological Organization [WMO], 2021). More specifically, these include increased heatwaves (Milman* et al., 2021), *fires, storms, rainfall, drought. Long term, the dominant effect may be sea rise: the Intergovernmental Panel on Climate Change (IPCC) predicts 0.3–1.1 m by 2100, but many researchers now favour 2 m (and up to 8 m by 2200). Between low and high emission rate scenarios, by 2100 between 190 million and 630 million people will be displaced by sea level rise (Kulp and Strauss, 2019). If nothing is done to change the cause of CC in this coming decade, the predictions start to use terms like tipping point, catastrophe, and existential crisis (Climate Council, 2021; Carrington, 2021; Potsdam Institute, n.d.).* (A3: scan report En5)

The overwhelming consensus among the world's leading scientific bodies is that global warming is likely to reach at least 1.5° C between 2030 and 2052 if it continues to increase at the current rate (Intergovernmental Panel on Climate Change [IPCC], 2022). To prevent further global warming beyond 1.5°C, the world must reach net zero greenhouse gas (GHG) emissions by the mid-2050s (WMO, 2022). In this scenario, predictions are that over the next two decades, the physical effects of climate change in the form of higher temperatures, sea level rise and increased extreme weather events will be felt in every country of the world. This, in turn, will likely have dramatic impact on the natural world causing is predicted biodiversity loss – the resulting degradation of land and marine ecosystems predicted to create greater risks to food security, water supplies and human health, thus precipitating conflicts and mass migration (IPCC, 2022, Chapter 7). Even if global warming is held to within 1.5°C, this trend is set to worsen before it could possibly become better, with poorer countries in the Global South predicted to feel the effects of these changes more severely than more developed countries (IPCC, 2022, Chapter 8).

In response, global public opinion is shifting dramatically with regard to the environment, with attitudes broadly differentiated across generations. Concern for the environment is cited as the number one priority for Generation Z and millennials – with young people in emerging economies expressing similar sustainability concerns as those in developed countries (see, for example, UNDP, 2021, January 26; Amnesty International, 2019, December 10; Credit Suisse Research Institute, 2022).

Implications for Heritage

Demonstrating environmental responsibility

Most organizations today already accept the imperative that they play their part in contributing to reaching net zero – at least in principle. Currently, the cultural heritage sector is failing to curb its emissions. As cultural institutions are required to report their impacts, they may face greater scrutiny for unsustainable practices (including tourism). In the future, it is highly likely that heritage institutions will come under increasing pressure to reduce their environmental impact if they are to avoid being seen as part of the problem. This will require both policy change and practical innovation to relinquish unsustainable practices (e.g., to revise museum environment standards and replace high-energy climate control systems with low-energy alternatives). At a more fundamental level, it may also require a shift away from a business model based on tourism towards other more sustainable sources of support. Indeed, cultural tourism will likely face increasing criticism, not just for the carbon impacts of travel but also the inequality of those emissions – recreational travel being a privilege of high consumption lifestyles.

Convergence of natural and cultural

> *There's going to be a more profound relation between natural and cultural, even its material or intangible cultural heritage. Because as the decolonization grows, because of all the world, they have more of a related view of cultural heritage, that it's nature as well. So it's not so divided.* (Workshop transcript, day 1)

Increasing environmental awareness, particularly among youth, is shaping twenty-first century worldviews, with a growing perception of human society as being part of, rather than separate to, the natural world. Environmental activism and protest – lead by Generations Z and Alpha – will likely grow as the failures of governments to address the climate crisis become more evident. The common concerns within these groups for both environmental and social justice issues mean that the *Rights of Nature* movement may combine with other justice movements seeking to redress the legacies of colonialism and Indigenous dispossession. This may lead to increasing demands for consideration of multi-species justice along with human rights, and eventual legislative change (Fitz-Henry, 2022; Challe, 2021; Barkham, 2021). This perspective will have important implications for heritage as notions of the natural and cultural converge.

Mounting threats to communities and their heritage

The frequency and magnitude of climate change-induced extreme weather events and rise in sea levels are expected to grow, endangering communities, particularly on islands and along coastlines. Coastal erosion has and will likely continue to threaten historic sites with destruction, especially as threatened communities migrate away.

As these and other impacts of climate change become more evident, affecting habitats, livelihoods and lives, the mounting threats to communities and their heritage will demand a dramatic shift in conservation strategies towards risk management (in particular of flooding and fire risks) and building resilience. Despite these efforts, direct physical impacts due to climate change are likely to result in significant heritage loss, both tangible and intangible.

Increasing acceptance of the inevitability of heritage loss

In the face of such changes, greater acceptance of the inevitability of loss may start to shape heritage conservation and management plans, as it becomes increasingly clear that the conservation of heritage in affected areas may not be possible or sustainable. Efforts may then converge around

preparing for this through documenting heritage that cannot be saved, developing strategies for relinquishment and coming to terms with loss.

Potential Game-changers

Mitigation

In facilitating global efforts to reach net zero, the heritage sector has three main ways to go:

1. Decarbonize its own operations;
2. Highlight ways in which heritage contributes to sustainability – and seek to enhance these; and
3. Use its influence to educate and inspire others towards more sustainable behaviours.

1. Decarbonize heritage operations

Environmental impact reporting

> *Cultural institutions are likely to be required to report on the full range of their impacts, openly and transparently. Such a reporting will highlight the large carbon footprint of institutions in terms of visitor travel, and the complexity of reducing Scope 3 emissions. As tourism grows, cultural heritage as a key driver of tourist travel, will be increasingly scrutinized and likely criticized as a source of emissions, notably in relation to the inequality of emissions by those with high-consumption lifestyles.* (A3: scan report En7)

At present, few cultural heritage organizations undertake environmental impact assessments of their operations, and even fewer publish these. This will likely change if not solely by sheer force of moral imperative but also because failure to do so may be penalized by loss of credibility and funding. Gone are the days when not-for-profit organizations could simply report the outputs of their activities as "impact" – how many visitors, how many objects conserved, how many people trained. Increasing scrutiny, calling out green-washing or SDG washing, means that the assumed essential beneficial nature of the heritage sector will likely be questioned, particularly where activities are funded publicly.

In the short term, this will probably comprise simple reporting of energy consumption and carbon costing of staff travel by organizations. The longer term may see a migration towards ecosystems approaches for more realistic assessments of the wider impacts of heritage operations in order to identify and make meaningful changes to cut emissions and waste.

Circular economic thinking

To retain credibility, any environmental impact reporting will have to go hand in hand with concerted efforts to reduce emissions and waste meaningfully. This goes beyond making adjustments to existing consumption patterns, towards rethinking operations from a circular economic perspective. Circular economic methods do not typically feature within heritage management at present, but there are indications that these may garner increasing interest. Examples of research into the application of circular economics as well as Life Cycle Assessment (LCA) methods to cultural heritage include the CLIC project (see, https://www.clicproject.eu/), and the STICH project (see, https://stich.culturalheritage.org/).

Sustainable tourism

Arguably, one of the most significant contributions to GHG emissions by the heritage sector is through visitor travel. In the future, as environmental impact assessments become the norm

for many heritage organizations, these will likely also be undertaken on across the sector as for other industries. In such assessments, the wider impacts of tourism travel are expected to feature prominently. This, in turn, will likely require the heritage economy to actively counteract the negative consequences of being labeled as a high-emission sector. While promoting more sustainable tourism may help, nevertheless heritage business models will likely shift. Rather than focussing on increasing travel to sites and museums, organizations will probably have to explore alternative revenue streams as well as prioritize the delivery of wider social and environmental benefits.

2. Contribute to sustainability

Heritage carbon savings

> *Traditionally, the way that communities would consume natural resources was based on what we now call the preservation of energy, but only because it was more practical, it was more productive to do it that way. What we today call low or zero waste was then just the best, most successful way to do a job.* (Workshop transcript, day 2)

Recognizing that GHG emission reductions will not suffice, in the future we can expect increasing focus on captured carbon. Here, heritage is well suited to contribute. Natural heritage sites, if conserved, can play a crucial role in providing ecosystem services, such as carbon sinks, to capture atmospheric CO_2 and mitigate climate change. In the built environment, the retention of existing building stock offers significant carbon savings over new build (Harrabin, 2020).[1] Assessing the 'whole life' carbon of historic buildings, rather than just the emissions produced when they are used, highlights how historic buildings are in fact a very low carbon option, particularly when their energy efficiency is significantly enhanced. Here, the heritage sector can do much to promote retrofitting and adaptive reuse of existing building stocks so that their embodied carbon is not lost through redevelopment (Heritage Counts, 2020). In the future, "whole life" auditing of embodied carbon emissions may provide greater impetus for retaining and adapting building stocks – some of which are yet be recognized as heritage, but destined to become so. Further, traditional knowledge and construction skills can also enhance new build projects, contributing effective passive cooling and insulation solutions within modern building design.

3. Inspire sustainable behaviours

> *…it is not more science, but better psychology, that determines what citizens believe and will act on.* (A3: scan report En9)

There are many ways in which heritage can be used to educate about climate change and sustainable development, and inspire more sustainable attitudes and behaviours, as highlighted by ICCROM's *Our Collections Matter* project and its associated toolkit (see https://ocm.iccrom.org/). In the future, such efforts will need to become mainstream, utilizing as yet untapped resources and approaches. Diverse forms of intangible, traditional and Indigenous heritage can promote more sustainable mainstream practices, much of which is under-recognized.

An example is food heritage: reaching net zero will demand major changes to the ways we use land to farm and what we eat. Food accounts for 26 percent of all GHG emissions, 57 percent of which are associated with raising livestock (of which 50 percent come from beef and lamb), which is often accompanied by large-scale deforestation (Ritchie, 2019; Xu *et al.*, 2021). Already, there is

[1]The Royal Institute of Chartered Surveyors (RICS) estimates that 35% of the lifecycle carbon from a typical office development is emitted before the building is even opened. The figure for residential premises is 51%. Thus, prioritizing retrofitting over new construction presents significant carbon savings (see Harrabin, 2020).

growing awareness of the need to cut milk and meat consumption for environmental and human health reasons. In the future, an increased focus on food heritage could significantly contribute towards healthier and more sustainable diets by revisiting and drawing from traditional food habits. Similar arguments apply to the textiles industry, estimated to be responsible for 8–10 percent of global GHG emissions as well as extensive environmental pollution, versus traditional textile manufacture and mending practices (The European Parliament, 2022; Sharpe, Dominish and Martinez Fernandez, 2022).

Adaptation

Focusing on mitigation alone is not enough to address the inevitable consequences of climate change, hence adaptation (increasingly referred to as "resilience") is needed to reduce vulnerability to its effects. Early warning is emerging as a key area for timely preparation in order to allow adaptation and build capacities of at-risk communities. Increasing partnerships with other environmental research disciplines and the private sector offer opportunities to advance adaptation strategies.

Natural heritage as cultural heritage

As environments degrade, natural heritage becomes a past memory, its vestiges retained within traditional knowledge and intangible heritage practices. Likewise, natural history collections capture traces of past biodiversity as "wild" biodiversity declines. Both of these not only serve as documentary evidence of what has been lost but also have potential to contribute to improved biodiversity management.

Community Resilience

The cultural heritage sector will need to adopt and embed climate adaptation into planning as a standard practice. This means adapting management guidelines to consider risk and uncertainty, and incorporate managed change into planning. A key focus is on transformative adaptation and disaster risk management to enhance the resilience of communities and ensure cultural continuity. While the inputs of science and technology are key for driving innovation in climate change adaptation approaches, Indigenous knowledge and inclusion can also be instrumental to creating resilient places. However, successful adaptation will ultimately rest on building strong multi-party partnerships between communities and other actors (different levels of government, private companies and climate change/DRM sectors) to derive bottom-up strategies centering on the needs of people at risk, to help them make necessary transformations to manage future uncertainties.

Opportunities for Action

Decarbonize and cut waste. The first step is for the cultural heritage field to reduce its own footprint reducing unnecessary travel and phasing out harmful practices (e.g., refrigerants in conservation), integrating science and modern skillsets with traditional techniques and knowledge to create more sustainable alternatives. Within this effort, reporting institutional environmental impacts is an essential pre-requisite for public accountability and transparency. Further to this, the adoption of circular economic models and LCAs within heritage management could help identify ways to decarbonize heritage operations and orient business models away from highimpact tourism towards delivering more sustainable social and environmental outcomes (well-being).

Evidence sustainability impacts and seek to enhance them. Placing greater priority on evidencing and enhancing environmental and social impact is key for building sustainable heritage futures. In this

regard, ecosystems services approaches could be adapted to help evidence the sustainability impacts (positive and negative) of heritage institutions and sites. These include carbon savings achieved through the adaptive reuse of heritage, the carbon sequestering potential of natural/cultural sites, and their contribution to preserving biodiversity. Placing priority on sustainability impacts through integrating them within key performance indicators would reorient management goals towards these outcomes.

Acknowledge and use intangible heritage and traditional knowledge. Acknowledging and preserving natural heritage as cultural heritage is vital not only to preserve memory of past environments but also to evidence and understand change (e.g., in regard to biodiversity loss), and improve both cultural and natural policies. As such, intangible heritage and traditional knowledge, particularly of Indigenous communities, will likely become increasingly important to understand and conserve natural cultural heritage.

Partner with other environmental sectors. To advance much-needed innovation in climate mitigation and adaptation – for example, in areas such as ecosystem services, adaptive reuse and early warning – there is a need to engage more closely with the environmental sciences and other sectors working in these areas to develop technologies and adaptive practices for heritage conservation.

Integrate foresight with disaster risk management. Disaster risk management in the future is likely to become significantly more complex due to not only the increased frequency and severity of extreme weather events but also their rising unpredictability. Added to this, wider political and socioeconomic drivers of change introduce further uncertainties that in turn dramatically affect exposure and vulnerability to hazards. However, these factors are not captured within disaster risk assessments that focus on the current state of risk. Foresight practices have grown in many areas, but are yet to see widespread uptake in disaster risk management – although the parallels are obvious. Given the need to build greater awareness of uncertainty into disaster risk management planning, foresight techniques could provide significant advantages for gaining improved longerterm insights to support community adaptation and resilience (Riddell *et al.*, 2020).

Use heritage to encourage environment friendly practices. Culture embodies values, which in turn drive behaviour. Museums and other cultural heritage organizations, as places of memory and learning, have a unique social and moral status that can be leveraged to educate and inspire pro-environmental attitudes and behaviours. We are at a defining moment in our history, and the consequences of failure are unprecedented in scale. To remain relevant, this is a mission that cultural heritage institutions must embrace for the benefit of their own and their communities' future.

Prioritize what to save, and accept loss where necessary. There needs to be greater recognition and acceptance of the inevitability of heritage loss: preservation strategies then moving towards what is feasible to save, and documenting that which is not. As cultural heritage maintenance becomes more costly and/or impracticable, decisions will need to be made about what heritage to protect and abandon, likely linked to community finances. To prepare for this, cultural institutions will need to start dialogues within affected communities about notions of change and permanence to raise public awareness and facilitate participation in decision-making.

Societal

Societal

The Mega Trend

We will likely see increased transnational migration due to multiple factors, including climate crises, political conflicts and wars. These migratory flows will likely mostly move from the Global South to the Global North, also influenced by histories of colonization, resulting in large diasporic communities. Largescale transnational migration is likely to be closely intertwined with other rapid demographic changes in society, such as an ageing population and population growth/degrowth:

> *One of the major consequences of European imperial expansion was a bipolarization of the world on the basis of race and culture, but also, of the many contradictions, disparities and inequal opportunities and privileges that it has created and that became a real burden of history. The mirage of economic paradise, of haven of peace and, of political stability displayed by the Global North and so coveted by many people of the Global South affected by political conflicts, economic disarray and precarious existence is today the main incentive for them to migrate there. These movements are inseparable from the colonial legacy to which they are intrinsically linked. Moreover, the massive arrival of migrants from the Global South coincides with dropping birth rates and ageing population in the host countries in the Global North.* (A3: scan report S4)

The global population is expected to reach 9.7 billion by 2050 and then begin to decline. Demographic changes are predicted to be highly regionally variable. In the Global South, while growing populations will likely lead to greater economic development and stronger geopolitical influence, these may be attended by urban overpopulation and resource exploitation. Worldwide, urban areas will likely continue to grow while many rural areas are increasingly abandoned. At the same time, most parts of the world will experience an ageing population:

> *According to a United Nations report (UN DESA, 2019), the current trend is that virtually every country in the world is experiencing growth in older populations (over 65 years) and this proportion is expected to double in 2050 to about 1.5 billion people. The key drivers for this change are the lower fertility rates and mortality rates – as well as migration, more recently. Regional trend is that Eastern and South-Eastern Asia and Latin America and the Caribbean will experience the fastest population ageing. Additional research by the Pew Research Center shows that the result will be a much older world, in which "roughly one-in-six people is expected to be 65 and older by 2050, double the proportion today" (Tyson, Kennedy and Funk, 2021).* (A3: scan report S2)

The presence of fewer young people in some parts of the world may lead to decline in long-term growth of their economies and workforces – some of which are already experienced. At the same time, a greater number of elderly people will require care, and age-related medical conditions, such as dementia will become more common. The world is currently relatively unprepared for this rectangularization of the global population pyramid.

Implications for Heritage

Population growth and decline

Growing populations in the Global South will likely place greater stress on cultural heritage, principally through urbanization. Meanwhile, in other regions, shrinking populations – particularly in rural areas – will result in fewer people to inherit and care for cultural heritage. Both trends may in different ways prompt heritage declassification.

Ageing populations

By 2050, most countries will probably be experiencing ageing populations, leading to a decline in long-term economic growth and workforce gaps. This points to a scenario in which there will be fewer young people to pass on intangible heritage, while the heritage sector may suffer the effects of a shrinking and increasingly older workforce. While ageing populations may equate to people spending a greater number of years in ill health, a proportion will be living longer active lives, and be increasingly engaged in creative voluntary work after retirement where heritage may play a role.

Transnational migration

Large-scale transnational migration and increasingly influential diasporic communities would mean that traditional conceptions of heritage, which tend to locate heritage within the imagined boundaries of the nation state, may be challenged by transnational, rather than national, conceptions.

Underserved communities

Furthermore, so-called universal values of heritage may increasingly be complemented with more inclusive and diverse values, based on sensitivities to local conditions. Decolonizing heritage in countries with colonial pasts may become a top priority, in which the rights of Indigenous and marginalized communities are recognized. Accordingly, heritage actors will need to actively strive for increased equity and social justice. To move forward in this process, the heritage sector will need to acknowledge and find a space for different knowledge systems to flourish, which may challenge recognized standards:

> *The field of conservation and of cultural heritage in general will be subject to significant transformations informed by endogenous knowledge which will enrich and sometimes challenge or complicate previously universally recognized standards. The new practices and knowledge that will result from it will especially be carried by traditionally colonized peoples in search of more equity and social justice as well as of a redefinition of a self-image other than that of the colonial library.* (A3: scan report C1)

Identity politics

Potential counter-trends will likely emerge because of these societal changes related to identity politics and the politicization of everyday life (see also the chapter on the political scans). Politically extreme right-wing groups in the Global North may seek to protect frameworks that emphasize exclusionary national values in heritage. There will likely be increased public debates concerning heritage, where tensions regarding "whose heritage" and "who belongs here" may lead to conflicts between migratory and Indigenous peoples and rightwing groups. Thus, there is a risk that heritage will become increasingly politicized from each side of the political spectrum. This could potentially make heritage even more divisive.

Potential Game-changers

Embracing social justice through human rights-based approaches

For heritage to be a positive force in sustainable development, the heritage sector needs to work actively against discrimination of all sorts, through human rights-based approaches, to reduce racism, sexism and xenophobia. A firm commitment to social justice needs to be thoroughly integrated in the work and agenda of heritage organizations. There also needs to be a heightened awareness of when and how heritage is misused to further widen societal gaps and increase xenophobia and exclusionary practices, and for greater commitment to addressing injustices.

It is essential that the gains in gender equality and women's rights achieved within the last decades are not rolled back due to, for example, the climate crisis, future pandemics or wars. Furthermore, gender-fluid identities need to be embraced. Accordingly, there is an opportunity for ICCROM to take a strong initiative in these issues:

> *ICCROM should seize the opportunity to implement projects that address gender stereotyping and inequalities in the field of heritage in a meaningful and inclusive manner. Current projects do not address issues of gender violence; genders beyond the male/female binary; and male supremacy.* (A3: scan report P13)

When heritage projects aim to empower marginalized groups for the purpose of social justice, they need to actually correspond to these groups' desires and needs. Thus, these projects cannot be designed from the topdown but need to be bottom-up.

Evidencing the benefits of heritage for societal development

In line with fully embracing and acting on the social justice issues outlined above, the heritage sector needs to better evidence its benefits for positive societal development, including social cohesion, well-being and gender equality. The sector needs to both develop better holistic models for evidencing the societal benefits of heritage, including quantitative and qualitative aspects, and practically apply and implement those developed on an on-going basis. This would be a potential game-changer when lobbying for heritage to be more present in key policy documents and when arguing for why heritage needs to be considered as a vital component in the SDGs. Here, there may be inspiration from already developed models.[1] Models of evidencing societal value also need to show who benefits from heritage and in what way, and by implication, who does not benefit and why not. This is vital for developing strategies and plans for action that can broaden the societal value of heritage, overcoming previous exclusions.

Lifelong learning through co-creation

To adapt and be relevant in a world where the population is getting increasingly older and are living active lives for longer, the heritage sector will have to fulfil different needs from today. Learning may be seen as lifelong rather than connected to specific phases in life, and co-creativity may be a game-changer in ensuring that lifelong learning continues to be meaningful. Here, formal, informal and non-formal learning, which build upon trans-sectorial expertise, will be key, also within the field of conservation:

> *Conservation will include new skills and competences. Educational programmes will focus on lifelong learning (LLL) and offer flexibility in their structure to allow students to build on their skills from different sectors. The new types of professionals will not fit in traditional*

[1]One recent example is the SoPHIA model (https://sophiaplatform.eu/en), a social platform for holistic impact heritage assessment, which has been developed through funding from the European Union's Horizon 2020 programme.

> *occupational profiles, and they will be allowed to build their skills and collect "credits" in formal and non-formal ways.* (A3: scan report C2)

Furthermore, heritage may be increasingly used for the health and wellbeing of an ageing population, where co-creative heritage programmes can be used to stimulate memories and slow the progression of Alzheimer's disease. Here, it is likely that the heritage of contemporary times will be prioritized:

> *…digital recreation of the heritage of contemporary and recent times has become a prioritized field since it is a period which people themselves can personally relate to and is therefore ideal for countering dementia and creating affective experiences. (…) Focus is seldom upon using heritage to trigger or wake memories, but to let participants co-create their own memories (…).* (A3: scan report S1)

It follows that both physical and digital environments will play a major role in stimulating memories in an active and affective way. It is possible that elderly people will be voluntary caretakers of many heritage sites, in which the act of collectively taking care of the physical environment within a social context contributes to lifelong learning and social cohesion.

Meanwhile, the cultural heritage sector will need to find ways to attract youth to engage in heritage, offering greater opportunities for active participation, learning and employment. Engaging in socially responsible causes that resonate with younger groups will be key.

A broadening of the concept of heritage emphasizing interconnectivity and experiences

Instead of primarily defending already established values, the heritage sector can approach these societal changes as an opportunity to initiate a discourse on changing community values and reevaluate its concepts of heritage. Overall, this entails the need to broaden and diversify the concept of heritage, which will have an impact upon how the field approaches issues, such as time, decay, conservation and management, among others. This also means that policies and processes need to adjust to include diverse forms of heritage that move away from colonial hierarchies of value:

> *ICCROM could strengthen its leading position in the field by fully embracing a more decolonized approach to heritage. It could implement programmes, including research projects, to demonstrate how moving away from concepts of authenticity and of heritage as "frozen in time"; the separation between nature and culture; and the consideration of time as linear would enhance heritage protection and help to address development issues such as climate change.* (A3: scan report P1)

A potential game-changer could be heritage values emphasizing interconnectivities and experiences rather than physical sites and objects. Experiences would mean an increased focus on multiple senses (polysensory heritage), including the heritage of smells, sounds, taste and touch. There are already indications pointing in that direction:

> *…in 2018, UNESCO inscribed the skills related to perfume in Pays de Grasse on the Representative* List of the Intangible Cultural Heritage of Humanity. In France, a law was recently passed to protect the noises and smells of the countryside. (A3: scan report S6)

Interconnectivity would mean a focus on the entanglement of objects, places, people and stories, rather than separating them into distinct boxes. This may serve to nuance dichotomies, such

as those between nature/culture, material/immaterial and local/global by tracing links and connections in multiple directions.

As a result, heritage professionals/institutions will likely broaden their roles with new ways of collecting, conserving, managing and presenting heritage. This suggests that there is a need for new training models that embrace a greater diversity of approaches and new flexible skills and competences to better adapt to the changing and expanding values of heritage:

> *Cultural heritage is expanding to incorporate new forms of art and heritage to represent diverse communities and audiences. This, in combination with the ever-expanding role of museums and the advancements of new technologies, will force institutions to engage with professionals with new sets of skills from within the sector and beyond.* (A3: scan report C2)

A movement towards grassroots initiatives and bottom-up approaches

> *Sociomuseology proposes a shift from "mere" collecting, researching, and exhibiting objects to researching identities, the roots of injustices, and offering tools for local populations to become politically and socially aware.* (A3: scan report C6)

Rather than primarily focusing on collecting and caring for objects and places, heritage actors and institutions can serve a more meaningful role in society as community advocates by facilitating platforms of connecting and listening. Grassroots initiatives and bottom-up approaches will be key in such work. These initiatives would aim to facilitate active, free and meaningful engagements with the aim to enable communities themselves to instigate transformative change. A sense of local ownership and active participation are thus essential. Accordingly, there is an imperative of accountability to include local voices in decision-making processes.

Within such initiatives, heritage institutions can be significant on scales beyond the national or even the regional, focusing, for example, on individual stories of people, which can highlight perspectives, forms of knowledge and voices previously excluded:

> *The new way of work and focus of emerging professions in preservation will be on people, communities, their stories and knowledge rather than objects per se. This will lead to creating a grassroots network and mode of operation that could offer alternatives to local work as well as open new channels of interaction and action in society, in one's own community, but also in the context of the city, country and internationally.* (A3: scan report C6)

Providing platforms for sharing and listening to stories that have previously been unrecognized can be a truly empowering and transformative experience for those joining. The heritage sector may thus need to develop skills as facilitators. This may also entail the need to value different forms of expertise in recruiting processes:

> *There may be flow on effects to the types of employment (…), moving away from traditional curatorial roles, to more facilitators of community engagement (…).* (A3: scan report S9)

Finally, the horizon scans are highlighting co-creativity as a useful method in building and sustaining trust and participation from the bottom-up. Aided by technology, the future of cultural heritage will likely be substantially more co-creative, with the potential to flatten hierarchies between experts and nonexperts. In such a way, citizens and communities will have more agency over creating and narrating cultural heritage through their own individual stories, which may challenge imposed and enforced narratives.

Opportunities for Action

Reinforcing the need for human rights-based approaches, including actively using heritage to reduce social inequalities, strengthen social cohesion and move towards greater social justice and gender equality.

Developing and implementing models of evidencing social benefits of heritage. We need models that are transparent about the societal impacts of heritage, showcasing who benefits and in what ways. Such models

would constitute a major opportunity when lobbying for making heritage more visible in key policy documents and within global goals of sustainable development.

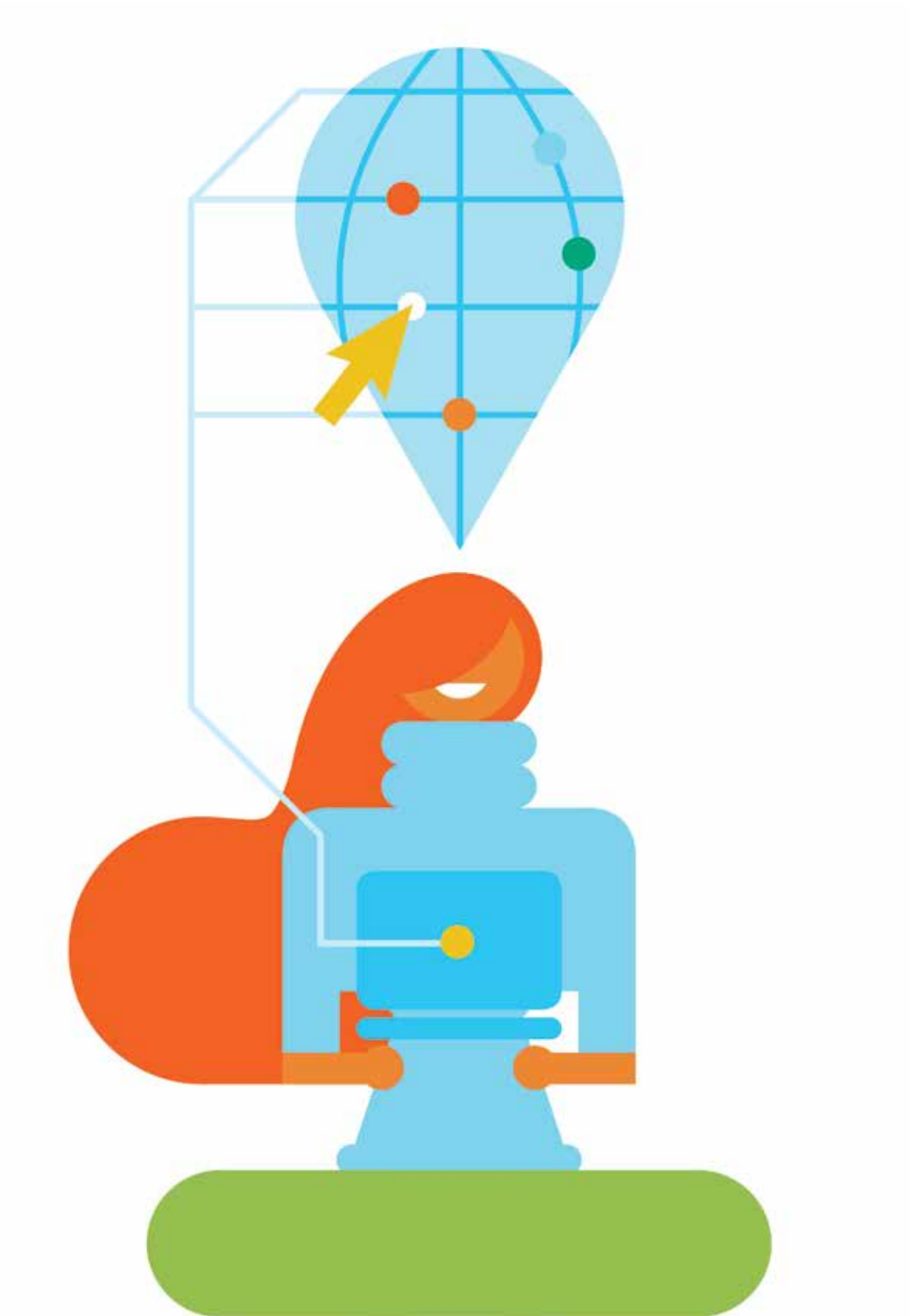
New courses and training models are needed to meet the changing roles and values of heritage. These would entail different sets of skills and expertise related to tools for lifelong learning, measures in countering age-related diseases, means to take account of a much broader and more diverse concept of heritage, and expertise in facilitating meaningful and open participation with an increasingly diverse society.

Community engagement initiated through bottom-up and grassroots initiatives may be a game-changer necessary to enable a sense of local ownership and empowerment, in which previously unrecognized perspectives and worldviews are included.

Co-creativity can be key in building long-lasting relationships to diverse communities and increasing social cohesion and the well-being of an ageing population. Co-creativity has the potential to lead to more sustainable connections built on mutual trust and care.

Facilitate platforms for sharing and listening to stories that have the potential to empower communities and flatten hierarchies between "experts" and "non-experts." Furthermore, due to the likelihood of larger diasporic communities in the future, these stories may move beyond national or even regional frameworks to emphasize transnational connections and values.

Technological



Technological

The Mega Trend

The clear trend is that society is swiftly moving towards a more digital future marked by rapidly advancing technology and the intensification of digital and online activities. At the same time, the convergence of non-associated technologies, for example, between AI and biotechnology, are likely to spark breakthroughs that will dramatically affect the ways in which people live, work and interact. These developments may offer new ways to tackle issues, such as ageing and climate change, but at the same time create disruptions and tensions between industries, societies and nations. In turn, this will throw up myriad ethical issues regarding the intervention of technology in human lives and their impact on societies as well as increasing security concerns (The National Intelligence Council, 2021).

Technological advances

Technology is already advancing at such a rapid pace that it is difficult to predict what innovations the future will bring. It is already clear that future developments in AI, immersive technology and digital content management are likely to impact the heritage sector.

Artificial intelligence is expected to drastically change society in the future. By 2040, machines are expected to have the capacity to make data and information available in real time, autonomously realize set objectives, collaborate with human users, and improve human behaviour and responses, making it a valuable tool in many facets of daily life and work. AI will likely be adopted by all industries and will transform the workforce by automating routine tasks while also driving massive innovation that will fuel job growth (Stahl, 2021). AI is also expected to be writing its own code and making self-improvements through advanced machine learning algorithms (Billings *et al.*, 2017). Some experts predict that a phenomenon called technological singularity – in which AI surpasses human intelligence and technological growth becomes uncontrollable and unstoppable – will occur around 2040 (Patel, 2016). Such developments have been highlighted in mainstream media as a potential existential risk to humanity (Bengio et al., 2023). Nevertheless, others consider this debate distracts attention from the harms that current AI systems are already causing (such as worker displacement, copyright infringement, and privacy violations) which will, regardless of whether singularity occurs or not, continue to exacerbate (Curry, 2023).

We will likely also see many innovations in immersive and interactive experiences, such as virtual reality (VR), augmented reality (AR), mixed reality (MR), haptics (tactile technology), audio augmentation, gamification and three-dimensional (3D) technology. These technologies will offer new ways to attract and engage users, for example, in storytelling, and may eventually become ubiquitous in daily life (Springwise Intelligence Ltd., 2018).

Looking ahead, integrated digital content systems may provide solutions to current data collection, management and access limitations, by providing greater storage capacities, enhanced search and data-mining methods, and AI-generated metadata (PimCore, 2021).[1] We can also expect to see greater connectivity through data aggregation of multiple collections, links to social media

[1] *Mega trends driving DAM in 2021* (PimCore, 2021). https://pimcore.com/en/digital-asset-management-trends

and other external platforms, and a focus on user-generated content and tools that democratize data creation and management (Freire, 2020).

Intensification of digital activities

As technologies emerge and develop, and digital and online activities intensify, we are expected to migrate deeper into the metaverse – a centralized and immersive virtual world – which is likely to change the nature of social communication, collaboration, learning and the digital economy (Clark, 2021). Work will likely become less place-bound, with the remote work model becoming increasingly favored for its flexibility, cost-effectiveness and environmental sustainability as organizational operations and communications shift to digital workplace services and platforms, and their data stored and accessed through cloud networking (Hatfield and Jones, 2020).

New cyber threats

Globally, a key concern stemming from this digital intensification will be an inevitable rise in threats to cybersecurity. Cyberattacks are already increasing in number and hackers are adopting new and effective methods to compromise digital operations and data, including ransomware, phishing/social engineering attacks, IoT-based attacks and distributed denial-of-service (DDoS) attacks. Meanwhile, premiums for data protection services are on the rise, suggesting that cybersecurity will be a costly endeavour for organizations (Novinson, 2021):

> *Current and future threats will implicate loss of connectivity, exposure of data and paralysation of operations, both in the private level as well as in the global level. There will be a need to adopt more robust security services and ransom attack detection systems to protect remote data.* (A3: scan report T2)

Ethical issues

Also of concern are exploitative applications of technology, which we have already seen in recent years in everything from privacy infringements to fake news dissemination. Currently, most new technologies and digital platforms are created and controlled by the private sector, fitting either a profit-driven or surveillance-driven model. Policymakers have been slow to regulate the limits of new technological applications, so it is likely that it will continue to be left in the hands of programmers, developers and Big Tech themselves to keep their technology accountable (Kleinman, 2020). This may lead to further ethical binds concerning digital applications that conflict with public values, such as transparency, privacy, community, co-creation and accountability:

> *Elections across the world have shown how fake news, search algorithms and recommendation systems that guide the user through the data not only sway votes, but undermine the citizens' decision-making ability and informational self-determination.* (A3: scan report T1)

> *…digital services essential for the functioning of modern society are delivered by commercial platforms and companies, giving them an unwarranted power. They control algorithms, data about content and users, and policy on development and (dis-)investment.* (A3: scan report T4)

Implications for Heritage

Increased volume and diversity of born digital and hybrid digital heritage

As society moves towards a metaversal future in which our realities become increasingly digital, contemporary culture itself is likely to assume digital or hybrid digital forms. Non-fungible tokens (NFTs) may change the way we view the value, sale, ownership and management of digital

art, and may also be used to monetize digital heritage experiences (Sycip, 2021). Moreover, it may not be long before emerging forms of technology, such as AI and VR, are considered cultural heritage themselves. The proliferation in quantity and diversity of digital heritage will present conservators with new preservation challenges, for example, loss of heritage living on inaccessible digital formats, limited storage space forcing decisions about what to preserve, and legal issues concerning copyright and licensing of digital artworks (Brungs and Wyber, 2016):

> *And we may have many embodiments, many selves, in the digital world. The younger generation is already fiercely protective of those embodiments. And it is a question for the heritage sector how to preserve that richness of existence in the digital domain. As the self disintegrates, do we need to think about the heritage of machines or the heritage of robots in the future? Do we need to get ready to develop that discourse in the heritage sector?* (Workshop transcript, day 2)

Increasing cybersecurity threats

The heritage sector will not be spared from global risks to the integrity of digital data, institutional operations and IoT-based functions (e.g., environmental monitoring), particularly in regions with fewer resources to prepare for and respond to these threats. Heritage institutions must be ready to resist attacks to digital and digitized heritage as well – data protection will likely be integrated into digital preservation and archive management. The heritage sector will need to invest in more robust cybersecurity systems to protect its operations and heritage, as well as staff training to address one of the greatest risks to data safety – employee negligence (Liberatore and Lyons, 2018):

> *The challenges will include security and privacy, coverage and connectivity, power consumption, scalability (large vs. small environments), and cost… By not reacting to the trends in cyber security…both tangible and intangible data will be lost permanently, especially in less technologically/economically developed regions.* (A3: scan report T2)

Potential Game-changers

New technological tools for heritage

Advances in technology will offer the heritage sector new and improved tools for managing, conserving and consuming heritage. It is likely that AI will revolutionize the way heritage is conserved, managed and experienced. The potentials of AI for heritage require further exploration, but it may serve as a powerful tool for surveying heritage buildings/sites, digitizing heritage, generating heritage metadata, enhancing visitor experience at museums and improving access to collections; it might also be used to preserve intangible heritage, such as endangered languages (Thornton, 2019; Boo, 2020). It is also likely that AI will increasingly be used to guide heritage decision-making in the future:

> *AI is going to happen whether we like it or not. It's going to make decisions for us. It's going to decide what is heritage in the future. It's going to bring together heritage consumers and develop their relationships. It's going to define how heritage is managed… But regardless, algorithms should be seen as tools that bring people together, and that is a positive thing.* (Workshop transcript, day 2)

As for immersive technologies, certain frontrunners in the museum world have already begun to use such technologies as VR in exhibitions to engage visitors in novel ways. Museums may use 3D experiences, VR, AR, MR, audio augmentation, gaming, holograms and avatars for immersive

storytelling and education. We might also see the emergence of more virtual tours of heritage environments and entirely virtual museums. These advanced immersive experiences have the potential to further engage audiences narratively and emotionally, and feature visitor-driven narratives over traditional linear ones (Pappa and Makropoulos, 2021). These technologies might be employed to enhance visitor experience both on-site and off-site, and attract younger audiences to art and heritage:

> *Opportunities created by digital technologies enable cultural institutions to offer online and onsite experiences and services that (i) increase outreach and increase access of cultural content to a wider audience, without being restricted by crowd sizes, opening hours or travel limitations. This allows for (ii) the emergence of new product innovations, and (iii) increases the resilience of the cultural heritage sector.* (A3: scan report T10)

> *Digital technology offers a new, cost-effective and reliable way to preserve cultural heritage and add value and excitement to it, using new multimedia and digital technologies, such as 3D modelling, VR, AR and gaming to excite younger generations.* (A3: scan report T8)

The COVID-19 pandemic demonstrated the value of digital access to art and cultural heritage, particularly to public health and well-being (Tan and Tan, 2021). Early indications are that while virtual engagement with heritage may have increased during the pandemic lockdowns, this may have stimulated, rather than supplanted, the desire to visit and engage with heritage in person (Lodovici *et al.*, 2022, p. 62). In the future, advanced digital content management systems may drastically improve access to heritage collections, particularly as heritage digitization technologies are improved through 3D technology, photogrammetry, laser scanning, AI, VR, etc. Heritage organizations might pool digital collections and resources. However, as more content is collected into digital repositories, the heritage sector will likely be challenged with how to manage and curate large, semantically incoherent collections of information that are difficult to navigate. User-focused digital content strategies that prioritize quality over quantity and centre user demand will be needed to minimize amounts of irretrievable content. This might involve mapping out users' interests and crowdsourcing contributions to digital repositories (Scholz *et al.*, 2017):

> *Because preservation and archiving are resource-driven, this will lead to a growing problem of disappearance or irretrievability of a large amount of valuable digital cultural heritage content.* (A3: scan report T3)

> *The physical dimension will remain important; however, the digital and intellectual (or non-intellectual) use of heritage will be enhanced to reach different audiences around the world. The way collections are formed will change with communities being actively engaged in the process.* (A3: scan report C2)

Public values-driven technology

Currently, institutions organized around public values – e.g. public media, schools, healthcare providers and cultural institutions – depend on digital services delivered by private companies and driven by private-sector values. However, there are emerging digital tools and technological models that cultural institutions might adopt, which better align with their public missions:

> *…increasing consideration should be given to aligning technology with public values. Does the system track users? Who owns data created by the system? Are the algorithms open and accessible so that we can trace bias and take corrective action? Are we comfortable showing online advertisements that collect user data on our portals?* (A3: scan report T4)

For the heritage sector, one area to develop this discourse is technology for collaboration and community engagement. Shared research infrastructures streamline research funding and practices and support cocreation through shared research facilities, resources, training and services among nations and/or organizations. A pan-European infrastructure for heritage science, E-RIHS, is already in the works; supported by digital platforms, there is potential to expand this model to other regions or globally with greater functionality (Rathgen-Forschungslabor, 2020)[2]:

> *The opportunity has arisen to develop a shared global conservation infrastructure that could remove the need for individual institutions to support their own in-house facilities, but rather pool their resources and establish a shared infrastructure…there is a role for ICCROM to play, i.e., to enable the global heritage and conservation communities to benefit from the investments into the shared infrastructures.* (A3: scan report T11)

Collaboration can also extend to the public. Some other fields, such as the natural sciences, have already found success in implementing crowdsourcing projects to engage citizens in aggregating and managing data over digital platforms (Joly *et al.*, 2016). The heritage sector also stands to benefit from directly engaging the public in heritage research, creating/managing heritage data, and contributing inputs grounded in traditional knowledge. Open data ecosystems for cultural heritage that facilitate citizen science would be immensely valuable in enabling communities to contribute to creating, curating and sustaining their own heritage (Parthenos, n.d.):

> *The current trend of online public interactive and interconnected spaces will continue to enable new practices of data and information generation, sharing and aggregation in many forms…For ICCROM: lead initiatives to promote regional engagement for crowdsourcing projects and information sharing; partner with other fields such as natural science/ biodiversity; and see how this could be emulated into cultural heritage, how to assess the quality and value of crowdsourced content and data, and how to consider it in the context of what cultural heritage institutions will collect.* (A3: scan report T3)

Finally, there are opportunities for the heritage sector to contribute to technological models driven by public values, which centre humans and society at their core. While this may be appropriate for a range of technologies, AI is an exemplar. The application of AI to cultural operations is known as AI for Culture; a nascent focus is Culture for AI, which highlights how culture can be involved in the development of AI so that this technology can better serve society. Culture (or heritage) for AI might mean that the cultural and heritage sectors use their data and digitized collections as training data to feed to AI systems to make them aware of social history and cultural context – by extension, developing cultural consciousness and recognition of current biases (Werkheiser, 2019):

> *So a model that is not driven by profit, not driven by surveillance, but an AI model that is driven by public values. And you can think, for instance, that these AIs need to be open, they need to be transparent, they need to be sovereign, they need to be accountable and they need to be human-centric.* (Workshop transcript, day 1)

> *In order to avoid the negative impacts of AI on human society, efforts to make AI understand the context of human cultural heritage will be promoted.… AI should be taught the complex precepts of human history and culture to increase the likelihood that it will preserve and reflect our shared cultural heritage and, by extension, our humanity.* (A3: scan report T8)

[2]Rathgen-Forschungslabor (2020, July 14). *Cooperation throughout Europe in research on cultural heritage*. Staatliche Museen zu Berlin. https://www.smb.museum/en/whats-new/detail/cooperation-throughout-europe-in-research-on-cultural-heritage/

Opportunities for Action

Digital heritage preservation. The heritage sector should advance the discourse around how to approach the preservation of born- and hybrid digital heritage, training or recruiting the necessary technical expertise. The possibility of using AI and other emerging technologies for digital preservation can also be explored.

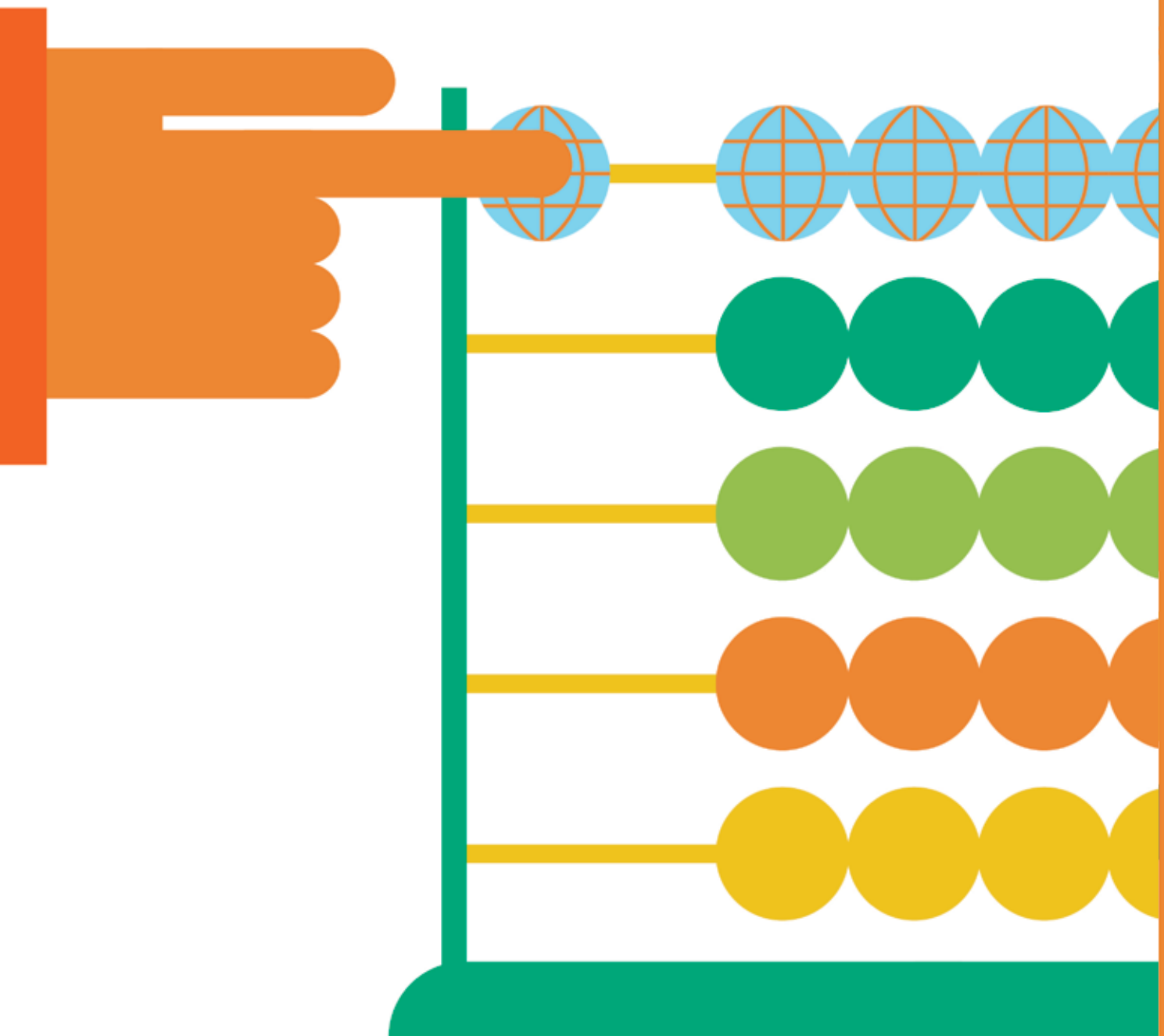
Cybersecurity. Cultural heritage institutions should allocate a cybersecurity budget to invest in more secure infrastructure. Staff trainings should be instituted to protect digital operations, institutional data and digital collections. Currently, the sector lacks a leader on the issue of cybersecurity, whose role might involve educating and raising awareness so that cultural institutions can collectively protect their heritage and data.

New technological tools for heritage. The heritage sector should explore potential applications of AI to support its operations and innovations in immersive technologies to engage heritage consumers – particularly younger audiences – in new ways. As digital content management will be critical to the future of heritage institutions, planning should be undertaken and the appropriate digital instruments acquired to generate integrated digital repositories that are accessible and user-centered. More broadly, technological literacy should be integrated into heritage education and training so that heritage professionals are well equipped to embrace new innovations.

Public values-driven technology. There are opportunities for the heritage sector to both identify digital tools that align with the missions of cultural institutions, and contribute to public values-driven technological development that can better serve society's needs. Employing digital services used by other sectors for shared research infrastructures and crowdsourcing may produce collaborative and inclusive heritage projects. The sector should also form partnerships within the technological sector to explore the ways in which the heritage sector can contribute in creating socially and culturally conscious technologies.

Bridging the digital divide. A third of the world's population – 2.9 billion people – remains offline, defining digital divides that disproportionately impact developing countries as well as women, rural populations and the elderly. While Internet penetration, mobile connectivity and broadband access are expected to expand globally in the next decade, many will continue to lack access to emerging technologies and may face further disenfranchisement from the digital sphere shaping daily life in other parts of the world (ISO, 2022; Rastogi, 2022). For cultural heritage, this may prevent many communities from reaping the benefits of the digital tools highlighted in this chapter, and may leave them especially vulnerable to cybersecurity threats. In order to avoid entrenching existing imbalances, digital inclusion must be set as a priority for the heritage sector by approaching investments into digital infrastructure and literacy with a view to equity.

Economic



Economic

The Mega Trend

The prevailing economic paradigm centered on deregulated free markets that has dominated policymaking for the past 40 years, while generating prosperity, has also produced vast inequalities in wealth, income, healthcare and power. Although extreme poverty has declined globally since the 1980s, it is evident that inequality is on the rise, as wealth is increasingly concentrated within a shrinking proportion of people (Chancel *et al.*, 2022).[1]As an economic model based on ever-increasing consumption, many argue this has encouraged an unsustainable, wasteful and degenerative global economy that will become increasingly unstable as the climate crisis takes hold. Over the next 15 years, this, in turn, is likely to drive greater inequality, political instability and conflict, although the effects of these may be differentially distributed, with countries in the Global South impacted to a greater extent than those in the Global North with more developed economies:

> *Inequality is on the rise in all regions, but at different rates. Inequality may result in increasing disaster capitalism, where rich countries profit from the hardships in poor countries.* (A3: scan report P5)

Implications for Heritage

Failing market economies, dwindling resources for heritage

The possible collapse of global markets and decline in national economies may have profound economic implications for heritage, hitting two primary funding sources in particular. First, budget allocations may increasingly suffer as governments funnel public funds towards other crucial areas. Meanwhile, revenue from tourism, already in disarray due to the impacts of COVID-19, could be vulnerable to further destabilizing catastrophes. Moreover, as environmental policies to achieve net zero ramp up, tourism may become increasingly expensive. As inequalities rise, access to heritage could become more contentious. Attitudes towards heritage may shift – with certain types of heritage seen as the preserve of the privileged. Heritage tourism (particularly involving World Heritage) may become taboo as economically, environmentally and socially unsustainable.

Shift away from tourism

Greater inequality is likely to be felt in terms of access to cultural activities and institutions, as impoverished countries and communities are deprived of economic wealth to establish and run cultural heritage institutions and sites. Additional problems brought about by potentially greater economic hardship may further compound the effects of these dwindling financial resources. While reduced funding may increasingly threaten conservation activities, the heritage sector will

[1]According the 2022 World Inequality report (Chancel *et al.*, 2022), the current (2022) share of the bottom 50% of the world population of total global wealth is 2%, while the share of the top 10% is 76%. Between 1995 and 2021, the top 1% of the population captured 38% of the global increment in wealth, while the bottom 50% captured just 2%.

have to meet increased and different challenges. Thus, it will likely face an uncertain future as it is tasked to do more with less. Poverty and increased tensions within and between countries will likely lead to increased losses of cultural heritage through direct damage, neglect and looting.

Increasing demand for evidence of heritage impacts

In a scenario of tightening public budgets, heritage will have to compete harder to gain support. In such an environment, this will likely be accompanied by increased demands from funding bodies, both public and private, for concrete evidence of what heritage delivers in terms of its socioeconomic and environmental impacts to justify investment. In turn, governments may establish new standards for evaluation using economic methods for assessing the likely worth of heritage projects. To this end, heritage proposals may increasingly be framed in terms of their anticipated social impact, employing a range of qualitative and quantitative evidence to support these claims. This could precipitate an increased need for cultural economists and other specialists able to undertake such assessments.

Potential Game-changers

New economic models: Well-being, circular and regenerative economics

> *While often associated with human health, well-being is in fact a far more wide reaching concept, encompassing basic physical needs such as decent quality housing, nutrition, healthcare and freedom from violence and oppression, through to the requirements for each individual to be able to engage in society to their fullest capacity. The attainment of well-being is therefore the goal for all nations – not solely those with advanced economies. Put simply, 'well-being' is about individuals and the creation of an enabling environment that can holistically support their physical, mental, emotional, social, cultural, spiritual and economic needs so that they can achieve their potential.* (Heritage, Tissot and Banerjee, 2019)

In response to the failures of free-market economics, a growing body of economists are calling for a shift towards models centred on regenerative wealth and well-being. The uptake of these theories by governments is already evident, as seen in New Zealand, Iceland and Scotland, where generating well-being rather than gross domestic product (GDP) is used as a foundation for economic policy. Meanwhile, many other countries have developed national well-being frameworks to guide policy and measure outcomes, indicating movement away from GDP as the primary measure of successful government economic policy, towards a more nuanced outlook predicated on increased welfare and well-being[2]:

> *There is as yet no widely agreed name for a new, post-neoliberal economic paradigm. But those seeking to build one largely agree on its core goals. A key goal is to improve individual and social wellbeing rather than prioritising economic growth, as is reducing inequalities of income wealth and power.* (A3: scan report Ec8)

Within a free-market paradigm, where value is determined by price, public wealth in the form of common goods, such as the environment and culture, is disadvantaged. Cultural heritage generates value that is difficult to express in financial terms. Thus, economic approaches to

[2]While the concept of well-being is well established, a common definition and parameters for its measurement remains unclear. Of the different frameworks that exist, the majority incorporate elements of both subjective and objective well-being, spanning individual and collective perspectives. Recent work to review these frameworks in relation to heritage has developed a definition for "Societal Well-being" that encompasses quality of life; societal cohesion; and material conditions. See, Lodovici *et al.* 2022, p. 22.

assess the value of heritage assets based on appraisals of the market value of goods and services produced overlook the diverse non-market benefits that flow from heritage as well as the value of future services. This, essentially, is a root cause for why arguments for cultural investment often fail on economic terms when competing against other sectors, such as industry and infrastructure development:

> *At present, there is no agreed method for valuing the flow of services that culture and heritage assets provide to the people and businesses that engage with them. This means these types of services are implicitly valued at zero, potentially leading to sub-optimal decisions around investments and maintenance.* (Sagger, Phillips and Haque, 2021)

The answer, however, is not to abandon economic arguments for heritage, but to change the yardstick by seeking new ways of valuing heritage in economic terms that are more compatible with its essential nature. Economic assessment methods that take into account a wider range of non-market benefits generated by cultural heritage, particularly in relation to welfare and the environment, would allow more comprehensive and realistic social cost benefit analysis for informing heritage decision-making (Sagger, Phillips and Haque, 2021):

> *…one contribution of cultural economics is the development of the concept of non-economic value, where cultural value takes a central stage.* (A3: scan report Ec4)

As fundamental determinants of what makes life meaningful, culture and cultural heritage are inherent to well-being. Therefore, regenerative and well-being economic models present a significant opportunity for evidencing the value of cultural heritage to society. Moreover, placing greater emphasis on evidencing the wellbeing benefits of heritage, could stimulate initiatives to maximize these: what we choose to measure matters, as it drives policy focus and actions. Thus, the more efforts are made to evidence and use heritage as a source of well-being and sustainable development, the more it may be so.

Well-being is culturally and contextually determined. Thus, a well-being approach to cultural heritage must also be by default centred on community values and participation:

> *reflecting on things about well-being, which has different meanings for different people …the whole idea of how you look at well-being is very much centred in your cultural values.*
>
> *…the idea about well-being economics is that it has to be people-led, people first.* (Workshop transcript, day 2)

In addition to well-being economics, other approaches, such as circular economics, are also gaining traction as alternative, regenerative economic models rooted in sustainable development principles and community values. A circular community economy offers an introspective analysis on how to reduce environmental and social costs at local level and practicalize sustainable development principles. The adoption of circular economic methods, such as life cycle assessment (LCA) tools, would enable the heritage sector to respond to wider policies aimed at delivering on Agenda 2030 targets for sustainable consumption, thereby leveraging investment targeted to promote regenerative economies at the local level. Moreover, circular economic models could find application within the management and preservation of heritage sites, framing conservation efforts in terms of sustainable regeneration:

> *The European Union especially, has legislative proposals aimed at stimulating the European route towards the circular economy – a comprehensive city organization, its economy, its social system, its governance in order to improve urban productivity*

> *…This means readapting abandoned heritage areas as spaces and places of circular economies of creative activity such as spaces of co-working, co-housing, community centres and event locations. A regenerative management and planning strategy can help invigorate custodianship values in shared common goods within social, economic and cultural impacts.* (A3: scan report Ec1)

New financing instruments and business model innovation

> *It is imperative that the heritage sector takes a more active role to adjust the idea of nostalgia or loose relevance – especially when it comes to fundraising – as the sector will be seen to be more economically unsustainable.* (A3: scan report Ec1)

Despite the loss of more traditional sources of revenue, the availability of new instruments for financial investment provide alternative opportunities for funding heritage projects. For example, impact investing (or social finance) – which seeks to provide a desirable balance of financial returns, along with positive measurable social and environmental impacts – could leverage funds in the form of debt funding or a mixture of debt and grant funding, pooling public and private investment resources (see, for example, CLIC project: https://www.clicproject.eu/). These and other financing tools tailored for different contexts not only offer ways to increase revenue flows but through their diversification would bring greater economic resilience:

> *The ultimate choice and design of hybrid 'blended' and 'pooled' financial instrument combinations,*
>
> *… will change from building to building (and neighborhood to neighborhood) but must always take account of the need to protect local communities and ecosystems in parallel with saving vulnerable cultural heritage resources.* (A3: scan report Ec3)

However, to tap into social finance revenue streams, heritage must deliver – and be seen to deliver – increased benefits for diverse stakeholders. Placing social impact forefront within the rationale for heritage preservation is more than just a philosophical position: it requires action to make it a reality. This will demand a rethinking of current modus operandi of heritage institutions. Opportunities for this lie in the application of business model innovation (BMI) methods, which aim to enhance an organization's value creation and advantage by simultaneously making mutually supportive changes to both what it seeks to offer and its operating model:

> *…business models perform two major functions: they create value and they capture value. Business model innovation (BMI) results from converging (new) key objectives (such as energy savings, reducing the use of resources, or designing long-life products), the interests of various stakeholders and the viability of the focal organization.* (A3: scan report Ec4)

To more effectively capture and respond to diverse groups' needs, greater uptake of participatory approaches to BMI is needed within the heritage sector:

> *BMI that provides multiple value propositions that reflect various stakeholders' inputs and needs has been blatantly absent in the CH sector.* (A3: scan report Ec4)

To this end, cultural institutions require greater support in participatory BMI to capture the needs of diverse relevant parties, and put these concepts into action.

In many circular economies, alternative income generation streams are explored, such as the adaptive reuse (and repurposing) of heritage assets, to serve a contemporary socioeconomic purpose for sustainability.

Evidencing benefits

The ability to capitalize on the above opportunities is dependent on providing adequate evidence of the socio-economic and environmental benefits of heritage. In the future, it is likely that such wider impacts will increasingly be a prerequisite for heritage investment:

> *The individual activities we do, what does it add, what does it bring to societies? What does it bring to people? …it's difficult because a lot of the time, it's implicit, and I think we need to make it much, much more explicit in order for it to be something people outside our sectors and our bubbles really understand.* (Workshop transcript, day 2)

Among the many ways of doing this, economic methods offer significant opportunities, particularly through the development and application of new heritage assessment tools drawing from well-being and circular economic approaches. These demand mixed-method approaches combining qualitative and quantitative indicators, and flexible ways to adapt tools to suit different purposes and contexts. In the future, universal models may give way to grassroots approaches centred on locally determined criteria:

> *New efforts to measure social impact are underway, yet quantifying cultural value remains a challenge, being highly dependent on the preference function of individuals.* (A3: scan report Ec4)

Classical economic estimations of the value of cultural heritage have hitherto primarily focused on monetary estimates of revenue (in particular from tourism), employment and volunteering – which, while providing some insights, are overall a very poor estimation of the true value of cultural heritage for diverse communities. Methods for assessing the non-market value of heritage in more diverse ways – for example, in terms of its social and environmental impacts – are largely lacking. Opportunities for this lie in the application of LCA methods, as well as appraisals of well-being, participation and cognitive change, drawing together a mix of qualitative and quantitative evidence.

One approach is to borrow from health economics and apply well-being metrics to cultural heritage participation, or from educational economics to measure cognitive change. Conceptualizing cultural participation as a means to solve societal challenges requires a new understanding of participation and the adoption of relevant metrics. To this end, new work to establish subjective well-being metrics that can serve as a basis for public policy may provide useful examples and methodologies (Frijters and Krekel, 2022).

Ultimately, adopting these models means changing the way we conceptualize and measure success. In these models, success is not linear or monetary; it is not demonstrated by GDP or transient employment. Success or value in this approach is multidimensional and comprises a dashboard of qualitative and quantitative indicators, largely aligned with SDGs. Sustainability and well-being are the key goals.[3]

Opportunities for Action

> *…economics is a really, really powerful tool. And it has been powerful and it continues to be whether you like it or not. And I think what we're saying is we, the heritage sector, need to start working with those tools and on that platform a lot harder and stronger. … how can*

[3]While better methods to assess the non-market value of heritage-derived benefits are needed, it is worth stressing that these do not capture the entire value of heritage to people. Thus, evaluations of cultural capital should also seek to capture non-monetizable heritage values in qualitative terms.

> *we employ these alternative economic tools, whether it's well-being economics, feminist economics, because heritage can play such a big role in that.* (Workshop transcript, day 1)

Heritage can and should do more to support efforts to achieve sustainability and well-being. In many quarters of the heritage world, there is an emerging view that conservation thinking must take values-based and people-centred approaches a step further towards instrumentalizing heritage as a tool for delivering societal benefit. Since the launch of the Agenda 2030, much has been said about the value of heritage as a driver of sustainable development and the importance of its inclusion in future development frameworks. However, for this to cut any ice in a future environment of limited resources and increased pressures, there needs to be greater clarity around what heritage actually delivers:

> *…there needs to be transparency between us and users, clients, people, a community, [as] they are not going to invest in something unless they know what it is they're being asked to invest in.* (Workshop transcript, day 2)

This means not only evidencing the services that derive from heritage but also fundamentally re-appraising the intentions driving conservation activities. In the future, contributing to welfare and sustainability will become currency as values-based and people-centred approaches are augmented towards a well-being paradigm for heritage conservation.

Opportunities for working towards this include:

Apply circular regenerative economic models to heritage management and conservation to enhance sustainability outcomes. Circular economic models offer ways to analyze heritage operations to make them more sustainable and resilient, facilitating adaption to change within a dynamic environment. In such a circular economic approach, heritage is not a static asset but rather a living ecosystem involving also people and the environment that can adapt and regenerate; reuse of heritage being a fundamental principle of its conservation (Fusco Girard and Vecco, 2021).

Articulate and evidence the value of heritage for people, using qualitative and quantitative methods centered on well-being and sustainability, adapting to local contexts and using existing frameworks where possible. In combination with qualitative storytelling, economic approaches that more holistically capture the non-market value of cultural heritage capital in terms of the derived societal well-being and environmental benefits without doubt can be useful, providing arguments for investment and highlighting ways to improve the lives of communities through heritage. (Lodovici *et al.* 2022, p. 22)

Promote participatory sustainable business model innovation centered on maximizing value to diverse groups. Participatory BMI seeks to improve what an organization aims to deliver and how it goes about it, to serve its interested parties better, improve its viability and increase its contribution to sustainability. This requires identifying and implementing mutually supportive changes to both the value proposition of an organization and its operating model. Essential to this are participatory methods to ensure that diverse groups' perspectives are incorporated. As an approach to rethinking heritage operations, BMI can help reveal ways to practicalize desired objectives of enhanced impact while also rendering the organization more attractive for donor funding.

Develop new financing instruments for heritage adapted to local contexts. Opportunities in the future may lie in public/private funding instruments, such as impact financing investment portfolios, which could be developed to provide heritage initiatives with more diversified funding streams and promote financial resilience. This would require greater engagement with economists and financial advisors to develop appropriate tools.

4 The Value of Foresight as a Process

Foresight broadens the horizon of alternative futures. It can help identify potential paths of action and pinpoint consequences. Foresight increases adaptation and resilience through embracing uncertainty and identifying steps and strategies for the present. Foresight does not predict the future; instead, it creates opportunities for leading rather than reacting to change.

Successful foresight exercises challenge participants' mindsets to think in new and creative ways, revealing core assumptions about how the future is anticipated. This helps participants approach and act on the future with an increased awareness of both consequences and possibilities for guiding change.

Reflections on the Study

In a foresight exercise, the process of anticipation itself has a value in increasing the *foresight literacy* of participants. Thus, the value of a foresight process does not lie in the estimated probability of imagined futures, but on how the process of anticipation has expanded the range of possible futures considered and made preferable futures actionable in the present. Both imagination and creativity are therefore key in a foresight process. This was highlighted by the participants of this horizon scan study, when asked to comment on the value to them in undertaking the exercise:

> "*For my own value of the process, for me, it's been immensely transformative.*"
>
> "*I think that it has expanded my horizons as much as this whole work has, I think, expanded ICCROM's horizons.*"

Participants reported that the foresight process enabled them to imagine futures they had not previously considered. The perspectives from the participants also highlight the value in gathering a diverse group of professionals working in the heritage sector, both in terms of geography and area of expertise. It was mentioned that this forces each participant to lift their gaze beyond local boundaries to global horizons:

> "*I have found the whole process valuable, from working through a scanning process to reading and discussing how others see the world. By using an international team, we were challenged to look beyond our local boundaries to global horizons. It was interesting to see how emerging issues are playing out in other places around the world – what is similar, and what might be different. I think the exercise also challenges us to think about what cultural heritage is, what people value now and what they might value in the future. (…) Foresight studies can help lift you up out of your immediate surroundings and existing relationships, making you think about new ideas and future partnerships that might be forged within and across sectors.*"

Through creating a diverse group, the possible futures imagined could explore new connections and find creative links between sectors, geographical areas and different scales of analysis. If we take scales as an example, the scans were able to switch between local, national, transnational and global scales in a manner that would not have been possible in a more homogenous group. This created a nuanced and considerate discussion, in which we were able to examine links and tensions between local bottom-up approaches and global heritage politics. By gathering people from different fields within heritage management, the process also created potential for new partnerships to form. An aspect to consider for future exercises, and which we will expand upon in the following chapter, is that it would have been valuable to include participants outside of – but linked to – the professional heritage sector. External groups can often take into account interrelated trends, drivers and implications that would go unnoticed by actors within the sector.

5 What Next?

The present study was intended as a preliminary excursion into foresight to trial some established methods and gain insights into possible future changes that may impact heritage and the sector responsible for its care. This, however is, only a start.

The work conducted so far provides a glimpse into a number of potential future changes, but it does not predict whether they *will* occur, or tell us how we might anticipate and respond to them. Thus, further work is needed to build upon these insights. An important next step is to identify what future goals the organization might work towards, what desired future it seeks to build and, in light of possible changes ahead, how it might realize this.

This section sets outs a number of foresight methods that provide useful and practical ways to build upon the results obtained so far to work towards these ends.

Types of Futures and Ways of Using the Future

It is useful to be clear about different *types of futures* and different *ways of using* the future. The different *types* of imagined futures are:

- *possible* (might happen);
- *plausible* (could happen);
- *probable* (likely to happen); and
- *preferable* (we would like them to happen).[1]

All these types of futures play a role in a foresight exercise to expand the horizon of imagined futures. Possible and plausible futures are more likely to create alternative futures – which might reveal preferable futures previously unimagined. Preferable futures are distinct from the other types in the sense that these are futures we would like to experience.[2] Through anticipation, for example, by using methods, such as **backcasting** (see Appendix 1), preferable futures can be realized by identifying strategic decisions and actions in the present.

It is also useful to distinguish between different *ways of using* these imagined futures, each of which have different goals. The three main ways are *optimization*, *contingency* and *novelty*.

Optimization is a way of using the future that makes the future more usable and predictable in the present by extrapolating trends into the future. It is most often anticipated by forecasting methods, and it is built on quantitative data. However, optimized futures do not account for uncertainty and change, and therefore do not necessarily increase adaptability or resilience.

Contingent futures are used to prepare for already anticipated surprises that may or may not occur, combining quantitative and qualitative data. However, contingent futures do not take the unknown or the novel into account.

Novel futures are used to make sense of changes that are unknowable in advance by focusing on how futures are constantly emerging in the present through actions and processes (Poli, 2017, pp. 67–70; Miller, 2006).[3] Here, capturing weak signals is important. Weak signals are the first indications of an emerging issue that may have a large impact in the future.

These three ways of using the future can play a role in foresight exercises. However, while optimized futures are already quite common within the field of heritage – derived through methods of forecasting – novel futures are very seldom anticipated. Given the unpredictable nature of future change and the need for building greater resilience, the heritage sector would certainly benefit from a more systematic and collaborative engagement with novel futures.

Tools to help in the process are detailed in Appendix 1.

[1]For an insightful elaboration on the purposes of future studies and different types of futures, see Bell, 2009, pp. 73–114.
[2]The distinction of different types of futures is crucial in order to apply what has been called "Rigorous Imagining," which means a form of anticipation that is both imaginative and rigoros (scientific) (see Miller, 2007).
[3]Novel futures are embedded, embodied and contextual, and therefore have been described as lived futures in contrast to the abstract futures produced through forecasting (Adams and Groves, 2007).

Recommendations for the Heritage Sector

(a) Allocate resources to carry out further foresight exercises;
(b) Use foresight to set out key priorities and strategies, focusing on actions in the present;
(c) Implement foresight exercises on a regular, ongoing basis; and
(d) Consider how these exercises can be made open, participatory and diverse so that the futures anticipated will be less homogenous.

(a) Allocate resources to carry out further foresight exercises

To drive transformative change, it would be highly beneficial if more actors within the heritage sector used foresight exercises on a regular basis. The heritage sector, while being fundamentally motivated through an expressed responsibility towards the future, has so far seldom engaged with foresight – despite a demonstrated need for these tools (Holtorf and Högberg, 2022). Addressing this deficiency is a priority, and will require allocated resources to undertake regular foresight exercises. Foresight demands time and effort, but the returns promise a clearer path towards a future in which heritage organizations make a positive difference, enabling heritage to be valued and relevant to future generations who will undoubtedly appreciate, use and create it in different ways than today.

(b) Use foresight to set out key priorities and strategies, focusing on actions in the present

Foresight results in a set of strategies and steps of actions in the present, making the future actionable. Foresight might not predict the future, but it does anticipate alternatives for the future. In this way, it elucidates a wider range of opportunities where heritage can contribute to societal development, and helps visualize paths, strategies and actions for positive change. Regular foresight exercises can thus make the heritage sector more adaptable and resilient when facing the uncertainty of a future radically different from the present. Furthermore, it provides tools for being proactive rather than reactive – to lead rather than just react to change.

(c) Implement foresight exercises on a regular, on-going basis

It is important to carry out foresight on a continuous basis for it to be sustainable. New possible futures are constantly emerging while old futures are receding. This means that routines for on-going foresight exercises need to be implemented and included in strategies and goals; within an organization, a standing team – preferably cross-departmental – dedicated to foresight would help realize this aim.

(d) Consider how these exercises can be made open, inclusive and diverse so that the futures anticipated will be less homogenous

It is imperative to make foresight as open, inclusive and diverse as possible. This means building each stage of a foresight process on participatory approaches (Schatzmann *et al.*, 2013, p. 4). It is also worthwhile to consider perspectives outside, but linked to, the heritage sector. Selection

needs to be careful to ensure diverse representation and avoid exclusionary perspectives. Creating an open, participatory and diverse foresight – process is key to anticipating less homogenous futures. Furthermore, it is often necessary to involve external interested parties to note certain patterns and uncertainties, as well as challenges, which may be overlooked by internal groups. This demands a process that is flexible and dynamic in terms of adapting goals and open to incorporating innovative ideas that may be outside an exercise's initial scope. This ensures a bottom-up rather than top-down approach.

6 Final Comments

> … *maybe we should refer to quality of life rather than benefits … and I'm not too sure what exactly this will mean, but it's a different paradigm that is maybe worthwhile exploring, and that's why I'm taking away from this discussion and need to think more about what that could possibly mean. So thanks for the opportunity.* (Workshop transcript, day 2)

Foresight exercises demand that we re-examine our assumptions about the world. By placing the context of that reimagining in the future, it releases us from the strictures of how we rationalize the world today – our accepted beliefs and assumptions, and in doing so provokes us to think more freely and creatively about where change is happening and how we might address it. In setting out different ideas about the future, we are, of course, also talking about the present, since our conceptions are rooted in what we know now. Thus, in many ways, foresight is as much about now as it is the future – its strength lying in the way it frees us to recognize things afresh and articulate ideas about the future differently. This is evident in the way many of the scans gathered by this study highlight things that we are already aware of, but about which we certainly should be thinking more. Indeed, if we consider them closely, often the scans give a description not of future but current times in certain contexts.

Looking forwards, given predictions of likely increasing threats to ecosystems and livelihoods coupled with possible political, social and economic upheaval, ingenuity and resilience will be required. To prepare for this, it is clear that the heritage sector needs to undergo a significant paradigm shift. Here, foresight can help us – not only to recognize desired futures to strive for, and the things that can help us on that path, but also the things that hold us back; the baggage of the past we need to let go, the beliefs and practices that will no longer be relevant. The scope of this study explored broad-ranging macro-environmental factors from political, environmental, societal, technological and economic perspectives. In the findings, it is noteworthy that despite the different nature of the challenges described, common opportunities for building preferable futures emerged. Central to these is conserving and using heritage to enhance quality of life and sustainability, in obligation to people's rights. Well-beingand rights-based approaches are essential to this goal, and also to the much emphasized need for championing small-scale, bottom-up, community-based efforts – giving people voice in determining what matters to them.

There is an obvious pull when discussing the future towards a consideration of possible new technologies, or the implications of imminent threats, such as the climate crisis or political upheaval, with associated visions tending towards the dystopian. While these feature heavily in this study, nevertheless, another message came through: the enduring need to preserve those things that help us understand and express what it is to be human as a foundation for our and well-being both now and in the future – whatever it might be:

> *Cultural heritage, its creation, its preservation, its wealth for all, is the answer!* (A3: scan report P11)

References

Adams and Groves, 2007

Adam, B., & Groves, C. (2007). *Future matters: action, knowledge, ethics*. Brill.

Amnesty International, 2019

Amnesty International (2019, December 10). *Climate change ranks highest as vital issue of our time – Generation Z survey.* https://www.amnesty.org/en/latest/news/2019/12/climate-change-ranks-highest-as-vital-issue-of-our-time/

Barkham, 2021

Barkham., P (2021, July 25). Should rivers have the same rights as people? *The Guardian*. https://www.theguardian.com/environment/2021/jul/25/rivers-around-the-world-rivers-are-gaining-the-same-legal-rights-as-people

Bell, 2009

Bell, W. (2009). Foundations of futures studies. In *Human science for a new era* (Vol. 1). Transaction Publishers.

Bengio et al., 2023

Bengio, Y., et al. (2023, March 22). Pause Giant AI Experiments: An Open Letter. Future of Life Institute, 2023. https://futureoflife.org/open-letter/pause-giant-ai-experiments/

Billings et al., 2017

Billings, J.J., McCaskey, A.J., Vallee, G., & Watson, G. (2017). Will humans even write code in 2040 and what would that mean for extreme heterogeneity in computing? *ArXiv*. https://arxiv.org/abs/1712.00676

Boo, 2020

Boo, H. (2020, April 2). A *digital future for cultural heritage*. Arts Management & Technology Laboratory. https://amt-lab.org/blog/2020/3/a-digital-future-for-cultural-heritage

Brungs and Wyber, 2016

Brungs, J., & Wyber, S. (2016). Preserving our digital culture for the future: overcoming obstacles through collaboration. In *Global Information Society Watch 2016: economic, cultural and social rights and the internet* (pp. 36–40). APC and IDRC. https://giswatch.org/en/economic-social-and-cultural-rights-escrs/preserving-our-digital-culture-future-overcoming-obstac

Carrington, 2021

Carrington, D. (2021, August 9). Climatecrisis "unequivocally" caused by human activities, says IPCCreport. *The Guardian*. https://www.theguardian.com/environment/2021/aug/09/climate-crisis-unequivocally-caused-by-human-activities-says-ipcc-report

Challe, 2021

Challe, T. (2021, April 22). *The rights of nature – can an ecosystem bear legal rights*? Columbia Climate School. https://news.climate.columbia.edu/2021/04/22/rights-of-nature-lawsuits/.

Chancel, 2022

Chancel, L., Piketty, T., Saez, E., Zucman, G. *et al.* (2022). *World inequality report* 2022. World Inequality Lab. https://wir2022.wid.world/

Chatham House, 2021

Chatham House (2021, April). *Reflections on building more inclusive global governance ten insights into emerging practice*. Director's Office, International Law Programme. https://www.chathamhouse.org/sites/default/files/2021-04/2021-04-15-reflections-building-inclusive-global-governance.pdf

Clark, 2021

Clark, P.A. (2021, November 15). The metaverse has already arrived: here's what that actually means. *Time Magazine*. https://time.com/6116826/what-is-the-metaverse/

Climate Council, 2021

Climate Council. (2021, August 9). *What does the IPCC's latest report mean*? https://www.climatecouncil.org.au/resources/what-does-ipcc-latest-report-mean/

Conway, 2016
Conway, M. (2016). Foresight infused strategy: a how-to guide for using foresight in practice. *Thinking futures*, 197p. ISBN: 978-1095942482
Credit Suisse Research Institute, 2022
Credit Suisse Research Institute. (2022, February) *The young consumer and a path to sustainability*. https://www.credit-suisse.com/about-us/en/reports-research/studies-publications.html
Curry, 2023
Curry, A., (2023). Tech bros say the sky is falling in, The Next Wave, online blog post 6 July 2023. https://thenextwavefutures.wordpress.com/2023/07/06/tech-bros-say-sky-falling-ai-risks/
Engelke, 2022
Engelke, P. (2022). *Six snow leopards to watch for in 2022*. Atlantic Council. https://www.atlanticcouncil.org/content-series/atlantic-council-strategy-paper-series/six-snow-leopards-to-watch-for-in-2022/
Fitz-Henry, 2022
Fitz-Henry, E. (2022). Multi-species justice: a view from the rights of nature movement. *Environmental Politics*, 31(2), 338–359. https://doi.org/10.1080/09644016.2021.1957615
Flores et al., 2020
Flores, A.R., Langton, L., Meyer, I.H., Romero, A.P. (2020). Victimization rates and traits of sexual and gender minorities in the United States: results from the National Crime Victimization Survey, 2017. *Science Advances*, 6(40). https://www.science.org/doi/abs/10.1126/sciadv.aba6910).
Freire, 2020
Freire, N. (2020, December 15). *Innovating metadata aggregation in Europeana via linked data*. Europeana Pro. https://pro.europeana.eu/post/innovating-metadata-aggregation-in-europeana-via-linked-data
Fusco Girard and Vecco, 2021
Fusco Girard, L., & Vecco, M. 2021. the "intrinsic value" of cultural heritage as driver for circular human-centered adaptive reuse. *Sustainability*, *13*, 3231. https://doi.org/10.3390/su13063231
Harrabin, 2020
Harrabin, R. (2020, August 5) *Don't demolish old buildings, urge architects*. BBC News. https://www.bbc.com/news/business-53642581
Harrison et al., 2020
Harrison, R. *et al.* (2020). *Heritage futures: comparative approaches to natural and cultural heritage practices*. UCL Press.
Hatfield and Jones, 2020
Hatfield, S., & Jones, R. (2020). Rebooting the digital workplace. In: S. Buchholz & A. Chaudhary (Eds.), *Tech trends 2021* (pp. 117–134). Deloitte Development LLCC. https://www2.deloitte.com/us/en/insights/focus/tech-trends/2021/future-of-digital-workplace.html
Heritage Counts, 2020
Heritage Counts (2020, February). *There's no place like old homes. Re-use and recycle to reduce carbon.* Historic England. https://historicengland.org.uk/content/heritage-counts/pub/2019/hc2019-re-use-recycle-to-reduce-carbon/
Heritage, Tissot and Banerjee, 2019
Heritage, A., Tissot, A., & Banerjee, B. (2019, October 21). *Heritage and wellbeing: what constitutes a good life?* ICCROM. https://www.iccrom.org/news/heritage-and-wellbeing-what-constitutes-good-life
Hines, Bengston, and Dockry, 2019
Hines, A., Bengston, D.N., & Dockry, M.J. (2019). *The forest futures horizon scanning project*. General technical report NRS-P-187, U.S. Department of Agriculture, Forest Service, Northern Research Station. https://doi.org/10.2737/NRS-GTR-P-187
Högberg et al., 2017
Högberg, A., Holtorf, C., May, S., & Wollentz, G. (2017). No future in archaeological heritage management? *World Archaeology*, 49(5), 639–647.
Holtorf and Högberg, 2022
Holtorf, C., & Högberg, A. (2022). Why cultural heritage needs foresight. *Heritage for the Future, Science for Heritage.*
Inayatullah, 2008
Inayatullah, S. (2008). Six pillars: futures thinking for transforming. *Foresight.*

Inayatullah, 2020
Inayatullah, S. (2020). Co-creating educational futures: contradictions between the emerging future and the walled past. *Education Research and Foresight Working Paper*, 27.
Inayatullah, Jacob and Riz, 2020
Inayatullah, S., Jacob, A., & Riz, R. (2020). Alibaba and the golden key: scenarios of manufacturing futures in Egypt. *Journal of Future Studies.* https://jfsdigital.org/2020/11/03/alibaba-and-the-golden-key/
Inter-American Commission, 2015
Inter-American Commission on Human Rights. (2015, November 12). *Violence against lesbian, gay, bisexual, trans and intersex persons in the Americas.* ISBN 978-0-8270-6580-2 www.oas.org/en/iachr/reports/pdfs/ViolenceLGBTIPersons.pdf).
IPCC, 2022
Intergovernmental Panel on Climate Change (2022). Climate change 2022. Impacts, adaptation and vulnerability. Summary for policy makers. *Sixth Assessment Report, the Intergovernmental Panel on Climate Change.* https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FinalDraft_FullReport.pdf
IPCC, 2022, Chapter 7
Intergovernmental Panel on Climate Change (IPCC). (2022). Climate change 2022. Impacts, adaptation and vulnerability. Chapter 7. Health, wellbeing, and the changing structure of communities. Sixth Assessment Report, *The Intergovernmental Panel on Climate Change*. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FinalDraft_FullReport.pdf
IPCC, 2022, Chapter 8
Intergovernmental Panel on Climate Change (IPCC). (2022). Climate change 2022. Impacts, adaptation and vulnerability. Chapter 8. Poverty, livelihoods and sustainable development. Sixth Assessment Report, IPCC. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FinalDraft_FullReport.pdf
ISO, 2022
International Organization for Standardization. (2022). *ISO standardization foresight framework trend report 2022.* https://www.iso.org/publication/PUB100470.html#:~:text=This%20trend%20report%20is%20the,of%20the%20 ISO%20Strategy%202030.
Joly et al., 2016
Joly, A., Goëau, H., Champ, J., Dufour-Kowalski, S., Müller, H., & Bonnet, P. (2016). Crowdsourcing biodiversity monitoring: how sharing your photo stream can sustain our planet. In: *Proceedings of the 24th ACM international conference on Multimedia* (MM '16) (pp. 958–967). Association for Computing Machinery. https://doi.org/10.1145/2964284.2976762
Kleinman, 2020
Kleinman, M. (2020, February 27). The dangers of tech company ethics. *The Hill*. https://thehill.com/opinion/technology/484969-the-dangers-of-tech-company-ethics
Kulp and Strauss, 2019
Kulp, S.A., & Strauss, B.H. (2019). New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. *Nature Communications*, 10, 4844. https://doi.org/10.1038/s41467-019-12808-z
Liberatore and Lyons, 2018
Liberatore, M., & Lyons, A. (2018, March 19). Digital in danger. *The Strategist*. Australian Strategic Policy Institute. https://www.aspistrategist.org.au/digital-in-danger/
Lodovici, 2022
Lodovici, M.S. *et al.* (2022). *HERIWELL – cultural heritage as a source of societal well-being in European regions, final report, June 2022.* European Observation Network for Territorial Development and Cohesion (ESPON). ISBN: 978-2-919816-64-4 https://www.espon.eu/HERIWELL
McGhie, 2021
McGhie, H. (2021, July). *Reflection on the place of culture and heritage in Agenda 2030*. Report provided to ICCROM as an additional commentary to Political and Environmental Horizon Scans. See Appendix 3.
Miller, 2006
Miller, R. (2006). *From trends to futures literacy: reclaiming the future*. Centre for Strategic Education. https://doi.org/10.1 3140/2.1.2214.4329 https://www.researchgate.net/publication/271523619

Miller, 2007
Miller, R. (2007). Futures literacy: a hybrid strategic scenario method. *Futures*, 39(4): 341–362. https://doi.org/10.1016/j.futures.2006.12.001 https://www.researchgate.net/publication/222053294
Miller, 2018
Miller, R. (2018). Introduction: futures literacy: transforming the future. In: *Transforming the future* (pp. 1–12). Routledge.
Milman et al., 2021
Milman, O., Witherspoon, A., Liu, R., & Chang, A. (2021, October 14). The climate disaster is here. *The Guardian*. https://www.theguardian.com/environment/ng-interactive/2021/oct/14/climate-change-happening-now-stats-graphs-maps-cop26
Novinson, 2021
Novinson, M. (2021, May 17). 10 emerging cybersecurity trends to watch in 2021. CRN. https://www.crn.com/news/security/10-emerging-cybersecurity-trends-to-watch-in-2021
Pappa and Makropoulos, 2021
Pappa, D., & Makropoulos, C. (2021). Novel ways of discovering, capturing and experiencing cultural heritage: a review of current state-of-the-art, challenges and future directions. In: D. Turcanu-Carutiu (Ed.), *Heritage – new paradigm*. IntechOpen. https://doi.org/10.5772/intechopen.99170
Parthenos, n.d.
Parthenos. (n.d.). *Citizen science and research infrastructures*. https://training.parthenos-project.eu/sample-page/citizen-science-in-the-digital-arts-and-humanities/citizen-science-and-research-infrastructures/
Patel, 2016
Patel, A. (2016, October 30). Year 2040: technology will have changed the world in an unimaginable way. *Firstpost*. https://www.firstpost.com/living/year-2040-technology-will-have-changed-the-world-in-an-unimaginable-way-3080840.html
PimCore, 2021
PimCore. (2021). *Mega trends driving DAM in 2021*. https://pimcore.com/en/digital-asset-management-trends
Poli, 2017
Poli, R. (2017). *Introduction to anticipation studies* (vol. 1). Springer. See pp. 67–70
Potsdam Institute, n.d.
Potsdam Institute for Climate Impact Research. (n.d.). *Tipping elements: the Achilles heels of the earth system*. https://www.pik-potsdam.de/en/output/infodesk/tipping-elements/kippelemente?set_language=en
Rathgen-Forschungslabor, 2020
Rathgen-Forschungslabor. (2020, July 14). *Cooperation throughout Europe in research on cultural heritage*.
Rastogi, 2022
Rastogi, V. (2022, May). *This is how to counter the global digital divide*. World Economic Forum. https://www.weforum.org/agenda/2022/05/how-to-counter-the-global-digital-divide/
Riddell, et al., 2020
Riddell, G.A., van Delden, H., Maier, H.R., & Zecchin, A.C. (2020). Tomorrow's disasters – embedding foresight principles into disaster risk assessment and treatment. *International Journal of Disaster Risk Reduction*, 45, 2020. https://doi.org/10.1016/j.ijdrr.2019.101437.
Ritchie, 2019
Ritchie, H. (2019, November 06). *Food production is responsible for one-quarter of the world's greenhouse gas emissions*. Our World in Data. https://ourworldindata.org/food-ghg-emissions
Sagger, Phillips and Haque, 2021
Sagger, H., Philips, J., & Haque, M. (2021). *Valuing culture and heritage capital: a framework towards informing decisionmaking*. Department for Digital, Culture Media and Sport, UK Government. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955203/GOV.UK_-_Framework_Accessible_v2.pdf
Sandford and Cassar, 2020
Sandford, R., & Cassar, M. (2020). Heritages of futures thinking: strategic foresight and critical futures. In: *Cultural heritage and the future* (pp. 245–263). Routledge.

Schatzmann et al., 2013
Schatzmann, J., Schäfer, R., & Eichelbaum, F. (2013). Foresight 2.0–definition, overview & evaluation. *European Journal of Futures Research*, 1(1), 1–15.
Scholz et al., 2017
Scholz, H., Devarenne, C., Freire, N., Kyrou, P., Pekel, J., Popova, M., *et al.* (2017 March). Europeana content strategy. *Europeana*. https://pro.europeana.eu/files/Europeana_Professional/Publications/Europeana%20Content%20Strategy.pdf
Sharpe, Dominish and Martinez Fernandez, 2022
Sharpe, S., Dominish, E., & Martinez Fernandez, M.C. (2022). Taking climate action. Measuring carbon emissions in the garment sector in Asia. *International Labour Organisation Working Paper* 53. https://www.ilo.org/legacy/english/intserv/working-papers/wp053/index.html
Skjott Linneberg, and Korsgaard, 2019
Skjott Linneberg, M., & Korsgaard, S. (2019). Coding qualitative data: a synthesis guiding the novice. *Qualitative Research Journal*, 19(3), 259–270. https://doi.org/10.1108/QRJ-12-2018-0012
Smart et al., 2022
Smart, J.M., & the Foresight U and FERN teams. (2022). *The foresight guide anticipating, creating, and leading in the 21st century.* (Alpha version. Chapters 7, 8, and 10 still being written). Foresight University. https://www.foresightguide.com/horizon-scanning-frameworks/
Springwise Intelligence Ltd, 2018
Springwise Intelligence. (2018). The future of immersive content. https://www.springwise.com/wp-content/uploads/2019/10/The-Future-of-Immersive-Content_SW_DC-1.pdf
Stahl, 2021
Stahl, A. (2021, March 10). How AI will impact the future of work and life. *Forbes*. https://www.forbes.com/sites/ashleystahl/2021/03/10/how-ai-will-impact-the-future-of-work-and-life/?sh=ac6529079a30
Stonewall, 2016
Stonewall International. (2016, January). *The sustainable development goals and LGBT inclusion*. https://www.stonewall.org.uk/system/files/sdg-guide.pdf
Sycip, 2021
Sycip, G. (2021, December 8). *Crypto, non-fungible tokens and the potential of the metaverse in cultural heritage preservation*. Global Heritage Fund. https://globalheritagefund.org/2021/12/08/crypto-nft-metaverse-cultural-heritage-preservation/
Tan and Tan, 2021
Tan, M.K.B., & Tan, C.M. (2021). Curating wellness during a pandemic in Singapore: COVID-19, museums, and digital imagination. *Public Health*, 192, 68–71. https://doi.org/10.1016/j.puhe.2021.01.006
Taylor, 2021
Taylor, J. (2021). What do we talk about when we talk about "future generations"? Transcending boundaries: integrated approaches to conservation. *ICOM-CC 19th Triennial Conference Preprints*, Beijing, China, 17–21 May 2021. ICOM-CC 978-2-491997-14-4. https://www.icom-cc-publications-online.org/4356/What-do-we-talk-about-when-we-talk-about-future-generations
The European Parliament, 2022
The European Parliament. (2022, April 26). *The impact of textile production and waste on the environment (infographic)*. https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographic
The National Intelligence Council, 2021
The National Intelligence Council. (2021, March). *Global trends 2040. A more contested world*. ISBN 978-1-929667-33-8. https://www.dni.gov/files/ODNI/documents/assessments/GlobalTrends_2040.pdf
Thornton, 2019
Thornton, A. (2019, July 30). How AI is changing arts and culture. *On the Issues*. Microsoft. https://news.microsoft.com/on-the-issues/2019/07/30/ai-changing-arts-culture/
Tyson, Kennedy and Funk, 2021
Tyson, A., Kennedy, B., & Funk, C. (2021). *Gen Z, millennials stand out for climate change activism, social media engagement with issue*. Pew Research Center. https://www.pewresearch.org/science/2021/05/26/gen-z-millennials-stand-out-for-climate-change-activism-social-media-engagement-with-issue/

UK Cabinet Office, 2017

United Kingdom Cabinet Office and Government Office for Science. (2017). *The futures toolkit: tools for futures thinking and foresight across UK Government, edition 1.0* (28p.). https://www.gov.uk/government/publications/futures-toolkit-for-policy-makers-and-analysts

UNDP, 2021

United Nations Development Programme. (UNDP). (2021, January 26). *The peoples' climate vote.* https://www.undp.org/publications/peoples-climate-vote;

UNEP, 2018

United Nations Environment Programme. (UNEP). (2018). *Inclusive wealth report 2018*. https://www.unep.org/resources/inclusive-wealth-report-2018

UN DESA, 2019

United Nations Department of Economic and Social Affairs, Population Division (UN DESA). (2019). *World population ageing 2019: highlights.* https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Highlights.pdf

University of Sydney Library, 2022

University of Sydney Library. (2022, March 7). *Marketing: PESTLE analysis.* https://libguides.library.usyd.edu.au/c.php?g=508107&p=5994242

Werkheiser, 2019

Werkheiser, G. (2019, May 21). *Artificial intelligence: cultural heritage required.* Cultural Heritage Partners. http://www.culturalheritagepartners.com/artificial-intelligence-cultural-heritage-required/

WMO, 2021

World Meteorogical Organization (WMO). (2021, April 19). *Climate change indicators and impacts worsened in 2020*. https://public.wmo.int/en/media/press-release/climate-change-indicators-and-impacts-worsened-2020

WMO, 2022

World Meteorological Organization. (WMO). (2022, April 4). *IPCC: "now or never" on 1.5°C warming limit.* https://public.wmo.int/en/media/press-release/ipcc-now-or-never-15%C2%B0c-warming-limit

World Bank, 2019

World Bank. (2019, September 25). *Gender-based violence (violence against women and girls*). https://www.worldbank.org/en/topic/socialsustainability/brief/violence-against-women-and-girls

Xu et al., 2021

Xu, X., Sharma, P., & Shu, S. *et al.* (2021). Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods. *Nature Food*, *2*, 724–732. https://doi.org/10.1038/s43016-021-00358-x

Appendixes

Selection of Useful Foresight Tools

This report has focused on the application and findings of a single foresight technique, namely, horizon scanning. However, this is just a start. No foresight process is the same, and while many may begin with horizon scanning, further exercises are required to make use of the information gathered for different strategy and policy purposes. Here follows a list of useful tools and methods that may be particularly relevant for increasing FL, together with short descriptions detailing them. This list is by no means exhaustive, the intention here being to provide a brief introduction to those tools and methods that in addition to horizon scanning may be most relevant for supporting policy and strategy development within heritage organizations. The methods detailed here provide different insights, and are grouped according to the general functions they serve, namely:

- Gathering information about the future,
- Creating alternate futures,
- Unpacking assumptions and deepening the future,
- Transforming the future through a plan of action.

Keep in mind that many of these tools can be combined to anticipate more nuanced and layered futures, and to serve different planning goals. Since horizon scanning has already been described in detail earlier in the report, it will not be presented here, but belongs to the category *gathering information about the future*. Table 2 sets out the various techniques in detail, their use, outputs and how they might contribute to other methods within a foresight process. For a more extensive explanation of the use and combination of these and other techniques to achieve different policy and strategy goals, see UK Cabinet Office (2017).

Gathering Information about the Future

Driver Mapping

This exercise is used to identify influential forces of change (or 'drivers') which will shape or transform a certain area of interest in the future. Drivers are not to be confused with trends. While trends are patterns of activities operating within a shorter time horizon, drivers are clusters of many trends, forming deeper dynamics over longer horizons. Thus, drivers emerge and recede slowly and are not likely to be reversed (Sandford and Cassar 2020, pp. 248–250). This exercise consists of several steps: identifying drivers, determining which drivers are most significant and distinguishing the level of uncertainty regarding the outcomes of the driver (see UK Cabinet Office 2017, pp. 42–45).

Axes of uncertainty

This exercise is used to determine critical uncertainties for the future. This is achieved by locating critical uncertainties on an axis. To provide an example: The future of heritage is transnational

Table 2 Overview of various foresight techniques

	Tool	Why is it used?	What does it produce?	How to use the results?
Gathering information about the future	**Horizon Scanning** method: desk-based research	Used to identify weak signals of change within an area of interest.	Provides evidence-based insights into potential future change that can serve as a baseline for further foresight exercises.	Use for informing driver mapping; scenarios.
	Driver Mapping method: workshop discussion	Used to identify the underlying drivers of change that will shape the area of interest, and to separate the more influential drivers from the less influential ones.	Provides a list of priority drivers shaping the area of interest.	Use for informing axes of uncertainty.
	Axes of Uncertainty method: workshop discussion	Used to identify critical uncertainties concerning the impacts of priority drivers on the area of interest.	Provides a list of key critical uncertainties affecting the area of interest.	Use to create a matrix for developing scenarios.
Creating alternate futures	**Scenario planning** method: workshop discussion	Used to describe different ways the external environment might develop and how this might affect the area of interest. Helps to challenge assumptions and explore different ways a policy, strategy or programme may need to evolve in the future.	Provides a set of narratives describing different future states.	Use to develop a desired vision of the future – e.g., using visioning; and 'future-test' a policy strategy or plan of action – e.g., using backcasting. Scenarios can also be deepened using Causal Layered Analysis.
Unpacking assumptions and deepening the future	**Asking the right questions** method: individual reflection or workshop discussion	Used to introduce a group to futures thinking and explore their thoughts and underlying assumptions regarding the future.	Provides a set of diverse responses to key questions that describe different perspectives of the future held within a group.	Use to start a foresight workshop (or even as a preparatory exercise before a workshop) to get people thinking.
	Casual Layered Analysis (CLA) method: workshop discussion	Used to surface underlying assumptions about the future and the worldviews that underpin these in order to deconstruct conventional thinking and explore different narratives of change at a deeper level.	Provides deeper and more nuanced narratives of different possible future scenarios and the drivers that may shape them.	Use to inform Change Progression Method (CPM), or move straight to backcasting.
Transforming the future through a plan of action	**Visioning** method: workshop discussion	Used to develop a set of common aims and objectives, and describe what the future would be like if they were achieved.	Provides a shared vision to work towards.	Use to develop a plan of action to achieve the vision, e.g., using backcasting. The vision can also be deepened using Causal Layered Analysis.

	Tool	Why is it used?	What does it produce?	How to use the results?
	Change Progression Method method: workshop discussion	Used to deepen future scenarios by anticipating key changes and identifying ways of responding to these.	Provides a set of future scenarios in which different response options are identified to meet and lead future change to achieve a desired vision.	Use to inform backcasting.
	Backcasting method: workshop discussion	Used to identify key steps required to achieve the desired vision, or avoid an undesirable scenario; identify what is under the influence of the team and what is not.	Provides a plan of prioritized actions and a list of outside agents that need to be involved.	Use to develop a programme of action.

OR the future of heritage lies within national agendas. In the first step, a long list of several critical axes of uncertainty is created. Thereafter, the two most important axes of uncertainty are selected through a collaborative process and placed in a matrix forming the basis of a scenario (see UK Cabinet Office, 2017, pp. 46–49).

Creating Alternate Futures

Scenario planning

Scenarios are the most common tool in the field of anticipation. While there are multiple ways of undertaking scenarios exercises, those that tend to be most successful have a strong emphasis on co-creation and collaboration. One method is to centre the exercise around the creation of a matrix based on two critical uncertainties (as described above in the *Axes of Uncertainties*). When constructing scenarios, it is useful to make a distinction between different forms of futures: possible, plausible, probable and preferable. Some futures are possible but not plausible, some futures are preferable but not plausible, and so on. All these forms of futures play a role in a scenario exercise. The goal in a scenario exercise is to expand the horizon of imagined futures, which will help make more informed and long-term decisions in the present. Scenarios should provide a safe space for exploring alternatives and they cannot be judged based on criteria like "good," "bad," "right" or "wrong."

Unpacking Assumptions and Deepening the Future

Asking the right questions

During a foresight exercise, it is essential to ask effective questions. Two good questions with which to start a Foresight exercise are suggested by Inayatullah (2020):

- What is impossible today, but if possible, changes everything in the [heritage sector]?
- What practices does the [heritage sector] continue to do that are no longer useful or relevant?

The following six basic future questions can also be used to explore anticipation among individuals (reworked from Inayatullah, 2008, p. 7):

1. What do you think the future will be like? What is your prediction? Why?
2. Which future are you afraid of? Do you think you can transform this future to a desired future? Why or why not?
3. What are the hidden assumptions of your predicted future? Are there some assumptions taken for granted?
4. What are some alternatives to your predicted or feared future? If you change some of your assumptions, what alternatives emerge?
5. What is your preferred future? Which future do you wish to become reality for yourself or your organization?
6. How might you get there? What steps can you take to move toward your preferred future?

Casual Layered Analysis

Casual Layered Analysis (CLA) is a method used to explore the worldviews that might underpin diverse perspectives, and deconstruct ways of thinking about the future. This is particularly useful when working with groups from different backgrounds, especially when they hold different opinions about a policy or strategy area. The goal of CLA is to reach below the surface into how different futures are constructed and made relevant.

CLA unpacks the future by focusing on how different actors construct futures differently by unravelling four layers: litany, systemic causes, worldview and myth/metaphor (Inayatullah, 2008).

- **Litany** is the day-to-day future that represents the commonly accepted headlines and perspectives of how things should be in the future. One heritage-related litany could be: "Heritage is a political instrument for the far-right." This layer has short-term solutions for future challenges.
- The second layer deepens the future by identifying the social, economic and political **systemic causes** of the issue at hand. In line with the litany layer described above, this would entail mapping the social, economic and political incentives that motivate far-right parties to politically use heritage within specific agendas.
- The third layer is the underlying **worldview** shaping this way of framing the future – the very paradigm that informs the way one thinks about the world. This could be the paradigm that heritage represents a linear and essentialized continuity between identities in the past and identities in the present.
- The fourth layer is the **myth** or the **metaphor** that unconsciously constructs this future. This could be the metaphor that "heritage made us who we are."

The two first layers are more easily discernible, while the last two are deeper and may require someone external to properly unravel. After identifying the four different layers, it is worthwhile to work on finding possible solutions and challenges for each layer to develop a strategy. It is also possible to further deepen the CLA by identifying the same four layers in different types of futures concerning a specific topic, such as the preferred future, the future we do not want (the used future), and the alternative future (an outlier).

Transforming the Future through a Plan of Action

Visioning

The purpose of this exercise is to describe a vision of the future that the organization would like to strive towards, and a set of common aims that if achieved would help to bring this about. Visioning is useful for creating shared goals around which to orient collective efforts, and help

improve capacity within the organization for collaboration. To ensure that different visions of the future are considered, and to create a shared strategic vision that the organization can work towards, this exercise should be open and collaborative. Moreover, while it is important that the vision is inspiring, it must also be realistic and closely tied to the actual activities and functions of the organization so that it remains a meaningful orientation:

> *While enabling and ennobling us, the vision must link to the day-to-day realities; our day-to-day measures must reflect the vision.* (Inayatullah, 2008, p. 6)

Change Progression Method

The Change Progression Method (CPM) focuses on using four assumptions about the future regarding external/internal change: **no change, marginal change, adaptive change** and **leading change** (Inayatullah et al., 2020). These assumptions can lead to a preferred future (vision). The aim of CPM is to anticipate how the external world is changing and what steps/actions are taken (or not taken) to meet/lead this change:

- In the **no-change** scenario, the external world is changing but the organization/sector does not. This may be because there is a set of ideas about how the organization/sector should operate that does not allow for change, or because the capabilities to induce change are not present.
- In the **marginal change** scenario, the external world continues to change, but because of certain limitations that need to be identified, only a few policies are implemented to meet this change.
- In the **adaptive change** scenario, the organization/sector adapts alongside a changing world, and successfully implements policies to meet the change.
- In the **leading change** scenario, the organization/sector leads the future by reshaping the very rules of the game, which leads to transformative change.

Using these four different assumptions about future change, an array of different challenges and opportunities will arise that make it easier to build a preferred future/vision, which then can be made actionable through producing key recommendations identifying strategies and actions by backcasting.

Backcasting

Backcasting is a useful method when a vision (or an undesirable scenario) has been built to determine steps either for realizing the vision or to avoid that a certain chain of events occur. Backcasting means moving backwards from a specific future scenario to identify the key steps, events and decisions that will make it happen/not happen. It is also important to determine what lies outside control/influence and what lies within control/influence to build a strategy that is effective and realistic.

Suggested Further Reading on Foresight

1. Adam, B., & Groves, C. (2007). Future matters: action, knowledge, ethics. Brill.
2. Bell, W. (2009). Foundations of futures studies, volume 1: human science for a new era. Transaction Publishers.
3. Conway, M. (2016). Foresight infused strategy: a how-to guide for using foresight in practice. Thinking Futures, 197 p. ISBN: 978-1095942482
4. Harrison, R. et al. (2020). Heritage futures: comparative approaches to natural and cultural heritage practices. UCL Press.
5. Hines, A., Bengston, D.N., & Dockry, M.J. (2019). *The forest futures horizon scanning project*. General technical report NRS-P-187. US Department of Agriculture, Forest Service, Northern Research Station. https://doi.org/10.2737/NRS-GTR-P-187
6. Holtorf, C., & Högberg, A. (Eds.). (2020). *Cultural heritage and the future*. Routledge.
7. Holtorf, C., & Högberg, A. (2022). Why cultural heritage needs foresight. *Heritage for the future, science for heritage* (15th and 16th March 2022).
8. Högberg, A., Holtorf, C., May, S., & Wollentz, G. (2017). No future in archaeological heritage management? *World Archaeology*, 49(5): 639–647.
9. Inayatullah, S. (2008). Six pillars: futures thinking for transforming. *Foresight*.
10. Inayatullah, S. (2020). Co-creating educational futures: contradictions between the emerging future and the walled past. *Education Research and Foresight Working Paper 27*.
11. Inayatullah, S., Jacob, A., & Riz, R. (2020). Alibaba and the golden key: scenarios of manufacturing futures in Egypt. *Journal of Future Studies*. https://jfsdigital.org/2020/11/03/alibaba-and-the-golden-key/
12. Miller, R. (2006). *From trends to futures literacy: reclaiming the future*. Centre for Strategic Education.
13. Miller, R. (2007). Futures literacy: a hybrid strategic scenario method. *Futures*, 39(4): 341–362.
14. Miller, R. (2018). Introduction: futures literacy: transforming the future. In *Transforming the future* (pp. 1–12). Routledge.
15. Poli, R. (2017). *Introduction to anticipation studies* (vol. 1). Springer.
16. Riddell, G.A., van Delden, H., Maier, H.R., & Zecchin, A.C. (2020). Tomorrow's disasters – embedding foresight principles into disaster risk assessment and treatment. *International Journal of Disaster Risk Reduction*, Volume 45: 2020. https://doi.org/10.1016/j.ijdrr.2019.101437.
17. Sandford, R., & Cassar, M. (2020). Heritages of futures thinking: Strategic foresight and critical futures. In *Cultural Heritage and the Future*. Routledge (pp. 245–263).
18. Schatzmann, J., Schäfer, R., & Eichelbaum, F. (2013). Foresight 2.0 – definition, overview & evaluation. *European Journal of Futures Research*, 1(1): 1–15.
19. Smart, J.M., & the Foresight U and FERN teams. (2022). *The foresight guide. Anticipating, creating, and leading in the 21st century* (Alpha version. Chapters 7, 8, and 10 still being written). Foresight University. https://www.foresightguide.com/
20. Taylor, J. (2021). What do we talk about when we talk about "future generations"? Transcending boundaries: integrated approaches to conservation. ICOM-CC 19th Triennial Conference Preprints, Beijing, China, 17–21 May 2021. ICOM-CC. https://www.icom-cc-publications-online.org/4356/What-do-we-talk-about-when-we-talk-aboutfuture-generations
21. United Kingdom Cabinet Office and Government Office for Science. (2017). *The futures toolkit: tools for futures thinking and foresight across UK Government, Edition 1.0* (p. 28). https://www.gov.uk/government/publications/futures-toolkit-for-policy-makers-and-analysts

Horizon Scan Reports

Acknowledgments

These reports were compiled by the following team of researchers, to whom ICCROM is greatly indebted for their work:

- Dr **Tokie Laotan-Brown**, FRSA, Heritage Architect/Developer & Cultural Economist, Merging Ecologies Studio, Nigeria.
- Dr **Ranit Chatterjee**, Visiting Associate Professor, Keio University, Japan.
- Dr **Voula Golfomitsou**, Senior Lecturer, Department of Conservation, University of Gothenburg, Sweden.
- **Beatriz Haspo**, Collections Officer, Collections Management Division, Preservation Directorate, Library of Congress, United States.
- Dr **Hirofumi Ikawa**, Project Manager, ICCROM, working on secondment from the Agency for Cultural Affairs, Japan.
- Dr **Samia Kirchner**, Associate Professor, Morgan State University School of Architecture and Planning & Chair of the Internationalization of Education, Morgan Division of International Affairs, United States.
- Dr **Sophia Labadi**, Professor of Heritage, University of Kent, United Kingdom.
- Dr **Adala Leeson**, Head of Social and Economic Analysis and Evaluation, Historic England, United Kingdom.
- Dr **Thabo Manetsi**, Chief Director for Heritage and Tourism Integration, National Department of Tourism, South Africa.
- **Helen McCracken**, Principal Adviser, Delivery Group of Manatū Taonga Ministry for Culture and Heritage (MCH), New Zealand.
- **Henry McGhie**, Curating Tomorrow, Independent Consultant specializing in museums and sustainable development, United Kingdom.
- **Stefan Michalski**, Heritage Conservation Scientist, Canada.
- Dr **Johan Oomen**, Manager of the Department of Research and Heritage, Netherlands Institute for Sound and Vision, the Netherlands.
- Dr **Renata Schneider**, Senior Cultural Heritage Conservator, Instituto Nacional de Antropología e Historia (INAH), Coordinación Nacional de Conservación del Patrimonio Cultural (CNCPC), Mexico.
- Dr **Matija Strlič**, Professor of Analytical Chemistry, University of Ljubljana, Slovenia & Professor of Heritage Science, University College London, United Kingdom.
- Dr **Pascall Taruvinga**, Chief Heritage Officer, Robben Island World Heritage Site, Cape Town, South Africa.
- Dr **Ibrahima Thiaw**, Professor of Archaeology, University Cheikh Anta Diop of Dakar, Senegal.
- Dr **Gustav Wollentz**, Researcher, the Nordic Centre of Heritage Learning and Creativity, Sweden, and affiliated with the UNESCO Chair on Heritage Futures, Linnaeus University, Sweden.

Index of Reports

Political

P1. Decoloniality

Keywords	*pluriversality, new ontologies, repatriation, repressive legislation*
Other STEEP categories	*Economic | Environmental | Societal | Technological*
Author	*Sophia Labadi*

Description

On a short- to medium-term timescale, decoloniality will continue to be a prominent issue.[1] On the one hand, decolonial approaches will challenge mental models and cultural norms that benefit a hierarchical worldview; dislodge knowledge production from Westcentrism; recognize the "pluriversality" of knowledge; create spaces for marginalized and underrepresented people and voices; and reveal the discriminations faced by minorities in the economic, social, economic and cultural fields. They will also include issues of reparation and of "giving back" what did not belong to the Western world in the first place.[2] On the other hand, decolonial agendas will lead to a backlash against these ideas,[3] including increased frequency and/or severity of racist acts, new and repressive legislation against different forms of reparation (including repatriation), and repression of individuals and groups acting against signs of racial oppression (e.g., the toppling of statues).[4]

Broad implications

Public and private institutions will fund decolonial approaches that encourage the emergence of different and more diversified versions of the past, histories and nations. In addition, the impacts of colonialism and slavery will be better recognized and highlighted, particularly concerning structural injustices. However, repressive legislation[5] will make it difficult to implement real change and address the profound and systemic socioeconomic and cultural injustices faced by ethnic minorities, particularly in the West. Bilateral funding from Western countries to those in the Global South may focus on neocolonial projects,[6] protecting Western interests and countering any significant effects of the decolonial approach.

Implications for cultural heritage and its conservation

Implementing decolonial principles will have some of its deepest impacts on the field of cultural heritage and its conservation. In addition to current predominantly Western concepts, new concepts of time, conservation, decay, management and interpretation will need to be adopted. New training models on heritage conservation that take non-European approaches to heritage into greater account will need to be introduced. Key questions that will arise from a decolonial framework include: how can we protect, conserve and interpret repatriated objects in non-European ways? What can we do with toppled monuments, and how can we conserve and interpret them? Backlash against decolonial practices and agendas will be characterized by neocolonial modes of collecting, conserving and interpreting heritage, in addition to the legal impossibility of repatriating artefacts to their countries of origins.

Implications for ICCROM: ICCROM could strengthen its leading position in the field by fully embracing a more decolonized approach to heritage. It could implement programmes, including research projects, to demonstrate how moving away from concepts of authenticity and heritage as "frozen in time," the separation between nature and culture, and the consideration of time as linear would enhance heritage protection and help address development issues, such as climate change. This work would also help destabilize the

backlash against decolonial practices in explaining how the latter are more relevant for heritage conservation worldwide. ICCROM could also review and subsequently revise its pedagogical approach to training, taking non-European models of heritage and conservation into greater account.

References

1. Ndlovu-Gatsheni, S.J. (2015). Decoloniality as the future of Africa. *History Compass*, 13, 485–496. https://doi.org/10.1111/hic3.12264.
2. Bhagat, A. (2021, March 19). *What does it mean to decolonize the future?* The Futures Center. https://www.thefuturescentre.org/what-does-it-mean-to-decolonize-the-future/
3. Greene, R. (2017, November 10). How to fight white backlash. *Dissent Magazine*. https://www.dissentmagazine.org/online_articles/fight-white-backlash
4. Chow, R.M., Phillips, L.T., Lowery, B.S., & Unzueta, M.M. (2021, June 8). Fighting backlash to racial equity efforts. *MIT Sloan Management Review*, 62(4): 25–31. https://sloanreview.mit.edu/article/fighting-backlash-to-racial-equity-efforts/
5. Harris, G. (2021, January 18). UK Government announces new laws to protect controversial historic monuments from "woke worthies and baying mobs." *The Art Newspaper*. https://www.theart-newspaper.com/2021/01/18/uk-government-announces-new-laws-to-protect-controversial-historic-monuments-from-woke-worthies-and-baying-mobs
6. University of Kent. (n.d.). Rethinking heritage for development. https://blogs.kent.ac.uk/heritagefordevelopment/

P2. Decolonization, Restitution of Cultural Property and Conflicts

Keywords	*coloniality, cultural property, restitution, conservation, conflicts*
Other STEEP categories	*Legal | Societal | Economic*
Author	*Ibrahima Thiaw*

Description

European imperialism from the fifteenth century onwards marked the start of a massive circulation of cultural goods on a global as well as interregional scale. Colonization, out of the territorial conquest and of the extraction of economic resources, was a huge enterprise of despoilment of cultural properties of colonized peoples through ethnographic missions and punitive expeditions.[1] The cultural properties looted by Western powers continue to adorn the rooms and galleries of heritage institutions in the Global North, where they have been used to fabricate the image of the Other and the Elsewhere. Despite formal independence of African countries as in other parts of the Global South, the confiscation of their cultural properties is a stark reminder of the unilateralism, reign of force, domination and symbolic violence of colonialism. Decolonization and restitution turn out to be two inextricably linked processes. For some time now, we have experienced the emergence and development of anti-colonial and anti-racist movements in Africa and its diaspora.[2] Concomitantly with these movements, the debate on the restitution of African cultural properties extirpated from the continent by force or theft has imposed itself in the international public sphere and appears today as an inescapable process for more equity and justice, and a guarantee of peace and stability in the world.[3,4]

Broad implications

These demands create a very complex dialectic where we can distinguish two discursive axes. On the one hand, the claims of African states and their diaspora,[5] and, on the other, the former colonizing powers and their conservation institutions.[6] For the latter, the reluctance to restitute is linked to the idea of a deficiency in conservation and management infrastructures and is supported by a legal framework with universalist claim forged in the antechamber of Eurocentric conservation standards.[7,8] The contradictions on restitution will lead to multiple forms of conflicts,[9] not only between former colonizers and formerly colonized but also, ironically, between formerly colonized countries and communities both between and within states. On the one hand, former imperial powers have legislation that makes restitution improbable, despite the expression of a certain will for more justice and equity. This reluctance to restitute based on legal instruments that we all know to be factitious and designed to maintain privileges historically acquired by force or organized theft is unconvincing.[10] On the other hand, the circulation of cultural properties by colonizers within their former colonies has displaced and misplaced collections in hands outside their sites of production and belonging, which may become a potential source of conflict between modern independent states or between communities.

Implications for cultural heritage and its conservation

Claims around this heritage will grow in the coming decades and will pose unprecedented diplomatic crises, not only between the former colonial powers and their former colonies but more significantly and unexpectedly between postcolonial African states and/or communities. At all levels, the reluctance to return ill-gotten cultural properties will remain the same.[11] In the next decade, claims for restitution will gain momentum, but dangers of

open conflicts and diplomatic crises are particularly to be feared between formerly colonized countries and communities, rather than between the later and former colonial powers. Yet in both cases, colonization remains the main source of the problem, hence its pernicious nature.

References

1. Leiris, M. (2014). *L'Afrique fantôme*. Gallimard, édition électronique. https://www.facebook.com/felwine.sarr/posts/10222921890533126
2. Gbadamosi, N. (2020, July 28). *Is it time to repatriate Africa's looted art?* Foreign Policy. https://foreignpolicy.com/2020/07/28/time-repatriate-africa-looted-art-artifacts-cultural-heritage-benin-bronzes-nigeria-ghana-europe-british-museum/
3. Leveque, L. (2021, May 27). *Bénédicte savoy : le combat africain pour son art*. Heinrich-Böll-Stiftung. https://fr.boell.org/fr/2021/05/27/le-livre-politique-benedicte-savoy-le-combat-africain-pour-son-art
4. Cohen, B. (2019, January 28). *La restitution d'œuvres d'art africain : les obstacles juridiques au devoir de mémoire*. Village de la Justice. https://www.village-justice.com/articles/restitution-oeuvres-art-africain-les-obstacles-juridiques-devoir-memoire,30521.html
5. Sarr, F., & Savoy, B. (2018). *Restituer le patrimoine Africain*. Philippe Rey.
6. Agorsah. E.K. (1977). Restitution of cultural material to Africa. *Africa Spectrum*, 12(3), 305–308. https://www.jstor.org/stable/i40004990
7. Nijen, J. van. (2020). *La restitution du patrimoine culturel africain: L'Afrique au musée, les musées en Afrique: solutions et impasses*. https://www.museums.ch/fr/assets/files/dossiers_f/Bildung/Travaux%20certifi-cat/2019-2020/van%20Nijen.pdf
8. Boast, R. (2011). Neocolonial collaboration: museum as contact zone revisited. *Museum Anthropology*, 34(1), 56–70.
9. Sekongo, K. (2021, September 21). *Les affrontements informationnels autour de la question des restitutions des biens culturels africains*. Ecole de Guerre Economique. https://www.ege.fr/infoguerre/les-affrontements-informationnels-autour-de-la-question-des-restitutions-des-biens-culturels-africains
10. Cohen, B., (2019, January 28). *La restitution d'œuvres d'art africain : les obstacles juridiques au devoir de mémoire*. Village de la Justice. https://www.village-justice.com/articles/restitution-oeuvres-art-africain-les-obstacles-juridiques-devoir-memoire,30521.html
11. Panara, M. (2021, June 26). *Prendre au sérieux les demandes de restitution*. Le Point Afrique. https://www.lepoint.fr/afrique/prendre-au-serieux-les-demandes-de-restitution-16-06-2021-2431444_3826.php

P3. Equity, Recognition of Rights

Keywords	*community, decolonization, minorities, neoliberalism, power asymmetry, reconciliation, secular states, social inequity*
Other STEEP categories	*Societal | Legal | Technological | Environmental*
Author	*Samia Kirchner*

Description

Four tendencies related to social inequities are shifting geopolitical and economic priorities that present challenges to the universalizing principles of "human rights" and are expanding heritage discourse to address minority concerns:

1. **Decolonization:** The legacy of colonialism has produced social structures of racialization, patriarchy, heteronormativity and neoliberalism, shaping and constraining humans across the world in different ways. As economic disparities increase across the world's richest and poorest nations, there are demands of reconciliation through reparation for colonized nations.
2. **Convergence of environmental and social crises:** Evidence suggests a strong correlation between climate change and "social inequality" characterized by a vicious cycle, whereby initial inequality causes the disadvantaged groups to suffer disproportionately from the adverse effects of climate change, resulting in greater subsequent inequality.
3. **Sovereignty of the people over state**: It has become obvious that in ethnically diverse nation states, the tangible memories of minority groups are framed by the norms of the larger community. Equityseeking movements across the globe are calling for public oversight of governance to counter the state's role in supporting social inequities.
4. **Revolution of values in technological evolution:** The calls for a post-neoliberal economy is shaping the call for economies of happiness that reconceptualizes our (human) relationship with land, territories, sites and cultural resources from the "custodianship" lens of Indigenous people.

Broad implications

1. Decolonization is an action to dismantle the impact of colonialism on the lived experience of those who were colonized. Activists are asking: How do institutionalized "place making" processes shape national narratives and affect lived experiences in secular states with vulnerable minority populations?
2. The COVID-19 pandemic has revealed the social nature of human existence, or "the interrelated structure of all life and reality."[1] Constraint and dispossession by one group have directly supported access to wealth and prosperity for another. Balancing the universal rights of humankind against the legitimate concerns of marginalized minorities is seen to be essential now more than ever before, both for the survival of cooperative humanity and a biodiverse environment.
3. Many historic places have become sites of contestation, and community engagement is becoming central to their resolution as shared cultural assets.
4. Developing baseline values is becoming more important than preserving heritage as a material resource.

Implications for cultural heritage and its conservation

Embodying the transdisciplinary lenses of decolonization, secularism, nationalism and lived religion, World Heritage sites and their documentation help us better understand minority issues in secular states. World Heritage Centres can develop clearer legislative frameworks; conservation policies that support coordination among different stakeholders; responsible and transparent information channels; and closer involvement of the general public; for successful heritage conservation projects. ICOMOS can redefine the role of cultural heritage conservation in addressing socioecological problems and include traditional methods of achieving community food sovereignty as shared heritage value. ICCROM courses can prioritize technological production to serve community resilience and connect emerging economies with heritage values.[2–20]

References

1. King Jr, M.L. (1992). Letter from Birmingham jail. *UC Davis L. Rev.*, 26, 835.
2. Apaydin, V. (Ed.). (2020). *Amnesia by design: building and rebuilding in a Mediterranean small island-state: critical perspectives on cultural memory and heritage: construction, transformation and destruction*. UCL Press, pp. 98–110.
3. Appadurai, A. (2001). The globalization of archaeology and heritage. *Journal of Social Archaeology*, 1(1), 35–49.
4. Appiah, K.A. (2005). *The ethics of identity*. Princeton University Press.
5. Arizpe, L., & Amescua, C. (Eds.). (2012). *Anthropological perspectives on intangible cultural heritage*. Springer.
6. Bendix, R.F., Eggert, A., & Peselmann, A. (Eds.). (2012). Heritage regimes and the state. Göttingen studies in cultural property. *Universitätsverlag Göttingen* 6.
7. Bergdahl, E. (2012). Conversation piece: intangible cultural heritage in Sweden. In: Stefano, M.L., Davis, P., & Corsane G. (Eds.), *Safeguarding intangible cultural heritage*. Boydell Press.
8. Blake, J. (2000). On defining the cultural heritage. *The International and Comparative Law Quarterly*, 49(1), 61–85.
9. Brumann, C. (2014). Heritage agnosticism: a third path for the study of cultural heritage. *Social Anthropology*, 22(2), 173–188.
10. Cisneros, N.A. (2017). Becoming human: "urban Indian" decolonisation and regeneration in the land of enchantment. In *Handbook of Indigenous Religion(s)*, pp. 176–191.
11. Fewsmith, J. (2004). Promoting the scientific development concept. *China Leadership Monitor*, 11, 1–10.
12. Graham, B. J., & Howard, P. (2008). *The Ashgate research companion to heritage and identity*. Ashgate Pub.
13. Healey, J. (2014). *Indigenous rights*. The Spinney Press.
14. Jokilehto, J. (2011). ICCROM and the conservation of cultural heritage: a history of the organization's first 50 years, 1959–2009. *ICCROM Conservation Studies*, 11. ICCROM.
15. King, M.L., Jr. (1967). *The world house. Where do we go from here: chaos or community?* Beacon Press, pp. 167–191.
16. (Kirchner) Rab, S. (2004). Authenticity in cultural heritage management re-assessing the international charters of restoration conservation. *Scientific Papers of the first International Conference on Architectural Conservation between Theory & Practice.*
18. Samuels, K. L., & Rico, T. (Eds.). (2015). *Heritage keywords: Rhetoric and redescription in cultural heritage*. University Press of Colorado.
19. Stovel, H., Stanley-Price, N., & Killick, R. (Eds.). (2005). Conservation of living religious heritage. *ICCROM Conservation Studies* 3. ICCROM.
20. Nairen, Z. (Ed.). *Training strategies for World Heritage management*. Deutsche UNESCO-Kommission.
21. Labadi, S., & Long, C. (Eds.). (2010). *Heritage and globalisation, key issues in cultural heritage*. Routledge.

P4. Geopolitical Power Shifts: End of Eurocentricity (1)

Keywords	*geopolitical, power shifts, China, United States, pacific*
Other STEEP categories	*Economic | Technological | Environmental*
Author	*Tokie Laotan-Brown*

Description

Emerging trends seem to upset a number of balances that previously seemed enduring. The historical centrality of the European region seems to have shifted to the benefit of the Pacific area. These numerous new regional actors, including South Korea, Japan and Australia, are now capable of implementing important roles. This means that in the nearest future, the Pacific area will evolve and produce a system similar to the European "Balance of Power" of the eighteenth and nineteenth centuries. However, only China and the United States are potentially willing and able to act as main players in this geopolitical arena. Russia may act as a marginal partner within this multipolar leadership.

Broad implications

The cultural and economic processes of integration will advance systematically, but on a global scale these implications will be much slower. The groups of nations that share similar values, rules and sociopolitical structures will process much faster. Major international organizations will lose credibility and capacity to take action, making room for new regional bodies. These will be more parallel, more approachable, and will be overseen by a major power acting as a reference point.[1]

Implications for cultural heritage and its conservation

The rise of multipolar globalization, strategies of ICCROM, and the interests of many state and non-state parties in the cultural heritage space are shifting geopolitical patterns in heritage conservation. This has coincided with the paradigm shift from unipolar to multipolar form.[2] Countries like Brazil, Russia, India, China, Japan and South Africa are being allured by the promises of benefits from heritage sites and are now vigorously engaged in the politics of heritage.[3]

Elective connections rest upon shared values, common cultural heritage roots, and similar historical and social orientations.

These implications will see a shift from historical urban landscapes to more adaptable, economically viable living landscapes, as the last World Heritage Committee debates from Africa and China emphasized (July 2021). The economic paradigm shift will shape how the politics of heritage evolve, as state parties become more political about their heritage sites. Eurocentric definitions of Outstanding Universal Values (OUVs), historic urban landscapes etc., will become more contested as decolonization becomes more intricate.

References

1. Pieterse, J.N. (2017). *Multipolar globalisation: emerging economies and development*. Routledge.
2. Ibid.
3. Akagawa, N. (2016). Intangible heritage and embodiment: Japan's influence on global heritage discourse. In: W. Logan, M.N. Craith, & U. Kockel (Eds.), A *companion to heritage studies*. (pp. 69–86). John Wiley. https://doi.org/10.1002/9781118486634.ch5

P5. Geopolitical Power Shifts: End of Eurocentricity (2)

Keywords	*superpower states, power shift, world order*
Other STEEP categories	*Economic | Environmental | Societal | Legal*
Author	*Stavroula Golfomitsou*

Description

It is predicted that emerging economies will surpass developed economies by 2030, with countries such as China, India, Brazil, Mexico, Indonesia, Turkey and Egypt taking a lead alongside the United States, Germany and Russia. The European Union, although it could be considered an emerging superstate or superpower, is not included as such due to lack of a unique identity and/or military power. Although superpower states might no longer be defined by military power, it will remain a determining factor. These changes will create tensions and potential wars, leading to both geographical and power changes.

Broad implications

World order is expected to change significantly in the next 30 years. Emerging economies will result in newly rich countries with internal extreme poverty. Superpowers will have to contribute to efforts to reduce CO_2; however, emerging economies (i.e., new superpowers) might not respond the same way as developed economies because of internal conflicts associated with poverty. Conflicts will be driven by climate issues, lack of resources etc. New types of diverse "weapons" will be used with unknown effects. Main areas of conflict are expected to be the Middle East, Indo-Pacific area and Europe.[1] These changes will increase migration, which in turn will increase internal tensions within countries. The position of Europe as an ally to the United States is expected to decline. All the above are expected to impact societies and the environment, with conflicting views and actions taken by different countries.

Implications for cultural heritage and its conservation

Cultural heritage will be affected by geopolitical changes and shifts in economic power, especially in its use of soft power. These changes will affect the way cultural heritage is viewed, used and preserved. Although it is expected that conservation of cultural heritage will be more people-centred, there will be implications if heritage sites change "lawful" owners, with direct impacts on the way conservation is practiced. Digitization of heritage sites and decolonizing museum collections will drive new ways of looking at and caring for heritage. For any sector to survive and thrive, changes in mindset will be needed. Connecting to the bigger context and keeping a long-term perspective will be essential for a sustainable future.

Changes in economic power with a domino effect in the world order will have a direct impact on the way international organizations are structured and how they operate. New superpowers will want to play a central role in intergovernmental organizations (IGOs) as a tool of political power. IGOs, including ICCROM, will need to be reorganized and restructured to be able to deal with geopolitical and economic changes and adopt a more flexible way of operating. Some of the suggested ways forward refer to plurilateral approaches, shared leadership, and smaller and more flexible centres with specific geographic focus to name but a few to be able to deal with complex issues.

Reference

1. See: Rand Corporation. www.rand.org

P6. Growing Inequality

Keywords	*sustainable development, accountability, collaboration, governance*
Other STEEP categories	*[Societal] [Economic] [Legal] [Environmental]*
Author	*Henry McGhie*

Description

Economic wealth is increasingly in the hands of a shrinking proportion of people. Inequality is on the rise in all regions but at different rates. Inequality may result in increasing disaster capitalism, where rich countries profit from the hardships in poor countries. Inequality operates both between and within countries. Technological change and educational attainment may not be linked as they are at present, with increasing mechanization and replacement of workers with robotics.

Broad implications

Increasing mechanization and use of robotics may alter the purpose of education, which has focused on providing people with skills and knowledge for work. Growing inequality may result in an unskilled, poorly educated tier of society, increasingly separate from a highly educated tier. Growing tensions between "haves" and "have nots" will be felt by all sectors. Social tiers will have less contact with one another, with likely different worldviews. Increasing inequality and poverty lead to greater tensions, and ultimately to wars within and between countries. Multidimensional poverty may be increasingly used as a measure, and incorporate greater emphasis on rights and the extent to which they are denied/realized. Increasing urbanization is likely to lead to increasing splits between rural and urban, as well as those in high quality versus poor quality (e.g., polluted, inadequate housing) urban settings.

Implications for cultural heritage and its conservation

Cultural heritage may likely have to pivot towards a greater prioritization of rights-based perspectives of heritage as a shared heritage, rather than a commodity or asset that is enjoyed by middle classes but to which more impoverished people have restricted or limited access. Cultural heritage institutions will likely have to adopt rights-based approaches, as employees will have limited experience of people and social groups who are marginalized/under-served. Recognition of cultural heritage and access to it as elements of multidimensional poverty are likely to be increasingly evident, notably in light of changes to work and economics. Development and preservation of cultural heritage representing typically underserved/marginalized groups are likely to lead to either self-led collecting and preservation initiatives by those groups, or radical rethinking of who decides what is developed and why. Increasing separation between "haves" and "have-nots" may lead to calls for more representative institutions and leadership of institutions, or the emergence of a splintered field, with existing institutions being associated with wealth and grassroots institutions reflecting the aspirations and identities of underserved/marginalized groups and communities. Inequality is likely to be felt in terms of access to cultural activities and institutions, as impoverished countries and communities are deprived of economic wealth to establish and run cultural heritage institutions and sites. Commodification of cultural heritage is likely to be in both low-income and high-income settings for different reasons. Increased tensions within and between countries, and poverty, will likely lead to increased losses of cultural heritage through damage, neglect and looting.[1–3]

References

1. Goldin, C., & Katz, L.F. (2009). The future of inequality: the other reason education matters so much. *The Milken Institute Review*, 3rd Quarter, 26–33. https://scholar.harvard.edu/files/goldin/files/the_future_of_inequality.pdf
2. The Econreview. (2019, September 10). *The past, present and future of global inequality*. The Economics Review at New York University. https://theeconreview.com/2019/09/10/the-past-present-and-futureof-global-inequality/
3. Dadush, U., & Stancil, B. (2010). *The world order in 2050*. Carnegie Endowment for International Peace. https://carnegieendowment.org/files/World_Order_in_2050.pdf

P7. Heritage and Sustainable Development after Agenda 2030

Keywords	*sustainable development, UN, human needs and rights, Africa 2063*
Other STEEP categories	*Economic | Societal | Technological | Environmental*
Author	*Sophia Labadi*

Description

Heritage has been included in, but marginalized from, the UN SDGs (2015–2030),[1] the latest international development agenda.

Heritage will continue to be marginalized, if not totally excluded, from the next international development agenda, post 2030. Various factors can explain this situation. These include the lack of meaningful indicators[2] used to measure the contribution of heritage for development, and a lack of adequate advocacy for such inclusion by UNESCO, the only UN organization with a mandate on heritage. Indeed, within this organization there is currently no strong voice advocating for a greater role for heritage in future international development agendas.[3] Finally, many governments will continue to consider heritage, particularly certain intangible practices, to be misaligned with key sustainable development principles, such as gender equality.

Broad implications

The COVID-19 pandemic has put many SDGs out of reach. In this context, in the coming years, governments and international organizations will prioritize, focus on and invest in key development issues and basic needs, including reducing poverty and hunger, and rolling out vaccination programmes for children and encouraging them to go back to school.

Heritage is often essential in addressing these key development issues and basic needs (e.g., heritage food practices in reducing hunger). Its exclusion from future agendas means that heritage will still not be considered necessary to address development goals. This will result in these goals and human needs not being met.

Implications for cultural heritage and its conservation

Heritage will continue to be excluded from priority areas for funding and will therefore remain an underfunded field.

Heritage will still be protected for its own sake. One implication of this may mean that heritage conservation, management and interpretation will continue to be considered a liability, as is already the case in the SDGs.[4] Heritage may not be considered holistically, with due attention to its interconnection with its wider landscape and entangled issues, such as increased urbanization and inequalities. This model may also continue to dissociate heritage from its communities, while heritage should have a role in the life of communities in order to be sustainable.

Using heritage to address sustainable development challenges may still occur, but on a localized and small-scale basis. Publications that clarify the role of heritage in addressing every single SDG, such as the ICOMOS Policy Guidance on Heritage and the Sustainable Development Goals,[5] will provide essential guiding principles in this process.

Implications for ICCROM: ICCROM could secure funding to support projects demonstrating the importance of a heritage-led approach when addressing sustainable development. Africa

could be a good target region because of the amount of international aid for sustainable development it would receive. This is in line with Agenda 2063, which aims to ensure that heritage is a major contributor to Africa's growth and transformation.

Using the data collected, ICCROM could then take a leading role in advocating for a greater consideration of heritage when addressing sustainable development, thereby filling the void left by UNESCO.

ICCROM could also produce more research and advocacy on the importance of access to heritage and how this addresses particular rights and needs.

References

1. United Nations Department of Economic and Social Affairs, Sustainable Development. (n.d.). *The 17 goals.* https://sdgs.un.org/goals
2. UNESCO. (2019). *Culture 2030 indicators*. https://unesdoc.unesco.org/ark:/48223/pf0000371562
3. University of Kent. (n.d.). *Rethinking Heritage for Development*. https://blogs.kent.ac.uk/heritagefor development/
4. Ibid.
5. Labadi, S., Giliberto, F., Rosetti, I., Shetabi, L., & Yildirim, E. (2021). *Heritage and the sustainable development goals: policy guidance for heritage and development actors*. ICOMOS. https://www.icomos.org/images/DOCUMENTS/Secretariat/2021/SDG/ICOMOS_SDGs_Policy_Guidance_2021.pdf

P8. Identity Politics (1)

Keywords	*social and political rights, cultural redistribution, vindication, polarization*
Other STEEP categories	*Societal | Legal*
Author	*Renata Schneider*

Description

There will be greater economic and political struggle over ownership of territories and suitability and respect of social, economic and cultural rights provided by the states against actions of representation and possession of immovable property, ritual goods, human remains, textiles, and everyday objects produced and activated by Indigenous and Afro-descendant groups, minority and migrant cultural groups, feminist movements, and LGBTIQ+ groups. The difference compared to the current state of these demands will be their degree (amplitude) if the trends in economic redistribution at the international level are not addressed, leaving social and cultural representation (and the denial of the hegemonic culture) as the only way to satisfy and affirm collective identity needs or achieve economic losses derived from the use of cultural capital.

Broad implications

The benefits and control that states exercise over museums, theme parks, monuments and temples of all kinds may be limited or will be the cause of much deeper conflicts based on self-vindicating discourses that these groups, collectives and movements produce (or the rejecting of symbols considered state hegemonic, even having previously identified with them individually or as part of other social and cultural groups).

Debate and conflict resolution strategies should be better understood and translated, and probably should be part of bottom-up strategies much more so than the opposite, since positions considered part of national and international cultural establishments will be challenged.

The possibilities of abstraction and use of past and present heritage resources will present novel positioning discourses related to intellectual rights, collective property rights etc.

Objects and practices produced by historically excluded groups, such as women, migrants, Indigenous agricultural groups etc., will be recognized as heritage (and must be looked after and studied) with greater precision.

Implications for cultural heritage and its conservation

In a positive sense:

- Cultural production of Indigenous groups, minority, and migrant cultural groups, feminist movements, and LGBTIQ+ groups will be known and understood much better and from their own axioms, highlighting their multiple facets and not only those that nation states seek to vindicate.
- This cultural production will be the object of very important reappropriations that may imply rescue, rediscovery or invention of techniques of elaboration, diffusion and, above all, care of objects and own performative actions.

- Forms of protection of monuments and objects will be innovated to allow the possibility of representation and solidarity of various groups that could, in turn, become cultural heritage.
- Amicable resolutions will be more sought after than judicial resolutions.
- Greater spaces for representation in decision-making and training positions of all kinds, including those in the sector in question.
- Incorporation of these trends in legal and administrative frameworks.

In a negative sense:

- Knowledge and dissemination centres will be emptied through claims of possession or symbolic violence; construction of others will be prevented and heritage resources will be used to obtain scarce economic resources in certain regions. Violence could arise in the event that social inequalities and control of certain states over these material and symbolic assets increase. That is, in many cases, the struggle will not actually be about heritage content, but for access to an economic spillover, especially in the Indigenous case, even causing a reemergence of groups once considered vanished.
- Likewise, in cases of participation inequality, they will increasingly seek to challenge symbols considered hegemonic, rejecting and vandalizing them to clarify the violence suffered by underrepresented identities.
- The cultures of these groups will be essentialized, believing that it lies in items and not in the communities.
- Despite the push from international organizations, there may be local, state or national processes of stagnation and prolongation of debates with results that are often not very virtuous from a technical perspective, although they are accurate from social or cultural points of view.[1–25]

References

1. Arrieta, I. (Ed.). (2017). *El género en el patrimonio cultural*. Universidad del País Vasco.
2. Francioni, F., & Vrdoljak, A.F. *The Oxford handbook of international law*. Oxford University Press.
3. Heyes, C. (2020). Identity politics. *The Stanford encyclopedia of philosophy*. https://plato.stanford.edu/archives/fall2020/entries/identitypolitics/
4. Jakubowski, A, Hausler, K., & Fiorentini, F. (2019). *Cultural heritage in the European Union: a critical inquiry into law and policy*. Brill.
5. James, M., & Burgos, A. Race. (2020). *The Stanford encyclopedia of philosophy*. https://plato.stanford.edu/archives/sum2020/entries/race/
6. Iser, M. (2019). Recognition. *The Stanford encyclopedia of philosophy*. https://plato.stanford.edu/archives/sum2019/entries/recognition/
7. Janse, H. (2019). *Changes in gender roles within intangible cultural heritage: a survey of gender roles and gender restrictions within the Yama Hoko Yatai float festivals*. Japan World Heritage Studies.
8. See: Restauradoras con Glitter: https://restauradorasconglitter.com/
9. Fernández-Paradas, A.-R. (2018). Patrimonios invisibles: lineas de investigación desde la perspectiva de género y la recuperación de la memoria LGTB. Vivat Academia, 141: 115–137. https://www.redalyc.org/journal/5257/525756095006/html/
10. UNESCO. (2014). *Igualdad de Género: patrimonio y creatividad*. http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Montevideo/pdf/CLT-LibroGeneroPatrimonioBORRADOR.pdf
11. See: *Cultura gitana patrimonio de la humanidad*. https://institutoculturagitana.es/manifiesto-cultura-gitanacomo-patrimonio-culturalinmaterial-de-la-humanidad_unesco/
12. See: *Migraciones y patrimonio cultural intangible*. https://hemisphericinstitute.org/es/enc05-work-groups/item/1427-enc05-migration.htm

13. UNESCO. (2015). *Patrimonio cultural inmaterial y género*. https://ich.unesco.org/doc/src/34300-ES.pdf 14. See: https://www.genero.patrimoniocultural.gob.cl/651/w3-alt_propertyvalue-48426.html?_noredirect=1
15. Mathilde, V.O. (2020, October 28). *The role of women in the preservation of intangible cultural heritage*. Institut du Genre en Geopolotique. https://igg-geo.org/?p=3133&lang=en
16. Quirosa García, V., & Gómez Robles, L. (2010). El papel de la mujer en la conservación y transmisión del patrimonio cultural. *Asparkía*, 21, 7590. https://www.e-revistes.uji.es/index.php/asparkia/article/view/440/360
17. See: African American cultural heritage action fund. https://savingplaces.org/african-american-cultural-heritage#.YYJCNNbML0t
18. Villegas, H. (2021). *El patrimonio cultural como aliado feminista.* Universidad de Colima. https://portal.ucol.mx/dgpc/ver-noticias-2834.htm
19. Pape, P. (n.d.). *Gender equality: what does cultural heritage got to do with it?* Council of Europe. https://rm.coe.int/strategy-21-factsheetgender-equality-what-does-cultural-heritage-got-/168093c03a
20. Sulbarán Lovera, P. (2017, April 4). *Sinixt, la tribu indígena que "reapareció" 60 años después de que Canadá la declarara extinta*. BBC News. https://www.bbc.com/mundo/noticias-internacional-39461906
21. Redacción. (2021, June 6). *Los siniestros internados donde murieron 6.000 niños indígenas en Canadá*. BBC News. https://www.bbc.com/mundo/noticias-internacional-57369709
22. Colella, S. (2018). Not a mere tangential outbreak: gender, feminism and cultural heritage. *Il Capitale Culturale*, 18, 251–275. https://www.digitalmeetsculture.net/wp-content/uploads/2019/01/Gender_Feminism_CH.pdf
23. Gerstenblith, P. (2016). The destruction of cultural heritage: a crime against property or a crime against people?. *The John Marshall Review of Intellectual Property Law*, 336. https://repository.law.uic.edu/cgi/viewcontent.cgi?article=1382&context=ripl
24. Eichler, J. (2021). Intangible cultural heritage, inequalities and participation: who decides on heritage? The
25. *International Journal of Human Rights*, 25(5), 793–814. https://doi.org/10.1080/13642987.2020.1822821
26. Nicolson, R., Banyasz, D., & Turnbull, E. (2021). *Five critical trends shaping the business and human rights landscape in 2021*. Allens Linklaters. https://www.allens.com.au/insights-news/insights/2021/02/five-critical-trends-shaping-the-business-and-human-rights-landscape-in-2021/

P9. Identity Politics (2)

Keywords	*identity politics, politization, everyday life, bottom-up*
Other STEEP categories	*Societal*
Author	*Gustav Wollentz*

Description

What we today consider to be politically extreme has become normalized in society at large.[1] On the other hand, political neutrality is an extreme position, which means that it is very seldom put forward as a viable option. This means that everyday life has become a political arena where consumption patterns are also political manifestations – the things you buy and the stores you buy them at showcase your political beliefs. This also means that people very seldom meet those who do not share their own political standpoints.[2]

Broad implications

Society has become more divided where mutual understanding is seldom sought after, but it has also led to an increased political awareness in society. People are largely interested in politics. Being able to actively defend the political issues one believes in is a strong merit on the job market. Companies are increasingly forced to take political stands and be visible in political debates, and therefore need employees who are politically competent and have rhetorical skills.

Implications for cultural heritage and its conservation

Politicization of the field of heritage is not only normalized but also seen as unavoidable, and heritage is an effective political instrument.[3,4,5] To be within the heritage field means to act within the political arena, and heritage scholars are often active in political debates and regularly heard in media. They are therefore often public figures and sometimes even minor celebrities, with a fanbase they actively interact with. However, a counter trend to the public politicization of heritage has occurred and made a large impact on society. It is a trend that has developed from the bottom-up, through people who do not necessarily have a degree in a heritage-related field but have started to create heritage experiences focusing on the messiness of everyday life through small-scale museums or initiatives. These experiences deliberately avoid reducing everyday life to identity politics through a focus on chaos, messiness and the contradictory, but they are not apolitical – rather, they are actively positioned as a response to the political instrumentalization of heritage. The idea of a heritage of the banality of everyday life becomes a powerful and potent symbol of an alternative future. Official heritage organizations are slowly picking up on the bottom-up trend of focusing on the small-scale, chaotic and occasionally harrowing experiences of everyday life in the late 2030s.[6–8]

References

1. *The Economist*. (2021, March 1). How far-right extremism is becoming a global threat. https://www.economist.com/international/2021/03/01/how-far-right-extremism-is-becoming-a-global-threat
2. Hofmann, D., Hanscam, E., Furholt, M., Bača, M., Reiter, S., Vanzetti, A., et al. (2021). Forum: populism, identity politics, and the archaeology of Europe. *European Journal of Archaeology*, 1–37. https://doi.org/10.1017/eaa.2021.29

3. USA *Today*. (2021, April 22). America first caucus: how platform language evoked white nationalism. https://eu.usatoday.com/in-depth/news/politics/2021/04/22/america-first-caucus-platform-sets-off-alarm-bellsracism/7261157002/
4. Readfearn, G. (2021, August 6). "Low point" in world heritage committee history as politics "tramples" human rights of the Karen people. *The Guardian*. https://www.theguardian.com/environment/2021/aug/06/low-point-in-world-heritage-committee-history-as-politics-tramples-human-rights-of-the-karen-people
5. Noakes, T.C. (2021, July 23). Victims of communism memorial received donations honouring fascists, Nazi collaborators, according to website. *CBC*. https://www.cbc.ca/news/politics/victimscommunism-memorial-fascists-1.6112809
6. See: Museum of broken relationships: https://brokenships.com/
7. Goskar, T. (2020, December 14). Small museums should spearhead drive to decolonise museum practice. *Museums Journal*. https://www.museumsassociation.org/museums-journal/opinion/2020/12/smallmuseums-should-spearhead-drive-to-decolonise-museum-practice/#
8. Fukuyama, F. (n.d.). *Against identity politics*. The Andrea Mitchell Center for the Study of Democracy. https://amc.sas.upenn.edu/francis-fukuyama-against-identity-politics

P10. Identity Vindication Faced with Heritage Seen as an Element of Subjugation

Keywords	*culture heritage, identity, education, assimilation, resistance*
Other STEEP categories	*Legal | Societal*
Author	*Ibrahima Thiaw*

Description

Heritage and culture are powerful means of legitimizing but also of subjugating the Other, particularly in multicultural contexts based on unequal political and social relations. In this light, cultural heritage, wherever it is, is very often the product of old and present power struggles. Each group tries to give itself legitimacy by imposing its heritage, either coercively or more subtly through education or cultural and linguistic assimilation. However, whatever the strategy, it leaves wounds in dominated peoples. The American science fiction series "Star Trek-The Next Generation," through the culture of the Borgs, which reproduce by assimilating (which here has the same meaning as annihilation or absorption) others, shows well that resistance is the only guarantee of survival.

Since 2015, the "Rhodes Must Fall" movement in South Africa has inspired numerous protests against racism and the persistence of social injustices to become an almost global phenomenon, particularly with the "Party of Indigenous People of the Republic" in France or even "Black Lives Matter" in the United States and the United Kingdom.[1] In Canada, Indigenous protesters toppled statues of Queen Victoria and Queen Elizabeth in Winnipeg during rallies paying tribute to children found in anonymous graves at the sites of former boarding schools.[2] These government-funded compulsory schools were run by clerics in the nineteenth and twentieth centuries with the aim of assimilating native youth into Anglo-Saxon culture.[3,4] Similar scenes have taken place in the United Kingdom, where "Black Lives Matter" protesters ransacked a statue of slave trader Edward Colston and threw him in a harbor in the city of Bristol.[5] In Senegal, the "*Place de l'Europe*" in the mythical Island of Gorée, known for its past in the transatlantic slave trade, becomes, "*Place de la Liberté*," and "*Place Faidherbe*," named after the French governor of the colony of Senegal in the middle of the nineteenth century, becomes "*Baya Ndar*," from the local name of this famous colonial city.[6,7,8] In Mexico, violent feminist demonstrations have led to the destruction of many monuments and statues. In 2019, for example, the monument *Angel de la Independencia de Mexico* was disfigured by feminist protesters. In response, Jose Alfonso Suarez del Real expressed his deep sadness at these acts, which he described as "vandalism" against this monument, which, according to him, "belongs to the Mexican people, not to the State."[9] But are these really acts of vandalism or self-liberation struggles? Do all Mexican people share the same feelings about this monument? How should we preserve such places of memory without continually reproducing symbolic and psychological violence against some groups or social layers?

Broad implications

All these identity claims reflect a burning desire to be accepted equals, while distinguishing unique identities. Ironically, this self-identification/self-representation and the request to be accepted as such by others are all too often acquired through violence. In the next decade, conflicts of identity and memory will accelerate and, beyond the racial, religious and colonial aspects prevailing in the current moment will add issues of gender and sexual orientation.

Implications for cultural heritage and its conservation

This will result in the dismantling and desanctification of many places of memory and the rewriting of new narratives of local and national history at the cost of intense politico-judicial battles that will strain the cultural institutions of countries around the world.

References

1. *Africanews*. (2015, December 28). Frederik de Clerk qualifie le mouvement « Rhodes must fall » de « bêtise ». https://fr.africanews.com/2015/12/28/frederik-de-clerk-qualifie-le-mouvement-rhodes-must-fall-de-betise/
2. *BBC News*. (2021, June 24). Canada: 751 unmarked graves found at residential school. https://www.bbc.com/news/world-us-canada-57592243
3. Honderich, H. (2021, July 15). Why Canada is mourning the deaths of hundreds of children. https://www.bbc.co.uk/news/world-us-canada-57325653
4. Levinson-King, R. (2019, October 1). Why Canada is mourning the deaths of hundreds of children. https://www.bbc.co.uk/news/world-us-canada-49884387
5. *BBC News*. (2021, July 1). Canada Day: Discovery of more unmarked graves fuel calls to cancel holiday. https://www.bbc.com/news/world-us-canada-57674682
6. *Le Point Afrique*. (2020, October 2). Sénégal : la place Faidherbe de la ville de Saint-Louis devient Baya Ndar. https://www.lepoint.fr/afrique/senegal-la-place-faidherbe-de-la-ville-de-saint-louis-devient-bayandar-02-10-2020-2394570_3826.php
7. Monénembo, T. (2020, August 14). « Statues, héros : et si nous, Africains, balayions devant notre porte ? ». *Le Point Afrique*. https://www.lepoint.fr/afrique/tierno-monenembo-statues-heros-et-si-nous-africains-balayions-devantnotre-porte-14-08-2020-2387753_3826.php
8. See: FRANCE 24. SÉNÉGAL : Louis Faidherbe doit il tomber ? [video] https://youtu.be/t37ga-QI-kc ; Gorée News. Ile de Gorée: La Place de la Liberté [video]. https://youtu.be/9a1XeBeavfc ; chroniques tv. Saint-Louis: la place Faidherbe porte désormais le nom de “Place Baya-Ndar” [video]. https://youtu.be/ofleg9Csu6o
9. *Associated Press*. (2019, August 17). Mexico City assesses damage after violent feminist protest. VOA. https://www.voanews.com/americas/mexico-city-assesses-damage-after-violent-feminist-protest#&gid=1&pid=1

P11. Inequality

Keyword	*inequality*
Other STEEP categories	*Economic | Societal | Technological | Legal | Environmental*
Author	*Stefan Michalski*

Description

There are several "intersecting" forms of inequality, and many are trending towards worse in the next 50 years, assuming a "business as usual" future.[1]

Racial inequality within nations has been best analyzed for the United States. It is argued that the underlying economic mechanism (supported by systemic racism) is a huge (10:1, white to black) disparity in median family wealth, which passes from generation to generation and leads to inequalities in education, income, employment and rate of incarceration. Barring massive state reparations, it will take several generations and effective policy initiatives, as well as good will on the part of white people, to undo that mechanism. Although there is a large body of intelligent proposals on why and how to slowly move to a better society, there is little-to-no literature projecting optimism for the next few decades – rather, the corpus suggests, it will probably get worse. This pattern is likely to repeat in other wealthy countries where Indigenous communities had their resources stolen long ago, or countries where influxes of visible minority immigrants arrive without family wealth.[2]

Gender equality in terms of income in wealthy countries appears to be slowly improving. The US data show that median income ratio steadily rose from 60% to 80% in the last 40 years, so should reach parity by 2060. This data mask, however, a bigger inequality: women work less for income and more in unpaid care. In the United States and other wealthy countries, women perform unpaid care at a ratio of 2:1, compared to men. This climbs to 5:1 in less wealthy countries.[3]

Global inequality trends: When modeling up to 2050, World Inequality Lab states, "whatever the scenarios followed, global inequalities will remain substantial" (both between countries, and within countries).[4]

There are "wild cards" discussed by others, but not used in any quantitative modeling reviewed above:

1. Automation will eliminate jobs, but not necessarily at the bottom of the scale. It is suggested that physical care tasks will still remain unautomated, but manual labor, machine operation and middle bureaucratic tasks will disappear. This will tend to "hollow out" the middle class.

   > "There needs to be ways for people to live fulfilling lives even if society needs relatively few workers. There is a danger of disruptions and unrest from large groups of people who are not working… We need to think about ways to address these issues before we have a permanent underclass of unemployed individuals. In short, if we don't address these issues, the gap between the haves and havenots will not only widen and deepen, but also place our entire social structure in great jeopardy."[5]

2. Demographic shifts are going to strike wealthy countries hard by mid-century as too many old people will need care with not enough young people generating wealth. Africa is an outlier, as it will have a very large working age population.

3. More pandemics? One can assume that these pressures will tend to set back some hoped-for reductions of economic inequalities.

Broad implications

On the one hand, Stephen Pinker (Better Angels of Our Nature) offers a cheerful and long-term trend (millennia), whereby we have become a less violent, better educated and more egalitarian world. That said, the prognosis for the next century may still be a big turn in the wrong direction, with several plausible reasons to worry: climate change, demographic shift and intelligent automation at never-before-seen levels. What seems clear from the literature on inequality is not what might be achieved in the next few

decades, but what all people of good will are working to achieve: the reduction of all forms of inequality – particularly consumption of the world's resources. Sustainability and climate change reduction will only occur if income groups and nations agree on an equitable allocation of the costs.

Implications for cultural heritage and its conservation

It is argued that family wealth and its intergenerational transfer, rather than simply income, is the economic mechanism behind the maintenance of chronic inequality for Black people in a white America, Indigenous people worldwide and poor (visible minority) immigrants arriving in a wealthy country.[6] This can be extended to the idea of cultural heritage as an economy, where dominant groups accumulate their heritage "wealth" over generations, while the oppressed are restrained from accumulation or told that their currency is worthless. Indeed, their heritage and land *was* stolen in the past, and what remains now is often appropriated by well-meaning members of the still-dominant group. If this analysis is correct, then the corrections may be analogous too: e.g., reparations, not just restitution of artefacts but financial/land compensation.

Short term: Some self-awareness of this by heritage agencies has occurred already, and can be expected to grow. Art galleries have discovered that artists who were women or Black or Others have been there, forgotten and devalued, all along. They are being "discovered"! Some historic plantation houses in the United States are developing sites and programmes about the previously invisible Black occupants and their forgotten heritage (and not all white visitors approve).

Medium term: Museums (some) are moving slowly towards restitution, especially as politicians discover its value to their electorate, e.g., Macron. Some wealthy countries (Sweden, the Netherlands etc.) have long supported capacity-development in the heritage sector of less wealthy countries. Other museums and agencies will be under pressure to follow such examples.

Medium and long term: One thing seems sure: museums will remain under heavy pressure by simple morality (i.e., trying to avoiding hypocrisy) to develop and maintain leadership and provide context and learning that address inequality in all its forms, because it's not going away by itself. Ironically, whether inequality gets better or worse, cultural heritage agencies will be expected to be a source of hope. And finally, remember the previous quote about the effect of automation: "There needs to be ways for people to live fulfilling lives even if society needs relatively few workers."[7] Cultural heritage, its creation, its preservation and its wealth for all, is the answer!

References

1. For more data on various forms of inequality, see: https://inequality.org/
2. Inequality.org. (n.d.). *Racial economic inequality*. https://inequality.org/facts/racial-inequality/
3. Inequality.org. (n.d.). *Gender economic inequality*. https://inequality.org/facts/gender-inequality/
4. World Inequality Lab. (n.d.). *Part V: tackling economic inequality*. WID.world. https://wir2018.wid.world/part-5. html
5. Checco, L. (2015, November 5). *The inequality of the future*. Inequality.org. https://inequality.org/research/inequality-future/
6. Mineo, L. (2021, June 3). Racial wealth gap may be a key to other inequities. *The Harvard Gazette*. https://news.harvard.edu/gazette/story/2021/06/racial-wealth-gap-may-be-a-key-to-other-inequities/
7. West, D.M. (2015). *What happens if robots take the jobs? The impact of emerging technologies on employment and public policy*. Centre for Technology Innovation at Brookings, Washington DC.

P12. Inequality (Race, Gender, Sexuality, Class) and the Impacts Thereof

Keywords	*social justice, social cohesion, heritage uses*
Other STEEP categories	*Societal | Legal*
Author	*Thabo Manetsi*

Description

There seems to be consistent and recurring communication (messages and promotion) by nation/states, nonprofit organizations (e.g., human rights groups) and heritage organizations (e.g., UNESCO Intangible Cultural Heritage programme) that heritage can serve to address "social ills" in society, such as inequality, racism and various abuses of basic human rights. The perceived expectation here is that heritage can serve as a panacea for societal problems and that it can engender a culture of social justice, social cohesion and tolerance, among others. However, despite this kind of messaging and communication, there is little evidence to show that heritage can address and respond adequately to societal problems. Also, it is noteworthy to observe the growing manifestation of "heritage polarization," where heritage is used for expediency and politicized to propagate factional interests, and advance the interests of certain political parties, religious groups, cultural groupings and social movements. This has been a growing global trend unabated.

Conversely, in many developing states, there has been an upsurge of cultural activism by "Indigenous and native" groups to advance their birth rights and lay claims for ownership and accessibility of their heritage – often a heritage and legacy marginalized or dispossessed by the colonial project, especially in former European colonies.

Broad implications

Global trends illustrated that "Indigenous and native" communities will continue to seek justice for recognition of their legacy and ownership rights to their heritage. Conversely, it would appear that heritage will continue to be used for expediency and to serve the interests of certain groupings in society.

Implications for cultural heritage and its conservation

Drawing on the aforementioned, the dominant global politics on uses of heritage to advance certain interests will prevail and inform the allocation/distribution of resources (including funding) to support heritage work, including the work of ICCROM, which is largely informed by the mandate of European Member States (state parties).

P13. Inequality (Race, Gender, Sexuality, Class) and the Impacts Thereof: Gender

Keywords	*genders, intersectionality, racism, inclusion, shecession*
Other STEEP categories	*Societal | Economic | Environmental | Technological*
Author	*Sophia Labadi*

Description

The Global Gender Gap Index benchmarks the evolution of four key dimensions (Economic Participation and Opportunity; Educational Attainment; Health and Survival; and Political Empowerment) and tracks progress towards closing these gaps over time. The 2021 Global Gender Gap Index reveals that it will take 135.5 years to achieve equality in these areas if the current situation prevails.[1]

Some of the gains in gender equality and women's rights that have been achieved over the last few decades[2] could be rolled back due to increased risk of regular sanitary crises and extreme climatic events, exacerbating trends that emerged during the COVID-19 pandemic.[3] This would constitute a prolonged "shecession," where women, particularly those from ethnic minorities and of low economic status, would be more likely to be laid off because they are overrepresented in sectors particularly vulnerable to shutdowns, such as catering.[4] Additionally, new pandemics would see women bearing additional household duties and caring responsibilities. Since women are often paid less than their male partners, this would again lead to a high percentage of them leaving the workplace.

Global Trends 2040 also reports that people will gravitate towards like-minded groups, which might lead to increased micro- and macroaggressions and xenophobia towards LGBTQIA+ individuals.[5]

Broad implications

Many governments and international organizations will put women and girls at the centre of their policies and recovery efforts, making them a priority area, as requested by the UN Secretary General.[6]

To counter regression on gender equality, gender-based violence and issues of male supremacy might be better known, reported and acted upon by activists and activist organizations, such as Black Lives Matter although it may be difficult to upscale these initiatives.

As the 2020 Women in the Workplace report warns, decreasing numbers of women in the workplace will lead to less productivity and innovation.[7]

Implications for cultural heritage and its conservation

Cultural heritage institutions will likely continue to reflect and reproduce some inequalities facing different genders, including a lack of representation at leadership levels. As a result of the BLM movement, staff working in the sector might be more diverse, for example, including more women from ethnic minorities, although in many cases they might receive lower salaries and suffer structural discrimination.

In the Global South, heritage projects on empowering women might continue to train them to work predominantly in the tourism or handicraft sector, without necessarily ensuring that this corresponds to what they want or what is suitable for them.

Implications for ICCROM: ICCROM should seize the opportunity to implement projects that address gender stereotyping and inequalities in the field of heritage in a meaningful and inclusive manner. Current projects do not address issues of gender violence; genders beyond the male/female binary; and male supremacy. One such meaningful and inclusive project could be to run a high visibility programme on the history of heritage preservation, focusing on key historical and contemporary female figures, to address their invisibility and the effects of male supremacy and other power injustices, and to encourage more women to join the field. Another such project could give voice to women and LGBTQIA+ conservators and explore how heritage can help them address some of the issues, concerns and inequalities they face. A subsequent phase of this project would address some of these issues.

References

1. World Economic Forum. (2021). Global gender gap report 2021. https://www.weforum.org/reports/ab6795a1-960c-42b2-b3d5-587eccda6023
2. United Nations. (n.d.). Goal 5: achieve gender equality and empower all women and girls. UN Sustainable Development Goals. https://www.un.org/sustainabledevelopment/gender-equality/
3. Deloitte. (2021). Women @ work: a global outlook. https://www2.deloitte.com/global/en/pages/about-deloitte/articles/women-at-work-global-outlook.html
4. Gupta, A.H. (2020, May 9). Why some women call this recession a "Shecession." The New York Times. https://www.nytimes.com/2020/05/09/us/unemployment-coronavirus-women.html
5. The National Intelligence Council. (2021). Global trends 2040: a more contested world. https://www.dni.gov/index.php/gt2040-home/gt2040-media-and-downloads
6. UN, Goal 5.
7. McKinsey & Company. (2021). Women in the workplace 2021. https://www.mckinsey.com/featured-insights/diversity-and-inclusion/women-in-the-workplace

P14. Sustainable Development Post-2030

Keywords	*sustainable development, accountability, collaboration, governance*
Other STEEP categories	*Societal | Economic | Legal | Environmental*
Author	*Henry McGhie*

Description

Increasing access to information, notably via the Internet, has fostered the growth of minilateralism in sustainable development agendas. The failure of governments/nation states to address sustainable development challenges has been increasingly recognized and is likely to continue; the trajectory of sustainable development agendas has been to increase use of goal-based approaches to invite cross-sector participation, which is likely to continue.

Broad implications

Increasing emphasis on inclusive decision-making is likely to continue and to be a requirement of good governance, transparency and accountability. These approaches are likely to influence the activity of sectors through increasing participation in shaping policies and agendas, rather than delivering the agreements made between states but with little follow-up or accountability. As sectors become increasingly competent in participating in sustainable development, greater collaboration and the need for opportunities for coherence will be more needed and called for. Continuing development of reporting and accounting processes will create more opportunities to share and scale up sustainable development activity. The UN's recent experiences of seeking large-scale participation in shaping its agenda to create opportunities for participation and strengthen a social mandate are likely to increase in future. A desire to participate in sustainable development agendas by sectors will likely lead to greater influence in shaping agendas in local and national settings, if not in international ones, and require sectors to prioritize sustainable development (rather than narrow professional) principles. International collaboration within sectors will likely become increasingly important in light of failures at the state level. Future multilateralism/minilateralism is likely to empower the individual (in society) in terms of their contribution to sustainable development, and to demand greater accountability from governments, sectors and institutions, including the cultural sector, in supporting rights of them and others. Managing impacts – positive and negative – will become increasingly important in the face of further and deeper social and environmental challenges. Sustainability reporting is likely to become the norm and the expectation. Contributions to partnerships and beyond institutions' own interests are likely to become increasingly important as a measure of value creation.

Implications for cultural heritage and its conservation

With greater familiarity with sustainable development, the principles of sustainable development (rights, full range of costs and benefits) will likely become part of the expectation of cultural heritage institutions, both within and outside the sector. Failure of heritage institutions to address their negative impacts may result in increasing tension with special interest groups and broader society. Rights-based and inclusive approaches about what constitutes heritage, what it is for, who it belongs to and how it can be better mobilized by society could lead to increasing challenges to institutions, such as ICCROM and individual institutions. Heritage is likely to be at least partly instrumentalized, and directed

more towards future-making than documenting the past. The heritage sector is likely to have to work in closer partnership with other sectors.[1–5]

References

1. Valovaya, T. (2020, December 9). *The future of multilateralism: how international organizations are vital to building back better*. International Trade Center. https://www.intracen.org/article/The-future-of-multilateralism/
2. Moret, E. (2016). *Effective minilateralism for the EU: what, when and how*. European Union Institute for Security Studies. https://www.iss.europa.eu/sites/default/files/EUISSFiles/Brief_17_Minilateralism.pdf
3. Kharas, H., Snower, D.J., & Strauss, S. (2020). The future of multilateralism. Global Solutions Initiative. https://www.global-solutions-initiative.org/press-news/the-future-of-multilateralism/
4. Internet Society. (2015). Policy brief: internet governance. https://www.internetsociety.org/policybriefs/internetgovernance/
5. Web Science Institute. (2021). *Four internets: data, geopolitics, and the governance of cyberspace*. University of Southampton. https://www.southampton.ac.uk/wsi/research/four-internets.page

Environmental

En1. Biodiversity Loss

Keywords	*biodiversity, food security, natural history collections, science*
Other STEEP categories	*Societal | Economic | Legal*
Author	*Henry McGhie*

Description

Biodiversity exists at three main levels: genetic diversity, species diversity (diversity is packaged up into species) and habitat or environmental diversity. Biodiversity of the future is likely to be greatly impoverished in comparison to that of today. Current challenges identified are likely to persist beyond 2035: habitat conversion, overexploitation, climate change, invasive species and pollution. On current trajectories, human population growth is likely to be particularly high in Southeast and South–East Asia, and Central Africa – areas that currently contain a lot of distinctive biodiversity. Climate change will continue to redistribute biodiversity. Technological advances will result in novel ways of both understanding and exploiting biodiversity, both in collections and in the wider environment, with wide implications.

Broad implications

Biodiversity loss and redistribution will have profound impacts. Environmental degradation will continue to increase risk of pandemics, while biodiversity redistribution as a result of climate change will lead to novel combinations of risks. Increasing population in areas where food production is increasingly challenging is likely to lead to deregulation of, for example, genetic modification of food, disease risk and need for synthetic food. Nature's ability to contribute to climate mitigation will be reduced. Highly biodiverse areas may be more forcibly set aside. Value of nature and its services may be increasingly factored into accounting processes. Increasing demands from countries where biodiversity has been exploited by other countries will be likely to result in greater litigation, and regulation of biodiversity.

Implications for cultural heritage and its conservation

Biodiversity in collections will become of increasing importance, as "wild" biodiversity declines. Environmental changes will result in the modeling potential of collections to understand the current wider world being reduced. The need for ongoing and current understanding of changes may result in greater cooperation among agencies (scientific, biodiversity managers), and reinvigorated collecting using novel methods combined with traditional approaches. Liberating collections information in online aggregators will increasingly become a requirement demanded by source countries. Traditional knowledge and other forms of intangible cultural heritage will become of increasing importance, as both documentary evidence and it integrated into biodiversity management. The need for continued preservation of specimens of increasing value may result in their storage in novel ways to promote long-term storage. Traditional taxonomy may become more important, although skills shortages are likely on current trajectories. Regulation of biodiversity (for trade, commercial exploitation, access, and benefits sharing) will very likely reduce ease of collection and cross-border lending. Criticism of the roles of museums and collecting to biodiversity loss through collecting/overcollecting may become increasingly prominent and vocal, presenting additional challenges to undertaking or reinvigorating the roles outlined above.[1–4]

References

1. Gardner, J.L., Amano, T., Sutherland, W.J., Joseph, L., & Peters, A. (2014). Are natural history collections coming to an end as time-series? *Frontiers in Ecology and the Environment*, 12(8), 436–438. https://doi.org/10.1890/14.WB.012
2. Sutherland, W.J., Broad, S., Butchart, S.H.M., Clarke, S.J., Collins, A.M., Dicks, L.V., et al. (2018). A horizon scan of emerging issues for global conservation in 2019. *Trends in Ecology & Evolution*, 34(1), 83–94. https://doi.org/10.1016/j.tree.2018.11.001
3. Sutherland, W.J., Dias, M.P., Dicks, L.V., Doran, H., Enwistle, A.C., Fleishman, E., et al. (2020). *Trends in Ecology & Evolution*, 35(1), 81–90.
4. Franks, P. (2021, September 3). *Does the global biodiversity framework offer a plan B for protected areas? International Institute for Environment and Development.* https://www.iied.org/does-global-biodiversityframework-offer-plan-b-for-protected-areas

En2. Climate Change Adaptation (1)

Keywords	*adaptation, transformation, bottom up, partnership, STI*
Other STEEP categories	*Political | Economic | Societal | Technological | Legal*
Author	*Ranit Chatterjee*

Description

Focusing on mitigation alone is not enough to address the inevitable consequences of climate change. Hence, adaptation is very important for preparing for such instances. The traditional predications are failing to counter climate change and related extreme weather events. Further, more and more communities are living with higher risk of floods, droughts, water scarcity, pollution and other impacts of climate change, and adjusting life to low impact–high frequency events, rather than targeting high impact–low frequency events is guiding new adaptation pathways. A sectoral adaptation approach is taken mainly by developing and small island countries. The efficacy of the coping techniques of traditional communities will possibly decline in the face of climate change uncertainties. Targeting nature-based solutions for adaptation and targeting local issues are driving innovations in climate change adaptation. Innovations are driving the adaptation and mitigation for climate change, but the numbers of innovations for adaptation in the last three decades has remained the same whereas innovations in mitigation is steadily growing. Innovations and technology transfer are driven by adaptation capacity of a country instead of being need-based, mainly in developed countries.

Broad implications

- A shift in focus from incremental adaptation to transformational adaptation will lead to actions for longer engagement shaping a major change. The focus will shift from urban to peri-urban in the coming years.
- Data show a growing trend of commitments and investments in climate change adaptation in recent years.
- There is increasing agreement on unifying climate change and disaster risk management that might lead to emergence of climate and disaster resilience as a terminology to be used in future, replacing "adaptation."
- Science, Technology and Innovation (STI) is emerging as the key thrust area for climate change adaptation. Early warning is an emerging area in adapting and building capacities of at-risk communities. The focus needs to be need-based, focusing on the developing and least developed countries (LDCs).
- Adaptation would require a focus on building multiparty partnerships. Bottom-up adaptation is emerging with focus on communities/people at risk to make necessary transformations to manage uncertainties.
- The experience of the COVID-19 pandemic will guide the coming decade, especially on disaster risk and climate change adaptation. One area that has found limited traction is public health (cognitive, social well-being and physiological) and heritage.
- Issues of heat stress, urban heat island effect and other such emerging themes are being targeted in urban planning and environmental management.
- Long-term adaption policies are being prepared by both national governments and local authorities, suggesting a shift from global to national and local actions.

Implications for cultural heritage and its conservation

- In 2006, climate impact assessment was mandatory for World Heritage sites, thus paving the way for concentrated actions towards climate change adaptation. The year 2015 was a landmark year due to the recognition of cultural heritage as an important area for climate change adaptation. Many times, actions taken as a positive step for adapting climate change end upin the long term as a maladaptation process. This may be due to reasons like lack of futuristic planning, incremental change in accounted risk and lack of funds, among others. Having said that, the research on adaptation of cultural heritage is limited. The barriers to climate change adaptation fall under four heads, namely: institutional, technical, sociocultural and financial.
- Heritage adaptation governance is an area that is important for proper management of heritage sites and its sustainability. To assist decision-making, there is a need for evidence-based studies. Furthermore, lack of contextualized guidelines and standards to support decision-making is an impediment to selecting of appropriate adaptation methods.
- The innovations can be extended beyond technological solutions to investigate heritage financing and heritage continuity/sustainability planning, especially in developing countries and LDCs.
- Bringing heritage-linked research connecting Indigenous knowledge systems and citizen science can pave transition from adaptive science to adaptive practices for heritage conservation. Capacity-building and training of traditional communities to update the knowledge base to adapt and cope with changing climate patterns will drive bottom-up adaptation, which will lead to a long-term ownership.
- Heritage sector stakeholders can build partnerships with private companies for conservation, planning and training of human resources for heritage restoration and resilience.

En3. Climate Change Adaptation (2)

Keywords	*climate change adaptation*
Other STEEP categories	*Political	Economic	Societal	Technological	Legal*
Author	*Stefan Michalski*

Description

The term "adaptation" here refers to the reduction of vulnerability to climate change. In some organizations and publications, the more upbeat term "resilience" is replacing the more passive term "adaptation," but in the case of climate change, both are an admission that humans have been unable to stop themselves from making the mess in the first place.

It is difficult to summarize better than these bites from the press release of the Global Adaptation Summit (GAS), January 2021:

> Many of the measures needed to reduce people's vulnerability to extreme weather are well understood and relatively cheap to implement, from early warning systems against storms, to planting trees that help prevent flooding and landslides. However, funding to take such preventive measures is currently inadequate. The UNEP Adaptation Gap Report 2020 finds that while nations have advanced in planning, huge gaps remain in finance for developing countries and bringing adaptation projects to the stage where they bring real protection against climate impacts such as droughts, floods and sea-level rise.
>
> Unless we step up and adapt now, the results will be increasing poverty, water shortages, agricultural losses, and soaring levels of migration with an enormous toll on human life.
>
> According to the Commission, every euro invested in climate adaptation projects ultimately prevents up to 10 euros of climate damage.
>
> According to a new State and Trends report, the first in a series that will assess progress on climate adaptation, global climate adaptation funding needs to increase by ten-fold, to US$300 billion a year, to meet estimates of what is needed to respond to escalating climate risks.[1]

Both GAS summit and multinational business consultants marketing online stress the programmes and strategies actively pursued by cities and consortiums of cities, where, by 2050, 70% of the world population will live. Not surprisingly, since many major cites began as seaports, storms and flooding are key concerns. Scientists have noted that some solutions have backfired: after communities built levees and dikes, intensive urbanization followed in the "protected" areas, and when these barriers were breached by higher seas than predicted a few years earlier, even greater losses occurred.[2] *Conclusion*: True resilient design recognizes uncertainty in current "probable" scenarios, and builds in worst-case scenarios.

Broad implications

Control of coastal flooding will affect all nations with coastal cities, but it is the less wealthy nations that will see larger populations affected and have less resources for adaptation. They will rely on population movement to higher ground, where possible. Even wealthy nations

will need to make harsh decisions about what to keep and what to abandon. Just recently, the US federal government's highly subsidized flood insurance programme for coastal regions announced that premiums for private dwellings will rise towards actual risk costs, thereby using financial pressures to force individuals to move to safer ground. Smaller museums in such areas will have to follow. The National Trust already has accepted that coastal erosion will continue to destroy historic monuments.

Implications for cultural heritage and its conservation

Medium term: There will be a huge shift in national and urban budgets towards adaptations that are expensive (i.e., levees, dikes, massive pumps), which will rob the budgets for heritage above and beyond their budgets for adaptation. Will Venice be able to build an even bigger dam? Will Tate storage, or London itself, be able to build flood control of the rising Thames? Threatened coastal regions considered of low economic importance or too expensive to protect will be abandoned. The presence of a heritage site has not been a good enough reason in the past to avoid flooding. That said, inasmuch as the general population needs to be informed and engaged in all those adaptations that are behavioral, or low-budget individual actions, museums must play a role in providing that information, engagement, and to some extent, the necessary optimism that it all makes sense.[3,4]

References

1. United Nations Climate Change (2021, January 25). *Building resilience in a warming world – Global Adaptation Summit 25–26 January*. https://unfccc.int/news/building-resilience-in-a-warming-world-global-adaptationsummit-25-26-january
2. *New Scientist*. (2021, August 21). Special issue on climate change. 3348.
3. CAS. (2021). Press release: decade of action launched at CAS 2021. https://www.cas2021.com/press/documents/media-articles/2021/01/26/cas-2021-wrap-up
4. Boland, B., Charchenko, E., Sahdev, S., & San Jose-Ballesteros, M. (2021, September 16). *Ensuring adaptation and resilience to climate change*. McKinsey. https://www.mckinsey.com/business-functions/operations/our-insights/ensuring-adaptation-and-resilience-to-climate-change

En4. Climate Change Adaptation (3)

Keywords	*climate, education, governance, risk, change*
Other STEEP categories	*Political | Societal | Economic | Legal*
Author	*Henry McGhie*

Description

Climate change adaptation here refers to measures to cope with climate impacts. Climate change is guaranteed for foreseeable future, whatever happens in terms of reduction in emissions. Failure of climate mitigation and ongoing reduction in nature's ability to absorb emissions and reduce the effects of climate change will increase the need for successful adaptation. Climate adaptation is typically thought of in three categories: structural/physical (engineering, technological and ecosystem-based), social (educational and behavioral) and institutional (economic, taxation, laws and policies).

Broad implications

With increasingly severe climate impacts, climate adaptation will become of increasing importance in planning and funding decisions and directions. Public spending will likely be directed increasingly to successful adaptation (e.g., Department for Environment, Food and Rural Affairs 2010 principles).[1] Climate adaptation may result in fundamental calls for climate justice and rights-based approaches in the face of inequality of contributions and impacts. Inequality will be further highlighted, with wealthy communities, sectors and countries favoring adaptation over mitigation measures.

Implications for cultural heritage and its conservation

Cultural institutions could play an increasing role in public awareness, information, and public participation activities to support people, communities and society to adapt to climate change and build resilience. Defining what constitutes public value in light of increasingly challenging climate impacts is likely to prioritize the needs of vulnerable social groups and communities over simplistic measures of visitor numbers. Notions of permanence or "forever" of heritage preservation are likely to be increasingly recognized as impossible, false or undesirable. As cultural heritage, in collection and *in situ*, is increasingly challenged by climate impacts, professional practice is likely to have to radically pivot from conservative to more adaptive approaches of managed change; proactive approaches to managing heritage in light of climate impacts will be required to ensure that valued heritage is not lost. Where change cannot be prevented, processes of managed change involving both specialists and communities will be required, but which are presently hardly developed.

Unpredictable and more extreme climate impacts will result in losses of cultural heritage through both direct damage and damage to institutional integrity and effectiveness (through, e.g., different requirements in different climates, novel pests, inability to retrofit, or upgrade environmental systems). The cultural heritage sector is likely to have to adopt and embed climate adaptation into short-term planning, and risk registers will become increasingly important and used as practical tools. Professional practice, from training onwards, is likely to focus more extensively on managing impacts and managed change. The inability of the sector to change in line with the needs of climate adaptation may cause a loss of public trust and challenges to existing institutions – both single institutions and cross-sector bodies, such as UNESCO and ICCROM. Climate adaptation will require the

relocation of large numbers of people, avoiding both short- and long-term climate impacts. They are likely to want to take some of their cultural heritage with them, which may lead to tensions with cultural heritage institutions. Ongoing climate impacts mean that adaptation responses are not likely to be in "one step," but in many steps. Failure of climate adaptation may see cultural heritage change hands in terms of governance, with increased state/local authority intervention or increased public intervention, depending on context, but often in the context of increased losses.[2–5]

References

1. Department for Environment, Food and Rural Affairs (DEFRA). (2010). *Defra's climate change plan 2010. DEFRA.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69254/pb13358-climate-change-plan-2010-100324.pdf
2. Högberg, A., Holtorf, C., May, S., & Wollentz, G. (2017). No future in archaeological heritage management? *World Archaeology*, 49(5), 639–647. https://doi.org/10.1080/00438243.2017.1406398
3. DeSilvey, C., Fredheim, H., Fluck, H., Hails, R., Harrison, R., Samuel, I., & Blundell, A. (2021). When loss is more: from managed decline to adaptive release. *The Historic Environment: Policy & Practice*. https://doi.org/10.1080/17567505.2021.1957263
4. OECD, UN, & World Bank Group. (2018). *Financing climate futures: rethinking infrastructure*. https://www. oecd.org/environment/cc/climate-futures/synthesis-financing-climate-futures.pdf
5. United Nations. (2020). *Financing for sustainable development report 2020: report of the Inter-agency Task Force on Financing for Development*. https://developmentfinance.un.org/sites/developmentfinance.un.org/files/FSDR_2020.pdf

En5. Climate Change Impacts

Keywords	*climate change reduction*
Other STEEP categories	*Political	Economic	Societal	Technological*
Author	*Stefan Michalski*

Description

Prediction of climate change (CC) impacts is an easy topic to document. The latest IPCC report[1] by Working Group 1 is the first part of what will be the full IPCC Sixth Assessment Report due in 2022. Among other things, it covers humans' influence on the climate system, extreme weather, and the current and future state of the climate. Every major news outlet (*The Guardian*, *The New York Times*, etc.) and governmental agency (United Nations, World Meteorological Organization, national agencies, etc.) has published a wealth of online info. A succinct summary is in the 2020 report of the World Meteorological Organization:

> All key climate indicators and associated impact information … highlight relentless, continuing climate change, an increasing occurrence and intensification of extreme events, and severe losses and damage, affecting people, societies and economies … The negative trend in climate will continue for the coming decades independent of our success in mitigation.[2]

More specifically, these include increased heatwaves,[3] fires, storms, rainfall and drought. The long-term, dominant effect may be sea rise: IPCC predicts 0.3–1.1 m by 2100, but many researchers now favor 2 m (and up to 8 m by 2200). Between low- and high-emission rate scenarios, by 2100, between 190 million and 630 million people will be displaced by rise in sea level.[4] If nothing is done to change the cause of climate change in this coming decade, the predictions will start to use terms, like tipping point, catastrophe and existential crisis.[5–7]

Recently, there has been a trend to link climate change to several other crises in the natural world – in particular, biological diversity, with causality going both ways. That the climate affects the biosphere is easy to understand, but the reverse is also being more commonly documented – not just carbon sequestration by trees but also by huge, poorly understood ecosystems in the oceans.

Broad implications

Cc will have huge economic impacts: massively increasing costs of recovery from natural disasters, increased energy demands for cooling, and loss of habitable and agrarian regions in areas already marginal. Direct climate change impacts (above), plus its economic impacts, finally have human impacts: increase in deaths from heat waves and natural disasters, shifts in global spending away from so-called "nonessential" activities, such as cultural activities, as occurred during the COVID-19 pandemic, and a general social malaise, again not unlike what resulted from the COVID-19 lockdown.

Loss of habitable areas of the globe in economically depressed regions will result in much greater human migration pressures than have occurred to date.

Implications for cultural heritage and its conservation

Short-term scale: National Trust, United Kingdom, has already adapted its advice on building maintenance to respond to the increased frequency of severe rainfall. Youth groups and

activists (e.g., Greta Thunberg) are questioning the culpability and relevance of status quo institutions, such as museums.

Medium-term scale: In the same way that hydroelectric dams flooded archaeological sites, sea level rise will bury coastal and delta sites. Since the heritage economy is linked to tourism, consider this from IPCC 2014:

> The costs of future climate change impacts on coastal tourism are enormous … in the Caribbean community countries alone, rebuilding costs of tourist resorts are estimated US$10–23.3 billion in 2050. A hypothetical 1 m sea level rise would result in the loss or damage of 21 airports, inundation of land surrounding 35 ports, and at least 149 multimillion dollar tourism resorts damaged or lost from erosion to the coastal beach areas.[8]

At the very least, the conservation field (and ICCROM) will be asked to advise on risk management, shifting preventive conservation priorities to flooding and fire risks.

Long-term scale: If the predicted human migrations occur, at the very least, the cultural heritage community will be faced with adapting to an unprecedented shift in diversity of populations. At worst, unfortunately, it will trigger more authoritarian nationalism than has already occurred due to immigration, forcing the professional heritage community to confront its own values.

References

1. IPCC. (2021). *Climate change 2021: the physical science basis: contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/#FullReport
2. World Meteorological Organization. (2021, April 19). *Climate change indicators and impacts worsened in 2020*. https://public.wmo.int/en/media/press-release/climate-change-indicators-and-impacts-worsened-2020
3. Milman, O., Witherspoon, A., Liu, R., & Chang, A. (2021, October 14). The climate disaster is here. The Guardian. https://www.theguardian.com/environment/ng-interactive/2021/oct/14/climate-change-happeningnow-stats-graphs-maps-cop26
4. Kulp, S.A., & Strauss, B.H. (2019). New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. *Nature Communications*, 10, 4844. https://doi.org/10.1038/s41467-019-12808-z
5. Climate Council. (2021, August 9). What does the IPCC's latest report mean? https://www.climatecouncil.org.au/resources/what-does-ipcc-latest-report-mean/
7. Potsdam Institute for Climate Impact Research. (n.d.). *Tipping elements: the Achilles heels of the earth system*. https://www.pik-potsdam.de/en/output/infodesk/tipping-elements/kippelemente?set_language=en
8. Wong, P.P., Losada, I.J., Gattuso, J.-P., Hinkel, J., Khattabi, A., McInnes, K.L., et al. (2014). Coastal systems and low-lying areas. In: Field, C.B., Barros, V.R., Dokken, D.J., et al. (eds.), Climate change 2014: impacts, adaptation, and vulnerability. Part A: Global and sectoral aspects. *Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK. pp. 361–409. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap5_FINAL.pdf

En6. Climate Change Impacts and Exacerbation

Keywords	*impact, exacerbation, extreme weather, heritage continuity*
Other STEEP categories	*Political|Economic|Societal|Technological|Legal|Environmental*
Author	*Ranit Chatterjee*

Description

The most recent IPCC report shares that the benefits of GHG emission reduction and air quality improvement can be experienced more than those due to stabilization of temperatures. Every region is facing issues of climate change. Climate change is inevitable and will lead to a rise in frequency and severity of catastrophic events. But not all impacts are negative, and some regions will benefit from increasing yield, lower mortality and less energy demand. There is a stress on early warning systems for better predictability. The scaling down of global models is informing local actions with a focus on green and blue development and recovery. The current efforts are directed towards determined risks, while addressing the issues of future risks takes a back seat. There is unanimous agreement that anthropogenic influences have warmed the atmosphere, ocean and land.

Broad implications

- Enhanced knowledge of climate processes, paleoclimate evidence, and the response of the climate system will drive future policies and actions.
- Both plants and animals become an integral part of sociocultural systems. Many species of plants and animals will become extinct or approach extinction. While people can be shifted, species which are endemic to nations/islands/regions may cease to exist.
- Livelihoods will be at risk, leading people to look to abandon, diversify or shift to other livelihoods. Climate-induced migrations to cities might lead to the neglect of heritage monuments in rural areas. Due to rise in sea level, the existence of coastal cities and small island nations is threatened.
- Impact on sociocultural continuity of a region, leading to erosion of community-based regulatory mechanisms for protection of ecosystem services.
- Climate change leads to depletion of natural resources, which in turn may lead to an increase in conflicts for control of these limited resources. The extra pressure of climate-induced displacement and migration may push many of the species to the brink of being endangered or extinction.
- Climate change in the future may lead to increased frequency and severity of natural hazards and health emergencies affecting, more people and tangible and intangible cultural heritage, and resulting in higher economic losses.

Implications for cultural heritage and its conservation

- Climate change will affect the Outstanding Universal Values (OUVs) of World Heritage sites, many of which will be threatened in the near future. Research, training and actions should be directed towards conservation and protection of OUVs.
- Heritage needs to be considered as a dynamic carrying-forward of past learnings and achievements. Climate change adds the twist of uncertainty in this futuristic journey of the past. The impact of climate change is not only felt in built heritage but also in the sociocultural and economic aspects of heritage. Currently, heritage seldom features

in the discourse on climate change. In limited cases where acknowledgment of climate change as an important impediment to heritage protection and conservation is made, it is more directed towards understanding impacts and taking appropriate mitigation measures, not adaptation.

- There will be higher costs of maintenance of heritage properties due to climate change. Further research and development on changes in energy demands, as well as technology for new building materials in heritage, needs to be accelerated.
- There will be a scaling up of youth-led advocacy from local to national and regional levels, especially as climate change impacts and cultural heritage are transboundary in nature. A coordinated approach is needed to reduce the impact of climate change across boundaries through connected and trained future youth and young professionals.
- The private sector is emerging as a strong partner for climate change and disaster risk management in cultural heritage. These collaborations will be beneficial for early warning research, designing training courses, collaborations of research & development, and exploring funding opportunities for conserving World Heritage sites.
- There is limited documentation concerning future risks of low impact and high frequency events to heritage sites in terms of tangible and intangible cultural heritage, thus not addressing the root cause of vulnerability in the long term. This is becoming an impediment for informed local actions and policies. Local actions would need the availability of local teams for heritage first aid, rescue and monitoring.
- Promoting research on paleoclimate evidence gathering and the response of climate systems in relation to natural heritage sites will be beneficial for informed heritage policies.
- The climate change impacts on World Heritage sites need to be studied and updated from time to time. A heritage risk indexing methodology should be developed for World Heritage, incorporating and accounting for emerging indirect and wider risks. These risks need to be connected to economic loss models to link regional, national and local economies.

En7. Climate Change Mitigation (1)

Keywords	*climate, procurement, reporting, risk, retrofitting, insurance*
Other STEEP categories	*Political | Societal | Economic | Legal*
Author	*Henry McGhie*

Description

Climate mitigation, meaning reduction of GHG emissions and strengthening nature's ability to mitigate emissions, is a major plank of the Paris Agreement, and closely related to climate adaptation. Emissions are required to fall by ca. 7 percent year on year from 2020–2035; however, this is not likely to be met, and global heating by 2100 is more likely to be around 3°C. Interest in measuring natural capital accounting alongside economic accounts will highlight unsustainable practices.

Broad implications

With ongoing failure to meet the needs of climate action, an increasingly tense situation is likely to arise in terms of institutions, countries and sectors. Failure to address emissions will likely result in increasing focus on reducing emissions in public funding and procurement. Reduction of GHGs is likely to fall unevenly on countries, depending on their current emissions and access to funding. Mitigation requirements are likely to include open reporting by a wide variety of organizations of the full scale of emissions. Practical measurement of Scope 3 emissions[1] is likely to be improved. Reduction in emissions, including Scope 3 emissions, is likely to be more directly required by funders and other stakeholders. With increasing transparency and ease of access to information online, greater scrutiny and accountability is likely to be demanded by special interest groups and stakeholders. Carbon pricing mechanisms are likely to be implemented to encourage shifts to renewable energy sources, but at different rates in different countries; carbon taxes may be directed to funding activity that can be shown to support climate mitigation and adaptation.

Implications for cultural heritage and its conservation

Mitigating climate change in the cultural sector will require significant focus on retrofitting pre-existing infrastructure, with a shift to infrastructure/retrofitting projects, and away from creation of new organizations/institutions. Funding requirements may be part of a carbon tax or offset against carbon tax. Mitigation actions will likely be required to factor in climate adaptation. The discrepancy between access to opportunity and ability to reduce emissions between institutions and countries will become increasingly apparent. This discrepancy may result in ongoing tensions with dispossessed countries and communities. Cultural institutions are likely to be required to report on the full range of their impacts, openly and transparently. Such a reporting will highlight the large carbon footprint of institutions in terms of visitor travel, and the complexity of reducing Scope 3 emissions. As tourism grows, cultural heritage, as a key driver of tourist travel, will be increasingly scrutinized and likely criticized as a source of emissions, notably in relation to the inequality of emissions by those with high-consumption lifestyles. Sector-wide emissions would be likely to be reported, beyond those of individual organizations, resulting in comparison across sectors and comparison of value added to society. Requirements of mitigation measures in terms of use of sustainable products will be a challenge for existing buildings made of unsustainable materials. Harmful practices, which include many chemicals used in conservation of heritage (e.g., refrigerants) will likely be phased out/unavailable through

legal/policy requirements. Failure of mitigation, in institutions and more broadly, will very likely result in loss of many institutions and collections, and challenge their insurability. Cultural institutions may become increasingly featured in climate justice contexts (unfair distribution of contributions and impacts).[2–8]

References

1. Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain. For further information see: EPA Center for Corporate Climate Leadership. (2022). Scope 3 Inventory Guidance. EPA. www.epa.gov/climateleadership/scope-3-inventory-guidance
2. Silver, N., & Dlugolecki, A. (2009). The insurability of the impacts of climate change. https://www.actuaries.org.uk/system/files/documents/pdf/c11silverpaper.pdf
3. Rooney, M., Burke, J., Taylor, M., & Lightfoot, W. (2018). *The future of carbon pricing: implementing an independent carbon tax with dividends in the UK*. Policy Exchange. https://policyexchange.org.uk/wp-content/uploads/2018/07/The-Future-of-Carbon-Pricing.pdf
4. Setzer, J., & Higham, C. (2021). *Global trends in climate change litigation: 2021 snapshot*. Grantham Research Institute on Climate Change and the Environment and the Centre for Climate Change Economics and Policy. https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/Global-trends-in-climate-changelitigation_2021-snapshot.pdf
5. Scottish Government. (2021). Taking account of climate and circular economy: considerations in public procurement. https://www.gov.scot/publications/taking-account-of-climate-and-circular-economy-considerations-inpublic-procurement-sppn-1-2021/
6. Carbon Pricing Methods. (2017). Price on carbon. http://priceoncarbon.org/wp-content/uploads/2017/03/Carbon-Pricing-Methods.pdf
7. OECD, UN, & World Bank Group. (2018). *Financing climate futures: Rethinking infrastructure*. https://www.oecd.org/environment/cc/climate-futures/synthesis-financing-climate-futures.pdf
8. United Nations. (2020). *Financing for sustainable development report 2020: report of the Inter-agency Task Force on Financing for Development*. https://developmentfinance.un.org/sites/developmentfinance.un.org/files/FSDR_2020.pdf

En8. Climate Change Mitigation (2)

Keywords	*mitigation, heat, greenhouse gases, carbon sink, carbon capture, funding, policy*
Other STEEP categories	*Political | Economic | Societal | Technological | Legal*
Author	*Ranit Chatterjee*

Description

Climate change mitigation measures are directed towards reducing the impact of climate change by reducing GHGs in the atmosphere and targeting net-zero emissions. Also, there is a thrust on carbon capture or carbon sequestration, realizing that reducing GHGs is not enough. It is reported that GHGs emissions are rising despite the COVID-19 pandemic slowing down a few sectors in 2020–2021 and the global 2030 targets are not enough to slow down 2° warming. The fluctuating economies and increase in economic losses from extreme weather events is putting the commitments to mitigation and resilience at risk. There is a thrust on low carbon emission innovation. The UN is batting for healthy ecosystems that can provide 37% of the mitigation needed to limit global temperature rise. Further, a lot of focus is on green and blue infrastructure to mitigate climate change impacts in cities. OECD emphasizes an integrated approach with people-centred climate change mitigation policies. Further, well-being, literacy and reducing inequalities are high on developmental agendas for climate change mitigation. Many countries are passing net zero emission legislation. Many of the climate-change-impacted countries in the world are also affected by conflicts.

Broad implications

- Regenerative co-evolution is an emerging area with specific focus on agriculture, forests, mangroves, oceans and other ecosystem services. This may reverse the focus from the secondary and tertiary sector to the primary sector in the future.
- While upgrading of skillsets will be important, at the same time, the continuation of traditional methods and integrating modern and traditional techniques will ensure continuity of the well-established practices that might be cost-effective in comparison to the modern techniques.
- There are possibilities of rebound effects of new technologies, where overuse may erode the gains of energy efficiency and the advent of new technologies.
- There is a lack of guidelines for modern technologies and its standardization for various building typologies. A shift from GHGs to carbon sequestration and carbon capture is an emerging trend. Ecosystem services will become central to such efforts to mitigate climate change impacts.
- Severe conflicts within countries and beyond may lead to protected armed violence with higher risk of damage to built forms.

Implications for cultural heritage and its conservation

- Land and ocean forests act as a natural barrier to sea level rise and green and blue and carbon reserves. Many of these are designated World Heritage sites. Research towards conserving their biodiversity and ecological processes will be an emerging area.
- Food habits are an important part of intangible heritage. Reviving older food habits (like seaweed, kelp) and culture with strong linkages with ocean forests may lead to

conservation and restoration of net zero carbon sinks. Furthering studies on the revival of food culture and other intangible heritage for restoration of carbon sinks may pave a way for climate change mitigation.

- As there are limited guidelines on heritage and energy efficiency, there are possibilities that the negative impacts may overscore the positive impacts without proper monitoring. A heritage rating and audit system for buildings and organizations may be developed. Private companies who comply to the rating and audit system may be empaneled for heritage restoration and retrofitting works.
- The loss of traditional skillsets for construction may slowly lead to erosion of climatological considerations, such as passive cooling and insulation techniques in built heritage. In the future, this will create more dependency on new technologies without an option to go back to older technologies.
- Due to a lack of guidelines on the use of modern technologies and materials for making heritage buildings energy-efficient, the value of the building itself might be affected and, without proper study, this may lead to an increasing carbon footprint. The lack of economic support to use standard materials may become an impediment for the future.
- In countries facing issues of climate change and conflict, risks to tangible heritage are very high and may lead to irreversible damages.

En9. Climate Change Mitigation (3)

Keywords	*climate change reduction*
Other STEEP categories	*Political | Economic | Societal | Technological*
Author	*Stefan Michalski*

Description

Climate change (CC) reduction here refers to reduction of the hazard of climate change itself. The term "mitigation" is avoided since different authors often use it to refer to different concepts.

There is a huge corpus of technical literature (IPCC, etc.) and popular media outputs about how to reduce climate change. Any follower of the news and opinion pieces knows that the solution is simple: Reduce the greenhouse effect by (a) reducing emissions of CO_2 and methane, (b) sequestering these gases, or (c) both; or, failing that, geo-engineering the planet, e.g., reflective particulates. The question for this report, however, is the probability, timeline and results of such interventions, and whether they will be enough. Here the literature becomes highly controversial and uncertain, and the upcoming COP26 meeting next month will offer a better idea of what might be planned next.

Prior to any COP26 clarity, prognostications are not good. The best available political will produced the Paris Agreement, which even in its targets accepted that a great deal of climate change was unavoidable. Now it is clear that even well-meaning states where citizens favor fixing the planet (of course) did not meet their targets, because citizens are attached to their current lifestyles – diminishing that is considered local political suicide. If there is any commonality among optimistic left-wing commentators, it is that solutions, such as scaled up CO_2 scavenging plants or massive reforestation and wilding, will have large costs, but actually not so large as a percentage of global GDP, and that big changes in consumer habits will be essential, but not impossible.

In summary, the best case, but unlikely long-term scenario, is that an unexpected solution appears, for example, fusion power. This is very unlikely to occur in this century. The best plausible scenario in the short term and middle term is that a mix of the following is applied and works partially: reduction in energy consumption, reduction in meat and dairy consumption, and massive increase in wind/solar installations. To make the mix fully successful, it probably requires acceptance and significant increase of nuclear power. This could reach global net zero, and then CO_2 reduction over the century. The most likely scenario, given past political histories, is that not enough of the above is applied, so weather extremes increase in the short and medium terms, with massive expenditures on mitigation of the impacts but no reduction in the greenhouse effect, heading towards some kind of apocalypse in the long term.

Broad implications

The most likely scenario is that societies muddle along, reducing CO2 footprints per capita and avoid apocalypse, but rely heavily on mitigation and a reduced standard of living all around. Meanwhile, even so, the middle of the century will see a peak of severe climate change (and standard of living woes).

The past few years have seen a shift in advice for the individual who wants to help. The initial emphasis on home and transportation energy savings remains, but recycling has been

de-emphasized (complicated by life cycle costs), while meat and dairy consumption has become much more important. There is a recent recognition that it is the top 10% of earners that create 50% of carbon footprint and besides that, it is certain behaviors as influencers in social circles, workplaces and voting choices that will be critical to any significant changes in behavior. This is combined with the insight that it is not more science, but better psychology, that determines what citizens believe and will act on.[1–3]

Implications for cultural heritage and its conservation

Short term, and ongoing to long term: Following the observations of the previous paragraph, professional white-collar classes in wealthy countries have met the enemy and it is themselves (Pogo).[4] If this quantitative economic/social analysis takes hold, which it should, these groups are expected to know that advice and act accordingly. Various committees and well-meaning groups with web pages in professions have focused on greening the conservation laboratories or reducing their museums' energy consumption – this is good, but only step one (control of one's own footprint). The remaining steps are influencing (leveraging) larger communities (our only hope). Modifying climate guidelines has been a step in this direction. A long-term proponent of the museum as a place with a unique social and moral status is Robert R. Janes. His publications and webinars encourage museums to use this special status to influence the public, the visitor, as to their roles in reducing climate change – Partly by example of what they do (for credibility), but largely by what they teach. There is not necessarily any evidence that this is a growing trend, yet there is a strong argument that it must grow if museums and conservation are to be seen as relevant to the defining moment of this era.

References

1. Nicholas, K., & Steensen Nielseen, K. (2021, September 30). The 5 roles you may have to affect climate change. *New Scientist*. https://www.newscientist.com/article/2291988-the-5-roles-you-may-have-to-affect-climate-change/
2. Readfearn, G. (2020, January 2). Science can help us adapt to climate change, but first we have to admit it is happening. *The Guardian*. https://www.theguardian.com/environment/2020/jan/03/what-stops-scientists
3. Porritt, J. (2021, August 18). Environmentalist Jonathon Porritt's big idea to slow global warming. New Scientist. https://www.newscientist.com/article/2287520-environmentalist-jonathon-porritts-big-idea-to-slow-globalwarming/
4. "…classic newspaper comic strip Pogo were known for their seemingly simplistic, but slyly perceptive comments about the state of the world and politics. None is more remembered than Pogo the 'possum's quote in the poster Kelly designed to help promote environmental awareness and publicize the first annual observance of Earth Day, held on April 22, 1970: "WE HAVE MET THE ENEMY AND HE IS US." See: This Day in Quotes. (2022, April 22). "We have met the enemy and he is us." http://www.thisdayinquotes.com/2011/04/we-havemet-enemy-and-he-is-us.html

Societal

S1. Ageing Population and Demographic Change

Keywords	*elderly, dementia, co-creation, digital, lifelong learning*
Other STEEP categories	*Technological*
Author	*Gustav Wollentz*

Description

As a result of a population that is increasingly getting older, dementia is three times more common in society than today. The older population is highly digitally competent, and digital exclusion is very uncommon among the elderly – most have access to digital tools and the competence to use them.[1,2] Older people live active lives online, and volunteering for digital causes after retirement has become a major trend. This means that the volunteer sector has become digital. As a benefit, elderly people with reduced physical capabilities are still able to live active lives. Furthermore, this helps reduce social isolation among the elderly.[3,4]

Broad implications

As an implication, the digital sphere is expected to be co-creative and interactive. Everyone has the possibility to shape and narrate their own digital experience. Co-creation has proven to be a major benefit to reduce dementia, including Alzheimer's disease, and creating digital experiences focusing on one-directional storytelling is regarded as outdated. Immersive digital co-creative experiences are widely used as an effective tool for stimulating memories and slowing down dementia.

Implications for cultural heritage and its conservation

Developing co-creative digital experiences for elderly people who are suffering from dementia has become a major focus within the heritage sector, and elderly are a highly prioritized target group.[5–9] This has also led to a shift towards how and which heritage stories are valued. First, digital recreation of the heritage of contemporary and recent times has become a prioritized field, since it is a period people can personally relate to and is therefore ideal for countering dementia and creating affective experiences. Second, focus is seldom upon using heritage to trigger or wake memories, but to let participants co-create their own memories as they experience the digital environment. Participants are therefore part of creating their own digital experience, together with others. Third, as memories are not linear, but superimposed upon each other forming palimpsests, heritage experiences have largely moved away from focusing on linear narratives, but are working with multiple time layers simultaneously. Digital memories can be co-created jumping from one period to another in the blink of an eye. Furthermore, the physical experience complements the digital one and does not replace it. As a result, heritage environments and open-air museums often accommodate housing for elderly who are also tending to and caring for the environments.[10–14] They often interact with visitors. People are used to seeing elderly people living their everyday life within open air museums and other heritage environments. This also means that certain parts are closed off and only used for residents to ensure the possibility of privacy, which frequently causes heated debates within the heritage field.15

References

1. Fiocco, A.J., Millett, G., D'Amico, D., Krieger, L., Sivashankar, Y., Lee, S.H., & Lachman, R. (2021). Virtual tourism for older adults living in residential care: A mixed-methods study. *PLoS ONE*, 16(5), e0250761. https://doi.org/10.1371/journal.pone.0250761

2. Dieck, M.C. Tom, Jung, T., & Michopoulou, E. (2019) Experiencing virtual reality in heritage attractions: perceptions of elderly users. In: Dieck, M. Tom & Jung, T. (Eds.), *Augmented reality and virtual reality: progress in* IS. Springer, Cham. https://doi.org/10.1007/978-3-030-06246-0_7
3. Rogers, S. (2020, Febuary 26). How virtual reality is benefiting seniors. Forbes. https://www.forbes.com/sites/solrogers/2020/02/26/how-virtual-reality-is-benefiting-seniors/?sh=239309c21485
4. Siroto, J. (2021, September 2). Virtual reality technology is about to improve aging in a big way, especially for isolated seniors. Market Watch. https://www.marketwatch.com/story/virtual-reality-technology-is-about-to-improve-aging-in-a-big-way-especially-for-isolated-seniors-11630087192
5. Considerable Staff. (2019, May 12). *New app uses nostalgic images to trigger memories for dementia patients. Considerable*. https://www.considerable.com/health/alzheimers/house-of-memories-app-helps-dementia-patients-recall-their-pasts/
6. Zeilig, H., West, J., & Byl Williams, M. van der. (2018). Co-creativity: possibilities for using the arts with people with a dementia. *Quality in Ageing and Older Adults*, 19(2), 135–145. https://doi.org/10.1108/QAOA-02-2018-0008
7. Alzheimer's Society. (2020, December 1). Caring culture: museums reaching out to people with dementia. https://www.alzheimers.org.uk/dementia-together-magazine-dec-20jan-21/caring-culture-museums-reaching-out-people-dementia
8. Gilmour, L. (2021, August 25). Paisley Thread Mill Museum launches plea for donations as it fights for survival. *The Gazette*. https://www.the-gazette.co.uk/news/19536942.paisley-thread-mill-museum-launchesplea-donations-fights-survival/
9. Hempel, C. (2019, February 21). Ny forskning: kulturintresse kan minska risken för alzheimers. SVT *Nyheter*. https://www.svt.se/kultur/kulturaktiviteter-kan-minska-risken-for-alzheimers
10. Coates, C. (2019, April 11). *Reminiscence and adult learning for elderly audiences in open-air museums. Museum Next*. https://www.museumnext.com/article/active-ageing-and-the-open-air-museum/
11. Hansen, A., & Jamtli (Eds.). (2017). *Reminiscence in open air museums: results from the Erasmus+ project Active Ageing and Heritage in Adult Learning*. Jamtli Förlag. https://www.beamish.org.uk/content/uploads/2016/10/aha_project_report.pdf
12. Notts TV (2021, August 5). *Former D.H. Lawrence Heritage Centre could become dementia day care. Notts TV*. https://nottstv.com/former-d-h-lawrence-heritage-centre-could-become-dementia-day-care/
13. The Happy Museum. (2018). Welsh museums and the Wellbeing of Future Generations Act. http://happymuseumproject.org/wp-content/uploads/HM_Welsh_report_2018_WEB_4.pdf
14. Dagverksamhet på Jamtli. (n.d.). Östersunds kommun. https://www.ostersund.se/omsorg-och-hjalp/aldre-och-andra-i-behov-av-stod/demens/dagverksamhet-pa-jamtli.html
15. Eastwood, A., & Spiteri, M. (2020, September 23). Memories of London. Museum of London. https://www.museumoflondon.org.uk/discover/memories-london

S2. Ageing Population; Youth (and Public) Engagement (or Lack Thereof)

Keywords	*ageing population and distribution, youth engagement, generational interests, sustainability*
Other STEEP categories	*Political | Economic | Environmental*
Author	*Beatriz Haspo*

Description

According to a United Nations report,[1] the current trend is that virtually every country in the world is experiencing growth in older populations (over 65 years), and this proportion is expected to double in 2050 to about 1.5 billion people. The key drivers for this change are lower fertility rates and mortality rates, as well as migration, more recently. **Eastern and South-Eastern Asia and Latin America and the Caribbean will experience the fastest ageing population**. Additional research by the Pew Research Center shows that the result will be a much older world, in which "roughly one-in-six people is expected to be 65 and older by 2050, double the proportion today."[2] The number of children younger than 15 years is expected to increase by only 10 percent, from 1.8 billion in 2010 to 2 billion in 2050. It is expected that the median age in Latin America, currently ten years lower than the median age in North America, will match North America's age level by 2050. Africa will continue to have the youngest population in the world and is expected to have a greater share of the world's population, 25 percent in 2050. Research shows that the world is currently relatively unprepared for a society that has more people over 65 than under 5 years and is reaching a **rectangularization of the global population pyramid**.

Millennials (1981–1995) and Generation Z (1996–2010) are more conscious and sustainability-oriented in all levels and are vocal and active about it. According to research from Hiroshima University, "in 2030, the younger generation will be the central working force in society and is expected to make real efforts to create a sustainable future and likely play a substantial role in achieving the United Nations' Sustainable Development Goals (SDGs)." The trend for Generation Z is that 43 percent of young people are graduating not knowing what they want to do after high school and 68 percent have struggled with their mental health. The key drivers are their need to choose a career based on passion. **Youth are increasingly speaking in a visual language, which also breaks language barriers, among other things**. This trend is being supported by new communication technologies, such as TikTok. They've even ditched the old-school, highly curated Instagram aesthetic for a more unfiltered and genuine look into their lives. Young people are demanding greater inclusion and meaningful engagement and are taking action to address development challenges themselves.

Broad implications

Since the pyramid of population is being reversed and becoming rectangular due to the ageing population and change in mortality/fertility rates, this will imply a decline in the long-term growth of the economy. As a result, long-term innovation will decline. **With fewer younger people, there will be less creativity and ideas and therefore not enough good ideas to invest in**.

As an outcome, besides needing to increase fertility rates, there will be a need to increase funding for research and development that can boost the innovation and investment opportunities and to create new advances in artificial intelligence (AI) and robotics that could fill gaps in the workforce.

As developing nations are ageing faster, they may experience "brain drain" or immigration (loss of intelligent and skilled workers), meaning that the brightest emerging professionals/workers will leave the places where they were born and go to industrialized countries for new opportunities. One of the outcomes will be the high probability that lifelong education and retooling will be needed globally, and work markets will be redefined.

As a pattern for the future, the millennial generation will want to invest in a socially responsible manner, because they believe in changing communities. **They are more racially and ethnically diverse and will certainly use technology in all aspects of their lives to support diversity and inclusion**. If we do not recognize this trend, we may lose critical youth engagement in the preservation of cultural heritage as a whole. Generation Z is leading a sustainability revolution through authentic values and principles (personal, social and environmental). This generation will make decisions about their future career based on passion and community-building potential. One of the outcomes of young people struggling to find their place in the labor market is that there will be an enhancement of youth social entrepreneurship. Young social entrepreneurs will hire other youth and give them the opportunity to learn new skills that will allow them to gain a position in the labor market.

Implications for cultural heritage and its conservation

For cultural heritage, the implication of an ageing society will prompt immediate investment in funding for research and innovation opportunities that may attract the new generation to the field of preservation, for example, through the use of AI tools applied to cultural heritage and how to demand less from the planet and her resources, since the new generations (Millennials and Generation Z) are very sensitive to the planet.

The implications of "brain drain" or immigration will directly impact the preservation of traditions, especially those passed from family members to other family members. The outcome may be the need to immediately invest in intangible preservation, oral history, and similar projects.

The Millennial and Z generations may become the funders and/or supporters (or volunteers) of community-based preservation projects and programmes.

Cultural heritage preservation will become much more "mobile" (and experience-based) in order to remain relevant (in general, and especially to young generations). In addition, institutions need to review communication systems to reach out to Millennials and Generation Z, who welcome much more visual, less "aesthetic curated" tools. Youth engagement will be connected to creative networking, building connections and relationships that contribute to social cohesion and the harmonization of social development efforts. Cultural heritage institutions will need to **explore what young social entrepreneurs need to know and do to successfully contribute to inclusive social development**.

References

1. United Nations Department of Economic and Social Affairs, Population Division. (2019). *World population ageing 2019: highlights.* https://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2019-Highlights.pdf
2. Tyson, A., Kennedy, B., & Funk, C. (2021). *Gen Z, Millennials stand out for climate change activism, social media engagement with issue*. Pew Research Center. https://www.pewresearch.org/science/2021/05/26/gen-z-millennials-stand-out-for-climate-change-activism-social-media-engagement-with-issue/

S3. Changing Demographics

Keywords	*conflict, belonging, heritage economy, terrorism, transnational, Wikileaks*
Other STEEP categories	*Political | Economic*
Author	*Samia Kirchner*

Description

Three interconnected trends are shaping concepts of cultural heritage and heritage conservation:

1. **WikiLeaks:** Public and critical scholars have access to documents that expose the political nature of World Heritage inscription. In some cases, the real actors (local, national and international politics and politicians) who drive World Heritage agendas are not conservation experts.
2. **Global terrorism, denationalized economies and renationalizing political life:** The scale and complexity of politics surrounding heritage is intensifying due to ongoing longitudinal wars between nation states and transnational groups who denounce the national borders defined by post-colonial Western powers.
3. **Transnational movement of persons:** Migrants seeking a sense of belonging in new places are running into Indigenous calls for sovereignty over their places of origin.

Broad implications

1. There is evidence to support the involvement of nation states and their militaries in the corporatization of cultural assets beyond sovereign borders.
2. Heritage regimes curation of "good heritage" conforms to hegemonic constructions that use cultural difference to reinforce, rather than challenge established national narratives, geopolitical boundaries, and symbolic and social hierarchies. This either leaves cultural groups excluded or coerced to transform their cultural practices to fit the national narrative.
3. The conflict between migrant and Indigenous groups is a double-edged sword: on the one hand, debates over "whose heritage" and "who belongs here" are leading to conflicts related to heritage. On the other hand, cosmopolitan migrants are shifting the national government's priorities towards appropriating local (Indigenous) initiatives. "Post-settler" states, like Canada, are mobilizing important resources and curating an array of international expertise who can engage diplomatic knowhow to scale up local issues and ideas at the global levels. Both trends support the proposition that it is "with the nation-states that the capacity for innovation and oppression ultimately lies" in global heritage.

Implications for cultural heritage and its conservation

1. World Heritage office staff should analzse the WikiLeaks documents to detect and identify misinformation, and keep abreast with what is now available to the public and scholars with critical perspectives on the universalizing tendencies of UNESCO.

2. ICOM and ICOMOS: Cultural heritage repatriation procedures and guidelines for the appropriate use of cultural heritage in post-conflict reconstruction should address intercommunal mistrust that is the legacy of terrorist insurgencies across the world.
3. The annual World Heritage Committee should directly address its broader conservation mission, rather than managing the divergence of opinions over World Heritage site inscription or "branding, marketing, and promoting new nominations in an increasingly acquisitive heritage economy."

ICCROM: Creating capacity of national governments' involvement in seeing the local initiative through at the global level has the potential to create new concepts of "heritage," broadening World Heritage typologies (such as canals and rivers as tangible heritage). The cultural heritage nomination process should underscore the intricate hyperconnectivity of cultural, natural, tangible and intangible heritage, and encourage transnational development of tentative lists.1–16

References

1. Askew, M. (Ed.). (2010). *Legitimacy crisis in Thailand. Chiang Mai*. Silkworm.
2. Askew, M. (2010). The magic list of global status: UNESCO, World Heritage and the agendas of states. In: *Heritage and globalisation*, pp. 33–58
3. Byrne, D. (2016). Heritage corridors: transnational flows and the built environment of migration. *Journal of Ethnic and Migration Studies*, 42.
4. Chesterman, S. (2015). The international court of justice in Asia: interpreting the Temple of Preah Vihear case. *Asian Journal of International Law*, 5(1), 1–6.
5. De Cesari, C. (2010). World Heritage and mosaic universalism. *Journal of Social Archaeology*, 10(3), 299–324.
6. De Cesari, C. (2014). World Heritage and the nation-state. In: De Cesari, C., & Rigney, A. (Eds.), *Transnational memory: circulation, articulation, scales*. De Gruyter, pp. 247–270.
7. Denes, A. (2015). Folklorizing Northern Khmer identity in Thailand: Intangible cultural heritage and the production of "good culture." *Sojourn: Journal of Social Issues in Southeast Asia*, 30(01), 1–34.
8. Dharmawardhane, I. (2013). Sri Lanka's post-conflict strategy: restorative justice for rebels and rebuilding of conflict-affected communities. *Perspectives on Terrorism*, 7(6), 27–57.
9. ICOM. (2016). *Red list*. ICOM. http://icom.museum/programmes/fighting-illicit-traffic/red-list/
10. Jeffery, L. (2014). Neither confirm nor deny: WikiLeaks evidence and the Vienna convention on diplomatic relations in the judicial review of the Chagos marine protected area. *Anthropology Today*, 30(3), 9–13.
11. Mavin, D. (2021, February 11). Calculating the revenue from antiquities to Islamic State. *Wall Street Journal*. http://www.wsj.com/articles/calculating-the-revenue-from-antiquities-to-islamic-state-1423657578.
12. Meskell, L., Byrne, D., De Cesari, C., et al. (2016). World Heritage and WikiLeaks. *Current Anthropology*, 57(1), 72–95.
13. Seneviratne, S. (2013). Heritage of an Island civilization. *Special Report: Commonwealth Heads of Government Meeting*.
14. Svensson, M., & Maags, C. (2018). Mapping the Chinese heritage regime: ruptures, governmentality, and agency. In: Svensson, M., & Maags, C. (Eds.), *Chinese heritage in the making: experiences, negotiations and contestations*. Amsterdam University Press; pp. 11–38. https://doi.org/10.2307/j.ctt2204rz8.4
15. Chulov, M. (2014, June 16). How an arrest in Iraq revealed ISIS's $2bn jihadist network. The Guardian. https://www.theguardian.com/world/2014/jun/15/iraq-isis-arrest-jihadists-wealth-power
16. Vlasic, M., & Turku, H. (2016, December) Blood antiquities: protecting cultural heritage beyond criminalization. *Journal of International Criminal Justice*, 14(5), 1175–1197. https://doi.org/10.1093/jicj/mqw054

S4. Changing Demographics: Increasing Ethnic and Cultural Diversity: Migration, Security Crisis and Heritage

Keywords	*coloniality, migration, diaspora, demography, security*
Other STEEP categories	*Political | Economic | Legal | Environmental*
Author	*Ibrahima Thiaw*

Description

Our planet is the theatre for migratory flows whose South–North direction espouses the opposite direction of the European imperial expansion in the fifteenth century that was oriented towards trade, territorial conquest and the extraction of resources. One of the major consequences of European imperial expansion was a bipolarization of the world on the basis of race and culture, but also of the many contradictions, disparities and inequal opportunities and privileges that it has created and that became a real burden of history. The mirage of economic paradise, of haven of peace and of political stability displayed by the Global North and so coveted by many people of the Global South affected by political conflicts, economic disarray and precarious existence is today the main incentive for them to migrate there. These movements are inseparable from the colonial legacy to which they are intrinsically linked. Moreover, the massive arrival of migrants from the Global South coincides with declining birth rates and ageing populations in the host countries in the Global North.

Broad implications

In the long term, these processes will result in new demographic rebalances with profound consequences on the management of diversity and cultural representations. Thus, we can expect significant identity recompositions that could strain imperial constructions and imaginaries based on political and economic bipolarization, racialization and much more. Diasporic communities' negation of the nation state, of its borders, of its national, racial or ethnic boundaries, and of its passports, feeds very strongly on the political antagonisms and subjectivities created by coloniality and racialization. Thus, both diasporas resulting from former forced migrations and from those more recent will inevitably continue to protest their marginalization and ask for recognition and full citizenship, which will cause an unprecedented security crisis.

Implications for cultural heritage and its conservation

In that process, culture heritage will be central to claims for recognition and citizenship from the diasporas. Already in 2006, Aminata Traoré had set the tone for the protest against migration policies in connection with the confiscation of cultural properties: "Our works have the right of citizenship where we are, on the whole, prohibited from staying." In 2020, in France, a group of activists of African origin attacked the Museum of Quai Branly with one of them haranguing: "These goods were stolen from us during colonization. We will leave with our property; we will bring it home."

These movements will increase in size over the next decade and, beyond the security issue, we will witness complex processes of renegotiation of identities and modes of representation of cultural goods, which will lead to profound transformations of cultural landscapes in the North as well as in the Global South to accommodate difference, diversity and correct the injustices of the colonial past. We will witness a vast process of re-symbolization and re-semantization of several cultural landscapes, monuments, sites, objects and places of memory. Faced with these inevitable changes, we must also expect stiff resistance from far-right movements.

S5. Changing Demographics: Population Growth/Decline

Keywords	*population crash, low birth rate*
Other STEEP categories	*Political | Economic | Legal*
Author	*Helen McCracken*

Description

There will be a noticeable decline in the world population growth by the middle of the twenty-first century due to declining birth rates. The total world population will grow to 8.5 billion in 2030, reaching a peak just after the middle of the century at 9.7 billion, before falling to 8.8 billion by the end of the 2100. Peak population growth for countries will vary from region to region, but all countries will eventually experience declining birth rates by the end of the twenty-first century.

In areas such as Sub-Saharan Africa, populations will continue to grow, with countries like Nigeria seeing its working population grow considerably from 86 million in 2017 to 357 million in 2100. According to a recent study, North Africa and the Middle East are the only other regions predicted to have larger populations in 2100 (978 million) than in 2017 (600 million). The fastest shrinking populations are predicted to be in Asia and Central and Eastern Europe, with 23 countries, including Japan, Thailand, Spain, Italy, Portugal and South Korea, expected to decline by more than 50 percent by the end of 2100. A further 34 countries, including China, will see a population decline of 25–50 percents.1

Broad implications

As birth rates fall, the number of older persons will increase relative to young people, helped by scientific discoveries in medicine increasing average life expectancy.

Along with declining population, urban drift will continue, causing abandonment of rural coastal settlements (villages and towns). Population decline in some areas may be a result of migration, either forced or the result of people attracted to other communities with pro-migrant policies to reverse population decline in other areas.

The decline in population will affect countries at different times, impacting economic growth. In SubSaharan African countries with large working populations, economies will grow. In Europe, some countries will retain their GDP rankings due to migration stemming the tide of population decline. Other countries, such as Spain and Italy, will not be able to compensate for the population decline and see substantial falls in their GDP rankings. In Asia, India is likely to outstrip China, retaining a substantial workforce until the end of the century. China will have a greater economic influence than the United States in the next 20 years, but this will likely be reversed as the century progresses if the United States addresses reduced birth rates through migration.

The shift in economic growth will have a corresponding impact on geopolitical influence. It is likely, we will see the decline of Europe as a major political force and the rise of areas such as Africa.

Implications for cultural heritage and its conservation

Issues around how to pay for care of heritage places may arise, as reduced working populations resulting in a reduced tax intake by central and local government already burdened with

supporting an ageing population. This will be of concern in places like Europe and Asia, where there are significant numbers of World Heritage sites (e.g., Spain, Italy, Japan and China) corresponding with significant population decline.

There may be difficulties in retaining skilled labor. We will see an increasing number of places abandoned, requiring new approaches to caring for cultural places. Hard choices will have to be made over which heritage should be conserved if there are no longer communities to care for such places or objects.

Improvements in technology to record and store records of abandoned heritage will continue to be developed and efforts to record will increase. Where the original population has dispersed to other areas of the country or indeed the globe, issues will rise over who has the rights to such knowledge, requiring new protection mechanisms.

Intangible heritage will suffer as fewer young people will remain to learn, practice and pass on knowledge and traditions. Without sufficient populations speaking local dialects, some languages will be lost.

Situations will arise where heritage will be used to attract people to areas of declining population. However, this will result in tension, as new arrivals will bring their own cultural values and practices.

Where depopulation coincides with World Heritage, for example, rural areas and coastal areas, significant challenges will arise in the ongoing care of such places and have a detrimental impact on the qualities that contribute to Outstanding Universal Value. This will particularly be the case for those sites associated with living traditions. Depopulation and migration will cause disruption to cultural practices.[2–10]

References

1. Vollset, S.E., Goren, E., Yuan, C.-W., Cao, J., Smith, A.E., Hsiao, T., et al. (2020). Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the Global Burden of Disease Study. *Lancet*, 396, 1285–306. https://doi.org/10.1016/S0140-6736(20)30677-2
2. Orchard, R. (2019, January 3). *Why the world's population is lurching towards decline – and what we can do about it*. Delayed Gratification. https://www.slow-journalism.com/delayed-gratification-magazine/why-the-worlds-population-is-lurching-towards-decline-and-what-we-can-do-about-it
3. Witsen, P.P. (Ed.) (2014). *Attract and connect: population decline and the heritage in Europe*. Rijksdienst voor het Cultureel Erfgoed. https://www.cultureelerfgoed.nl/publicaties/publicaties/2014/01/01/attract-and-connect-population-decline-and-the-heritage-in-europe
4. Prabhu, E. (2017, October 10). How will we cope when there are too few young people in the world? Brookings. https://www.brookings.edu/blog/future-development/2017/10/10/how-will-we-cope-when-thereare-too-few-young-people-in-the-world/
5. Parmelee, M. (2021, June 15). The Deloitte Global 2021 Millennial and Gen Z survey: highlights. Deloitte. https://www2.deloitte.com/global/en/insights/topics/talent/deloitte-millennial-survey.html
6. Bricker, D., & Ibbitson, J. (2019, January 29). *By the end of this century, the global population will start to shrink*. Medium. https://onezero.medium.com/by-the-end-of-this-century-the-global-population-will-start-to-shrink-2f606c1ef088
7. Konstantinos, J. (2020, January 16). The unprecedented demographic boom and bust. Medium. https://medium.com/@joshuafkon/the-unprecedented-demographic-boom-and-bust-4a04c389bc36

8. Cowen, T. (2021, March 29). A population crash is coming. Mint. https://www.livemint.com/opinion/columns/a-population-crash-is-coming-11616987679167.html
9. Jones, C. (2021, March 27). The economics of falling populations. The Economist. https://www.economist.com/finance-and-economics/2021/03/27/the-economics-of-falling-populations
10. TRT World. (2021, January 4). How the receding global population could affect the world. https://www.trtworld.com/magazine/how-the-receding-global-population-could-affect-the-world-42950

S6. Changing Perceptions of Heritage (1)

Keywords	heritage
Other STEEP categories	
Author	Matija Strlič

Description

Trend: Perceptions of heritage are changing to include multisensory aspects, avoiding the tangible/intangible and natural/cultural binaries.

The path traveled in the past two decades moved from the UNESCO definition (Convention of 2003) of intangible cultural heritage as "oral traditions, performing arts, social practices, rituals, festive events, knowledge, and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts"[1] to the more inclusive definitions of cultural heritage, such as the one given in the Burra Charter:

> "Setting [i.e., the immediate and extended environment of a place that is part of or contributes to its cultural significance and distinctive character] may include: **structures, spaces, land, water and sky; the visual setting including views to and from the place, and along a cultural route; and other sensory aspects of the setting such as smells and sounds.** Setting may also include historical and contemporary relationships, such as use and activities, social and spiritual practices, and relationships with other places, both tangible and intangible."[2]

This definition is important, as it firmly places cultural heritage into its "natural" environment, involves multisensory aspects, and makes little distinction between tangible and intangible.

Broad implications

To focus only on olfactory aspects, in 2001, the Japanese Environment Ministry released a list of "100 especially fragrant places," with a Ministry official stating, "We hope that this will raise awareness of people at the local level and lead to a rediscovery of fragrant areas and their preservation."[3] Also related to olfactory heritage, in 2018, UNESCO inscribed the skills related to perfume in Pays de Grasse on the Representative List of the Intangible Cultural Heritage of Humanity.[4] In France, a law was recently passed to protect the noises and smells of the countryside.[5]

Implications for cultural heritage and its conservation

The examples demonstrate that the attitudes to and perceptions of heritage are developing to involve a multitude of aspects of a "place or object of value," beyond the traditional dichotomy of tangible/intangible. Some of these aspects are still being actively researched. For example, the European Union projects ODEUROPA[6] and POLIFONIA[7] specifically research olfactory and sound heritage and will emerge with new concepts of value and conservation, and enrich the definition of cultural heritage through a historically informed and systematically developed body of knowledge.

This will have a profound global impact on conservation theory and practice and on how institutions and the heritage sector engage with heritage, which includes display and presentation to diverse (potentially more diverse than currently) audiences. **Emerging**

paradigms of conservation will require new policy and strategy documents to be developed. The foreseen implications are in that there is currently no international body looking into the policy implications of the changing perceptions of heritage. ICCROM is well placed to seize the initiative and develop not just a meaningful definition that embraces the changes but also build new conservation and ethical paradigms that have the potential to engage global audiences.

References

1. UNESCO. (2011). *What is intangible cultural heritage?* https://ich.unesco.org/doc/src/01851-EN.pdf
2. Australia ICOMOS. (2013). *The Burra Charter: the Australia ICOMOS charter for places of cultural significance*. https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf
3. The Japan Times. (2001, October 31). Ministry compiles list of nation's 100 best-smelling spots. https://www.japantimes.co.jp/news/2001/10/31/national/ministry-compiles-list-of-nations-100-best-smelling-spots/
4. UNESCO. (2018) *The skills related to perfume in Pays de Grasse: the cultivation of perfume plants, the knowledge and processing of natural raw materials, and the art of perfume composition.* https://ich.unesco.org/en/RL/the-skills-related-to-perfume-in-pays-de-grasse-the-cultivation-of-perfume-plants-the-knowledge-and-processing-of-natural-raw-materials-and-the-art-of-perfume-composition-01207
5. AFP in Paris. (2021, January 21). France passes "sensory heritage" law after plight of Maurice the noisy rooster. *The Guardian*. https://www.theguardian.com/world/2021/jan/21/france-passes-sensory-heritage-law-after-plight-of-maurice-the-noisy-rooster
6. See: *Odeuropa Research Project*. https://odeuropa.eu/
7. See: *Polifonia Project*. https://polifonia-project.eu/

S7. Changing Perceptions of Heritage (2)

Keywords	*heritage, Black Lives Matter, Indigenous, marginalized, gender*
Other STEEP categories	*Legal | Political*
Author	*Tokie Laotan-Brown*

Description

Heritage is a social construct to reproduce and strengthen particular values in society. It is also presented as having objective and scientific values within a cultural conservation system, which tends to exclude many interpretations as the aesthetic and scientific qualities assigned as "valuable" are often following the rules of Eurocentric science and art.

Broad implications

Over the last two decades, there has been a significant shift in the literature on heritage. For example, some have argued that the emerging heritage literature recognizes the contested nature of heritage and the role of power "in the construction of history" and the "production of identity."[1] Hegemonic discourses, such as the European convention doctrinal texts, tend to view cultural heritage narrowly as material progress, and both marginalized heritages and heritage "experts" tend to be deeply influenced by the lure of technical solutions to address the socioeconomic problems of heritage. The broad implications of these involvements of marginalized communities in many cases has been mostly tokenistic and symbolic. Development agencies, such as Western-modeled government agencies, generally invite local people to participate in the implementation of specified programmes (e.g., UNESCO-listed site, Little Rome in Asmara, Eritrea). Participatory practices and processes have not provided adequate space for marginalized communities to have meaningful voices in and influence on heritage decisions. Rather, in some cases, participation and consultation turned out to be detrimental to and, in a few instances, exploitative of marginalized peoples.

Implications for cultural heritage and its conservation

A radical systemic change, not a box-ticking initiative is needed. The concept of "decolonizing heritage" is not sufficient in addressing the problems caused by Euro-American neo-imperial institutions. The current trends seen during the 2020 "Black Lives Matter" protests support deconstructing colonial ideologies and the privileges of white, elite, (cis)gender and/or able-bodied dominant institutional structures thinking that have dominated the heritage sector. Colonial structures perpetuate the system and close down alternative futures. These implications are what will continue to drive the changing perceptions of heritage and conservation. This means that as more awareness is raised, literature and protests from marginalized groups will continue to probe institutions to be socially responsible and may even move in completely different directions from what has been up to the present considered the norm or international standards (Euro-American-centred approaches).

Reference

1. Silverman, H. (Ed.) (2011). *Contested cultural heritage: religion, nationalism, erasure and exclusion in a global world*. Springer.

S8. Changing Perceptions of Heritage (3): Climate Change

Keywords	*climate change, sustainability, unsustainable heritage, degrowth*
Other STEEP categories	*Environmental | Political | Economic*
Author	*Gustav Wollentz*

Description

Many societies have altered their attitudes towards time and economic development in response to climate change and moved towards valuing slower development and economic models based on degrowth. A sustainable lifestyle is very much promoted as the norm, and the basis of success has shifted from valuing careers based on economic income towards valuing the results of actions. A large stigmatization has been created surrounding what is a sustainable contra unsustainable lifestyle, which has created a new form of polarization in society. A slower tempo with less working hours per week has led people to have more time for caring about family and friends as well as engaging in things they believe strongly in, which is also highly valued. It is common with scandals when a media figure or a politician is revealed to have acted in an unsustainable way, and often this will force the individual to resign from her/his position and may have legal repercussions due to new laws connected to the rights of nature.

Broad implications

As an implication, society has moved away from focusing on the risk of climate change towards actions done to reduce climate change. Climate change is present already and is no longer a risk but a reality – however, actions are instead at the centre of attention. Both individuals and companies are judged based on actions, rather than words, and actions to reduce climate change are vital to be seen as successful both as an individual and as a company.

Implications for cultural heritage and its conservation

This has led the heritage sector to move away from the "risk"-paradigm, where focus is upon preserving and protecting heritage from the effects of climate change in order to halt change, towards focusing on how heritage can be actively employed to induce change – that is, to make people live more sustainable lives. Instead of a heritage at risk framework, there is a heritage for action and for change framework. However, a new form of heritage has emerged and become widely popular: the heritage of unsustainability. Despite there being a large stigmatization surrounding unsustainable lifestyles, people have a large interest in the heritage of unsustainable ways of being and living, which is often regarded as a form of "dark heritage." These forms of heritage are widely used for educational and learning opportunities. Large-scale and industrial animal farms are preserved as heritage, there are museums of plastic bags, toxic waste and private jets. The heritage of unsustainability is seen as significant to preserve. This process is not without conflict, and there are also large groups who fear that the heritage that is important to them will disappear or become confined to the "museum," as it is not sustainable enough.[1–11]

References

1. UNESCO (2021). *New research demonstrates crucial role of World Heritage marine sites in fighting climate change*. World Heritage Convention. whc.unesco.org https://whc.unesco.org/en/news/2258

2. Fischer, B. (2021). Working for climate justice – an update from the ENA climate group. https://pro.europeana.eu/post/working-for-climate-justice-an-update-from-the-europeana-network-association-climate-group
3. Neal, A. (2020). Cultural heritage is a necessary component of climate solutions. Eesi.org. https://www.eesi.org/articles/view/cultural-heritage-is-a-necessary-component-of-climate-solutions
4. Sutter, Glenn C. (2021) Curating climate: insights from a curator of human ecology. https://cmcj.ca/curating-climate-insights-from-a-curator-of-human-ecology/
5. Coalition of Museums for Climate Justice (CMCJ.). (2021). https://cmcj.ca
6. MfCA. (2021). Reimagining museums for climate action. https://www.museumsforclimateaction.org
7. COST-European Cooperation in Science and Technology. (2021). CA20105 – slow memory: transformative practices for times of uneven and accelerating change (SlowMemo). https://www.cost.eu/actions/CA20105
8. Zorzin, N. (2021). Is archaeology conceivable within the degrowth movement? *Archaeological Dialogues*, *28*(1), 1–16.
9. Perrett, T. (2021, September 14). Governments must focus on degrowth. The Ecologist. https://theecologist.org/2021/sep/14/governments-must-focus-degrowth
10. *The Star* (2020, November 3) *Museum of plastic bags to be launched in Britain by Scottish.* artist. thestar.com. https://www.thestar.com.my/lifestyle/culture/2020/11/03/this-artist-in-scotland-launches-plastic-bag-museum
11. Challe, T. (2021, April 22). *The Rights of nature – can an ecosystem bear legal rights?* State of the Planet: News from the Columbia Climate School. https://news.climate.columbia.edu/2021/04/22/rights-of-nature-lawsuits/

S9. Communities and Citizen Engagement (1)

Keywords	*online engagement, gamification, Artificial Intelligence, data*
Other STEEP categories	*Political | Technological | Environmental*
Author	*Helen McCracken*

Description

Communities are increasingly engaging with each other online. As the COVID-19 pandemic forced communities to socially distance and follow nationwide lockdowns, communities turned to technology to keep connected, explore new ways of meeting and legitimize online engagement. As of January 2021, there were 4.66 billion active Internet users worldwide.[1] It is estimated that by 2030 there will be 7.5 billion Internet users. The number of connected devices globally is proposed to increase from 30.4 billion in 2020 to 200 billion in 2030.[2] However, it will take until 2050 until there is universal access (90 percent of people online).

As the number of people connected online grows, technologies that enable people to engage online – such as VR, gamification and AI, mobile technologies and wearables – will also continue to grow. By 2036, where there will be significant online connection, the increased connectedness combined with changes in these technologies will play a significant role in the way people engage in their communities, both through political and non-political processes.[3]

Broad implications

In countries where online connection and broadband infrastructure exist, governments, both at national and local levels, will increasingly favor online methods of engagement and use mobile technology and AI to gather information/data and connect with diverse communities.

Online engagement reduces such barriers as the need to be in the office, transportation and childcare, allowing for greater participation in community decisions. Government assemblies and council meetings online will become the norm, allowing more people to participate in democratic processes and making decision-making more transparent.

There will be an increased need to gather and transform data to present information in a way that is accessible to diverse groups in communities. Citizen data will become more available, and new tools will be developed to help filter and organize this information into meaningful insights on community life.

Gamification will be used to create engaging ways to involve diverse communities in planning discussions, or potentially crowd-source solutions to complex community problems. Equally, communities may engage in online spaces separate from government to collectively act and address local issues through community-driven solutions. For example, new technologies will allow communities to work with scientists and others to use data about their local environment to develop scenarios to understand possible futures in relation to climate change. Gamification may also increasingly be used to encourage positive civic actions. Community-focused activities will increase demand to put decision-making within communities, rather than at a national level.[4–10]

New technology may help remove barriers for parts of communities that have previously been disconnected (for example, due to age, gender or disability). However, this will only benefit those who have access to technology and good connectivity. There is likely to be

a significant digital divide due to a lack of infrastructure, illiteracy, online skills or poverty. This could lead to some areas of the community becoming disenfranchised.

Although new technologies may assist participation in democratic processes, they could also bring about the opposite. We could see the growth of digital authoritarianism, where governments seek to supress dissent, spread disinformation and undertake surveillance of opposition groups using AI and monitoring of social media.[11] Misuse of this technology by malicious actors could see the rise in mistrust of the Internet, raise significant issues around human rights, and see people opting out of online engagement causing a decrease in social cohesion.

There will be an increase in moves to protect individual digital data, the rise of ethical AI, and increased cybersecurity. This may vary between regions/countries depending upon government's appetite to intervene. With the increase of information/data arising out of the increased community engagement, there will be a need for new data handling tools, systems and infrastructure.

Implications for cultural heritage and its conservation

New technologies will provide opportunities to engage with cultural heritage in different ways, with potential for greater participation in planning processes. Gamification and AI may provide new ways of storytelling, providing platforms for local communities to speak about their heritage to a wider audience, and preserve those stories for future generations.12

Notions of citizen heritage will evolve, where communities may take more active roles in the management and conservation of cultural heritage, helping to collect data that can be collated at a national level to better inform government policy around cultural heritage protection. Online communities may help monitor cultural heritage places from a distance, participating in national or international studies. There may also be benefits for disaster risk management of cultural heritage, particularly in the recording of what is of value to communities before a disaster and helping to respond during and after a disaster. Communities will be able to quickly analyze a wide range of data to inform decisions on responding to cultural heritage at risk.

There will be changes in the way communities engage with national institutions, such as museums, libraries and archives, and there may be more opportunities for crowd-sourcing heritage projects. There may be flow-on effects to the types of employment in museums, moving away from traditional curatorial roles to more facilitators of community engagement in collections.

There will also be challenges to ownership of cultural digital information as more collections from museums and archives are digitized. New cultural practices will arise over the stewardship of data and even the ways in which we create cultural spaces online. We will see development of international and domestic laws to protect cultural heritage data.

There will also be increased risk to cultural heritage as, without proper protection, communities and how they interact with each other and store data on their cultural heritage may become exposed to cybercrime or manipulation by hostile states. In some circumstances, individuals or groups may be reluctant to identify themselves in case they become targets. Organizations working with such groups may need to consider the development of appropriate protocols, best practice, etc. to help protect these communities and their heritage. Training organizations, such as ICCROM, may like to consider potential for new partnerships with technology companies to help build capacity and capability.[13–37]

References

1. Johnson, J. (2021). Worldwide digital population as of January 2021. Statista. https://www.statista.com/statistics/617136/digital-population-worldwide/
2. European Commission. (2021). 2021 Strategic Foresight report: the EU's capacity and freedom to act. https://ec.europa.eu/info/sites/default/files/foresight_report_com750_en.pdf
3. Cave, K. (2015, September 8). What will the internet look like in 2040? IDG Connect. https://www.idgconnect.com/article/3582444/what-will-the-internet-look-like-in-2040.html
4. Preetish. (n.d.). Gamification for community engagement. Tribe.Blog. https://tribe.so/blog/gamification-for-community-engagement/
5. Robinson-Yu, S. (2021, August 4). Gamification in community forums: increase user engagement. Vanilla. https://blog.vanillaforums.com/community/gamification-in-online-communities-incentivize-your-members-and-increase-engagement
6. Growth Engineering. (2021, May 27). 19 gamification trends for 2021–2025: top stats, facts & examples. https://www.growthengineering.co.uk/19-gamification-trends-for-2021-2025-top-stats-facts-examples/
7. Hassan, L., & Hamari, J. (2020). Gameful civic engagement: a review of the literature on gamification of e-participation. *Government Information Quarterly*, 37(3), 101461. https://doi.org/10.1016/j.giq.2020.101461
8. Romano, M., Díaz, P., & Aedo, I. (2021). Gamification-less: may gamification really foster civic participation? A controlled field experiment. *Journal of Ambient Intelligence and Humanized Computing*. https://doi.org/10.1007/s12652-021-03322-6
9. Jay, A. (n.d.). *12 Gamification trends for 2021/2022: Current forecasts you should be thinking about*. Finances Online. https://financesonline.com/gamification-trends/
10. Puttkamer, L. (2020, November 3). *Gamification in urban planning: participation through Minecraft*. Urbanet. https://www.urbanet.info/gamification-in-urban-planning-participation-through-minecraft/
11. Cebul, M., & Pinckney, J. (2021). *Digital authoritarianism and nonviolent action: challenging the digital counterrevolution*. United States Institute of Peace. https://www.usip.org/sites/default/files/2021-07/sr_499-digital_authoritarianism_and_nonviolent_action_challenging_the_digital_counterrevolution.pdf
12. Social Pinpoint. (n.d.). Is augmented reality the future of engaging with the community? https://www.socialpinpoint.com/blog/is-augmented-reality-the-future-of-engaging-with-the-community/
13. Hillenbrand, K. (2020, January 14). *The future of civic engagement: Interview with Hollie Russon Gilman*. DataSmart City Solutions. https://datasmart.ash.harvard.edu/news/article/future-civic-engagement
14. Rollison, B. (2017, June 16). Digital cities: An introduction to a new civic layer. Medium. https://medium.com/@bkrollison/digital-cities-an-introduction-to-a-new-civic-layer-25f3a4067851
15. Powell, A. (2021, June 7). Urban life and civic action in "smart" cities. Media@LSE. https://blogs.lse.ac.uk/medialse/2021/06/07/urban-life-and-civic-action-in-smart-cities/
16. Carr, P.R., Cuervo Sanchez, S.L., & Daros, M.A. (2020). Citizen engagement in the contemporary era of fake news: hegemonic distraction or control of the social media context? *Postdigital Science and Education*, 2, 39–60. https://doi.org/10.1007/s42438-019-00052-z
17. Europeana Pro. (2021, April 16). Research and digital cultural heritage: new impact horizons. https://pro. europeana.eu/event/research-and-digital-cultural-heritage-new-impact-horizons
18. Heritage 2020. (n.d.). How to involve as many people as possible from all backgrounds in heritage. https://www. heritage2020.net/working-groups-public-engagement/
19. Gouache, C. (2021). Imagining the future with citizens: participatory foresight and democratic policy design in Marcoussis, France. *Policy Design and Practice*. https://doi.org/10.1080/25741292.2021.1930687
20. Coulson, S., Woods, M., & Making Sense EU. (2021). Citizen sensing: an action-orientated framework for citizen science. *Frontiers in Communication*. https://doi.org/10.3389/fcomm.2021.629700

21. Digital Agenda. (2020, May 15). Going digital: The future of community engagement. Medium. https://medium.com/@digitalagenda/going-digital-the-future-of-community-engagement-a62794f07ca5
22. Cerreta, M., Daldanise, G., Di Lauro, P., & La Rocca, L. (2020). Collaborative decision-making processes for cultural heritage enhancement: the play ReCH platform. In: T.M. Nguyen (Ed.), *Systems-of-systems perspectives and applications: design, modeling, simulation and analysis* (MS&A), *gaming and decision support*. IntechOpen. https://doi.org/10.5772/intechopen.92115.
23. Maptionnaire. (2021, April 12). Top-3 community engagement trends in 2021. https://maptionnaire.com/blog-list/top-3-community-engagement-trends-2021
24. Schroedel, J. (2020, September 10). Trends for youth civic engagement: online, inclusive, and local. CitizenLab https://www.citizenlab.co/blog/civic-engagement/trends-for-youth-civic-engagement-online-inclusive-andlocal-2/
25. OECD. (2020). *Digital transformation and the futures of civic space to 2030: four scenarios and what they could mean for development co-operation providers*. https://www.oecd.org/publications/digital-transformation-andthe-futures-of-civic-space-to-2030-79b34d37-en.htm
26. Cho, A., Byrne, J., & Pelter, Z. (2020). *Digital civic engagement by young people*. UNICEF Office of Global Insight and Policy. https://www.unicef.org/sites/default/files/2020-07/Digital-civic-engagement-by-youngpeople-2020_4.pdf
27. Herriges, D. (2021, August 18). Is this the future of civic engagement? Strong Towns. https://www.strongtowns.org/journal/2021/8/17/is-this-the-future-of-civic-engagement
28. Ferrari, A. (2018, May 7). Seeing the future: Harnessing the power of virtual reality for community engagement. Stantec. https://www.stantec.com/en/ideas/seeing-the-future-harnessing-the-power-of-virtual-reality-for-community-engagement
29. Pagano, A., & Wisniewski, L. (2021, February 2). The future of community is virtual. Medium. https://medium.com/alpaca-vc/the-future-of-community-is-virtual-e5c9a5ef2c0b
30. Elon University. (2020). Credited responses: future of social and civic innovation. Imagining the Internet. https://www.elon.edu/u/imagining/surveys/future-of-civic-innovation-2020/credit/
31. Kamensky, J. (2019, January 15). *Visions of government in 2040: the future of civic engagement*. IBM Center for the Business of Government. https://www.businessofgovernment.org/blog/visions-government-2040-future-civic-engagement
32. Mačiulienė, M., & Skaržauskienė, A. (2020). Building the capacities of civic tech communities through digital data analytics. *Journal of Innovation & Knowledge*, 5(4), 244–250. https://doi.org/10.1016/j.jik.2019.11.005.
33. European Parliament. (2020). Digital democracy: is the future of civic engagement online? https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2020)646161
34. Ada Lovelace Institute. (2021). *Technology and civic engagement – double book launch with the Ada Lovelace Institute*. https://www.adalovelaceinstitute.org/event/technology-civic-engagement-double-book-launch/
35. EU Science & Innovation. (2021, January 25). What will citizen engagement look like in post COVID 19 times [Video]. Youtube. https://www.youtube.com/watch?v=DF1f2e6BWnE
36. See: We are social. https://wearesocial.com/uk/
37. See: *Citizen heritage*. https://www.citizenheritage.eu/

S10. Communities and Citizen Engagement (2)

Keywords	*citizen, community engagement, locality, development plan, built environment*
Other STEEP categories	*Legal | Environmental | Political | Economic | Technological*
Author	*Tokie Laotan-Brown*

Description

A Community and Citizen Engagement strategy illustrates a plan, program, part or component of a community within its locality. A development plan for the citizens and community to come together to determine the common good of their society might have several briefs at various stages and these might change as the community engagement process takes shape.

Broad implications

Government state parties and corporate organizations have continually managed and controlled resources and services from the top-down. While top-down approaches can contribute to the development of technical infrastructure for urban efficiency, they have often been criticized for leaving communities and citizens out of the decision-making or overlooking citizens' concerns and aspirations for their communities.

At the same time, several community groups at the grassroots level are adopting civic technologies and participatory frameworks to address local issues.1 In the process, they also strengthen relationships within their community, learn and share skills, and shape their localities.

Implications for cultural heritage and its conservation

The role of community and citizen engagement is emphasized in the preservation and revitalization of cultural heritage and cultural conservation. Modern consumption has graduated from a commercial relationship with cultural objects to an experience-based connection with cultural social identities, causes and associations. Trends show engagement as (i) loyal members of associations and sects, (ii) as participants in informal events, such as social gatherings and meetings, (iii) as practitioners who embed object-related consumption in their daily practices, and (iv) as sympathizers who agree with the trends and move marginally around the consumption-related engagement. Citizens can be involved with different cultural heritages and cultural associations at the community and individual levels. The custodianship of heritage is a combination of five dispositions, such as (1) sense of self, (2) belonging, (3) potency, (4) continuance, and (5) responsibility. Citizens as self-organizing stakeholders are responsible for their well-being and growth, able to actively participate in the politics of their local regions and sustainable development. Studies on urban redevelopment in a technological era show that citizens' empowerment needs to be enhanced further through knowledge enrichment regarding cultural heritage. Tangible assets, like built heritage, or intangible assets such as local folklore, craftsmanship, music and citizen-led heritage custodianship, can influence social dynamics and decisions regarding heritage management, marketing and redevelopment.

Reference

1. Townsend, A., & Chisholm, A. (2015). *Citizen urban science: new partnerships for advancing knowledge.*

S11. Demographic Pressure and Cultural Heritage in the South

Keywords	*demography, resources, economic development, heritage declassification, indigenous communities*
Other STEEP categories	*Political | Economic | Environmental | Legal*
Author	*Ibrahima Thiaw*

Description

Since the nineteenth century, political economy theorists have clashed over the linkages between resources and birth rate. That debate is rooted in the Industrial Revolution, but is still alive today.[1–4] According to the UN estimates, the world population is expected to increase from 7.7 billion to 9.7 billion by 2050.[5] But it is likely that countries of the Global South will be the most impacted and could alone reach an increase of 1.9 billion by 2050.[6–8] Sub-Saharan Africa's working-age population keeps the lion's share in these estimates, and Nigeria, for example, could become the third most populous country on the planet, while Niger could see its population double in 18 years.[9] Convinced that population growth is a brake on economic development, some believe that the latter can be used as a contraceptive to regulate the balance between the two. Thus, President Emmanuel Macron declared in July 2017 on the sidelines of the G20 Summit: "When countries still have seven to eight children per woman, you can decide to spend billions of euros there, you will not stabilize anything."[10] In reply, others, like Angélique Kidjo, expressed their deep disgust at this interference in the sovereignty of the intimate body of the other, especially millions of Africans, to dictate to them "what to do in their bedroom."[11]

Broad implications

Beyond the eminently political-economic and even cultural dimensions of this debate, which has become classic, the implications of this demographic growth on the conservation of cultural resources seem to have received little attention so far. How many cultural sites, especially classified archaeological and natural sites, will be exposed to economic activities to accommodate urban overpopulation, resources exploitation, or infrastructure development? What effect will the inevitable expansion of new production and exploitation sites have on historical, natural and cultural landscapes? The trend is already heralded in many countries by the declassification of many cultural and natural sites, and this process is expected to accelerate in the years to come aided by the capitalist bulimia for the accumulation of resources.

Implications for cultural heritage and its conservation

In the coming decade, major conflicts will oppose small Indigenous communities attached to their cultural and natural sites on the one hand, and states and multinationals on the other. In the urban margins, the development of slums will accelerate further and cultural and natural sites will be the subject of increased competition similar to the tragedy of the commons, which will cause massive destruction that will be difficult to control by the public authorities. The destabilizing force of these processes will be immense and will cause the redefinition of the significance of cultural resources in many countries of the Global South, which will have to make difficult choices and arbitrage between the different stakeholders on what to preserve and what to destroy. These choices will have to be sovereign, but can they disregard international standards established by nongovernmental organizations (NGOs) and other global institutions, such as ICCROM, that tend to develop universal models of

good practice that apply to all? Either way, accepting the difference will be decisive in this process.

References

1. Bouquet, C. (2018, May 3). Démographie africaine et migrations: entre alarmisme et déni. The Conversation. https://theconversation.com/demographie-africaine-et-migrations-entre-alarmisme-et-deni-94765?fbclid=IwAR0iqLgOo5Q0nvkE7I4dyI9DS1cfFiGjMQ4kWvgdpqyTi6t-n8ezLNPQIib0
2. Mahicka, H. (2019, May 30). Réduire la démographie africaine : il faut y penser. Jeune Afrique. https://www.jeuneafrique.com/mag/779665/societe/tribune-reduire-la-demographie-africaine-il-faut-y-penser/
3. Faujas, A. (2015, September 15). *Croissance démographique en Afrique : « Une chance pour certains, un frein pour d'autres »*. Jeune Afrique. https://www.jeuneafrique.com/mag/263974/societe/croissance-demographique-en-afrique-une-chance-pour-certains-un-frein-pour-dautres/
4. Foka, A. (2019, July 9). L'Afrique ou comment éviter la bombe démographique? RFI. https://www.rfi.fr/fr/emission/20190804-afrique-comment-eviter-bombe-demographique
5. *Questions Thématiques: Population*. (n.d.). United Nations. https://www.un.org/fr/global-issues/population
6. *Age Economie*. (2019, June 26). *La population mondiale devrait atteindre 9,8 milliards en 2050, et 11,2 milliards en 2100*. http://www.marchedesseniors.com/silver-economie/la-population-mondiale-devrait-atteindre-98-milliards-en-2050-et-112-milliards-en-2100/22150
7. Rabier, S., & Djoufelkit, H. (2021, January 18). *Lebasculementdémo graphiquedumon-decommenouvelhorizondu développement*. iD4D. https://ideas4development.org/basculement-demographique-horizon-developpement/
8. Rabier, S., & Lamara, F. (2021, February 8). *Dynamiques de populations dans les Suds : quelles évolutions urbaines ?* iD4D. https://ideas4development.org/dynamiques-urbaines-populations-suds/
9. Charbit, Y., & Becker, S. (2021, March 15). *Une catastrophe démographique est-elle inéluctable au Niger?* iD4D. https://ideas4development.org/croissance-demographique-niger/
10. Gaboulaud, A. (2018, July 5). *«Sept ou huit enfants par femme» : le refrain africain de Macron*. Paris Match. https://www.parismatch.com/Actu/Politique/Sept-ou-huit-enfants-par-femme-le-refrain-africain-deMacron-1554563
11. See: https://www.youtube.com/watch?v=B27qzAebcvA&t=5s

S12. Indigenous People Empowerment

Keywords	*social and political rights, cultural redistribution, vindication, knowledge construction processes, drifting ethics codes*
Other STEEP categories	*Political | Legal | Economic | Environmental*
Author	*Renata Schneider*

Description

Political and legal recognition of stateless nations and the ways in which their cultural actions and objects are produced and understood, symbolically and economically speaking, will have three repercussions. The first is related to regulations and practices that govern analysis, research and caring for their cultural heritage (and how native nations are visualized, compared to other heritages of the nation states in which they live). The second, based on a much deeper consolidation of terms and sets of symbols, human and nonhuman entities, landscapes, territories and elements that make up the notion of biocultural heritage and that will challenge the idea of "specialties," against multiple and, at the same time, much more local understanding of its elements. Finally, a series of much deeper economic collisions (as they achieve more social and cultural rights) on the use and exploitation of cultural resources and their territories.

Broad implications

- Considering the three points, one of the main changes in 15–20 years will be the production of terms, notions and analysis systems of Indigenous assets and heritage based on the work of internal intellectuals who will dialogue and sometimes go against the current ethical perspectives of study and intervention of their cultural heritage. Indigenous groups might increasingly demand to see themselves represented in ways they consider correct in the state's cultural systems and apparatuses, or perhaps, on the contrary, they will not want to see themselves and their objects represented there. This is essential because given a polysemy of groups, there will be different discursive proposals and different forms of negotiations, since there is no universal Indigenous philosophy or anything similar.
- The concept of biocultural heritage will be much stronger, discursively speaking (probably under another name), and will lead to policies of conservation that could be totally different from the current ones, since the symbolic and ritual dimensions of these territories and spaces should be assumed by the nation states also through non-divisive or unique strategies.
- Finally, with an increase in presence, there will also be a desire to manage heritage, not only at a discursive level but also to benefit from it, especially when it comes to Indigenous groups, nations or tribes that do not live in wealthy countries.

Implications for cultural heritage and its conservation

In a positive sense:

- New strategies and terms of production, study and care will be created in conservation, generating a broader debate on meanings of a given group's cultural heritage.
- Endogenous specialists will produce more solid and useful results for each case, germinating an advocacy for diversity, an essential aspect to make every Indigenous group feel represented.

- The horizons of professional specialties related to cultural heritage will be broadened towards more perfect sets of the understanding of human production in relation to its environment and nonhuman entities, avoiding bias, and results in overlapping disciplinary layers.

In a negative sense:

- Many notions established in the twentieth century by conservation as we understand it today will be destroyed and forgotten, causing a series of important disagreements. Among them will be the idea that it is not necessary to have training or arbitration from international institutions, since heritage will be conceived as a local production and cultural heritage.
- Biocultural heritage will not correspond to the sense of a reserve or a cultural landscape, which will imply great theoretical debates. In addition, the obvious collisions over resources and raw materials they contain will broaden and complicate the horizon of conflict resolution and profile of participants in the field of cultural heritage conservation and its management.[1–12]

References

1. Carroll, S.R., & Hudson, M. (2020). *The CARE principles for indigenous data governance*. ICCROM | Our Collections Matter. https://ocm.iccrom.org/documents/care-principles-indigenous-data-governance
2. Janke, T., & Grant, S. (2018). *First peoples: a roadmap for enhancing indigenous engagement in museums and galleries*. Australian Museums and Galleries Association. Warralang Projects. https://ocm.iccrom.org/documents/first-peoples-roadmap-enhancing-indigenous-engagement-museums-and-galleries
3. IIED (2021). *BioCultural Heritage*. https://biocultural.iied.org
4. Sengupta, S., Einhorn, C., & Andreoni, M. (2021). There's a global plan to conserve nature: Indigenous people could lead the way. *New York Times*. https://www.nytimes.com/2021/03/11/climate/nature-conservation30-percent.html
5. New Zealand Government. (2021). Māori culture and heritage. https://www.govt.nz/browse/history-culture-and-heritage/maori-language-culture-and-heritage/maori-culture-and-heritage
6. Heritage B.C. (2021). Indigenous cultural heritage. Reconciliation. https://heritagebc.ca/resources/first-peoples-heritage
7. See: Application guidelines – Indigenous heritage. Canada.ca. https://www.canada.ca/en/canadian-heritage/services/funding/museums-assistance/indigenous-heritage/application-guidelines.html
8. IPinCH. (2021). Indigenous peoples, cultural heritage, and the law. https://www.sfu.ca/ipinch/project-components/working-groups/customary-conventional-and-vernacular-legal-forms-working-group
9. UNESCO. (2021). *Living heritage and Indigenous peoples*. https://ich.unesco.org/en/indigenous-peoples
10. Huircapán, D., Jaramillo, A., & Acuto, F.A. (2017). Reflexiones interculturales sobre la restitución de restos mortales indígenas. *Cuadernos del Instituto Nacional de Antropología y Pensamiento Latinoamericano*, 26(1), 57–75.
11. Flexner, J.L., & Spriggs, M. (2015). Mission sites as indigenous heritage in southern Vanuatu. *Journal of Social Archaeology*, 15(2): 184–209.
12. See: Indigenous people empowerment. https://www.youtube.com/watch?app=desktop&fbclid=IwAR3 mlnAxt_WUWM5979aE395yhbyQNR8sk-Z7TXTIlLFn8lBwAZL8KsCsgek&v=GVc7sHPZaHg&feature= youtu.be

S13. New Heritage Preservation Actors

Keywords	*heritage*
Other STEEP categories	*Technological	Conservation sector specific*
Author	*Matija Strlič*

Description

Participatory methods enable a new paradigm of global grassroots engagement in heritage, conservation, research and management.

Citizen science is defined as "the involvement of nonprofessional scientists in data collection and, to some extent, its analysis." It developed conceptually and theoretically in the late 2000s and has become increasingly popular. By recruiting the help of members of the public to collect and analyze data related to heritage or heritage preservation, the public may become enthused about heritage as well as about research.

This type of data collection has been particularly successful in monitoring the presence or absence of species[1] and reporting geological observations, including earthquakes.[2] Platforms also exist that enable the development of other types of citizen science projects, such as Zooniverse, where, recently, a master's project explored the value of historical combs from diverse museum collections.[3] **The benefits of crowd-sourced measurements are diverse and include increased data-collection rates, the ability to cover large areas, and the involvement of a global audience, also because of the widespread availability of smartphones**.

Broad implications

In conservation, institutions have long relied on volunteers to carry out tasks, such as cleaning, collection, surveying, or small repairs. **The availability of pervasive technologies, such as smartphones, and particularly the emergence of global issues, such as climate change and social change, will enable a deeper and more meaningful involvement of the "general public" through participatory methods in research, conservation and heritage management more generally** (as is the example of heritage combs above). There is no barrier for global involvement, in fact, because of the prevalence of smartphones. It is feasible that through methods of citizen science, global publics can become more engaged.

Implications for cultural heritage and its conservation

In the next decade, participatory research methods will transform the way we engage the public in heritage research, conservation and management.

Several strategic documents, including the European Union Joint Programming Initiative Strategic Research and Innovation Agenda 2020,[4] foresee a significant role for participatory methods in the near future: "**Public-led research and community engagement should be a catalyst for innovation and guarantee greater impact.**" An example where this approach has already led to change, is the monitoring of climate change effects on cultural heritage using Monument Monitor,[5] an early adoption of this approach that could become global. The Natural History Museum in London, United Kingdom, has started a range of citizen science projects specifically around the topic of climate change.[6]

What is needed: Despite the potential, there are no initiatives currently that would take this approach to the global level. However, given the global issues of climate and social change

affecting heritage and its conservation, **the implications for the heritage sector and global institutions, such as ICCROM, are that (i) policies need to be developed to conduct citizen-led initiatives, and (ii) platforms need to be developed that benefit global communities in an inclusive and nondiscriminatory way**.

References

1. See: iNaturalist. inaturalist.org
2. *Citizen Science*. (n.d.). *British geological survey*. https://www.bgs.ac.uk/geology-projects/citizen-science/
3. *Zooniverse*. (n.d.). *Heritage combs*. https://www.zooniverse.org/projects/ucl-dot-dasch/heritage-combs
4. Joint Programming Initiative on Cultural Heritage and Global Change. (2020). *Strategic Research and Innovation Agenda* 2020. http://jpi-ch.eu/wp-content/uploads/2156_JPI-Cultural-Heritage.pdf
5. See: https://www.monumentmonitor.co.uk/
6. Citizen Science. (n.d.) The Natural History Museum, London. https://www.nhm.ac.uk/take-part/citizenscience.html

S14. Polyvocality in Collections, Policies and Infrastructures

Keywords	*critical heritage, dialogue, polyvocality*
Other STEEP categories	*Political | Technological*
Author	*Johan Oomen*

Description

Critical heritage challenges the "authorized discourse" approach where heritage is interpreted via an expert's perspective that tends to privilege prestigious, universal and grand narratives, neglecting the role of nondominant groups, such as women and ethnic minorities.[1] As alternative discourses do exist, clustered around different communities (defined by geography, ethnicity, culture, belief etc.), critical heritage calls into question the concept of consensual heritage that underpins a single, authorized interpretation (Smith, 2006). Plurality of values is important if heritage has to become an expression of social inclusion, rather than a means to assimilate and dissimulate different, potentially dissenting voices. By opening up to multiple interpretations, memory institutions' role shifts from that of being "guardian of collections" to "ambassador of cultural values and significance."[2] European cultural heritage institutions are increasingly addressing topics of race, religion, diversity, gender representation, colonialism, and social injustice, counterbalancing grand narratives with the history from below. The result is "an interplay of voices and viewpoints so as to offer the reader a dialogue that is polyvocal."[3] The shift of focus from the official view to the perspectives of individuals as both actors and observers of history has generated a culture of participation that evolved beyond academic interest and institutional involvement through a proliferation of community-based endeavors.[4]

Broad implications

The concept of heritage as a process of contemporary interpretation of the past is particularly significant for colonialism-related heritage, whereupon today's sensitivity changes the way a nation looks back. European media archives hold and curate recordings of former empires generated as part of the "cultural technologies" of control of populations and territories, and many have been propelled to examine such heritage, imbued with an imperialist mindset, in an attempt to decolonize and democratize it. Moreover, the opening up of archives to online users has enabled grassroots movements to challenge the colonialist mindset. However, such dissonant voices, often rich in personal accounts and memories, do not re-enter the archive, but live on the Web, on social media or YouTube.

Implications for cultural heritage and its conservation

We need to seek answers to questions on three levels:

First, understand and address polyvocality in collections.

- Imperialist powers have produced different narratives about themselves: what are these and how have they entered Cultural Heritage Institutions collections? What form have they taken (official ceremonies, anthropological documentaries, fictional films, radio broadcasts etc.)?
- In the last 20 years, historical archives have been used by both national broadcasters and activists to support opposite arguments around colonialism. How do these narratives address issues specific to the colonial past? How do they reinterpret historical content

(confrontation, resolution, reconciliation, or vindication) and what is the difference between them? (note: AI can be of assistance here, as demonstrated by the Cultural AI Lab.[5])

Second, the role of cultural heritage organizations.

- Searching the same CHI, scholar and non-scholar users seek very different content and layers of metadata accumulated over decades, which may or may not be meaningful to contemporary archive users: how do different user groups (historians, postcolonial theorists, activists, communities and filmmakers) search video archives? What needs and strategies do these different groups have? What makes their search succeed or fail (e.g., language shift)?
- How can archives and archive staff go beyond their curatorial role and become an integral part of the challenging conversations surrounding slavery and colonialism? How can memory organizations reach out to and engage with citizens, activists and communities critical of their national colonial past? What tools participative and creative practices can we offer them to invite archive exploration and reuse? Should the reframing of colonialism generated by grassroots storytelling disseminated via commercial platforms (e.g., YouTube) be incorporated into statutory audio-visual archives?

Third, accommodating multiple perspectives.

- Data infrastructures around AI and big data are reflecting that (i) data need to be interpreted differently based on the context and purpose of use and (ii) data should be understood as part of a larger data space rather than as separated across data silos. Instead of an unitary representation to reflect an objective fact, different views on the same data are needed for different applications, workflows, usages or users. For instance, media organizations need to repurpose their assets for distribution on different platforms with different audiences. Cultural organizations need to capture differences in meaning of objects in their collections depending on the time, place or background of the observer so that they can curate and present yet-untold narratives. Education providers need to tailor their learning materials linked to digital resources to match the envisaged learning outcomes and competencies of students and teachers where topics need a balanced presentation covering multiple viewpoints. Such contextualized data need a multidimensional representation, where each dimension is one context in which the data are to be interpreted in time, space, society, culture, politics, source, target audience and so on.

References

1. Smith, L. (2006). *Uses of heritage*. Routledge.
2. Somers Miles, R, Osbourne, A, Tzialli, E, & Captain, E (Eds.). (2020). Inward outward, critical archival engagements with sounds and films of coloniality. In: Somers Miles, R., Osbourne, A., Tzialli, E., & Captain, E. (Eds.), *Inward outward*. https://doi.org/10.18146/inout2020
3. Berkhofer, R. (1995). *Beyond the great story: history as text and discourse*. Cambridge, MA.
4. Robertson, I.J.M. (2012). *Heritage from below*. Ashgate.
5. See: *Cultural AI Lab*. https://www.cultural-ai.nl/

Technological

T1. Artificial Intelligence

Keywords	*AI, standardization, Artificial Intelligence, big data*
Other STEEP categories	*Societal*
Author	*Johan Oomen*

Description

Artificial intelligence controls our daily lives in many ways. And the growing availability of data, number-crunching power, and storage capacity is only going to extend that further.

AI is an important transformative force operating in both culture and media sectors, as summarized in the slogan "AI for culture." AI is changing the way we see the world around us, not only in its capacity as a technology but also in the cultural practices based on the technology. The transformative power of AI for culture and media is currently visible on several fronts. It is marking out a new phase of the digital era, in which other questions are bubbling to the surface or existing questions are coming to the fore in different forms. Europeana recently did a survey about the use of AI in the GLAM (Galleries, Libraries, Archives, & Museums (GLAM)) sector.[1] This research found that data quality is the topic for which people in the Europeana network have more practical experience with AI (29.1%), followed by knowledge extraction (29.1%), collections management (21.8%), and discovery and search (21.8%). (Meta-)data quality is also the topic in which most people are "very interested" (65%), followed by knowledge extraction (59.3%), collections management (61.8%) and discovery and search (60.0%).

The second cornerstone of optimum use of AI is involving culture and media in the development of AI in society. This is in line with the value that the creative industries have as a lever for innovation in other domains and sectors with which there is a great deal of interaction. We refer to this as **Culture for AI**. Input from culture for the introduction and application of AI can involve showing the significance of the way this new technology can contribute to a better functioning of social system and indicating how that could be done.

Broad implications

Information comes from an ever-growing multitude of digital sources. Discerning between fact and fiction, and identifying relevant facts in continuous streams of heterogeneous data and information have become immensely difficult actions, jeopardizing citizens' positive engagement, responsibility and participation in the community. Elections across the world have shown how fake news, search algorithms and recommendation systems that guide the user through the data not only sway votes but undermine the citizens' decision-making ability and informational self-determination, thus eroding the democratic system from inside.[2] A similar challenge confronts cultural and heritage conservators who continuously collect terabytes of multimodal data about society (text, pictures, video, music and photographs) in digital repositories. These repositories could in principle help citizens assess factuality and relevance, but are virtually untapped because of their size, multimodal nature and difficulty to grasp by the public.

For cultural heritage institutions the public's access to their collections connects directly with the question of sustainability of heritage preservation: How can these institutions distinguish between what is societally relevant and worth preserving, without an insight into which parts of the heritage are at the centre of the public's attention? How can cultural

heritage institutions best leverage its social value? And how can new business models in the cultural and creative sector emerge through radically improved access to collections?

The origin of the above-sketched problem is the inadequacy of the scientific and institutional instruments to respond to the current challenges of cultural heritage digitization and preservation. Available instruments were designed to manage predetermined amounts of already curated data in earlier stages of digitization and deep-learning research. They are not able to respond to current challenges of cultural heritage digitization speeding up, becoming more democratic in its production, and being intertwined with social media.

Implications for cultural heritage and its conservation

Technological

- The search and data-mining methods in the digital heritage preservation reached a standstill because they are focused on "fragments" (text, pictures and video) instead of semantically coherent ensembles of multimodal communication. As a consequence, collection of information takes place in an ad hoc manner along the path of least resistance. This has the associated risks of obscuring marginal voices or collections, and preventing the user from acquiring an independent view.
- The user has been regarded as a passive recipient and the construction of meaningful information is left to professionals or to highly motivated interest groups. The fake news phenomenon showed that meaning is shaped to a significant degree by the way in which digital data are presented to users, and by the limited option they have to weigh this information or find alternative interpretations. The migration of social contact from the physical to the online realm under COVID-19 with the concomitant risk of diversity of information has increased the need for reliable information.

Societal

- There's a need to invest in research into the responsible use of AI technology. What will define our social interaction in the future? How transparent should AI systems be? Which choices can we entrust to AI technology and which not? How can we ensure that AI technology is used responsibly?
- Significant technical efforts have been made to improve the access to data by establishing interinstitutional networks of heritage organizations to pool collections and resources and map out the users' interests. Increasingly, the limitations of data volume-focused rather than user-focused approaches are recognized and the importance of cultural and responsible AI is acknowledged. However, currently, this mostly concerns individual efforts. An integrative approach to AI in which scientific disciplines, heritage institutions and users collaborate to outline the desired features for multimodal AI is needed.

References

1. See: *AI in relation to GLAMs*. https://pro.europeana.eu/project/ai-in-relation-to-glams
2. Kraaft, P.M., & Donovan, J. (2020). Disinformation by design: the use of evidence collages and platform filtering in a media manipulation campaign. *Political Communication*, 37(2), 194–214.

T2. Cyber Security Threats: Trends to Watch

Keywords	*data management, cyber security, metadata*
Other STEEP categories	*Economic*
Author	*Beatriz Haspo*

Description

New threats, technologies and business models have emerged in the cybersecurity space as the world embraced a remote work model, especially after COVID-19, where there are no network perimeters and more applications and data in the cloud than ever before.

The indicators show that protection of data is expensive; cyber coverage premiums increased by 29% in 2020 and cyber incidents have proliferated globally.

One of the key drivers for the threats is the ability of hackers to monetize ransomware attacks by threatening to publicly leak victim's data. Besides hacking, ransomware, phishing/social engineering attacks, and IoT-based attacks, and a distributed denial-of-service (DDoS) attack is a malicious attempt to disrupt the normal traffic of a targeted server, service or network. One of the major drivers to lack of data safety is employee negligence.

Broad implications

Current and future threats will implicate loss of connectivity, exposure of data and paralyzation of operations, at both private and global levels.

There will be a need to adopt more robust security services and ransom attack-detection systems to protect remote data. For example, secure access service edge (SASE), zero trust policy (no user should be trusted), and extended detection and response (XDR). Staff training for cyber security is imperative to alert people of the possible threats. Research showed that the demand for staff with well-developed cybersecurity skills will triple in the next three years. Large service providers need to get together to join forces to protect people's data. More systems will run various levels of authentication throughout the network. There will be microsegmentation to minimize damage from hackers by creating interior walls and locks. Others will run off the network to secure critical data. **While some nations will be able to invest in data security, others will remain exposed due to financial constraints**. By not reacting to these changes, this will increase global discrepancies.

Implications for cultural heritage and its conservation

Cyber security threats will impact cultural heritage digitized data, IoT-based operations that monitor and supervise resources in the institution (such as environment monitoring etc.), and institutional operations in general. Also, there will be a financial impact to provide sustainable data protection. **Data protection will become part of the preservation of cultural heritage in general. Future research and investment will be needed to implement wireless-sensor network-based monitoring,** including low deployment costs; energy-efficient sensor nodes and remote access. The challenges will include security and privacy, coverage and connectivity, power consumption, scalability (large vs. small environments) and cost.

For ICCROM (for both internal and global data from cultural institutions):

- Education and awareness for cultural institutions around the globe to protect data as a collective group.

- Invest in staff training for cyber security to alert people of possible threats.
- Increase and sustain a budget for cyber security, including cyber security insurance.
- Increase detection accuracy by correlating intelligence and signals for threats across multiple security offerings, and improving security operations efficiency and productivity.
- Understand the new technologies engineering for data management.
- Adopt zero trust principles.

By not reacting to the trends in cyber security and recommendations above, both tangible and intangible data will be lost permanently, especially in less technologically/economically developed regions.1–5

References

1. Brooks, C. (2021, April 12). 3 key cybersecurity trends to know for 2021 (and on…). Forbes. https://www.forbes.com/sites/chuckbrooks/2021/04/12/3-key-cybersecurity-trends-to-know-for-2021-and-on-/?sh=4e0669ff4978
2. Goddard, W. (2021, June 11). What is the future of cybersecurity? IT Chronicles. https://itchronicles.com/information-security/what-is-the-future-of-cybersecurity/
3. Novinson, M. (2021, May 17). 10 emerging cybersecurity trends to watch in 2021. CRN. https://www.crn.com/news/security/10-emerging-cybersecurity-trends-to-watch-in-2021
4. Freire, N. (2020, December 15). *Innovating metadata aggregation in Europeana via linked data*. Europeana Pro. https://pro.europeana.eu/post/innovating-metadata-aggregation-in-europeana-via-linked-data
5. Zahmatkesh H., & Al-Turjman F. (2020). A review on the use of wireless sensor networks in cultural heritage: communication technologies, requirements, and challenges. In: F. Al-Turjman (Ed.) *Trends in cloud-based IoT* (pp. 21–35). Springer. https://doi.org/10.1007/978-3-030-40037-8_2

T3. Data: Availability, Analysis and Modeling

Keywords	*metadata, description of objects, linked/aggregating metadata*
Other STEEP categories	*Societal*
Author	*Beatriz Haspo*

Description

Research indicated that there are trends to sustainable metadata aggregation models for the cultural heritage sector via linked data through multicountry collaborations, which facilitate the adoption of common standards and good practices for data gathering across the network and common digital aggregation strategy. Indicators show that **knowledge production today relies increasingly on exchanges between groups of people who connect through the Internet**.

In the future, those indicators will lead to a new and high-potential area of aggregation of crowdsourced content and sharing findings worldwide. Future development is in the creation and application of quality criteria for aggregating metadata in an environment of huge quantities of crowd-generated content. Crowdsourcing is becoming an important aspect of future work of thematic/domain aggregators (large service platforms).

Broad implications

The key drivers to link metadata are optimization of resources and data-sharing platforms.

This will imply collaborative community activity with a mission to create, maintain and promote linked/aggregating metadata for structured data on the Internet, for example, for good-quality metadata descriptions of cultural heritage objects. However, the trend is a focus on people, communities, their stories and knowledge, rather than objects per se. **The current trend of online public interactive and interconnected spaces will continue to enable new practices of data and information generation, sharing and aggregation in many forms**.

Implications for cultural heritage and its conservation

For cultural heritage: There is interest in implementing linked data among data providers, but it will require significant institutional resources. The outcome is that the involvement of the community at large becomes critical for the future of crowdsourcing and data management. **To create a sustainable metadata aggregation model for the cultural heritage sector, there will be a need for partnerships with other organizations outside the field, including those interested in science, social engagement and citizenship**. It will be important to look in depth at what has been done in other fields, such as natural science/biodiversity, and also to divide data gathering according to different types of crowdsourcing. It seems that the most impact on preservation will be to engage and involve new audiences for crowd-sourcing activities outside the field of conservation/restoration/preservation.

While cultural heritage institutions create their own crowdsourcing projects and LibGuides,[1] the access and sharing of content remains limited, for example, to the institution's website. This will require researching other disciplines where there is a high level of crowdsourcing activity, such as natural sciences and biodiversity.

Because preservation and archiving are resource-driven, this will lead to a growing problem of disappearance or irretrievability of a large amount of valuable digital cultural heritage content. **For sustainable data management, cultural heritage institutions will need to look seriously into investing in user-generated content tools, programmes and human/technical resources, and explore models that could be implemented with little dependency on not of energy-based systems.**

By not reacting to this change, there may be a loss of intangible information and also metadata, in addition to limiting preservation actions in countries/regions that don't have a strong/stable energy system.

ICCROM can lead initiatives to promote regional engagement for crowdsourcing projects and information sharing; partner with other fields, such as natural science/biodiversity; and see how this could be emulated in cultural heritage, how to assess the quality and value of crowdsourced content and data, and how to consider it in the context of what cultural heritage institutions will collect.[2]

References

1. LibGuides is a hosted, web-based content management system popular within libraries worldwide. For further information, see: Martinez, J. (2014). *Introduction to libGuides: the basics*. Boston College Libraries. libguides.bc.edu/libguidesintro
2. Freire, N. (2020, December 15). *Innovating metadata aggregation in Europeana via linked data*. Europeana Pro. https://pro.europeana.eu/post/innovating-metadata-aggregation-in-europeana-via-linked-data

T4. Data Use: Supporting a Public Value-Based Ecosystem for Distribution and Interaction

Keywords	*big data, distributed web, next generation internet*
Other STEEP categories	*Legal | Societal*
Author	*Johan Oomen*

Description

The past year has clearly demonstrated the value of digital access to culture for global society, particularly in a time when most cultural institutions were shuttered for months on end. The mere fact that many institutions had made their content available online contributed to viewers' mental health and wellbeing.1 Online access to, and contact with, culture created a sense of belonging to a community, despite the temporary physical separation. Furthermore, the enormous intensification of online activities, no longer limited to a specific geographic location, created a unique opportunity for the archives to not only rebuild their relationship with their existing audiences but also to reach a new audience, one eager to vividly participate in online culture, learn about the institution's offer and sometimes contribute creatively by taking part in crowdsourcing initiatives. However, the infrastructures used to facilitate these exchanges are not in line with public values.2

Broad implications

Public broadcasters, libraries, schools, museums and other public institutions that are organized around public values and are tasked with providing public services often find themselves dependent on digital instruments or tools that serve anything but public values. These instruments are usually provided by for-profit companies and are optimized for enhancing shareholder value. Examples are software kits for sending out newsletters, performing user analytics or platforms for social interaction, and community-building around these public services.

This practice has a number of detrimental effects. Most importantly, digital services essential for the functioning of modern society are delivered by commercial platforms and companies, giving them an unwarranted power. They control algorithms, data about content and users, and policy on development and (dis-)investment. Furthermore, these algorithms and datasets mostly remain proprietary, outside of public scrutiny. Society thus delivers vital instruments and data that have become indispensable for information dissemination, delivery, discovery, education, entertainment, navigation, collaboration, etc. into the hands of very few.

The second harmful effect is of a more operational nature but also flows from this one-sided dependency. Public institutions that employ proprietary services, mostly delivered by the five Big Tech companies, often suffer from "vendor lock in." A switch to another service might entail, for instance, loss of (historical) data. This in itself would be sufficient reason to abstain from such a switch. Anyhow, usually there's a high cost involved in switching vendors, thus creating an extra obstacle for any change in acquisition policy. This affects the entire public sector: from government to education, healthcare, public media and cultural institutions.

Implications for cultural heritage and its conservation

Public organizations have, as a response to these growing concerns about the influence and social ramifications of "big tech," become more aware of legal and ethical dimensions

while choosing between different content distribution solutions. Aside from the obvious factors (cost, usability, scale and quality of service), increasing consideration should be given to aligning technology with public values. Does the system track users? Who owns data created by the system? Are the algorithms open and accessible so that we can trace bias and take corrective action? Are we comfortable showing online advertisements that collect user data on our portals? It is important for institutions to strategize which considerations are important for them given their missions, as these choices will greatly affect successful technical implementation, the cost perspective and rights of end-users.

Lawmakers in different countries are considering legal actions that they will need to take to support pluriformity, openness and privacy online. Cultural heritage organizations will also need to consider how they can contribute to an Internet that is more aligned with public values, and work towards the creation of a public service data ecosystem (PSDE) as a way of modeling an environment for data services that has the potential to improve access to data to support the delivery of digital public media services while building and maintaining trust with audiences, incorporating new types of functionality and controls to support transparency around data use and active choice.

References

1. Hickley, C. (2021, September 9). *Brussels doctors prescribe museum visits to treat COVID-19 stress*. The Art Newspaper. https://www.theartnewspaper.com/2021/09/09/brussels-doctors-prescribe-museum-visits-to-treatcovid-19-stress
2. See: *Shared Digital Europe*. https://shared-digital.eu/vision/

T5. Digital Media and Communication

Keywords	*heritage, digital tech, accessibility, communication*
Other STEEP categories	*Environmental*
Author	*Thabo Manetsi*

Description

The global COVID-19 crisis has laid bare certain deficiencies, risks and weaknesses in heritage management. In many instances, the heritage sector has not been adequately prepared to adapt to technological advancement and developments of the 4th Industrial Revolution (4IR). Most of the technology that exists and is used in heritage conservation is outdated and requires rapid updating/upgrading in keeping with the ever-changing and evolving technology. Even though the existing technology is able to support basic conservation work (including virtual experiences and access to heritage information), the heritage sector needs to be agile and adapt to latest digital technologies to effectively support heritage management.

Similarly, the heritage sector needs to play a proactive role to respond to and influence digital trends, especially regarding effective and accurate (factual) communication of heritage information to mitigate the risk of disseminating fake news, disinformation, omission and distortion/misrepresentation of information.

Broad implications

The digital and information and communications technology (ICT) space is an integral part of the new COVID-19 reality, and as such the drastic changes brought about by technology serve to provide an enabling environment to support heritage management work now and into the future.

Implications for cultural heritage and its conservation

The trends illustrate a strong will for the heritage sector to take advantage of digital technologies to increase the visibility and understanding of heritage – increased digital tech to support conservation work and access to information on cultural heritage resources (including virtual experiences).

T6. Digital (Virtual) Workplace

Keywords	*digital workplace, remote working, fairness*
Other STEEP categories	*Environmental | Economic | Societal | Political | Legal*
Author	*Stavroula Golfomitsou*

Description

The idea of working remotely has been explored for a few years with the recent pandemic forcing policies and use of new platforms to improve ways of doing so. As environmental concerns require drastic actions to cut down on CO_2, and property costs are expected to rise over the next decades, organizations will be forced to consider a more flexible and agile way of working. Working remotely using digital/virtual platforms will become even more common. In addition, young people entering the workforce will have more familiarity with this and possibly a different attitude towards digital tools and life.

Broad implications

Remote/digital working will have a positive effect on climate change, as it reduces our carbon footprint, with less people commuting to and from work. Working remotely and meeting people digitally implies use of new or emerging platforms, some of which will incorporate virtual and augmented reality (including use of holograms) to simulate office space/meeting rooms. Office spaces will become smaller, with fewer offices and shared desks. Meeting colleagues or potential collaborators only virtually will have implications on the type of collaboration to be achieved. A wider impact might be social isolation and loneliness, especially in older generations. Working remotely over digital platforms might have an impact on cybersecurity, which needs to be noted.

Implications for cultural heritage and its conservation

A potential impact on cultural heritage institutions will be increased inequalities between members of staff as some will still be required to work on site while others will work remotely. Less office space implies free space for other activities, such as educational programs and outreach activities important for all heritage institutions.

Conservation activities will be effected with focus on preventive measures, rather than remedial treatments, which will have an impact on the transfer of knowledge on treatments and loss of tacit knowledge. In addition, preservation of certain types of objects will be affected as less remedial work will be carried out.

A positive implication for ICCROM will be that if staff works remotely, it will need to occupy a smaller office space with significant reduction of costs, which will allow staff to be based in different continents instead of a city, with subsequent reduction of travelling distances/costs. ICCROM's international role will be enhanced if staff works from different parts of the world. Reduction of operational costs will lead to increased staff and activities for ICCROM. A negative implication will be on the visibility of ICCROM as an organization and, as in other institutions, potential inequalities when it comes to staff, especially if salaries are adjusted to meet levels in the countries staff is living/working. A flexible solution might be used, considering different models for remote work.[1–3]

References

1. Revoy, J. (2021). What's the future of remote working? SpaceIQ.com. https://spaceiq.com/blog/future-of-remote-working
2. Nira. (2021). *The future of remote work*. nira.com. https://nira.com/future-of-remote-work
3. Theron, E. (2021, September 6). How remote working will reshape the world by 2030. hackermoon.com. https://hackernoon.com/how-remote-working-will-reshape-the-world-by-2030-6x2035cb

T7. Digitization

Keywords	*new technology, digitization, ICT, big data, AI*
Other STEEP categories	
Author	*Hirofumi Ikawa*

Description

- The number of internet users in the world is 4.66 billion, accounting for 59.5% of the world's population.[1]
- Even if the lockdown continues, a period of social distancing is likely to follow. Digital engagement complements traditional methods of engagement. Engaging more people in the community is in everyone's best interest.[2]
- Data are not costless, and are not without power imbalances, nor ahistorical. Identify ways in which citizens' rights are being redefined in relation to data-enabled technologies.[3]
- In blockchain news, there is a lot of talk about NFTs, which are unique and not interchangeable with others. Currently, the focus is on using this technology to sell digital art.[4]
- Metadata are data that describe other data in order to increase their usefulness and meaning. Without metadata, it would be impossible to locate a specific collection item. Qualitative analysis and personas can be created to reveal the preferences of visitors.[5]
- Also, being able to participate in urban topics and participatory processes is attractive to the younger generation, for example, with the gamification of urban planning.[6]

Broad implications

What will the Internet look like in 2040? By 2040, there will be more than one Internet, and large technology companies will compete. With the proliferation of big data and increased transparency, the challenges of security and privacy will remain, and the IoT[7] will be there to help every step of the way.[8]

Impact of the social structure of the city on a local, regional, and global scale: If the digitization of cities is successful, the social interaction of citizens can shape the built environment. The city of the future can shape its built environment through the social interaction of its citizens.[9]

According to a survey of technology professionals, academics, practitioners and other leaders in business and public institutions, the use of technology significantly overcomes the negative aspects of the digital age.[10]

Active and continuous collaboration among citizens, organizations and institutions is essential for the realization of smart communities. Engaging citizens in the participation process is still an open issue. Gamified applications create a better user experience and citizen participation.[11]

Implications for cultural heritage and its conservation

- With the simplification of devices and the improvement of digital technology, almost all cultural heritage can be digitized. NFT technology may be used to guarantee their authenticity.

- As most citizens carry digital devices, citizen monitoring of cultural heritage may become more common.

As cultural heritage is increasingly digitized, it can be distributed as content for games and movies, which may spark interest in cultural heritage for young generations.[12–14]

References

1. Statista. (2021 January). Global digital population as of January 2021 (Graph). https://www.statista.com/statistics/617136/digital-population-worldwide/
2. DigitalAgenda. (2020, May 15). Going digital: the future of community engagement. Medium. https://medium.com/@digitalagenda/going-digital-the-future-of-community-engagement-a62794f07ca5
3. Powell, A. (2021, June 7). Urban life and civic action in "smart" cities. Media@LSE. https://blogs.lse.ac.uk/medialse/2021/06/07/urban-life-and-civic-action-in-smart-cities/
4. Clark, M. (2021, August 18). NFTs, explained. The Verge. https://www.theverge.com/22310188/nft-explainer-what-is-blockchain-crypto-art-faq
5. Recollect. (n.d.). Metadata and cultural heritage collections. https://www.recollectcms.com/metadata-and-cultural-heritage-collections/
6. Puttkamer, L. (2020, November 3). *Gamification in urban planning: participation through Minecraft*. Urbanet. https://www.urbanet.info/gamification-in-urban-planning-participation-through-minecraft/
7. The Internet of things (IoT) describes physical objects (or groups of such objects) with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks for further information. See: Sripriyanka, G., & Mahendran, A. (2021). A study on security privacy issues and solutions in internet of medical things – a review. *Intelligent IoT systems in personalized health care*, pp. 147–175.
8. Cave, K. (2015, September 8). What will the internet look like in 2040? IDG Connect. https://www.idgconnect.com/article/3582444/what-will-the-internet-look-like-in-2040.html
9. Rollison, B. (2017, June 16). Digital cities: an introduction to a new civic layer. Medium. https://medium.com/@bkrollison/digital-cities-an-introduction-to-a-new-civic-layer-25f3a4067851
10. Elon University. (2020, June). Credited responses: future of social and civic innovation. Imagining the Internet. Elon University. https://www.elon.edu/u/imagining/surveys/future-of-civic-innovation-2020/credit/
11. Romano, M., Díaz, P., & Aedo, I. (2021). Gamification-less: may gamification really foster civic participation? A controlled field experiment. *Journal of Ambient Intelligence and Humanized Computing*. https://doi.org/10.1007/s12652-021-03322-6
12. Google Maps. *Photogrammetry captures* [Interactive map of 3D record of London cityscape by individual volunteers]. Retrieved 11 October 2021 from https://www.google.com/maps/d/u/0/viewer?mid=157uOybfcbWq0REjEebBVV-iGw9bSwNLZ&hl=ja&ll=51.5191887078087%2C-0.075655760676381 91&z=12
13. Users can explore iconic locations in 3D, discover the tools of digital preservation, and download the collection on Google Arts & Culture. See: https://artsandculture.google.com/project/openheritage
14. Time machine is aiming to join Europe's rich past with up-to-date digital technologies and infrastructures, creating a collective digital information system mapping the European economic, social, cultural, and geographical evolution across times. See: https://www.timemachine.eu/about-us/

T8. Machine Learning

Keywords	AI, digitization, IoT, data, monitoring
Other STEEP categories	
Author	Hirofumi Ikawa

Description

Machine learning is a computer algorithm that automatically improves itself by learning from experience, and is regarded as a type of AI. It learns by using data called "training data" and uses the learning results to perform tasks.

- The machine learning market is expected to grow to USD 8.81 billion by 2022.[1]
- The European Union is funding the "Saint George on a Bike" project, which aims to enable AI to recognize the context of cultural heritage through machine learning.[2]
- The National Library of the Netherlands is trying to make AI aware of cultural contexts and open up its digitized library collections in a new way.[3]
- The progress in sensor device technology has been remarkable. A new smart portable sensor, Tattoo, designed to analyze the surfaces of cultural heritage sites, uses machine learning to diagnose localized damage to art materials as well as online monitor environmental factors that cause chemical, physical and biological deterioration phenomena.[4]
- The European Commission supports methods to promote and preserve the digitization of cultural heritage. Digitization of cultural heritage is important for the protection, preservation, restoration, research, dissemination and promotion of tangible and intangible cultural assets provided by all types of cultural institutions. Technologies such as 3D technology, AI and VR/augmented reality, ensure the preservation of cultural heritage.[5]
- AI has the ability to generate vast amounts of data which can be used to enrich cultural heritage collections. However, AI brings with it a number of ethical issues that need to be examined closely.[6]
- Digital technology offers a new, cost-effective and reliable way to preserve cultural heritage and add value and excitement to it, using new multimedia and digital technologies, such as 3D modelling, VR, augmented reality, and gaming to excite younger generations.[7]
- Giving AI the power to be a policymaker could have disastrous consequences. To that end, the digitization of various content should be promoted, and AI should be taught the complex precepts of human history and culture to increase the likelihood that it will preserve and reflect our shared cultural heritage and, by extension, our humanity.[8]

Broad implications

- The combination of machine learning, AI, natural language processing and code generation technologies means that by 2040, **machines will be writing most of their own code, not humans**.[9]
- By 2040, AI will have a better scientific understanding of causal models and will be able **to evaluate courses of action, such as responses to crises**. AI can collaborate with human users.[10]

- AI and machine learning will change the way we live, **making data and information available in real time**. The **amount of work will decrease and most of the routine and dangerous tasks will be done by robots**.[11]
- In 2030 and beyond, AI will have the ability to work with humans to improve human behaviour and responses; **AI will put people in appropriate teams** to meet specific goals and problem sets.[12]
- The level of AI will increase dramatically, and distributed autonomous organizations will develop. AI will be able to **autonomously carry out set objectives without direct human supervision**.[13]
- The transition to space-based archaeology will be realized in the next few years. A suite of satellites managed by the European Union will be used to continuously provide high-resolution images and data to improve environmental management, and **AI will enhance long-term monitoring** by quickly scanning vast amounts of data to identify areas of interest.[14]

Implications for cultural heritage and its conservation

- IoT technology and satellites will enable detailed, real-time monitoring of cultural heritage. In addition, cultural heritage will be digitized for preservation (Digital Twin), and will be traded as content for VR and games.
- By understanding the context of cultural heritage, AI will be able to recommend cultural heritage according to individual preferences.
- AI will be able to autonomously perform environmental impact assessments and risk management for cultural heritage protection.
- In order to avoid the negative impacts of AI on human society, efforts to make AI understand the context of human cultural heritage will be promoted.

References

1. Rose, S. (2020, March 21). What is the future of machine learning? Medium. https://codeburst.io/what-is-the-future-of-machine-learning-f93749833645
2. DIGITALMEETSCULTURE. (2020, July 28). Leveraging the power of AI for European cultural heritage. https://www.digitalmeetsculture.net/article/leveraging-the-power-of-ai-for-european-cultural-heritage/
3. National Library of the Netherlands. (2020, November 17). *Artificial Intelligence improved by cultural heritage*. https://www.kb.nl/en/news/2020/artificial-intelligence-improved-by-cultural-heritage
4. Talamo, M., Valentini, F., Dimitri, A., & Allegrini, I. (2020). Innovative technologies for cultural heritage: tattoo sensors and AI: the new life of cultural assets. *Sensors (Basel)*, 20(7), 1909. https://doi.org/10.3390/s20071909
5. European Commission. (2021). *CORDIS results pack on digital cultural heritage: how digital technologies can play a vital role for the preservation of Europe's cultural heritage*. https://cordis.europa.eu/article/id/413473-how-digital-technologies-can-play-a-vital-role-for-the-preservation-of-cultural-heritage
6. Markus, G. (2021, March 4). Exploring AI in the cultural heritage sector. Europeana Pro. https://pro.europeana.eu/post/exploring-ai-in-the-cultural-heritage-sector
7. Ahmed H.O., Belhi A., Alfaqheri T., Bouras A., Sadka A.H., & Foufou S. (2021). A cost-effective 3D acquisition and visualization framework for cultural heritage. In: X.S. Yang, S. Sherratt, N. Dey, & A. Joshi (Eds.), *Proceedings of fifth international congress on information and communication technology: advances in intelligent systems and computing*, vol. 1184 (pp. 495–503). Springer. https://doi.org/10.1007/978-981-15-5859-7_49

8. Werkheiser, G. (n.d.). Artificial intelligence: cultural heritage required. Cultural Heritage Partners. http://www.culturalheritagepartners.com/artificial-intelligence-cultural-heritage-required/
9. Billings, J.J., McCaskey, A.J., Vallee, G., & Watson, G. (2017). *Will humans even write code in 2040 and what would that mean for extreme heterogeneity in computing?* ArXiv. https://arxiv.org/abs/1712.00676
10. Gil, Y., & Selman, B. (2019). *A 20-year community roadmap for artificial intelligence research in the US.* Computing Community Consortium (CCC) and Association for the Advancement of Artificial Intelligence (AAAI). https://cra.org/ccc/resources/workshop-reports/
11. Jonathan, P.S. (2021, September 15). AI, machine learning will change the way we live. The Hindu. https://www.thehindu.com/news/national/andhra-pradesh/ai-machine-learning-will-change-the-way-we-live/article36464676.ece
12. Chenok, D. (2019, January 10). *Visions of government in 2040: the future of artificial intelligence*. IBM Center for the Business of Government. https://www.businessofgovernment.org/blog/visions-government-2040-future-artificial-intelligence
13. Pyle, D., & San José, C. (2015, June 1). An executive's guide to machine learning. McKinsey Quarterly. https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/an-executives-guide-to-machine-learning
14. Downstream Gateway. (2021, February 9). *Earth observation applications and machine learning for cultural heritage preservation*. https://down2earth.esa.int/2021/02/earth-observation-applications-and-machine-learning-for-cultural-heritage-preservation/

T9. New Technologies

Keywords	*AI, digitization, IoT, data, monitoring*
Other STEEP categories	
Author	*Hirofumi Ikawa*

Description

- Artificial intelligence solves problems faster than humans can. Experts are predicting the arrival of a phenomenon known as **technological singularity**. Experts predict it will be around the **year 2040**.[1]
- Currently, **only 15% of the world's cultural heritage is available in digital format**, but there is a burgeoning movement to promote the digitization of World Heritage. The German company CultLab3D has changed the digitization process and it now only takes five minutes to create a digital copy of an object. **The European Commission** is attempting to harness the analytical power of artificial intelligence to analyze big data, with **more than 300 organizations providing massive amounts of data detailing thousands of years of Europe's past**. The end result is **a simulation of Europe's social, economic, cultural and geographical history**.[2]
- The US military considered the technological changes over the past 20 years related to military innovation using the basic framework built in 2000, and emphasized the lesson that **computer advances create vulnerabilities**. The next two decades are likely to be more innovative due to rapid computer innovation, and the dynamics of robotics and cybersecurity are likely to intensify.[3] The US Department of Defense has invested in developing technology that allows **the human brain to communicate directly with machines**; brain–computer interface (BCI) could be used to monitor the cognitive workload of soldiers, control drone swarms and work with artificial limbs. A number of policy, safety, legal and ethical issues need to be assessed before the technology can be widely deployed.[4]
- Technology has changed dramatically in 100 years and is moving forward faster than ever before. Organ printing, brain-computer interfaces, and electric cars will become mainstream. Many of the technologies in use today were once used in science fiction movies.[5]
- **The building and construction sector is responsible for more than one-third of the world's final energy consumption and nearly 40% of the world's direct and indirect CO_2 emissions.** However, several heritage organizations are opposed to the fact **that the protection of historic buildings does not play an important role in the European Union Green Deal's strategy to combat climate change**.[6]
- Eight highly interconnected Science and Technology (S&T) sectors will be major game changers in the next two decades: data, AI, autonomy, space, hypersonics, quantum biology and materials. Disruptive effects are likely to come from a combination of emerging and disruptive technologies (EDTs) and complex interactions.[7]

Broad implications

- After the mid-2030s, the wave of automation will be so overwhelming that a large portion of the population will not be able to find gainful employment. Society will be funded by a tax on the wealth created by robots. The robot tax could be used to provide a "universal

income" to those who cannot find paid work. They will be equipped with smart contact lenses, earbuds and smart jewelry. Health and fitness monitors will be sewn into clothing.[8]
- Quantum computers are expected to revolutionize computing, but they may also make it possible to break the digital cryptosystems that underpin the modern information and communications infrastructure. As a result, quantum computers could jeopardize secure communications, financial transactions, and the systems that underpin the global economy.[9]
- Digitization will add significant value to the cultural heritage sector in the areas of documentation, preservation and research. On the other hand, there is a risk that the methods of digitization may lead to an objectification of the means, and that the actual value of cultural heritage may be devalued.[10]
- The status of copies of cultural heritage is showing signs of change. Two important topics were discussed at the international conference, including the impact of perfect replicas on the art market. There were remarks, such as the option to return originals to countries that have been taken away by the West. There was also a focus on what digital data can bring to the world of culture. Some say that if we encode digital data into synthetic DNA, all the data in the world will fit into a suitcase.[11]
- Sailors working on a short-range inland ferry in Norway are at risk of losing their jobs as a result of autonomous operation. Captains and engineers may be transferred to shore duty, reducing the need for personnel. Future seafarers will need to have an understanding of maritime issues and three digital skills: data savvy and the ability to interpret and analyze data, physical and digital operations, and software engineering.[12]
- Through one's own digital twin, encompassing all genetic, clinical and behavioural medical history, AI will provide deep insights into what is keeping one healthy, and automatically suggest corrective actions to prevent or treat disease.[13]

Implications for cultural heritage and its conservation

- The data brought about by the increasing digitization of cultural heritage will be used to simulate social, economic, cultural and geographical history.
- Reproduction of cultural heritage will be considered as an option for resolving disputes regarding the return of cultural heritage.
- Every element of cultural heritage will be digitized and shared as a digital twin on extremely compact terminals and brain interfaces. At the same time, however, the realization of quantum computers will make the survival of data security a serious issue.
- Cultural heritage professionals will be required to possess three digital skills: the ability to become familiar with, interpret and analyze data; the operation of physical digital devices; and software engineering.

References

1. Patel, A. (2016, October 30). *Year 2040: technology will have changed the world in an unimaginable way*. Firstpost. https://www.firstpost.com/living/year-2040-technology-will-have-changed-the-world-in-an-unimaginable-way-3080840.html
2. Boo, H. (2020, April 2). A digital future for cultural heritage. *Arts Management & Technology Laboratory Blog*. https://amt-lab.org/blog/2020/3/a-digital-future-for-cultural-heritage
3. O'Hanlon, M. (2018). *Forecasting change in military technology, 2020–2040*. Brookings. https://www.brookings.edu/research/forecasting-change-in-military-technology-2020-2040/
4. Binnendijk, A., Marler, T., & Bartels, E.M. (2020). *Brain–computer interfaces: U.S. military applications and implications, an initial assessment*. Rand Corporation. https://www.rand.org/pubs/research_reports/RR2996. html

5. Matthews, K. (2019, August 28). 4 *Life-changing technologies we'll see by the year* 2040. Innovation & Tech Today. https://innotechtoday.com/life-changing-technology
6. Buzatu, S. (2021, April 15). *The cultural heritage challenges a sustainable future*. POCITYF News. https://pocityf.eu/news/the-cultural-heritage-challenges-a-sustainable-future/
7. NATO Science & Technology Organization. (2020). *Science & technology trends* 2020–2040: *exploring the S&T edge*. https://www.nato.int/nato_static_fl2014/assets/pdf/2020/4/pdf/190422-ST_Tech_Trends_ Report_2020-2040.pdf
8. Allianz Partners. (2019). Megatrends of the 21st century: the world in 2040: the future of healthcare, mobility, travel and the home. https://www.allianz-partners.com/en_IT/Media/Futurology-Series/The-World-in-2040. html
9. Vermeer, M.J.D., & Peet, E.D. (2020). Securing communications in the quantum computing age: managing the risks to encryption. RAND Corporation. https://www.rand.org/pubs/research_reports/RR3102.html
10. Pollmer, U. (Ed.) (2020). *Cultural heritage in crisis cultural heritage research at European level: challenges in times of climate change and digitalization*. Fraunhofer Center for International Management and Knowledge Economy IMW. https://cultural-heritage-and-multilateralism2020.com/storage/documents/broschuere_villavigoni_satz_20200512_Druckauf_losung.pdf
11. Lowe, A., Mitchell, E., Béliard, N., Fornaciari, G., Tomassini, T., Nieto, B., & Damone, G. (Eds.). (2020). *The aura in the age of digital materiality: rethinking preservation in the shadow of an uncertain future*. Silvana Editoriale and Factum Foundation for Digital Technology in Conservation. https://www.factum-arte.com/resources/files/ff/publications_PDF/the_aura_in_the_age_of_digital_materiality_factum_foundation_2020_ web.pdf
12. World Maritime University. (2019). *Transport* 2040: *autonomous ships: a new paradigm for Norwegian shipping: technology and transformation*. http://dx.doi.org/10.21677/itf.20190715
13. Tas, J. (2018, December 17). 2040: *How technological innovation will have changed our lives and society*. LinkedIn Pulse. https://www.linkedin.com/pulse/2040-how-technological-innovation-have-changed-ourlives-jeroen-tas/

T10. New Technologies: Immersive Experiences

Keywords	AR, *standardisation*, *immersive technologies*
Other STEEP categories	*Environmental*
Author	*Johan Oomen*

Description

Opportunities created by digital technologies enable cultural heritage institutions to offer online and onsite experiences and services that (i) increase outreach and increase access of cultural content to a wider audience without being restricted by crowd sizes, opening hours, or travel limitations. This (ii) allows for the emergence of new product innovations, and (iii) increases the resilience of the cultural heritage sector. However, to succeed in the current era of information overload in competition with well-financed media groups, digital cultural content needs to be innovative, immersive, and of extremely high quality to capture the attention of the public. Successful strategies in digital communication that will widen the access and appeal of cultural heritage will need to include an interdisciplinary combination of (i) high-quality content, (ii) immersive technologies, such as AR, VR and MR,[1] and (iii) captivating stories.

Recently, cultural and creative sector professionals have invested effort and budget for making more immersive and interactive stories. Newspapers and broadcasters are using, for example, novel technologies for bringing content closer to the audience by creating 3D-based animations[2] using WebGL for illustrating complex concepts, introducing 360 video content in the production workflow,[3,4] instrumenting outside environments like stadiums[5] to explore novel ways of transmitting sports, and extending traditional studios with augmented reality technology.[6] Museums and cultural organizations have also embraced technology for breaking the 2D barrier of the screen when providing access to their collections by offering individual immersive visitors,[7–9] with few examples where connected visitors[10] can experience the artefacts together. Finally, there are a plethora of examples of new visionary performance pieces that are transforming the artistic landscape, where professionals combine innovations from different artistic domains (e.g., gaming and theatre)[11] and from different technologies (e.g., spatial audio, VR, and haptics).[12] The most recent explorations aim at making the audiences participate in the story[13,14] and at using novel capturing technologies like volumetric video[15,16] for telling new types of stories.

Broad implications

While immersive technologies are widely adopted in gaming, media and television, their use by cultural heritage institutions is under-exploited as a way to engage audiences with narratives that entertain and educate. Some front-runners in the cultural heritage space have successfully deployed these technologies, but today's solutions are often not scalable – they are custom-built for a specific project, cannot be reused, and require significant resources to implement. Additionally, the execution of such immersive projects requires collaboration with creative companies and technological partners who bring specialized knowhow and tools on immersive storytelling, content creation and interaction design. Since cultural heritage professionals lack this knowledge, it prevents them from fully engaging in the creative process and exploring the opportunities of immersive technologies. This creates an especially high barrier for immersive storytelling adoption in small and medium organizations. Therefore, the technologies do not have the expected uptake, although

several case studies document their effectiveness in the cultural sector. Consequently, their actual impact on end-users (support learning activities, support creatives in making new works etc.) is hardly assessed. Hence, the cultural heritage sector finds itself at crossroads: Will the entire sector and a wide variety of users benefit from the opportunities provided by digital transformation, or will the impact be limited to the privileged few?

Implications for cultural heritage and its conservation

Together, cultural heritage institutions and the cultural and creative industries (CCIs) have a central role in shaping the social, cultural and entrepreneurial fabric of the European Union. Where CCIs are

exploiting creativity and tech knowledge to push innovation, cultural heritage institutions are applying these concepts and technologies to their cultural content and engaging with their audience, (f.i. facilitate remote visits, make on-site experiences more engaging, and reach out to new user groups). However, both sides lack access to innovative technologies and content development processes due to the intricate, highly interdisciplinary fields of developments.

This requires specific skills, given the high complexity of the individual technologies, which need to be customized on a case-by-case basis, hence creating huge costs and low scalability. Furthermore, the current lack of interaction between cultural heritage owners and media producers from creative industries limits the possibilities to experiment and introduce truly disruptive immersive storytelling experiences.

References

1. Augmented Reality (AR)/Virtual Reality (VR)/Mixed Reality (MR)
2. See: Covid-19 particle and airflow simulations. awards.journalists.org/entries/covid-19-particleand-airflow-simulations/
3. See: The *New York Times*. The Daily 360. [videos playlist]. www.youtube.com/playlist?list=PL4CGYNsoW2iDN-xj9xxfgRLsqmAdY8J_W
4. See: LUCID WEB sandbox.vrt.be/cases/lucidweb
5. See: SATORESTUDIO. RUGBY_VER_FINAL [video]. vimeo.com/580667337/6f24fefe53
6. Zero Density. (2020). *The weather channel: a new approach to everyday weather presentation with reality virtual studio.* www.zerodensity.tv/euen/the-weather-channel-a-new-approach-to-everyday-weather-presentation/
7. Pavid, K. (2018, March 6). Explore the museum's collection with Sir David Attenborough. www.nhm.ac.uk/discover/news/2018/march/explore-the-museum-with-sir-david-attenborough.html
8. See: Museo Thyssen-Bornemisza. (n.d.). Enter into the painting. Virtual reality. Travelling across Spain 2019–2020. www.museothyssen.org/en/support/corporate-support/enter-painting-virtual-reality-travelling
9. See: Sint-Baafs Cathedral Ghent. (n.d.). GHENT ALTARPIECE AR TOUR. www.sintbaafskathedraal.be/en/ghent-altarpiece-ar-tour/
10. See: MEDIASCAPE Project. www.beeldengeluid.nl/en/knowledge/projects/mediascape
11. See:RoyalShakespeareCompany.Dream|Trailer[video].www.youtube.com/watch?v=1UM69ygvtiA
12. See: SATORESTUDIO. Cosmos Within Us Trailer [video]. vimeo.com/367299986
13. See: UNIFrance. Alice, the Virtual Reality Play (2017) – Trailer (International) [video] www.youtube.com/watch?v=jn_h904Zk4I&t=2s
14. See: m.facebook.com/story.php?story_fbid=397627321717744&id=108149267334060&_rdr
15. See: SATORESTUDIO. Cipi C [video]. vimeo.com/553403398 Pass: Unique123
16. See: SATORESTUDIO. Undust_Teaser_V2 [video]. vimeo.com/364786430/7716f74976

T11. Organizational Infrastructures

Keywords	*research, training, conservation practice, infrastructures*
Other STEEP categories	*Political | Economic | Societal | Technological*
Author	*Matija Strlič*

Description

Trend: Shared infrastructures for research (which includes practice-driven research, such as conservation) are one of the main drivers of development and innovation, and this position will be reinforced in the next several decades.

The European Strategy Forum for Research Infrastructures defines "research infrastructure" as

> facilities, resources and services that are used by the research communities **to conduct research and foster innovation** in their fields. They include: major scientific equipment (or sets of instruments), **knowledge-based resources such as collections, archives and scientific data**, e-infrastructures, such as data and computing systems and communication networks and any other tools that are essential to achieve excellence in research and innovation.[1]

This opens up the possibility for conservation facilities, where conservation research and innovation takes place to become shared research infrastructures themselves and receive significant funding. **This is of global importance, as many of these infrastructures operate globally.**

Broad implications

The European Union is moving towards systematically supporting "technical research infrastructures" with a large share of investment coming from industry – in the heritage sector, this would mean the GLAM sector. **The opportunity has arisen to develop a shared global conservation infrastructure that could remove the need for individual institutions to support their own in-house facilities**, but rather pool their resources and establish a shared infrastructure with EU financial support.

With the planned shutting down of support for joint programming initiatives, where national funding agencies pooled their resources to support a.o. conservation research, for example, the Joint Programming Initiative on Cultural Heritage and Global Change,[2] and the emergence of EU Partnerships (of which one may be related to cultural heritage), an opportunity will emerge for European countries (in partnership with non-EU countries) to jointly support research and development initiatives in a shared manner.

As a consequence of EU and national policies for making research funding and practices more efficient (including any research related to cultural heritage, which includes conservation), shared infrastructures are emerging with the remit to streamline global research, training and innovation, and which includes (support for) policymaking. This could have a fundamental influence on how conservation, training and research are conducted within institutions and international organizations. Among the relevant emerging infrastructures are E-RIHS,[3] EHRI,[4] DARIAH,[5] CLARIZ[6] and DISSCO[7] as well as 4CH.[8]

Implications for cultural heritage and its conservation

The foreseen implications are an emergence of novel shared training and research support facilities in the broad field of heritage research, including conservation. This could have an impact on ICCROM, as some of these activities are core business of ICCROM. Some of these large infrastructure projects have the ambition to become global; therefore, there is a role for ICCROM to play, that is, to enable the global heritage and conservation communities to benefit from the investments into the shared infrastructures.

References

1. The European Strategy Forum on Research Infrastructures. (n.d.). *ESFRI glossary*. https://www.esfri.eu/glossary
2. See: *Joint programming initiative on cultural heritage and global change*. https://www.heritageresearch-hub.eu/homepage/joint-programming-initiative-on-cultural-heritage-homepage/
3. See: *European research infrastructure for heritage science*. http://www.e-rihs.eu/
4. See: *European holocaust research infrastructure*. https://www.ehri-project.eu/
5. See: *Digital research infrastructure for the arts and humanities*. https://www.dariah.eu/
6. See: *Common language resources and technology infrastructure*. https://www.clarin.eu/
7. See: *Distributed system of scientific collections*. https://www.dissco.eu/
8. See: *The competence centre for the conservation of cultural heritage*. https://www.4ch-project.eu/

Conservation-specific

C1. Changing Professional Actors, Knowledge and Education (1)

Keywords	*education, representation, conservation, decolonial paradigm and epistemes, inclusive*
STEEP categories	*Political | Societal | Legal | Economic*
Author	*Ibrahima Thiaw*

Description

An exhibit on the Ishtar Gate, an antique built by Babylonian King Nebuchadnezzar, at the Pergamon Museum in Germany, has sparked a heated debate over the representation and educational role of museums in social media.[1] The Internet user who stimulated the debates questioned the legitimacy of Europeans to impose their standards of representation and conservation on others. "It smacks of white man's burden and racism," he argued.[2] The position taken by this Internet user invokes the power of the European Enlightenment in the formalization, standardization, and universalization of academic knowledge from the eighteenth century. Beyond its political dimensions and economic accumulation, colonial empires also instigated, through education and language, the colonization of the minds of colonized peoples to reproduce itself.[3–5] This mindset still persists today through systems of knowledge production, consumption and transmission that continue to serve the needs and demands of the former colonial powers.[6] Actors, approaches and standards, included in the field of conservation, are strongly influenced and imbued with practices that are rooted in Western systems and paradigms that stand out as custodians of the world's cultural heritage.[7] However, this system is more than ever challenged by decolonization movements. These latter are developing alternative methods and pedagogies inspired by Indigenous peoples and are increasingly opening up new knowledge and new possibilities to cultivate difference and diversity.[8,9]

Broad implications

The multiple debates that result from this, especially in the field of conservation, require new epistemes for a successful management of the representation of otherness and of elsewhere for the acceptance of difference and diversity. Decolonization of the standards of representation and conservation inspired by Indigenous peoples will result in new approaches whose originality and innovative character will result in greater valorization of endogenous knowledge. The next decade will be marked by a rise in power of decolonial movements which will instigate new educational policies and approaches that will cause major paradigmatic changes.

Implications for cultural heritage and its conservation

The field of conservation and cultural heritage in general will be subject to significant transformations informed by endogenous knowledge, which will enrich and sometimes challenge or complicate previously universally recognized standards. The new practices and knowledge that will result from it will especially be carried by traditionally colonized peoples in search of more equity and social justice as well as a redefinition of a self-image other than that of the colonial library. By enriching ourselves with these new subjectivities, we will gradually see the emergence, especially in the Global North, of more inclusive educational systems that, in the long term, will ease racial and interethnic tensions and progressively halt recent protest movements.

References

1. See: Archaeo – Histories. [@archeohistories]. (2021, August 29) *Ishtar Gate, built by Babylonian King Nebuchadnezzar II in Mesopotamia, 575 BC, was built using blue lapis lazuli and bricks containing strong asphalt.* [Image attached]. [Tweet]. Twitter. https://twitter.com/archeohistories/status/1431921747888992256?s=21 and some replies: SG Andrea[@sg_andrea]. (2021, August 29). *This is amazingly beautiful, but what is doing in Germany*? [Tweet]. Twitter https://twitter.com/sg_andrea/status/1431994933074931714?s=21; Derek #RIPJasonDavidFrank. [@Get_Deer_Recked]. (2021, August 29). *Probably because radical Muslims like the Taliban or ISIS would destroy it.* [Tweet]. Twitter https://twitter.com/get_deer_recked/status/1432001396614877189?s=21; Tweeter and the Monkey Man[@richard_mylan]. (2021, August 29) *Ah yes, this is exactly why all the plundered antiquities ended up in western museums. So simple!* [Tweet]. Twitter. https://twitter.com/richard_mylan/status/1432013376490643461?s=21
2. See: https://twitter.com/omoplatic/status/1432003204775022603?s=21
3. Thiong'o, N. (1986). *Decolonising the mind: the politics of language in African literature*. J. Currey.
4. Decolonial International Network. (n.d.). *Decolonizing the mind research network*. https://din.today/decolonizing-the-mind-research-network/
5. Hira, S. (2016, July 1). *Multiversity*. Decolonial International Network. https://din.today/claude-alvaresuniversities-as-we-know-them-should-not-and-shall-not-exist-in-the-future-we-need-multiversities/
6. Ibid.
7. Winter, T. (2014). Beyond eurocentrism? Heritage conservation and politics of difference. *International Journal of Heritage Studies*, 20(2), 123–137.
8. See: *Lápiz*, issue No. 6 (2021): https://75363db0-5ef1-4da3-a1c5-5a240a327b96.filesusr.com/ugd/c3ccc5_b41e2f24fd724d7290a11b7b1797f7e5.pdf; https://www.lapes.org/; and https://din.today/ashleywolstein/decolonizing-literacy-education/
9. Wolstein, A. (2017, September 6). *Decolonizing literacy instruction*. Decolonial International Network. https://din.today/ashleywolstein/decolonizing-literacy-education/

C2. Changing Professional Actors, Knowledge and Education (2)

Keywords	*education, new art, skills and competences, lifelong learning*
STEEP categories	*Technological | Economic | Societal | Legal | Environmental | Political*
Author	*Stavroula Golfomitsou*

Description

Cultural heritage is expanding to incorporate new forms of art and heritage to represent diverse communities and audiences. This, in combination with the ever-expanding role of museums and advancements of new technologies, will force institutions to engage with professionals with new sets of skills from within the sector and beyond. Museums are expected to become more flexible in the way they engage with the public, offering a self-directed, more immersive experience. The physical dimension will remain important; however, the digital and intellectual (or nonintellectual) use of heritage will be enhanced to reach different audiences around the world. The way collections are formed will change with communities being actively engaged in the process. Museums and artists will make use of AI to enhance visitor experience. Educational institutes will need to rethink the structure of their degrees and allow the emergence of new professionals. Following the mass higher education, we will go into a new era, with information being free and study taking different forms in and out of universities.

Broad implications

The increase of heritage collections and types of objects (material or immaterial) collected will require new types of professionals for their preservation. The use of AI and digitization of collections will also bring several new issues to deal with. Engaging with diverse audiences and creating more immersive experiences will require use of objects or their digital version. Avatars, holograms and more are expected to be used increasingly to enhance visitor experience. This will require professionals to have new sets of skills, some involving new technologies and some involving social science skills (in addition to the traditional skills and competences). The multifaceted roles that heritage professionals need to play will require different training, so educational programmes will need to change their curricula to meet the forthcoming needs. Future educational programs will be based on students having an active role in their education, selecting courses from different degrees, departments, universities and even countries.

Implications for cultural heritage and its conservation

Immersive experiences, use of collections in nontraditional settings, and use of AI and holograms as part of museum experience will be common in the future. New art, for example, computer-based art, will require new skills to be preserved. These skills (e.g., information technology (IT) coding skills to allow migration to new platforms) will require new types of professionals to be included in the preservation of heritage collections. Conservation will include new skills and competences. Educational programs will focus on lifelong learning and offer flexibility in their structure to allow students to build on their skills from different sectors. The new types of professionals will not fit in traditional occupational profiles, and they will be allowed to build their skills and collect "credits" in formal and nonformal ways. As heritage professions continue to evolve and change, guidelines, such as those developed by ECCO (2011)[1] and AIC (2011),[2] which focus on the core skills and competencies, and

organizations, like ENCoRE[3] in Europe, will need to become more open in their definitions of the profession and the skills needed.

ICCROM will need to employ/engage professionals with new skills and focus on courses offering and/or contributing lifelong learning skills. There is an antithesis with global versus local, which ICCROM could reflect and build on its educational programs to explore heritage conservation.[4–10]

References

1. European Confederation of Conservator-Restorers' Organisations. (2011). Competences for access to the conservation-restoration profession. ECCO. https://www.google.com/search?client=firefox-b-e&q=ECCO+%28European+Confederation+of+Conservator-Restorers%27+Organisations%29.+2011.+Competences+for+Access+to+the+Conservation-Restoration+Profession
2. AIC. (2011). Essential competencies for conservation, preservation and scientific analysis. https://www.culturalheritage.org/docs/default-source/membership/mdwg-essential-competencies-5-11-21.pdf?sfvrsn=47e31420_11
3. See: European Network for Conservation-Restoration Education (ENCoRE): encore-edu.org
4. Phil de Silva (2021, July 15). DataOps and MLOps – What's the hype? In: DEEP BLUE AI. https://www.deepblue.ai/post/dataops-mlops
5. Szántó, A. (2020, November 27). A new kind of museum is emerging—here's what the future holds. In: *The Art Newspaper*. https://www.theartnewspaper.com/2020/11/27/a-new-kind-of-museum-is-emergingheres-what-the-future-holds
6. European Parliament Research Service. (EPRS) (2021). Lifelong learning in the EU. https://www.europarl. europa.eu/thinktank/infographics/lifelonglearning
7. See: Directory. European Craftsmen and Restorers Of Cultural Heritage. https://madineurope.eu/en/home
8. Chairs. Abungu, G., & Desai, V. (2019). What future for cultural heritage? perceptions, problematics, and potential. Salzburg Global Seminar. Seminar Report. https://www.icomos.org/images/DOCUMENTS/Working_Groups/SDG/Salzburg_Global_2019-_C.Heritage_Session_Description-_Discussion_Note.pdf
9. See: American Institute for Conservation of Historic and Artistic Works, Nashville. (1994). *Code of ethics and guidelines for practice.* https://www.culturalheritage.org/about-conservation/code-of-ethics
10. See: Australian Institute for Conservation of Cultural Material, Canberra. (2002). *Code of ethics and code of practice*. https://aiccm.org.au/wp-content/uploads/2021/02/CODE-OF-ETHICS-AND-CODE-OF-PRACTICE-Australian-Institute-for-Conservation-of-Cultural-Material.pdf

C3. Conservation Theory, Practice and Management

Keywords	*ethics, drifting knowledge processes, philosophy, indicators*
STEEP categories	*Legal | Societal*
Author	*Renata Schneider*

Description

Conservation theory will face much greater challenges once the polysemy of cultural diversity really comes into play and advances in its refusal to become just a politically correct discourse. In turn, the trend – caused by austerity measures – to minimize interventions and focus policies of conservation agencies and schools on major processes and administration and management of sites, museums, collections and technological advances, will imply also that the practical profession will pivot away from the practical intervention of objects as such, which will lead to losses in manual expertise and experience-based problem-solving. This will also end, circularly, by generating a less comprehensive general theory.

Broad implications

- Theoretical openness towards decolonization, cultural and social plurality, and forms of understanding local heritage will generate a greater degree of academic uncertainty, because theoretical conservation-restoration ethics managed until now by organisms and professionals will be affected on multiple levels. This will cause a feeling of confusion, delay and lack of conceptual certainties, where the role of "the expert" will be relegated and must be reformulated.
- A loss of resources in international and state institutions will expand the presence of foundations in the best of cases, and of particular interests linked to tourism, in the negative extreme. These aspects will force construction of instrumental rather than prescriptive ethics.
- Contrary to the first point, under this logic, the view based on results, risk controls and bureaucratic administrative monitoring mechanisms will be broadened. This will reward quantitative indicators and production of manuals instead of qualitative results, which will be resolved in a small scale, locally and based on very specific problems (which, despite being welcomed by international organizations, do not seem to have a rigorous methodology, at least at the technological and scientific level they seek).
- In this sense, instruments, such as manuals, guides, booklets and critical path programs, will be considered not very useful, leaving declarations and letters of intent in a better position, but still without succeeding to replace the interactions between specific (and diverse) actors.

Implications for cultural heritage and its conservation

In a positive sense:

- More laboratories will emerge that are dedicated to thinking and generating unconventional proposals linked to economy of resources and locally directed self-diagnosis instruments.
- Diverse theoretical conceptions, from the bottom-up and from different geographies, will be added to specialized syllabi for heritage education.
- Replicas, reconstructions and other registration or conceptual solution tools previously discussed or rejected in Europe and English-speaking countries will be considered

cultural heritage as well, due to the inclusion of other systems of thought and approaches to culture and its symbols, presenting radical normative challenges.
- Ethical minimums and non-standardized methodologies for approaching cultural heritage and its symbolic meanings will be sought out.
- Works on conservation and diversity will tend to be mixed, where results will be presented from two perspectives: academic and local, interweaving objectives and readings, as happens today with narratives on the recovery of Mapuche mortal remains in Argentina.

In a negative sense:

- The crisis of totalitarian budgets (which support theoretical constructions, such as those of the World Heritage Sites) and of the organizations that support them will tend to worsen as these are blurred and their economic contributions to countries and communities become increasingly less significant.
- The real distance between state and international organizations and localities, enhanced by the lack of resources and advancement of digital communication, will prevent national organizations from concretely perceiving various community and state reinterpretations of their methodological and practical guides, especially if these are taken up without critical reflection on international budgets.
- There is a danger of not having activities and concrete technical solutions supported by exercises and interventions in the field unless they have the support of universities or foundations (not all heritage is sustainable or was produced locally). In this sense, despite an increase in diversity of conceptions referring to heritage, there may be a loss of depth in the subjects dealt with by the theory.
- More control of quantitative results and a tendency to ignore qualitative results in the absence of appropriate tools to measure and consider them will probably be the norm.[1–17]

References

1. ICCROM. (2020). World Heritage Leadership – who are we connecting and how can you be a part? [video]. https://www.youtube.com/watch?v=HHl8A-FqHYs&t=31s
2. ICCROM. (2020). Impact assessment for World Heritage I – what are the main things you need to know [video]. https://www.youtube.com/watch?v=3Se7aj3d5D0&t=8s
3. ICCROM. (2021). Nuevas estrategias y rol social del patrimonio/Novas estratégias e papel social [video]. https://www.youtube.com/watch?v=PjuL_pTHXgc&t=21s
4. ICCROM. (2021). Using traditional knowledge for disaster risk reduction: from words into action [video]. https://www.youtube.com/watch?v=LK8-MMqbkPQ
5. Heritage for All. (2021). Multidisciplinary heritage conservation approaches: theory and application [video]. https://www.youtube.com/watch?v=0dH-FpXRMMQ
6. Eichler, J. (2021). Intangible cultural heritage, inequalities and participation: who decides on heritage? *The International Journal of Human Rights*, 25(5), 793–814
7. Kristiansen, K. (2008). Do we need the "archaeology of Europe?" *Archaeological Dialogues*, 15(1), 5–25.
8. Suárez, M.S., & Castillo, M.T.M. (2017). Conservation of urban heritage: reflections on its appreciation and management in urban context. *Oculum Ensaios*, 14(2), 183–189.
9. Zancheti, S.M., & Similä, K. (2012). Measuring heritage conservation performance. In: *6th International Seminar on Urban Conservation* (pp. 5–6).
10. López Morales, F.J., & Vidargas, F. (Eds.). (2014). Los nuevos paradigmas de la conservación del patrimonio cultural. 50 años de la Carta de Venecia, Instituto Nacional de Antropología e Historia, México, D.F.
11. Getty Conservation Institute. (2020). Built heritage conservation education and training. *The GCI Newsletter*, 35(2).

12. Magar Meurs, V., & Rojas Vences, M. (2019). *Conversaciones con Ananda K. Coomaraswamy*. Editorial. (6). https://mediateca.inah.gob.mx/repositorio/islandora/object/issue%3A1374
13. Magar Meurs, V., & Rojas Vences, M. (2019). *Conversaciones con Cesare Brandi y Giulio Carlo Argan*. Editorial (7). https://mediateca.inah.gob.mx/repositorio/islandora/object/issue%3A1949
14. Zeayter, H., & Mansour, A.M.H. (2018). Heritage conservation ideologies analysis – historic urban landscape approach for a Mediterranean historic city case study. *HBRC Journal*, 14(3), 345–356.
15. Global Heritage Fund. (2010). *Saving our vanishing heritage.* http://globalheritagefund.org/images/uploads/docs/GHFSavingOurVanishingHeritagev1.0singlepageview.pdf
16.
17.

C4. Disaster Risk Management

Keywords	*systemic risk, disaster risk management, Sendai targets, science and technology, advocacy, evidence-based policy, risk-informed decision*
STEEP categories	*Political | Education | Economic | Societal | Technological | Legal | Environmental*
Author	*Ranit Chatterjee*

Description

A paradigm shift from response-centric to risk-reduction-centric approaches marks a recent change in disaster management. Realizing that the frequency and severity of disasters is increasing, reduction in loss of life and economic loss is one of the targets along with reduction in damage to critical infrastructure. A "whole of society" approach is envisioned for disaster risk management to address systemic risk. Among various stakeholders, the private sector and young professionals are included to drive science and technology innovation for disaster risk management. There is a growing consensus that no disasters are natural, thus bringing the onus on us to address the root cause of hazard risk.

Broad implications

- Overlaps between the Sendai framework and SDG targets are driving present disaster risk management activities with a possibility of stronger convergence of climate change and disaster risk management activities.
- Building partnership and inclusive risk management is being promoted. The link between central governments and local governments and people at risk is explored to greater depth than before.
- The importance of traditional knowledge, citizen science and inclusive approaches towards Indigenous communities is being promoted.
- Building back better and stronger is emphasized in recovery and in resilience of critical infrastructure. Risk financing and risk transfer is emerging as an important topic.
- Risk-informed and evidence-based policy-making is marking the paradigm shift in disaster risk management.
- Globally, the focus is on building the resilience of cities. Investments are being made by governments in critical infrastructure resilience.
- A growing number of universities have started courses on disaster management.
- A multihazard approach is promoted with inclusion of new and emerging risks, as well as cascading and compounding disaster events (like natural hazards triggering technological disasters [NATECH] and biological hazards). At the same time, assessment and planning are being mindful of these new risks. Classification of various hazards have been made recently. Systemic risk is being focused on to reduce chances of cascading failures in various linked sectors.

Implications for cultural heritage and its conservation

- Built heritage serves as an important infrastructure and adds to revenue-generation and a sense well-being for the associated communities. Considering these, it is important to treat and invest in heritage resilience across various dimensions similar to critical infrastructure.

- Inclusion of multihazard approaches along with inclusion of new and emerging cascading risks in the assessment of heritage.
- Future studies to cover systemic risk in both tangible and intangible heritage will be useful in reducing chances of failure and bringing more inclusivity in heritage risk management.
- Inclusion of Indigenous communities, researching traditional knowledge, and benefits of various practices in relation to disaster risk management.
- There will be a need to support and update a database on damage and loss of both tangible and intangible heritage. This will be useful in understanding the risk, creating baselines, and paving the way for future interdisciplinary research. Involvement of governments, academia, the private sector and other stakeholders will hold the key to this exercise. ICCROM with its experience from the Tracking Trends project can lead this initiative.
- Focus on innovation in heritage risk management for targeting integration of contextual solutions by local youth and young professionals (YYPs). YYPs lead advocacy for heritage conservation in relation to climate change and disasters.
- Heritage risk management may emerge as a specialization within disaster management course curricula. Fellowships encouraging young professionals to carry out innovative research, course accreditation and standardization may be required in the future.

C5. Governance

Keywords	*audit, knowledge, monuments, nomination procedures, urban, state party*
STEEP categories	*Conservation Sector Specific*
Author	*Samia Kirchner*

Description

Three distinct movements are converging to shape the future of Conservation Governance:

1. **Racial Justice:** The Monuments Lab at the University of Pennsylvania conducted an Audit of Registered Monuments in the United States. Similar efforts are being pursued in South Africa. These findings are uncovering the racist origins of history writing and heritage governance codified in the State Party nomination procedures of the World Heritage Convention. Recognition of heritage conservation as essentially a political act of silencing the minority perspective is bound to shape heritage governance beyond the colonial lens and a single-discipline approach (conservation).
2. **Democratization of Knowledge:** Respect of Indigenous ways of life and "place-knowledge" is making the scientific process less homogeneous in terms of its practitioners' values and interests, thus increasing objectivity. The notion of "Outstanding Universal Values" needs to be rethought in a democratically international world in the making. Cultural heritage shared across national boundaries are pregnant sites of conversations that will shape the future of heritage governance.
3. **Slow Food:** Human domination of species has shaped urbanism in the last 400 years, cohabitation with respect in the future will make "food" a powerful and extraordinary tool for climate justice. People across the world are recognizing the implications of industrially sourced (fast) food on the declining state of planet Earth. Markets are emerging in urban food deserts, small farmers are demonstrating across the world, seed diversity and people are demanding and putting into practice policies that can renew a pact with the countryside. The reorganization of the food supply chain will redefine "tourism" in the post-pandemic future.

Broad implications

Local governments, municipalities and educational institutions are advancing anti-racist practices to intentionally change the national and universalizing norms embedded in existing conservation policies. The increased role of Indigenous communities with alternative perspectives is shaping expert approaches to interpret, preserve and govern cultural heritage. Role of international agencies will continue in monitoring and educating but shifting to legislate national governments solicitation of local communities in the nomination and management of registered sites. In segregated and shrinking cities, like Baltimore, during the pandemic, local tourism reinvigorated local economies, built community gardens and enhanced local resources for heritage conservation.

Implications for cultural heritage and its conservation

1. World Heritage Office may conduct an audit identifying the common features of cultural landscapes inscribed on the World Heritage List to truthfully and accurately narrate the story of the world as told by the inscribed cultural heritage.

2. UNESCO may develop accountability strategies and legislative structures to ensure State Parties' inclusive inscriptions are pursued in consultation with members of local communities.
3. ICCROM intentionally diversifies staff, expertise and library holdings, and creates new training programmes that educate UN State Parties and conservation experts through decentralized presence at international heritage sites. Sharjah's ICCROM-ATHAR Centre is pursuing this in partnership with universities and serves as a model to engage local communities' knowledge and expertise. Conservation expertise needs to include "facilitation" skills to connect engaged communities, Indigenous knowledge and alternative perspectives on the value of international heritage sites.1–11

References

1. Conway, D., & Timms, B.T. (2010). Re-branding alternative tourism in the Caribbean: the case for "slow tourism." *Tourism and Hospitality Research*, 10(4), 329–344.
2. Coria, J., & Calfiicura, E. (2012). Ecotourism and the development of indigenous communities: the good, the bad, and the ugly. *Ecological Economics*, 73, 47–55.
3. Dickinson, J.E., & Lumsdon, L. (2010). *Slow travel and tourism.* London, Earthscan. Dimendberg, E. (2013). Diller Scofidio+ Renfro: architecture after images.
4. Dickinson, J.E., Lumsdon, L.M., and Robbins, D. (2011). Slow travel: issues for tourism and climate change. *Journal of Sustainable Tourism*, 19(3), 281–283.
5. Hewitson, J. (2008). Slow movement gains pace as architects inject soul into affordable new homes. *The Observer*. https://www.theguardian.com/money/2008/sep/14/property.housingmarket
6. Monument Lab. (2021). *National monument audit*. The Mellon Foundation. https://monumentlab.com/monumentlab-nationalmonumentaudit.pdf
7. National Trust. (2007). *Creating a footprint*. www.nationaltrust.org.uk/main/w-global/w-special_projects/wnews-projects-st_catherines_footprint.htm (accessed). Cited 28 February 2021.
8. Palmer, B., & Wessler, S.F. (2018). The costs of the confederacy: in the last decade alone American taxpayers have spent at least $40 million on Confederate monuments and groups that distort US history and perpetuate racist ideology. *Smithsonian*, 49(8), 54–66.
9. Staniforth, S. (2010). "Slow conservation." *Studies in conservation*, 55(2), 74–80. Taylor & Francis. Maney Publishing, International Institute for Conservation of Historic and Artistic Works.
10. Schumacher, E.F. (1973). *Small is beautiful: economics as if people mattered*. London: Blond & Briggs.
11. Southern Poverty Law Center. (2019). *Whose heritage? Public symbols of the Confederacy*. https://www.splcenter.org/20190201/whose-heritage-public-symbols-confederacy. Cited 1 February 2019.

C6. New Emerging Professions in Heritage/Expansion of the Field

Keywords	*sociomuseology, museologia social, emerging professionals, hybrid organizations*
STEEP categories	*Conservation Sector Specific | Societal | Political | Economic | Environmental*
Author	*Beatriz Haspo*

Description

The school of thought of Sociomuseology, mostly originated in Portugal and impacting Brazil and other countries in Latin America, is a field of knowledge in development. Sociomuseology brought the philosophy of New Museology closer to museums independent of their typology. It sees its role as contributing to adapting museological structures to a more human view of society. Similar to New Museology, it has an interdisciplinary approach, which calls upon other disciplines of human and social sciences.

Today, we speak of sustainable development, social inclusion, cultural diversity, multiculturalism and social harmony. It responds to the capacity of people to truly participate in the shaping of their own future. Indicators show a change in the cultural heritage field (especially the museum field) towards a more socially based function of the cultural heritage institutions, rather than a place of storage of objects. **Museums will become complex fields of knowledge and experimentation and those relations will break down language barriers and improve dialogue between different countries, cultures and peoples**. Key drivers, such as *Ecomuseus*,[1] community museums, and community-engaged cultural activities, are leading to an emerging qualification for professionals in cultural heritage with an interdisciplinary approach, who will need to work *with* the community to preserve *their* heritage. Immigration, gender studies, knowledge networks, globalization and social movements are some of the forces that have an enormous influence on these initiatives. Social Museology distinguishes itself from other museology practices, particularly through the fact that it does not patronizingly assume the role to assess the value of the discourses it presents. It tries to link and incorporate the voices that have been silenced for too long. Objects and collections have a social life inside museums. By looking at them as prime working tools, it is possible to explore how they relate to the lives of people outside. Similarly, cultural heritage institutions – and therefore **the preservation field – will serve as "a place for dialogue, where multiple voices can be heard and also controversial topics can be raised – an arena for people to feel at home across borders."**[2]

The current classical concept of the museum, which operates with the notions of buildings, collections and audience, is in transformation to new concepts that problematize and work with the categories of territory (socially practiced), heritage (socially constructed), and community (constructed by bonds of belonging).

Broad implications

The new way of work and focus of emerging professions in preservation will be on people, communities, their stories and knowledge rather than objects per se. This will lead to creating a grassroots network and mode of operation that could offer alternatives to local work as well as open new channels of interaction and action in society, in one's own community, and also in the context of the city, country, and internationally.

A new cultural heritage profession/specialty will look at how objects and collections can connect with each one of us, human beings living today, social actors striving to cope with the challenges of the modern world. Similarly, cultural institutions, such as museums, will be stepping up to the mission of facilitating connections and advocating for understanding in a global context, in their desire – or need – to be meaningful to society.

Future museum professionals, curators or conservators will make use of their collections in order to connect with society by giving the objects to the people (people, not in the sense of museum visitors, but of producers of culture).

The new actors in the cultural heritage management field will need to navigate a hybrid organization that will be driven by two forces: social change and sustainability of the organization with bottom-up, community-based initiatives.

Some of the challenges to engage the public in preservation of cultural heritage will be to define which public and whose heritage.

Implications for cultural heritage and its conservation

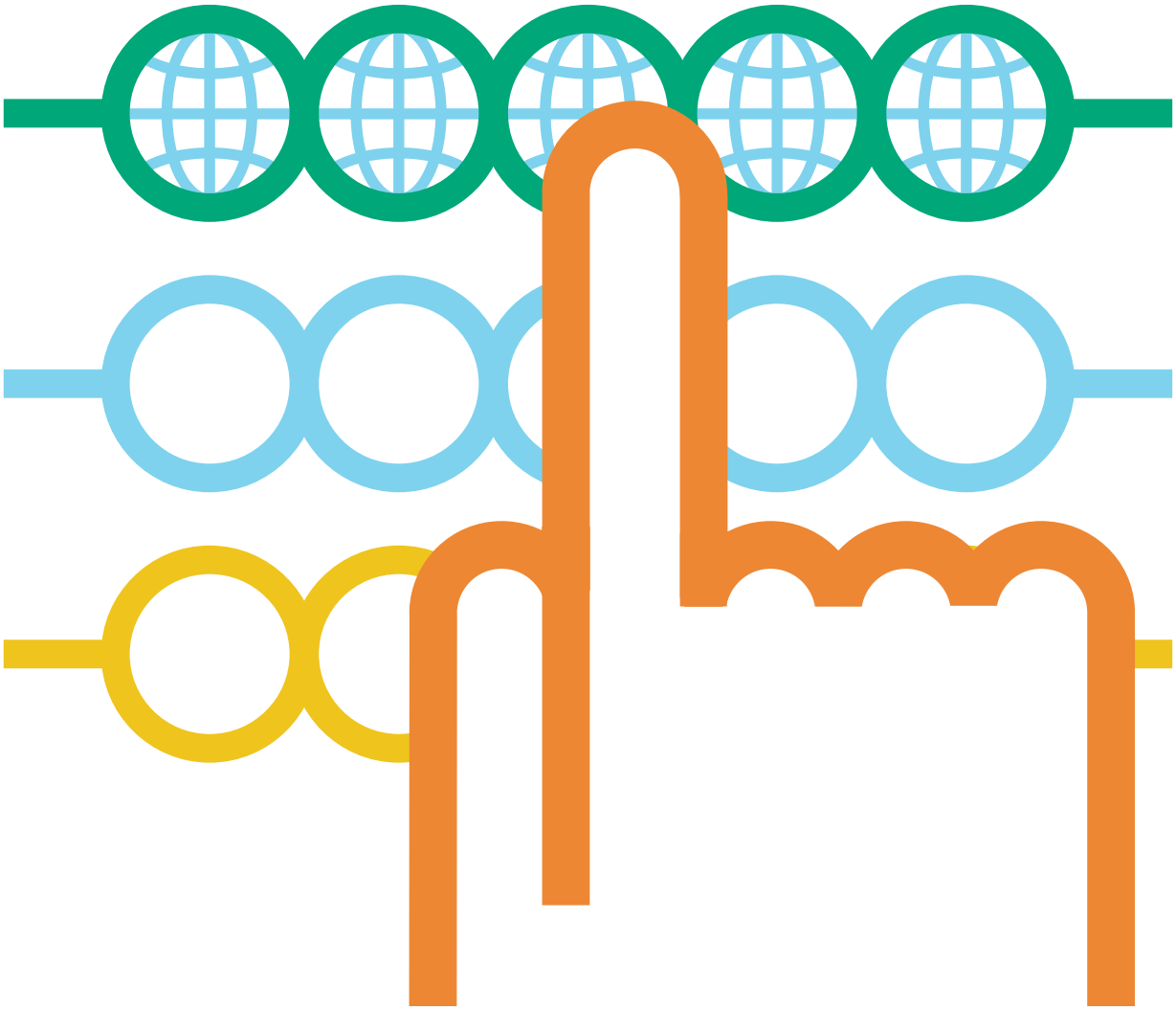
- Sociomuseology proposes a shift from "mere" collecting, researching and exhibiting objects to researching identities and the roots of injustices, and offering tools for local populations to become politically and socially aware.
- One of the implications for cultural heritage and emerging professionals will consist in understanding what "collections" and "preservation" mean, as they consist of material and immaterial objects, and how to give these categories an equal value to stimulate people to be proud of their identity, history and values, and the perils of their ancestors that made their home what it is now. The fundamental key to this is to **include additional topics in the training be related to soft skills and the ability to tear down invisible walls between groups and work in an environment that provokes critical thinking**. This will lead to a more inclusive and equitable conservation professional field.
- Specialists/conservators will move out of the association with formats such as paper, photos, painting, architecture, multimedia and textile, among others, and become more rounded with social science fields, technology, history etc. This will require a shift in training of new professionals as well as education in the new concepts of what preservation means. **By not reacting to this change and continuing with the current training programme models, the cultural heritage preservation field will lose engagement of important stakeholders, aside from trained conservators, in the preservation of their cultural heritage, which may not be a sustainable way for preserving cultural heritage in the future**.[3–6]

References

1. *Ecomuseums* itself arises during the 9th ICOM Conference in 1971, from the understanding of a sense of cultural heritage "linked to a community and an environment." For further information: Ferreira, R. (n.d.). What is an Ecomuseum? 2 examples in Brazil and Portugal. https://citaliar-estauro.com/ecomuseu-e-patrimonio/
2. Bonnell, J., & Simon, R.I. (2007). "Difficult" exhibitions and intimate encounters. *Museum and Society*, 5(2), 65–85.
3. See: Världskulturmuseet: https://www.varldskulturmuseet.se/en/visit/about-the-museum/, and the exhibition: *Horizons, voices from a global Africa at the Göteborg Museum of world cultures*. https://www.youtube.com/watch?v=vRz-W6GlGN0

4. Assunção dos Santos, P. (2010). Give or take: thoughts on museum collections as working tools and their connection with human beings. *Cadernos de Sociomuseologia*, 38, 75–87. https://revistas.ulusofona.pt/index.php/cadernosociomuseologia/article/view/1646
5. Europeana Pro. (2019, March 3). *Europeana common culture*. https://pro.europeana.eu/project/europeana-common-culture
6. Primo, J., & Moutinho, M. (Eds.). (2020). *Teoria e prática da Sociomuseologia*. Edições Universitárias Lusófonas.

Economic



Ec1. Equitable Income Generation: Circular Economics

Keywords	*circular economy, communities, self organisation, regenerative, resources*
Other STEEP categories	*Societal*
Author	*Tokie Laotan-Brown*

Description

The term "circular economy" was formerly used in the waste cycle management sector. In the last five years, the term is now used in the United Nations goal 12 of the 2030 Agenda; in paragraphs 71–74 of the New Urban Agenda; the outcome document of the Habitat III conference (October 2016); the United Nations Environment Programme (UNEP) in 2016, and The European Commission have adopted packages for supporting transitions into circular economy models. The European Union especially has legislative proposals aimed at stimulating the European route towards the circular economy – a comprehensive city organization its economy, its social system and its governance in order to improve urban productivity.[1] A circular community economy offers an introspective analysis on how to reduce the costs coming from burgeoning economies and to practicalize sustainable development principles.[2]

Broad implications

As indicators emerge from the analysis of literature, documents and reports: cultural heritage/landscapes include technical aspects of circularization and others with particular reference to adaptive reuse.[3] This means readapting abandoned heritage areas as spaces and places of circular economies of creative activity, such as spaces of co-working, co-housing, community centers and event locations. A regenerative management and planning strategy can help invigorate custodianship values in shared common goods within social, economic and cultural impacts.[4]

Implications for cultural heritage and its conservation

Increase in community engagement/ownership will become more mainstream as funding or trickle down effects of tourism from heritage sites become more robust. As changes in legislations from Europe become practical, regenerative community models will reshape the interpretation of a sustainable community across the globe.[5] Circular economics will be more central as investors and policy analysts take more interest. It is imperative that the cultural heritage sector takes a more active role and adjusts the idea of nostalgia or loose relevance, especially when it comes to fund-raising, as the sector will be seen to be more unsustainable economically. In the future, we will see more self-organization from community members geared toward local development and the preservation of the heritage sites, without necessarily relying on funding from Euro-American organizations.[6,7,8]

References

1. Angrisano, M., Biancamano, P.F., Bosone, M., Carone, P., Daldanise, G., De Rosa, F., et al. (2016). Towards operationalizing UNESCO recommendations on "historic urban landscape": a position paper. *Aestimum*, 69, 165–210.
2. See: Paris Climate Conference (COP 21) and Marrakech Climate Change Conference (COP 22): https://unfccc.int/process-and-meetings/conferences/past-conferences/paris-climate-change-conference-november-2015/paris-climate-change-conference-november-2015

and https://unfccc.int/process-and-meetings/conferences/pastconferences/marrakechclimatechangeconference-november-2016/marrakechclimatechange-conference-november-2016
3. Nocca, F., & Fusco Girard, L. (2017). Towards an integrated evaluation approach for cultural urban landscape conservation/regeneration. *Region*, 5, 33–51.
4. See: CLIC – *Circular models leveraging investments in cultural heritage adaptive reuse*. www.clicproject.eu
5. Della Lucia, M., & Trunfiob, M. (2018). The role of the private actor in cultural regeneration: hybridizing cultural heritage with creativity in the city. *Cities*, 82, 35–44.
6. Foster, G. (2020). Circular economy strategies for adaptive reuse of cultural heritage buildings to reduce environmental impacts. *Resources, Conservation and Recycling*, 152, 104507. https://doi.org/10.1016/j. resconrec.2019.104507.
7. McKinsey Center for Business and Environment. (2016). *The circular economy: moving from theory to practice*. https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/the%20circular%20economy%20moving%20from%20theory%20to%20practice/the%20circular%20economy%20 moving%20from%20theory%20to%20practice.pdf
8. Pickerill T. (2021). Investment leverage for adaptive reuse of cultural heritage. *Sustainability*, 13(9), 5052. https://doi.org/10.3390/su13095052

Ec2. Income Generation by Heritage: Circular Economics

Keywords	*revenue generation, income streams, tourism, adaptive reuse*
Other STEEP categories	*Societal | Technological | Environmental*
Author	*Thabo Manetsi*

Description

It is a recurring and growing phenomenon that tourism seems to be the primary economic driver for income generation for heritage. Recently, the commercialization of heritage through tourism has suffered adverse effects of COVID-19, which has acutely affected the global tourism economy and collapsed revenue generation streams for heritage. This dire situation of reduced income streams leads to drastic adjustments for the heritage sector to adapt to the new COVID-19 reality. In many circular economies, alternative income-generation streams are explored, such as the adaptive reuse of heritage assets (including repurposing of these assets) to serve a contemporary socioeconomic purpose for sustainability.

Global economic crush due to the COVID-19 pandemic impacted on revenue and income-generation streams for the heritage sector. It has been a rapidly growing phenomenon that several nation states have put in place economic recovery plans to address impacts of COVID-19 and to reignite and stimulate the economy. The effectiveness of these plans is yet to be tested. However, there is reprioritization of state resources to fund essential services, especially in the health fraternity (e.g., Personal Protective Equipment (PPE), vaccines, increase capacity and expansion of hospital beds). Consequently, there has not been sufficient budget allocation for the heritage sector, as heritage is not considered an essential service (according to disaster management laws). Therefore, the heritage sector has to contest and compete with other sectors for the same state or government resources. This growing trend has far-reaching ramifications for present and future funding of heritage conservation.

Broad implications

The persistent lack of state/government funding compels heritage institutions to seek creative and innovative approaches to source alternative revenue-generation streams for heritage. These include adaptive reuse of heritage assets for commercial purposes, tourism packages (including virtual tours), strategic partnership, and research and development.

Implications for cultural heritage and its conservation

There is a likelihood of funding shortfalls/deficiency to support heritage conservation efforts and ICCROM, as several countries (economies) have had to reprioritize resources to support the COVID-19 programs instead. Little to no tourism activities will have severe impact on revenue generation in the heritage sector, resulting in poor funding for conservation work. New opportunities for revenue-generation streams include adaptive reuse of heritage assets for commercial purposes, tourism packages (including virtual tours), strategic partnership, and research and development.

Ec3. Innovative Finance for Cultural Heritage

Keywords	*finance, financial instruments*
Other STEEP categories	*Economic*
Author	*Adala Leeson*

Description

> "The cost of adapting obsolete heritage resources is often prohibitive if the funding burden falls solely on public or private owners and custodians. Similarly, grassroots communities, undertaking cultural heritage activities in deprived urban neighborhoods and isolated rural communities, often lack the financial track record, entrepreneurial capacity and network infrastructure to overcome exclusion from traditional capital markets."[1]

Innovative financing instruments complement traditional international resource flows – such as aid, foreign direct investment and remittances – to mobilize additional resources for development and address specific market failures and institutional barriers. Innovative financing is an essential tool, as the development community strives to eliminate poverty, raise living standards and protect the environment. It encompasses a broad range of financial instruments and assets, including securities and derivatives, results-based financing and voluntary or compulsory contributions. Digitization is key to advancing innovative finance solutions.

Broad implications

There are many tried and tested innovative finance solutions available and while the use of innovative finance is not new, it is not financial innovation, there are many outstanding opportunities for the application and use of new products in new ways to different sectors. Ultimately, the aim is to mobilize funding and new resources.

Implications for cultural heritage and its conservation

Evidence illustrates that there are significant opportunities to fund cultural heritage using these instruments for the conservation of cultural heritage. But heritage organizations often have limited engagement with traditional and alternative sources of funds for a number of reasons, including capacity of the sector (requires an enhancement of communication and marketing skills in the heritage sector); also, financial institutions need greater awareness and knowledge of the characteristics of heritage organizations so that they can tailor their products and requirements to them. An actively engaged public sector is essential for the sustainability of these instruments.

Recent research by the European CLIC project2 has developed a framework to support the heritage sector and a toolkit of complementary financial (grant & endowment, tax, debt & equity) and nonfinancial (regulation, real estate, risk mitigation, risk performance, capacity-building, impact metric and digital network) instruments designed to leverage capital investment and engender collaborative partnerships to encourage private investment capital to flow to cultural heritage activities:

> "The ultimate choice and design of hybrid "blended" and "pooled" financial Instrument combinations, from the toolkit, will change from building to building

(and neighborhood to neighborhood) but must always take account of the need to protect local communities and ecosystems in parallel with saving vulnerable cultural heritage resources."[3]

Case studies are used to demonstrate the effective use of these models for cultural heritage, including: grants, loan funds, tax credits, tax incentives, public–private partnerships, community equity, investment funds, trusts and crowdfunding, among others. Through these mechanisms, the ongoing conservation of cultural heritage assets are achieved to the benefit of local communities, including communities in deprived areas.

References

1. Pickerill, T. (2021). *Overview of hybrid financial instruments and investment leverage enablers for cultural heritage adaptive reuse*. CLIC Deliverable 4.1. https://www.clicproject.eu/wp-content/uploads/2021/06/D4.1Overview-of-Hybrid-Financial-Instruments-and-Investment-Leverage-Enablers-for-Cultural-HeritageAdaptive-Reuse.pdf
2. See: CLIC Project. https://www.clicproject.eu/
3. Pickerill T. (2021) Investment leverage for adaptive reuse of cultural heritage. *Sustainability*. 13(9), 5052. https://doi.org/10.3390/su13095052

Ec4. Participation-Driven Business Model Innovation

Key words	*cultural economics, business models, business model innovation, diversification of revenue streams*
Other STEEP categories	*Societal*
Author	*Johan Oomen*

Description

As a result of the COVID-19 pandemic, European museums experienced a 75–80 percentage loss of income during the months they were closed. They undertook major operational changes to cope with the situation, shifting their focus towards digital or hybrid services. Four out of five museums invested in digital technologies and increased their digital services to reach new audiences.[1] While digitized collections and digital engagement strategies enabled organizations to come up with creative responses to adapt to the new normal, many cultural heritage institutions lack the resources, knowledge and infrastructures to efficiently and sustainably transform their services and respond to the needs of digital audiences.[2] Due to this, a significant number (40%–90%) of small- and mid-sized museums in rural areas have also been forced to reduce, with 10% of museums globally never to reopen.[3]

In essence, business models perform two major functions: they create value, and they capture value. Business model innovation (BMI) results from converging (new) key objectives (such as energy savings, reducing the use of resources or designing long-life products), the interests of various stakeholders and the viability of the focal organization.[4] An example is the new open storage of the Boijmans van Beuningen museum, which allows access to all collections, offers paid storage facilities for art collectors, provides a space for social gathering and uses sustainable technologies and materials, considering users' needs present and future.[5] BMI that considers the needs of stakeholders as building blocks of its activities is emerging, but is not sufficiently prevalent in the cultural heritage sector, with the exception of some simple configurations of a knowledge age business model.[6] While BMI can be found in museums, as in the new business model of the Louvre,[7] BMI that provides multiple value propositions that reflect various stakeholders' inputs and needs has been blatantly absent in the cultural heritage sector.

For example, much of society has moved to the platform model where new intermediaries provide the environment that facilitates direct interaction between various users for financial exchange to take place in all areas of daily life, for work (i.e., Amazon's Mechanical Turk), for the household (i.e., PickNick), for travel and tourism (i.e., AirBnB) and for culture (i.e., Netflix or Spotify). Platforms are important new intermediaries in the cultural value chain that function around online networks, with a key innovation in revenue models based on the value generated by users.[8] Can cultural heritage institutions adapt such experience to advance their missions?

Cultural heritage institutions are known for generating value that is difficult to express in financial terms. The value of cultural heritage includes other dimensions, such as cultural and social value.[9] The current process to redefine the museum by ICOM reflects a change in the perceived social value of museums,[10] with the emergence of what has been called "mental heritage," where emotions take greater importance.[11] Similarly, digital technologies have added layers of value where access to content (or a service) is more important than ownership, and digital heritage access is valued as information, rather than cultural heritage.[12]

Younger generations depend greatly on online social networks to form their perception of values, opening new possibilities for cultural heritage institutions to respond.

Broad implications

The emergence of Open BMI, as well as the delineation of multiple values in cultural heritage institutions, makes the participatory approach a natural methodological choice as both benefit from multiple stakeholder inputs. Conceptualizing museums as object-centered or as people-centered is being challenged by the progressive museology that recognizes the influence of the digital networked space, where distinguishing objects and people (or tangible and intangible) is no longer relevant. The notion of the "liquid museum" exemplifies this, where the living lab methodology can serve to involve museum visitors, museum staff and other constituents in the development of innovations through an interactive process.[13] An alternative is the participatory management model conceptualized in layers.[14] However, these models have so far only been applied in a handful of locations.

Implications for cultural heritage and its conservation

Measuring participation has gained attention with the increasing use of digital technology to mediate cultural heritage consumption.[15] As cultural production and consumption take new forms, so do metrics to reflect them. Similarly, new methods to understand the complexity of cultural heritage institutions emerge, such as the dynamic and networked analysis of efficiency that captures detail of multiple functions, production stages and external determinants of environmental context, starting to be applied in the culture and heritage sector.[16]

It has been argued that one contribution of cultural economics is the development of the concept of noneconomic value, where cultural value takes center stage.[17] New efforts to measure social impact are underway, yet quantifying cultural value remains a challenge,[18] being highly dependent on the preference function of individuals. One approach is to borrow from health economics and apply wellbeing metrics to cultural heritage participation, or from educational economics to measure cognitive change. Conceptualizing cultural participation as a means to solve societal challenges requires a new understanding of participation and the adoption of relevant metrics. Correspondingly, CHIs are conceived to respond to greater societal issues, including sustainability in the use of resources, regardless of market value. This requires a methodology to understand cultural management responding to social demands related to sustainability, cultural meaning and social responsibility, currently underdeveloped for the cultural sector.[19]

References

1. NEMO (2020, June). *Survey on the impact of the COVID-19 situation on museums in Europe final report.*
2. OECD. (2020). Culture shock: COVID-19 and the cultural and creative sectors.
3. NEMO (2020, June).
4. Bocken, N.M., De Pauw, I., Bakker, C., & Van Der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), 308–320.
5. https://www.boijmans.nl/en/depot/The%20Depot%20explained.
6. Falk, J.H., & Sheppard, B.K. (2006). *Thriving in the knowledge age: new business models for museums and other cultural institutions*. Lanham: Altamira Press.

7. Coblence, E., & Sabatier, V. (2014). Articulating growth and cultural innovation in art museums: the Louvre's business model revision. *International Studies of Management & Organization*, 44(4), 9–25.
8. Backache-Beauvallet, M., & Bourreau, M. (2020) Platforms. In: Towse and Navarrete (eds.) *Handbook of cultural economics*. Edward Elgar, pp. 241–429.
9. Klamer, A. (1997). The value of culture: on the relationship between economics and arts. Amsterdam, the Netherlands: Amsterdam, the Netherlands University Press. Snowball, J.D. (2007). *Measuring the value of culture: methods and examples in cultural economics*. Springer Science & Business Media. Throsby, D. (2001). *Economics and culture*. Cambridge University Press.
10. See: Museum definition. ICOM. https://icom.museum/en/resources/standards-guidelines/museum-definition/; https://icom.museum/en/news/icom-announces-the-alternative-museum-definition-that-will-be-subject-to-avote/
11. van de Laar, P. (2009). *Het Nationaal Historisch Museum en de emotional turn*. *Bijdragen en Mededelingen betreffende de Geschiedenis der Nederlanden*, 124(3), 431–438.
12. Hutter, M. (2020) Information goods. In: Towse & Navarrete (Eds.) *Handbook of cultural economics*. Edward Elgar, pp. 287–293.
13. Van Oost, O. (2012). Living lab methodology in museum studies: an exploration. In Kristiansen (Ed.) *The transformative museum: proceedings* (pp. 482–493). Danish Research Center on Education and Advanced Media Materials (DREAM).
14. Sancho-Querol, L., & Sancho, E. (2015). How can museums contribute to social and cultural change? In: Jensen & Lundgaard (Eds.), *Museums, citizens, and sustainable solutions*. Danish Agency for Culture, pp. 212–231.
15. NESTA Digital Culture Compass & MTM. (2017). *Digital culture 2017*. Nesta and Arts Council England.
16. Del Barrio-Tellado, M.J., Gómez-Vega, M., Gómez-Zapata, J.D., & Herrero-Prieto, L.C. (2020). Urban public libraries: performance analysis using dynamic-network-DEA. *Socioecon. Plann. Sci.* Del Barrio-Tellado, M.J., HerreroPrieto, L.C., & Murray, C. (2020). Audience success or art for art's sake? Efficiency evaluation of dance companies in the United States. *Nonprofit Manag. Leadersh*, 31(1), 129–152.
17. Dekker, E. (2015). Two approaches to study the value of art and culture, and the emergence of a third. *Journal of Cultural Economics*, 39(4), 309–326.
18. Willekens, M., & Lievens, J. (2016). Who participates and how much? Explaining non-attendance and the frequency of attending arts and heritage activities. *Poetics*, 56(June), 50–63.
19. Rizzo, I. (2012). Economic evaluation of the performance of cultural heritage conservation policies: some methodological and empirical issues. In: Zancheti, S.M., & Simila, K. (Eds.), *Measuring heritage conservation performance*. ICCROM and CECI.

Ec5. Regenerative and Redistributive Growth: Heritage in Productive Use

Keywords	*Doughnut economics, circular economics, social development, growth, redistribution, planetary boundaries, inclusive growth, equitable income*
Other STEEP categories	*Environmental | Societal*
Author	*Adala Leeson*

Description

Alongside the calls for urgent change from climate change scientists, economists have been developing new models for our future economies that consider the finite nature of our natural resources and the need to cater to ever-changing and growing societal needs. Doughnut economics, circular economics and economics of the common good are some of the key concepts that leading intellectuals are focusing on as the sustainable practice of the future.

Interestingly, some commentators note that with so many emerging theories in this landscape, a one-size-fits-all economic model may not be appropriate in the future. Adapting economic and social development policies bespoke to individual places, projects and programmes is necessary. Nevertheless, the common feature of each of these emerging approaches is that people and the environment are at the center of the economy.

The aim of these applied economic theories is to turn today's degenerative economies into regenerative ones, from societies characterized by overconsumption to those characterized by reuse and recycling; from exclusive economies into far more distributive ones.

Broad implications

Ultimately, adopting these models means changing the way we measure success. In these models, success is not linear or monetary; it is not demonstrated by GDP or transient employment. Success or value in this approach is multidimensional and comprises a dashboard of qualitative and quantitative indicators, largely aligned with SDGs. Well-being and welfare are the key goals.

There are examples of these types of measures infiltrating our economic development policies, for example, the better life index from the Organisation for Economic Co-operation and Development (OECD), The Royal Kingdom of Bhutan's gross national happiness index and New Zealand's well-being budget. All of these consider that our future economies will put people and our limited resources at the heart of economic policies.

This will impact how we pursue social and economic development policies and programmes – for example, the Be.CULTOUR project[1] aims to move away from a "stop-and-go" consumer-oriented approach towards one that puts humans and circular economy models at its center, paying attention to nature, communities and cultural diversity. "Place," intended as the genius loci, the ancient spirit of the site and "people" as co-creators of its uniqueness, culture, art, tradition, folklore, productivity and spirituality, are the focus of such approaches.

Implications for cultural heritage and its conservation

In our current economic system, cultural heritage is very often underestimated. This is because heritage has multiple values to people and those are not captured using orthodox approaches. Cultural heritage generates not only positive economic impacts but it also has

significant cultural, social, spiritual, aesthetic, community and environmental impacts. In the future, with focus on the circular economy, common goods economics or Doughnut economics, the multidimensionality of cultural heritage will matter and will be invested in.

This implies that as our throw-away culture gradually comes to a halt (or as some scientists insist comes to a screeching halt), our existing assets, our cultural heritage, becomes an ever more important resource – a source of regeneration and a sustainable future. In this scenario, it is not just cultural heritage for the sake of heritage conservation, it is heritage as an economic, social and environmental resource. It is heritage as a source of local sustainable employment; heritage as a source of social capital, including identity and belonging; as a community resource; as a source of positive environmental impacts.

Reference

1. See: *Be.CULTOUR project*. https://becultour.eu

Ec6. Tourism

Keywords	*tourism, economy, revenue generation, COVID-19*
Other STEEP categories	*Societal | Environmental*
Author	*Thabo Manetsi*

Description

Global tourism has been adversely impacted by the unprecedented COVID-19 pandemic, which has severely reduced domestic and international travel. Consequently, there has been little to no tourism activities, including low revenue in the heritage sector, forcing institutions and businesses to close indefinitely, resulting in job losses. The tourism and heritage sectors (like many other sectors) have had to devise adaptation strategies to survive the new COVID-19 reality, demonstrating compliance to health and safety measures to support travel and tourism activities.

In response to COVID-19, the tourism and heritage sectors (like many other sectors) have had to be agile and implement appropriate health protocols for compliance purposes. Several countries introduced economic recovery plans (e.g., National Tourism Recovery Plan in South Africa) to safeguard lives and sustain livelihoods as interim measures. The COVID-19 vaccine rollout is seen as a critical measure to support the reopening of the economy and provide some degree of stabilization and normality in the present and future. The COVID-19 pandemic has brought to light the need for risk preparedness in the event of health disasters, in addition to man-made and natural hazards.

Broad implications

Global travel and tourism, which is gradually taking off, has had to adapt to the new changes for now and the future. Heightened global travel restrictions due to perceived risks of resurgence of COVID-19 spurred the introduction of mandatory proof of vaccination (vaccine passports). Travellers also face possible travel bans and restrictions imposed by destinations due to the perceived prevalence of the COVID-19 mutations, new variant/s and infections.

Implications for cultural heritage and its conservation

Likelihood of funding shortfalls/deficiency to support heritage conservation efforts and ICCROM, as several countries (economies) have had to reprioritize resources to support the COVID-19 programmes instead. Few to no tourism activities will have a severe impact on revenue generation in the heritage sector, resulting in poor funding for conservation work. Vaccine roll-out provides a measure of assurance for return to normalcy.

Ec7. Well-being Economics

Keywords	*well-being, economic policy, budget, capital based sustainable development, future generations*
Other STEEP categories	*Societal | Environmental*
Author	*Tokie Laotan-Brown*

Description

Well-being economics recognizes the need to restore symbiotic balance with nature and people, equitable distribution of resources, and healthy and resilient communities. Emerging trends are seen in Scotland, Iceland, New Zealand and Wales at the 2018 OECD Well-being Forum.[1]

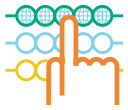
Broad implications

In the United States, a new initiative is looking to close these gaps by introducing the first phase of the Bureau of Economic Analysis' GDP and Beyond initiative: (1) the distribution of economic growth across households, factors of production, industries and geography; and (2) trends in, and the sustainability of, economic growth within a national accounting framework.[2] The Commission on the Measurement of Economic Performance and Social Progress focused on four types of capital: physical, human, natural and social. With slight variations in the name of the first category (sometimes labelled "economic capital," "produced capital," "human-made capital," or "physical and financial capital"), these four capitals have become standard in sustainable well-being frameworks.[3] In the coming years, a coordinated global action will be required to work on well-being issues. Climate changes and pandemics are obvious examples. Institutions and norms designed to foster cross-cultural collaborations at a global level will be seen more as diplomatic capital, similar to social capital within countries.[4]

Implications for cultural heritage and its conservation

In the Royal Kingdom of Bhutan's history and culture, an explicit vision of happiness-oriented development is articulated. This has led to a unifying conceptual framework built on four pillars: sustainable and equitable socioeconomic development, good governance, environmental conservation, and the preservation and promotion of cultural heritage. The framework continues to guide The Royal Kingdom of Bhutan's national five-year plans in: health, education, living standards, time use, good governance, ecological diversity and resilience, psychological well-being, community vitality, and cultural diversity and resilience.

There are unresolved tensions about how a national well-being approach works in diverse environments where different communities might express very diverse values in creating lives they value, including examples from New Zealand, such as the *Te Whare Tapa Whā* model of well-being.[5] ICCROM can play an important leadership role by taking on these best practices and shaping effective policies in well-being issues within Indigenous and diverse communities. By doing this, a mindset shift will be forged and effectively promoted in the cultural heritage sector. In the future, governments should not only measure the GDP but also the gross well-being of their communities that takes into account intangible heritage.[6,7]



References

1. See: Wellbeing Economy Governments (WEGo) partnership. https://weall.org/wego
2. US. Department of Commerce, Bureau of Economic Analysis. (n.d.). *Measures of economic well-being and growth*. https://apps.bea.gov/well-being/docs/background-materials-prototype-measures-of-economic-well-being-and-growth.pdf
3. See: Organisation for Economic Cooperation and Development (OECD), 2020. https://www.oecd.org/
4. Dalziel, P., Saunders, C., & Saunders, J. (2018). *Wellbeing economics: the capabilities approach to prosperity*. Palgrave Macmillan.
5. Durie, M. (1998). *Whaiora Māori health development* (2nd ed.). Oxford University Press.
6. Sofaer, J., Davenport, B., Stig Sørensen, M.L., Gallou E., & Uzzell, D. (2021). Heritage sites, value and wellbeing: learning from the COVID-19 pandemic in England. *International Journal of Heritage Studies*. https://doi.org/10.1080/13527258.2021.1955729
7. Wiedmann, T., Lenzen, M., Keyßer, L.T, & Steinberger, J.K. (2020). Scientists' warning on affluence. *Nature Communications*, 11, 3107. https://doi.org/10.1038/s41467-020-16941-y

Ec8. Well-being Economics: A New Economic Paradigm?

Keywords	*well-being, economic policy, budget, capital based sustainable development, future generations*
Other STEEP categories	*Societal | Environmental*
Author	*Adala Leeson*

Description

Historically, our economic systems have undergone significant paradigm shifts; from neoclassical economics to Keynesian economics to the prevailing neoliberal system. Neoliberalism derives many of its arguments from the prescriptions of neoclassical economics, including smaller governments, free trade, private sector deregulation and fiscal responsibility in government. This system has dominated the global political economy since its emergence in the late 1970s and 1980s. However, neoliberalism is coming under increasing pressure:

> "A sure sign of the declining influence of neoliberalism is the rising chorus of intellectual voices raised against it... This is most obvious in the United States of America, with economists such as Joseph Stiglitz, Paul Krugman, Dani Rodrik and Jeffrey Sachs becoming increasingly influential."[1]

Others include Thomas Piketty, Tony Atkinson, Angus Deaton and Ha-Joon Chang.

What these economists and others increasingly point to are the weaknesses of our current economic system, particularly **inequalities**. Since the 1980s, extreme poverty has declined globally; however, neoliberalism has resulted in greater inequalities – intergenerational wealth inequalities, interregional income inequalities and, most recently, international health inequalities highlighted in the COVID-19 pandemic: "Capitalism naturally gravitates towards increasing inequality."[2] This has led to calls for refinement, reform and even a wholesale reimagining of our economic fundamentals: "If the data don't fit the theory, change the theory."[3]

"There is as yet no widely agreed name for a new, post-neoliberal economic paradigm. But those seeking to build one largely agree on its core goals."[4] A key goal is to improve individual and social well-being rather than prioritize economic growth, as is to reduce inequalities of income wealth and power. This is arguably a return to the philosophical roots of economics, rather than a complete paradigm shift. For example, leading early economists, including Alfred Marshall, the nineteenth century Cambridge professor who taught John Maynard Keynes, thought "the end of all production . . . [was] to raise the tone of human life" and that, too often, "the bearing of economics on the higher well-being of man [was] overlooked."[5] Similarly, economist and Nobel laureate Simon Kuznets, the "inventor of GDP," argued that "the welfare of a nation can scarcely be inferred from a measurement of national income." Kuznets wanted defence spending removed from GDP because wars subtracted from human well-being.

"Economics is in greater flux, and generating more interesting ideas, than it has for a generation."[6]

Broad implications

Our economic models, systems, and policies will change to reflect this new economic paradigm and/or new economic ideas. At the heart of this new approach is tackling the deep systematic inequalities that have resulted from the neoliberal model:

> "Putting inequality at the core of the analysis pushes forward questions about whether the market performs the same for everyone – rich and poor, with economic power or without – and what that means for how the economy functions. It brings to the fore questions that cannot be ignored about how economic power translates into social power."[7]

This new paradigm and new economic ideas imply, as a minimum:

- building inequality into our economic models;
- moving from wealth to welfare; from GDP to well-being;
- moving from shareholder to stakeholder capitalism; and
- well-being will be the main measure of "success" for governments.

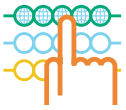
In the recent past, we have seen the empirical application of wellbeing economics. For example, the New Zealand government has broken traditions of national budget-making based on classical economic models and metrics, to focus on one that is based on wellbeing. Jacinda Ardern, the former prime minister, said that she wanted their well-being budget to be "**the foundation for a different approach for government decision-making altogether**." The OECD, in November 2020, launched their Centre on Well-being, Inclusion, Sustainability and Equal Opportunity (WISE), arguing that "**now more than ever**, **policy-makers need to prioritize what matters in people's lives.**"[8] Similarly in the United Kingdom, His Majesty's Treasury's recently revized Green Book (the United Kingdom Government's guidance on appraisal and evaluation) states that appraisals will include "**all significant costs and benefits that affect the welfare and well-being of the population, not just market effects**."[9]

Implications for cultural heritage and its conservation

A new economic paradigm and the well-being economy will have significant implications for the heritage sector in the short to medium term. Heritage matters to people, but this is often ignored or underplayed in our current economic system.

When we, in the heritage sector, talk about the value of heritage, we tend to describe what can be termed "soft" factors, such as beauty, significance, pride, identity, spirituality and the list goes on. In neoliberal economics, value equates to or revolves around market prices represented by economic metrics, such as GDP and employment. Harsh critique from former US President Robert J Kennedy in 1968 stated, "GDP measures everything . . . except that which makes life worthwhile."

A post-neoliberalism paradigm will consider factors that are not fully traded in markets: the existence values of cultural heritage, the bequest values, and the option values of heritage. In other words, the total economic value of heritage. It implies an improved and more holistic valuation of cultural heritage in economic policy and decision-making. It means the soft power of heritage is counted; it enables the exploration of the value of culture to society now and in the future. There will be new opportunities to understand and promote the value of cultural heritage in the future.



References

1. Jacques, M. (2016). The death of neoliberalism and the crisis in western politics. *The Guardian*, p. 21.
2. Piketty, T. (2013). *Capital in the 21st century*. Cambridge, MA: President and Fellows, Harvard College.
3. Emmanuel Saez (2018) as quoted in Boushey, H. (2019). A new economic paradigm. Symposium: beyond neoliberalism. *Democracy Journal.*
4. New Economy Brief. (2021, July 23). Changing the paradigm. https://www.neweconomybrief.net/challenge/changing-the-paradigm#
5. Marshall, A. (1890). *Principles of economics Macmillan* (8th ed., 1920). London.
6. Ibid.
7. Boushey, H. (2019). A new economic paradigm. Symposium: Beyond neoliberalism. Democracy Journal. https://democracyjournal.org/magazine/53/a-new-economic-paradigm/
8. Boarini, R. (2020, November 25). *Towards a people-centred, inclusive, and sustainable COVID-19 recovery: OECD launches the Centre on Well-being, Inclusion, Sustainability and Equal Opportunity (WISE).* The Forum Network. OECD. https://www.oecd-forum.org/posts/towards-a-people-centred-inclusive-and-sustainablecovid-19-recovery-oecd-launches-the-centre-on-well-being-inclusion-sustainability-and-equal-opportunitywise?channel_id=791-inclusive-growth
9. HM Treasury. (2020). The Green Book and accompanying guidance and documents. UK Government. https://www.gov.uk/government/collections/the-green-book-and-accompanying-guidance-and-documents

Via di San Michele 13
I-00153 Rome, Italy
Telephone: +39-06585531
iccrom@iccrom.org
www.iccrom.org

ISBN 978-92-9077-339-9