Technology and Regulation

‘Slow libraries’ and ‘Cultural AI’: Reassessing technology regulation in the context of digitised cultural heritage data

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Abstract

Cultural heritage institutions (galleries, libraries, archives, and museums; CHIs or GLAM) increasingly experiment with the use of artificial intelligence (AI) in epistemological tools for unlocking their collections. The use of AI poses both opportunities and risks, a notable risk being bias and silencing non-dominant perspectives. It is therefore time to rethink the design and regulation of AI. With the input of histories of, and developments in, collecting and unlocking cultural heritage, and various theories on cultural AI, regulation by design, and value alignment, this paper applies a law & humanities perspective to examine ‘cultural AI’ and ‘slow archives’ approaches in view of our envisaged output: the contours of a conceptual framework for the value-based regulation by design of culturally sensitive, fair and insightful AI in GLAM practice.

1. Introduction: cultural heritage institutions – metadata in movement

In 2019, the Amsterdam Museum made the headlines due to banning the term ‘Golden Age’, as part of the museum's process to become ‘many-voiced and inclusive’.[1] A couple of years earlier, the Rijksmuseum’s decision to no longer use certain sensitive terms in describing the collection evokes mixed reactions.[2] Clearly, GLAM institutions have become subject of increasing scrutiny regarding the way they handle, catalogue, present, describe and make accessible the cultural heritage they harbor and safeguard. While

1. *See* Het Parool, ‘Amsterdam Museum doet term ‘Gouden Eeuw’ in de ban’ *Het Parool* (Amsterdam, 12 September 2019) https://tinyurl.com/2p84fh8a accessed 20 May 2024.
2. Patrick Meershoek, ‘Besluit Rijksmuseum over Hottentotten en Negers roept Wisselende Reacties op’ (*Het Parool*, 10 December 2015) https://tinyurl.com/5xnunhbm accessed 20 May 2024.

restitution debates surrounding material and collections with origins in times of colonialism and power imbalance are the most prominent examples of tensions, this also has an important immaterial component as collections, archives and inventories are increasingly digitised. Arguably, power imbalance still resonates today, as systems and structures of cultural heritage institutions originate in dominant perspectives and world views. As a consequence, GLAM institutions could be criticised for being exclusionary in nature, despite increasing self-awareness and good intentions.

It is argued that such dominant systems should give way to "relations of respect and reciprocity – in practice and in the processes that allow for *alternative distributions of control* [italics added]".[3] In this regard, Christen and Anderson's approach of 'slow archives methods' to "to reevaluate the workflows and procedures of digital archiving and curation" is noteworthy, including practical epistemological tools such as "Traditional Knowledge (TK) labels" attempting to (re)allocate control over (intangible) materials with their source communities, particularly when these are digitised and made (widely) accessible.[4]

In parallel with these fundamental discussions, GLAM institutions are examining the use of AI in unlocking their collections. For instance, the National Library of the Netherlands (KB) and various museums and scientific institutions have initiated a Cultural AI Lab, which studies "how to deal with cultural bias in data and technology".[5] Hence, amidst the rise of digital technologies, which may pose opportunities and challenges for society at large, the development of AI also raises legal, ethical and social issues in specific contexts, such as the accessibility of cultural heritage online. It is this context which forms the focus of this paper, and more specifically, 'cultural AI' and the variety of perspectives that are relevant for the deployment and regulation of AI in a culturally sensitive manner.

Taken together, considering the opportunities and challenges that AI technology presents, how can AI be designed and regulated so that multiple perspectives on sensitive cultural materials are reflected, and fundamental values are safeguarded? Admittedly, the concepts central to this question raise certain issues, for instance the complexity of 'regulation by design'. As Yeung phrases it, this notion refers to "design-based instruments for implementing social policy that will aid our understanding of their ethical, legal and public policy complexities".[6] Notably, in this vision, the design might be embedded in various subjects, including "places and spaces, products and processes".[7] We aim to offer a way of thinking within this variety. Yet, another issue concerns the values involved: whose values form the baseline? According to Hasselbalch, "the explanation of values-based cultural frameworks for AI" can play a key role in setting an AI agenda, making programming values and categories visible in order to expose "cultural power dynamics" and "effect change".[8] Thus, values should be made explicit, and awareness of different perspectives is needed. Where policymakers and stakeholders in the GLAM context may have their own agendas, this may lead to what Hadfield has called the value alignment problem.[9] Alignment between the normative and technical aspects of AI might be an issue as well.[10] Diversity, inclusion and transparency in the process of AI design and regulation should prevent value misalignment.

So far, the EU policy agenda has addressed the regulation of AI in various sectors, including environment and health, finance, mobility, agriculture, education and culture.[11] Recurring keywords are 'trust' and innovation

3. Kimberly Christen and Jane Anderson, 'Toward Slow Archives' (2019) 19 *Archival Science* 87, 99.
4. Christen and Anderson (n 3) 102.
5. *See* Cultural AI lab, *Cultural AI – a Lab for Culturally Valued AI* https://www.cultural-ai.nl/ accessed 20 May 2024.
6. *See on the variety and complexity of design-based regulation approaches:* Karen Yeung, 'Towards an Understanding of Regulation by Design' in Roger Brownsword and Karen Yeung (eds.), *Regulating Technologies. Legal Futures, Regulatory Frames and Technological Fixes* (Hart Publishing 2008) 79.
7. Yeung (n 6) 80.
8. Gry Hasselbalch, 'Culture by Design: A Data Interest Analysis of the European AI Policy Agenda' (2020) 25 *First Monday* 3, 8-9.
9. Cf. Dylan Hadfield-Menell and Gillian K Hadfield, 'Incomplete Contracting and AI Alignment' (2019) *Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society* 417.
10. *See* Iason Gabriel, 'Artificial Intelligence, Values, and Alignment' (2020) 30 *Minds and Machines* 411.
11. *See for instance:* European Commission, 'Proposal for a regulation of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (Artificial Intelligence Act)' COM(2021) 206 final 2021/0108 (COD), 1.

versus safety and fundamental rights. The aim is for AI to be 'human-centric'.[12] As indicated, our paper zooms in on culture, and more specifically, on the conceptual discussion of 'cultural AI', an aspect which so far has not received much attention in the policy discussions. It does so in the context of digitally unlocking cultural heritage via GLAM institutions. Although a recent study for the European Parliament examines opportunities and challenges of AI in the context of cultural heritage and museums, this study highlights only a number of topics, such as the use of AI for restoring or completing works, author identification or the detection of hidden archeological sites. Cataloguing and information management – potentially dominant epistemological tools – are merely mentioned briefly.[13] It is precisely this angle and gap that our paper addresses, namely of how to benefit from the application of AI in the sphere of unlocking content online in a fair and insightful manner, that is, while being aware of the risks this technology poses, notably numerous forms of bias and potential discrimination, as well as lack of context-specificity and multivocality of this technology. How can the values at stake be safeguarded?

To explore these questions, our paper, which is positioned at the nexus between law, culture and technology, takes an interdisciplinary law & humanities approach to critically assess theoretical frameworks, practical epistemological tools and fundamental questions surrounding the insightful and culturally sensitive use of AI for GLAM practice, which we aim to concretise as value-based regulation by design for unlocking cultural heritage online. This approach should enable us to balance innovation with fundamental values such as access, stewardship, self-determination, representation, participation, fairness and trust. These are values that can be derived from both library mission statements and the underlying fundamental rights of participation in cultural life and freedom of expression.[14]

To that end, after a brief overview of recent regulatory initiatives on AI at the EU level (par. 2) and an introduction of the 'cultural AI' concept alongside current use of AI in the GLAM sector (par. 3), the paper aims to critically assess the following question: against the background of debates on restitution, (un) protection of TK and TCE and digitisation developments (par. 4), what does the 'slow archives' approach entail in theory, what values are central and what practical epistemological tools are used already (par. 5)? Building on research from (digital) humanities – such as library and information sciences and cultural studies – and legal scholars, this paper aims to work towards a conceptual framework (par. 6) to argue that the adoption of cultural AI could be part of a broader trend: slowing down to move forward. I.e., despite, or maybe especially given the fast developments, we might need to take a step back to rethink fundamental issues and values, and take time to develop a value-based approach towards regulating AI 'by design' in GLAM practice.

2. Current regulation of AI: EU initiatives versus culture

The tendency of "policy vacuums" that arise each time "policies clash with technological developments that force us to 'discover and make explicit what our value preferences are'" is noted in the literature.[15] It resonates with what we set out to do in this paper: (re)considering values and pursuing awareness of whose values are dominant and where – in this case, cultural AI regulation and design. The same goes for Hasselbalch's observations from a cultural studies perspective that culture – in the multifaceted yet contested sense of "interaction with peoples and artefacts", "a way of life" and "a site of power negotiation" – can be "traced in the very design of technology", whereas the introduction of new technologies represents "complex power dynamics between multiple actors and societal interests".[16] In this sense, "AI is not just

12. COM(2021) 206 final 2021/0108 (COD) (n 11).
13. Magdalena Pasikowska-Schnass and Young-Shin Lim, *Artificial Intelligence in the Context of Cultural Heritage and Museums: Complex Challenges and New Opportunities* (European Parliamentary Research Service, May 2023) 2–3, 9 https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2023)747120 accessed 5 June 2024.
14. *See for instance* International Federation of Library Associations and Institutions, 'IFLA-UNESCO Public Library Manifesto 2022' www.ifla.org/public-library-manifesto/ accessed 5 June 2024; and Article 19 of the International Covenant on Civil and Political Rights (ICCPR), and Article 15 of the International Covenant on Economic, Social and Cultural Rights (ICESCR)), respectively.
15. Cf. Hasselbalch (n 8) and sources cited there.
16. Hasselbalch (n 8) 6-7.

'coded' data; it is *data culture in code*" based on "shared skills and knowledge frameworks", "framed within specific cultural systems of meaning-making" and "shaped by ideas about the cultivation and production of data that reflect epistemologies about, for example, ordering, classification, and standards".[17] As such, "the cultural classification of the world is actively coded and produced within the system"[18], meaning that we need to ensure that multiple perspectives are heard in the discussions and design of AI. Again, we should be aware of the value alignment problem.[19] Against this background, this section briefly sketches current regulatory initiatives on AI with special attention for culture as one sector where the EU policy agenda addresses the development of AI.[20]

Whereas the European Commission has presented its general proposals for the regulation of AI in 2022, defining AI as "a fast evolving family of technologies that can bring a wide array of economic and societal benefits across the entire spectrum of industries and social activities",[21] the European Parliament adopted a resolution *specifically* on 'artificial intelligence in education, culture and the audiovisual sector' in 2021.[22] This resolution contributed to the political context of the European Commission's proposals[23], stating that the "development, deployment and use of AI [...] should be guided by the ethical principles of transparency, explainability, fairness, accountability and responsibility".[24] Moreover, the resolution reiterated, among others, that "AI should be 'ethical by design', with no built-in bias, in a way that guarantees maximum protection of fundamental rights"[25] as well as the need "to systematically address the social, ethical and legal issues raised by the development, deployment and use of AI such as the transparency and accountability of algorithms, non-discrimination, equal opportunities, freedom and diversity of opinion, media pluralism and the ownership, collection, use and dissemination of data and content".[26] Regarding bias, the resolution furthermore stressed the need to involve all relevant stakeholders, while calling on the European Commission to "encourage and facilitate the sharing of de-biasing strategies for data", which were not further defined.[27] Similarly, while referring to AI technology's potential for the cultural heritage sector, for instance in producing innovative tools for cataloguing, documentation, or the creation of suitable classification schemes, such tools were not further elaborated either.[28]

A study for the European Commission (2022) also notes the opportunities of AI for GLAM institutions which increasingly digitise their collections. Three categories of opportunities are identified, including "Archival, cataloguing and information management applications enhanced by AI", intended to help the institutions to "research and categorise their digital collections more effectively".[29] Similarly, a research briefing (2023) for the European Parliament examines opportunities and challenges of AI in the context of cultural heritage and museums. This briefing underlines the need for investments in infrastructure, equipment and essential "high qualified human resources", as "AI needs to be fed with high-quality data", while the data needs to be "properly described with metadata".[30] Bias is not mentioned in this regard, but could be an issue. In addition, as indicated, the briefing highlights a number of specific topics only, merely mentioning cataloguing and information management.[31] Yet, if we want to benefit from the application of AI in the sphere of unlocking content online while being aware of the risks this technology poses, such as bias and lack of context-specificity, how can the values at stake be safeguarded?

17. Hasselbalch (n 8) 7.
18. Hasselbalch (n 8) 7; Cf. also Chris Julien, Tom Demeyer and Stefano Bocconi, *Biased-by-Default* (Waag 2019) 22–23 https://waag.org/sites/waag/files/2019-06/Biased-by-default.pdf accessed 5 June 2024.
19. Hadfield-Menell & Hadfield (n 9); Gabriel (n 10).
20. COM(2021) 206 final 2021/0108 (COD) (n 11) 1.
21. COM(2021) 206 final 2021/0108 (COD) (n 11) 1.
22. European Parliament, 'Artificial Intelligence in Education, Culture and the Audiovisual Sector' (2020/2017(INI)) [2022] OJ C 15/28.
23. COM(2021) 206 final 2021/0108 (COD) (n 11) 3.
24. European Parliament (2020/2017(INI)) (n 22) under B.
25. European Parliament (2020/2017(INI)) (n 22) pt 4.
26. European Parliament (2020/2017(INI)) (n 22) pt 22.
27. European Parliament (2020/2017(INI)) (n 22) pt 7.
28. European Parliament (2020/2017(INI)) (n 22) pts 51-53.
29. European Commission Directorate-General for Communications Networks, Content and Technology, Opportunities and Challenges of Artificial Intelligence Technologies for the Cultural and Creative Sectors (SMART 2019/0024, 2022) 143.
30. Pasikowska-Schnass and Lim (n 13) 1.
31. Pasikowska-Schnass and Lim (n 13) 2-3, 9.

The work of the High Level Expert Group on AI (AI-HLEG) is noteworthy in this respect: already in 2018, the AI-HLEG stated that "[t]rusted AI is achieved not merely through regulation, but also by putting in place a human-oriented and ethical mind-set by those dealing with AI, in each stage of the process".[32] As we will see in the next section, this resembles the concept of 'cultural AI'. As to trusted AI, the AI-HLEG indicates that this requires "both (1) the right ethical intent [values] when dealing with AI, and (2) the correct implementation thereof"[33] as well as methods that "properly translate the values that we wish to ensure into the design of the AI tool".[34] The AI-HLEG further underlines that an adaptive process is needed to ensure trust, which further requires a dynamic approach to be maintained also after the launch of an AI system. In this regard, the AI-HLEG points at lifecycle management[35], a notion which resonates with safeguarding cultural heritage materials in GLAM institutions. Notably, the AI-HLEG indicated various tools to reach trusted AI, including technical tools and governance tools, such as ethics guidelines.[36] Taken together, these tools might result in regulation by design.

Returning briefly to the European Commission's efforts, regulation is linked to an AI application's qualification as high-risk or non-high risk. The legal qualification of 'high risk' is among others connected to adverse impact on fundamental rights in specific contexts. Although it is debatable whether these are directly relevant to the cultural context, this does not mean that the use of AI by GLAM institutions cannot touch on fundamental rights and values.[37] It does mean however that not every proposed rule applies. Yet, the proposals encourage the drawing up of voluntary codes of conduct applied to non-high-risk AI systems. Notably, it is advised that stakeholders should participate in the design of AI, which should furthermore be developed by diverse teams based on clear objectives.[38] For the cultural heritage context, the attention for participation and diversity might to some extent offset the observation that we could consider the focus on an individual human-centric approach vis-a-vis a communities world view – compare the concept of indigenous data sovereignty[39] – as a dominant values-based European "third way" in the "global AI race" with the US and China. Although the recognition of the need to safeguard fundamental rights is laudable, this dominant stance is an incentive to further explore 'cultural AI', to which the paper now turns, alongside examples of cultural AI projects.

3. 'Cultural AI'

This section zooms in on the central concept of 'cultural AI'. To that end, we will work from a brief overview of general AI characteristics to an understanding of 'cultural AI' and its specific application in the cultural heritage sector.

3.1 From AI to 'cultural AI': concepts and characteristics

Starting with general AI, there is not one go-to definition. Various definitions surface in the literature, which may be categorised as follows. Some AI definitions center on human or rational *thinking*, in the sense of devices or machines being able to take decisions, solve problems or learn. In other definitions, human or rational *action* is a parameter, referring to devices or machines containing AI insofar as these can perform acts which would require intelligence if carried out by humans.[40] According to Vetzo, Gerards and Nehmelmann, AI consequently denotes artefacts which operate, learn, understand and respond to their

32. High-Level Expert Group on Artificial Intelligence, *Outcomes of the AI HLEG Workshop of 20 September 2018* (European Commission 2018) https://ec.europa.eu/futurium/en/system/files/ged/report_of_the_ai_hleg_workshop_on_20_september_2018.pdf accessed 29 May 2024.
33. The High-Level Expert Group on Artificial Intelligence (n 32) 2.
34. The High-Level Expert Group on Artificial Intelligence (n 32) 5.
35. The High-Level Expert Group on Artificial Intelligence (n 32) 5.
36. The High-Level Expert Group on Artificial Intelligence (n 32) 6.
37. *See* European Commission (n 20) Article 6 jo Annex III.
38. *See* European Commission (n 20) Article 69(2) and (3).
39. *See on this concept:* Tahu Kukutai and John Taylor (eds.), *Indigenous Data Sovereignty. Toward an Agenda* (ANU Press 2016) 1-344.
40. *See* Max J. Vetzo, Janneke H. Gerards & Remco Nehmelman, *Algoritmes en Grondrechten* (Boom Juridisch 2018) 41-42, citing the standard work of Russell & Norvig, *Artificial Intelligence: A Modern Approach* (2010).

environment autonomously and adaptively, in order to reach an outcome as suitable as possible in any given circumstances.[41]

The highlighted characteristics portend numerous challenges, which will prove to be relevant for unlocking cultural heritage online. Most notably, since AI applications operating on the basis of algorithms are characterised by a high degree of autonomy, their decision-making cannot always be controlled by humans. Relatedly, the lack of predictability and transparency of complex AI-made decisions culminate in the 'black box' problem: although input and output of AI applications are known, the process in between cannot be explained.[42] Consequently, seeing that AI applications are human-made constructs, bias in the design, analysis or outcome can hardly be detected.[43] The data with which algorithms are trained may be classified with labels, which may contain prejudices.[44] Thus, AI systems involve both technical and "non-technical factors", "embody[ing] and reproduc[ing] their developers' cultural values" wittingly or unwittingly. AI systems are therefore considered "anything but objective and value free".[45] As "current AI technologies and data representations often reflect the popular or majority vote", this may lead to a "lack of polyvocality and contextual knowledge".[46] The described characteristics and their implications are a first indication that "value-driven, open and inclusive design"[47], as elaborated below, may be called for.

Next to defining AI, sub areas include robotics and natural language processing. The latter refers to the ability to process and produce spoken and written language, based on self-learning algorithms that can recognise patterns in datasets regarding the structure and content of expressions, including the sentiment of a text.[48] Other technologies to identify specific types of speech are word filters, which may detect hate speech on online platforms. Using a list of forbidden words, software then checks whether certain terms occur, but an important caveat is that such filters do not take context or less explicit expressions into account, especially if the filters rely on simple, rule-based algorithms (as opposed to machine learning).[49] Moreover, in the same sense that Kulk and Snijders note that what constitutes 'hate speech' may vary over time or per language and culture[50], we will see that descriptions of cultural heritage, including titles and metadata, may use terminology that we would nowadays consider outdated or contentious – how can we do justice to both historical descriptions, but also provide context and reflect our advancing understanding in the online environment? Indeed, it has been argued that "although smart machines can demonstrate impressive capabilities to execute mechanical tasks such as pattern identification, they lack the ability to "see" and "understand" contexts, a core quality of human intelligence".[51] In that sense, algorithms might be "technically 'neutral' but socially insensitive".[52]

Apart from definitions and sub areas, AI as a research field can be studied from various angles, including scientific, technological or cultural perspectives. For this paper, the latter two are of special importance, respectively studying "AI as a metatechnology and analys[ing] the social ramifications of various AI applications and subtechnologies" and "AI development as a social phenomenon and examin[ing] its interactions with the wider social, cultural, economic and political conditions in which it develops and by

41. Vetzo, Gerards and Nehmelman (n 40) 42.
42. Vetzo, Gerards and Nehmelman (n 40) 42, 49.
43. Vetzo, Gerards and Nehmelman (n 40) 48-49.
44. Vetzo, Gerards and Nehmelman (n 40) 143.
45. Forsythe 1993 as cited by Zheng Liu, 'Sociological Perspectives on Artificial Intelligence: A Typological Reading' (2021) 15 (3) *Sociology Compass* 4-5.
46. Marieke van Erp and Victor de Boer, 'A Polyvocal and Contextualised Semantic Web', in Ruben Verborgh, Katja Hose, Heiko Paulheim, Pierre-Antoine Champin, Maria Maleshkova, Oscar Corcho, Petar Ristoski and Mehwish Alam, *ESWC 2021: The Semantic Web* (Springer 2021) 1.
47. Cf. Tom Demeyer, 'AI in Culture & Society' (2019) WAAG AI Culture Lab https://waag.org/nl/article/ai-culture-society/ accessed 9 April 2024.
48. Vetzo, Gerards and Nehmelmann (n 40) 43; Stefan Kulk and Thom Snijders, 'Casestudy Contentmoderatie door Online Platformen', in Stefan Kulk and Stijn van Deursen (eds), *Juridische Aspecten van Algoritmen die Besluiten Nemen. Een Verkennend Onderzoek* (WODC 2020) 55.
49. Kulk and Snijders (n 48) 53-55.
50. Kulk and Snijders (n 48) 55.
51. Collins as cited by Liu (n 45) 5.
52. Liu (n 45) 8.

which it is shaped".[53] The cultural AI perspective acknowledges that "different groups leverage different cultural resources and traditions to develop AI narratives that help to advance their differing agendas".[54] Cultural framing is then seen as "a form of social intervention in AI design" in which researchers, regulators, users and other stakeholders play a role to "create socially beneficial AI".[55] With regard to cultural heritage, dominant and non-dominant views on the handling of the materials may differ, for instance concerning digitisation and subsequent access.[56] It illustrates that the design for and use of AI in unlocking such materials requires the involvement of different and representative stakeholders.

3.2 'Cultural AI' initiatives

Indeed, in addition to scholarly work on AI, practical initiatives on the interplay between AI and culture arise. An example is the Cultural AI Lab mentioned previously, a consortium which initiates research on AI and cultural collections in light of values such as diversity and inclusivity. It does so in connection with both the general public and professionals,[57] for instance researching how technology can deal with biases in data and secure multiple perspectives and subjective interpretations.[58] As is acknowledged, bias can be explicit or implicit, as explained with the following example: whereas 'The Dutch Seventeenth Century' and 'The Dutch Golden Age' are explicitly regarded as "pseudo-synonymous and refer[ring] to a particular era of Dutch history", the "'Golden Age' moniker" more implicitly carries "strong contestations". Yet, how can different or competing interpretations be accounted for in the data, especially since "data representations often reflect the popular or majority vote"?[59] Arguably, what is required, are "design guidelines and patterns for visualisation of polyvocal Knowledge as well as reusable tools and methods".[60] We will turn to inquiring potential (epistemological) tools initiated by source communities which may offer inspiration for the culturally sensitive use of AI in the cultural heritage sector in par. 5.

In connection with practical initiatives, ethical issues surrounding AI are addressed as well, for instance by the work of the United Nations Educational, Scientific and Cultural Organization (UNESCO). Observing that the rapid development of AI does not only pose opportunities, ethical concerns as well, such as bias, UNESCO warns that such risks may further increase inequalities among people, especially already marginalised groups. Therefore, in 2021, UNESCO issued a recommendation on the responsible development of AI, among others in the area of culture. The recommendation centers on the protection of human rights and dignity and is based on "the advancement of fundamental principles such as transparency and fairness".[61] Understanding AI in a dynamic sense as "systems with the ability to process data in a way which resembles intelligent behaviour", the recommendation encourages Member States to take educational and participatory approaches to "incorporate AI systems, where appropriate, in the preservation, enrichment, understanding, promotion, management and accessibility of tangible, documentary and intangible cultural heritage, including endangered languages as well as indigenous languages and knowledge [...]".[62] Education and training for professionals should contribute to the assessment of the "suitability of AI technologies" in a given field.[63] Moreover, according to the Recommendation, Member States should stimulate their GLAM institutions to use AI, including for their databases.[64] It is not further specified what would constitute the 'appropriate' use of AI, which therefore remains subject to research and discussion. Notably, the National

53. Liu (n 44) 4.
54. Liu (n 45) 8.
55. Liu (n 45) 9.
56. Cf. Kelly Breemen and Vicky Breemen, 'Human Rights Principles as Normative "Fairness" Tools in the Context of IP and (Access to) Indigenous Peoples' Heritage via Digital Libraries' in Daniel Gervais (ed), *Fairness, Morality and Ordre Public in Intellectual Property* (Edward Elgar 2020) 215-242.
57. *See* Cultural AI lab, *Mission and Vision* https://www.cultural-ai.nl/missionandvision accessed 20 May 2024.
58. Ibid.
59. Cf. van Erp and De Boer (n 46) 1.
60. Van Erp and De Boer (n 46) 6.
61. *See* UNESCO, 'Recommendation on the Ethics of Artificial Intelligence' (23 November 2021) https://www.unesco.org/en/artificial-intelligence/recommendation-ethics accessed 14 May 2024.
62. Ibid; *See also* United Nations Educational, Scientific and Cultural Organization, 'Recommendation on the Ethics of Artificial Intelligence' (Recommendation) SHS/BIO/PI/2021/1, par 94.
63. SHS/BIO/PI/2021/1 (n 62) par 96.
64. SHS/BIO/PI/2021/1 (n 62) par 100.

Library of the Netherlands already issued AI principles in 2020, among others stressing the need for inclusivity, impartiality and transparency of AI applications.[65]

3.3 AI in cultural heritage institutions

Examples of AI in cultural heritage institutions include the use of AI for machine-generated descriptions and tags by the Harvard Art Museums;[66] or for connecting hundreds of thousands of press pictures to newspaper articles by the National Library of the Netherlands[67]; or for establishing an "online capacity building hub for the application of artificial intelligence technologies in the cultural heritage sector" by the EU funded *AI4 Europeana* project.[68]

The Harvard example illustrates the use of machine vision, an AI tool that has gained attention in museum contexts. It has been described as "a computer's ability to understand what it is seeing"[69] or "the eyes of a machine".[70] Museums may adopt this tool "as a move to aid in the generation of metadata and descriptive text for their collections" and "to analyze, categorize, and interpret their collection images".[71] The generation of metadata, in turn, makes it easier to analyse, research and search the collections of thousands of objects in museum databases with often little information.[72] As Villaespesa and Murphy state: "Indeed, it is the need for digitized objects to be easily found, or discovered that makes these visual processing algorithms so promising for the management of museum collections online".[73]

Yet, for our specific topic, this view can also be considered problematic, at least for certain collections. Because as we will see in the next section, who determines digitisation and accessibility? For the Metropolitan Museum of Art it has for example been stated that: "The goals of tagging the museum collection are to increase user engagement, improve search and discovery of the collection, make the collection accessible to the widest possible audience and explore using tags as training data for AI models".[74] However, are these actually shared values between institutions and the society they operate in on the one hand and the source communities of the material concerned on the other?

Furthermore, if we consider Villaespesa and Murphy's observation that "[c]omputer vision technologies can generate data from the digital images of collection objects at a very fast pace compared to the speed of producing these data manually by museum staff",[75] this too raises questions about how 'culturally sensitive' a machine can be. Basic identifiers such as color or shape[76] will perhaps not lead to problematic outcomes, but tags that are (although unintentionally) inappropriate, insensitive and perhaps even hurtful may. Ciecko addresses various examples of bias and sensitive topics. He specifically describes Western cultural bias in the context of machine vision tools being unable to identify non-Western art. Both a Yoruba terracotta statue from Nigeria and a Japanese samurai suit of armor were classified as 'Buddha'. As Ciecko observes: "This suggests a pattern of conflating non-Western cultures".[77] Another problematic outcome of machine vision that Ciecko describes is a set of convict iron leg manacles from Australia being labelled as 'Fashion

65. *See* Koninklijke Bibliotheek, *AI en de Bibliotheek: Zeven Principes* (2020) https://www.kb.nl/sites/default/files/documents/AI%20Principes%20KB.pdf accessed 16 April 2025.
66. *See* Harvard Art Museums, *AI Explorer* https://ai.harvardartmuseums.org/ accessed 21 May 2024.
67. *See* Koninklijke Bibliotheek, 'Artificial intelligence koppelt honderdduizenden persfoto's aan krantenartikelen' (16 March 2022) https://www.kb.nl/actueel/nieuws/artificial-intelligence-koppelt-honderdduizenden-persfotos-aan-krantenartikelen accessed 21 May 2024.
68. *See* Europeana Foundation, *AI4Culture – An AI Platform for the Cultural Heritage Data Space* (14 November 2022) https://pro.europeana.eu/project/ai4culture-an-ai-platform-for-the-cultural-heritage-data-space accessed 21 May 2024.
69. Brendan Ciecko, 'AI Sees What? The Good, the Bad, and the Ugly of Machine Vision for Museum Collections' (2020) 5 *The Museum Review* 3-4 https://themuseumreviewjournal.wordpress.com/2020/04/23/tmr_vol5no1_ciecko/ accessed 9 April 2024.
70. Ciecko (n 69) 4.
71. Ciecko (n 69) 5.
72. Ciecko (n 69) 4.
73. Elena Villaespesa and Oonagh Murphy, 'This is Not an Apple! Benefits and Challenges of Applying Computer Vision to Museum Collections' (2021) 36 *Museum Management and Curatorship* 364.
74. Villaespesa and Murphy (n 73) 370.
75. Villaespesa and Murphy (n 73) 64.
76. Villaespesa and Murphy (n 73) 64.
77. Ciecko (n 69) 14.

Accessory' and 'Jewelry'. Mislabeling in, for example, sensitive areas such as African American history or the colonial period can be very offensive and inappropriate.[78]

Villaespesa and Murphy also pointedly describe challenges of AI-generated tags from the perspective of subjectivity, which is particularly relevant for the topic of this article: "Subject tags that are commonly used within a museum are defined from a specific worldview, and the worldview of those that trained the machine may be different from that of the museum, as an institution, or indeed the worldview of their visitors".[79] They further highlight as a *benefit* of museum vision that machines can describe collections "beyond what museum staff can do".[80] As repeatedly stressed in their interviews with museum professionals, museum staff is trained in, and their views therefore colored by, their scholarly art history discipline, making their perspective in a way 'limited'. With the help of AI, collections can be described in a very different way and terminology than would be normally the case.[81]

But what about the difference in worldview between the heritage institution and the source community? And is it useful, let alone desirable, for 'contentious collections' that yet another, i.e. the machine's, perspective is added to the perspective of the museum staff? Not only given risks of biases, but also given the lack of control for source communities, more on which follows in the next section, whereas machines *do* get 'agency' to determine narratives? This is even more the case when AI applications add *emotions* or *feelings* to objects. Villaespesa and Murphy describe an example from the Harvard Art Museum, where two specific algorithms generated keywords for a still life painting that addressed sensations or feelings of eating the fruits on the painting: "fresh", "delicious" and "sweet".[82] Although a benign example, 'emotional AI' may still present epistemological risks when imposing dominantly encoded perspectives of how contentious collections or sensitive objects 'feel' or 'come across', when source communities face difficulties in controlling or expressing their own experiences and narratives. In this respect, the DE-BIAS initiative of Europeana is noteworthy: consulting with marginalised communities, the initiative aims to establish "more inclusive and respectful" language in digital collection descriptions.[83]

Further problems may arise from relying on "third-party algorithms, or off the shelf tools to utilise these technologies from technology companies such as Microsoft, Google and IBM",[84] because"[j]ust working with these third-party, huge multinational corporations [...], they have our data. What does that mean long term? What can they do with it?"[85] For 'contentious collections', such ethical problems seem even more exacerbated. As we will see, source communities struggle with obtaining access to and control over materials, both tangible and intangible. In many cases, they have lost control during periods of power imbalance, which often lasts until this day. The fact that large technology companies gain access to – and essential control – over such data seems both insensitive and inappropriate. And then there is the issue of the 'black-boxes' and accompanying inaccuracies and biases supplied by these large companies,[86] whereas there is already bias in the collections themselves as well.[87]

However, since – as Villaespesa and Murphy indicate – museums are still in an experimental phase, this is where an 'opening' lies to consider cultural AI perspectives and stakeholder dialogues as gaining more prominence.[88] One suggestion is that "ethical component of the process will require critical decisions about the approval or not of tags, labels and other metadata generated by machines".[89] Furthermore, it is

78. Ciecko (n 69) 14.
79. Villaespesa and Murphy (n 73) 365.
80. Villaespesa and Murphy (n 73) 372.
81. Villaespesa and Murphy (n 73) 373.
82. Villaespesa and Murphy (n 73) 374.
83. *See* Europeana, 'DE-BIAS' (Europeana Pro) https://pro.europeana.eu/project/de-bias accessed 16 April 2025.
84. Villaespesa and Murphy (n 73) 364.
85. Villaespesa and Murphy (n 73) 379.
86. Villaespesa and Murphy (n 73) 379.
87. Villaespesa and Murphy (n 73) 377-78.
88. Villaespesa and Murphy (n 73) 376-77.
89. Villaespesa and Murphy (n 73) 380. They further state: *"Museums would need to develop an 'ethics playbook' to specify the criteria for approval, the accepted taxonomy and other actions to mitigate the bias".*

stated that museums should collaborate cross-sector to address ethical concerns and adopt a critical and constructive attitude towards technological developments: "If museums push back, and ask big questions, around accountability, authenticity, representation, diversity and unintended consequences, they can fulfill their wider mission as social purpose institutions".[90] In this regard, it should be added *and* underlined that for certain collections and materials, collaboration with communities of origin is desirable. More on this follows later in this article, where we address the 'slow' approach and practical tools that already work in this manner. First, the next section sketches the context and background for the interplay of topics of our paper: AI and contentious collections of cultural heritage.

4. Context and developments: restitution, (un)protection of TK and TCEs, and digitisation

Shining through every sub-section, the context of this paper is formed by restitution, (un)protection and digitisation discussions, particularly in the sphere of 'contentious collections'. For the term 'contentious', this paper follows a (broadened) understanding based on Brate et al, who use it "to refer to all (potentially) inappropriate or otherwise sensitive *words* [italics added]".[91] We broaden the term to also include both collections and organisational systems with contested *origins* (loot or otherwise acquired or formed in times of power imbalance) and sensitive *topics* (including for example indigenous peoples' sacred or spiritual knowledge or colonial archival or other materials, documents and photographs, etc.). The restitution discussion gained momentum with the publication of the prominent report of Felwine Sarr and Bénédicte Savoy on restitution of African cultural heritage from French institutions in 2018.[92] The report speaks of 'a new relational ethics' with regard to restitution of objects, in this instance of African cultural objects. Since then, European institutions themselves have adopted principles[93] and policy makers have responded with policy initiatives on how to deal with this material.[94]

As indicated, these types of discussion do not only regard *material* heritage objects. They are also seen in the context of *intangible* heritage, such as traditional knowledge (TK) and cultural expressions (TCEs), as well as in the digital realm, where issues at stake include 'digital repatriation'. Concepts of "slow archives"[95] and practical tools like "Traditional Knowledge (TK) labels"[96] are attempts to (re)allocate control over (intangible) materials with their source communities, particularly when these are digitised and made (widely) accessible. Before turning to the 'slow archives' concept and tools, this section addresses these trends and developments, both in the context of material heritage, (un)protection of TK and TCEs and digitisation of heritage collections and management. This sets the stage for reviewing the next step: application of AI to (digital) cultural heritage in CHIs and a fitting conceptual and theoretical framework for this latest development.

4.1 Restitution and dealing with colonial pasts

Restitution discussions surrounding collections and objects from colonial times, including material objects and ancestral remains, are not new, but gained momentum in Europe with the publication of the report of Sarr and Savoy. Developments in this area have forced reactions from politics and CHIs alike to examine

90. Villaespesa and Murphy (n 73) 380-81.
91. Ryan Brate and others, 'Capturing Contentiousness: Constructing the Contentious Terms in Context Corpus' (Proceedings of the 11th Knowledge Capture Conference, 2021) 18.
92. Felwine Sarr and Bénédicte Savoy, *The Restitution of African Cultural Heritage: Toward a New Relational Ethics* (Report to the President of the French Republic, November 2018) 1-252.
93. *See* for example for the Netherlands, Nationaal Museum van Wereldculturen, *Return of Cultural Objects: Principles and Process* (2019) https://www.tropenmuseum.nl/en/dutch-national-museum-world-cultures-nmvw-announces-principles-claims-colonial-collections accessed 21 May 2024.
94. *See* for example the Netherlands, the report 'Colonial collections and recognition of injustice' from the Council for Culture and the Advisory Committee on the National Policy Framework for Colonial Collections, published in October 2020. This led to a response from the Minister in the form of a 'policy vision on collections from a colonial context' (*beleidsvisie*) on how to proceed with regard to returning objects. As of November 2022, an Advisory Committee has been established to deal with requests of restitution.
95. Christen and Anderson (n 3).
96. Christen and Anderson (n 3).

their collections and look into origins and acquisition, but also for example assess their presentation and management of the objects they hold.[97]

As stated above, 'contentious collections' form the context for our argument for culturally-sensitive AI in CHIs. Illicit cultural heritage movement often took, and still tends to take, place in times of power imbalance, instability and conflict. These types of violent situations then led to illegal excavations, 'collecting' and looting. The colonial era is a period that gave rise to such practices, the legacy and power imbalance of which is still having an impact today, hence the term: 'contentious collections'. Lenzerini specifically identifies various 'instances' of dispossession in the context of heritage of indigenous peoples. These range from European trading posts in North America looting materials such as objects and human remains in the seventeenth century to send on to private and museum collections, to 'anthropological' collecting and the collection of 'rarities' and as a result of 'scientific' endeavors in the nineteenth and early twentieth centuries, for example from New Zealand and Australia[98] Sarr and Savoy also describe the various ways in which African cultural heritage has ended up in France, amongst others through violence, deceit, under other conditions that reflect colonial imbalance, and 'scientific expeditions'[99]

What is more, they strikingly describe how ethnographic museums "have been and continue to remain the sites of the production of discourses and representations of African societies", whereas "any power is first and foremost a power of controlling the narrative".[100] Indeed, with these narratives determined for 'ethnographic collections', representations have been imposed on societies and (colonial) categories applied to African peoples and cultures, as a form of exercising control[101] (and arguably repression). The same goes for "documentary regimes and scientific paradigms" in the context of cultural heritage objects that continue to this day.[102] Christen and Anderson have equated the history of collection with the history of colonialism.[103] They have even described some collecting practices as acts of 'perverse preservation', such as the documentation and collection of recordings of 'vanishing' Native languages and knowledge in the midst of policies of active dispossession and destruction of the same communities. These wax cylinders with recordings are now held by various collecting institutions in the US.[104] Moreover, Christen and Anderson indicate that "[t]he long arc of collecting is not just rooted in colonial paradigms; it relies on and continually remakes those structures of injustice not only through the seemingly benign practices and processes of the profession, but also through how terms like access and circulation are understood and expressed".[105]

So, the takeaway from this context description is that CHIs are not neutral actors. At least, in various instances they have not *started out* as neutral ones. Compare the following statement: "From its very origins, and within a logic of national affirmation, the museum allows for European powers to stage their aptitude for the absorption and classification of the world".[106] And still today they are the actors that epistemologically control and manage the presentation, classification, cataloguing and general engagement with the materials

97. *See* the example of the 'Golden Age' terminology in the Rijksmuseum in the introduction.
98. Federico Lenzerini, 'Cultural Identity, Human Rights, and Repatriation of Cultural Heritage of Indigenous Peoples' (2016) 23 *Brown Journal of World Affairs* 130-31.
99. Sarr and Savoy (n 92) 75; See also 49-58, describing "historical forms of dispossession", such as "Spoils", "'Exploratory' Missions and Scientific 'Raids'".
100. Sarr and Savoy (n 92) 37.
101. Sarr and Savoy (n 92) 38.
102. Sarr and Savoy (n 92) 38.
103. Christen and Anderson (n 3) 92 ff. Cf. also Gregory Younging, '*Gnaritas Nullius* (No One's Knowledge): The Essence of Traditional Knowledge and Its Colonization Through Western Legal Regimes' in Patricia W Elliot and Daryl H Hepting (eds) *Free Knowledge. Confronting the Commodification of Human Discovery* (University of Regina Press 2015) 175: "*As Indigenous peoples were being divested of their TK throughout the IRS [Indian residential school] era, some of the following disciplines and third parties were actively engaging in the following practices: 1) anthropologists, archaeologists, and some missionary groups were in the process of documenting TK in data banks; 2) museums and collectors were confiscating Indigenous cultural artifacts containing and representing TK; 3) third-party corporations were appropriating Indigenous artistic designs, such as symbols and totem poles, and functional designs, such as canoes and snowshoes; and 4) Canada was developing its IPR regime while at the same time subjecting TK and Indigenous peoples to it. This was the era of intense colonization and was the first wide-scale colonization of TK".*
104. Christen and Anderson (n 3) 92-99, in particular 97.
105. Christen and Anderson (n 3) 90.
106. Sarr and Savoy (n 92) 37.

in their collections. This results, among other things, from applicable (intellectual) property laws. As Anderson illustrates:

> *"As non-owners of materials that record their images, voices, histories, and ideas, the Penobscot Nation has to negotiate against the weight of powerful legal orders that reflect colonial idioms of control and authority over Native peoples and the representations of cultures".*[107]

And so it boils down to these institutions managing contact with materials in general, so the (limited) time, place and conditions under which communities may access their heritage.[108] Relatedly, even the 'preservation' idea itself, a central principle in cultural heritage law, is challenged, as this would reflect "imperial and ongoing forms of collecting and classifying which isolate the relational, deeply embodied, practiced, and dynamic processes between people, belongings, land, and communities that make, remake, and unmake cultural heritage, knowledge, and traditions".[109] So, what is at stake here is control over what 'happens' with the materials. Hogsden and Poulter argue that as far as contact zones are concerned, physical 'inreach' with source communities – so inviting source communities to museums to "add to the interpretation of objects" - is not enough. They argue that "collaborative engagement with museum collections also needs to take place beyond the museum walls". For this, digital technologies would offer possibilities.[110] And, as indicated, CHIs themselves have now started to reflect on their position in society, as well as their management and presentation of their collections. Krupa and Grimm go so far as to describe: "Due to the very nature of museums and archives being founded as colonial enterprises, perhaps only practices and methodologies can be decolonized rather than the institutions themselves".[111] Indigenous communities and sources of origin have also themselves actively engaged in efforts both of tangible return *and* looking into the possibilities of technological developments, such as in the context of digital repatriation.[112] This is where physical tensions of control *and* digital tensions of access may be addressed: by (dominant) institutions taking a slow approach and listening and source communities regaining control and (data) sovereignty over their cultural material. More on this follows in section 5. But first, immaterial heritage debates and digital challenges are addressed.

4.2 Legal (un)protection of TK & TCEs

Complementing discussions about control over material objects, concerns also arise in an immaterial context, regarding unauthorised use, and sometimes even mis- or offensive use, of TK and TCEs.[113] The World Intellectual Property Organization (WIPO) has been working on an international instrument to address the (un)protection of this cultural material for many years.[114] In a way, the discussion on protection of cultural heritage on an immaterial level is related to the restitution discussion: here, too, existing dominant legal systems exclude for example indigenous peoples' worldviews.[115] Where this previously led to dispossession of lands, resources and material objects, this has continued in an immaterial sphere with indigenous

107. Jane Anderson, 'Negotiating Who Owns Penobscot Culture' (2018) 91 *Anthropological Quarterly* 274; *See also* 278-79.
108. Anderson (n 107) 271-72; Sarr and Savoy (n 92) 38; Carl Hogsden and Emma K. Poulter, 'The Real Other? Museum Objects in Digital Contact Networks' (2012) 17 *Journal of Material Culture* 269; Krystiana L. Krupa and Kelsey T. Grimm, 'Digital Repatriation as a Decolonizing Practice in the Archaeological Archive' (2021) 18 *Across the Disciplines* 54;
109. Christen and Anderson (n 3) 100.
110. Hogsden and Poulter (n 108) 269.
111. Krupa and Grimm (n 108) 49; *See* also on 54: *"those of us trained in Western institutions rely on and are biased by rules and values supporting the Western system of knowledge, which dominates over Native knowledges".* and p. 55: *"Archivists must be aware of potential concerns related to cultural sensitivity for the materials that they curate, and they must take an active role in the stewardship of these materials - even if that means relinquishing control. This is only possible through consultation and other forms of engagement with descendant and/or source communities".*
112. Cf. for example Wayne Ngata, Hera Ngata-Gibson and Amiria Salmond, 'Te Ataakura: Digital *Taonga* and Cultural Innovation' (2012) 17 (3) *Journal of Material Culture* 229-244; Nicole Crawford and Darrell Jackson, 'Stealing Culture: Digital Repatriation (A Case Study)' (2020) 12 *University Museums and Collections Journal* 77-83.
113. Cf. for example J.M. Breemen, *Legal Shape-shifting. On the Protection of Traditional Cultural Expressions and Crossing the Boundaries between Copyright, Cultural Heritage and Human Rights Law* (1st edn Eleven 2021) 1.
114. *See* World Intellectual Property Organization, 'Knowledge and Folklore (Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore)' https://www.wipo.int/tk/en/igc/ accessed 24 May 2024.
115. As Younging observes, not all TK is 'indigenous TK'. He mentions the examples of Swiss yodelling and Chinese medicine; Yet, he notes, "well over 95 percent of TK is derived from Indigenous peoples"; Younging (n 101) 152.

peoples' TK and TCEs being unprotected under dominant intellectual property laws. Copyright law and its specific requirements, for example, exclude indigenous peoples' TCEs, which means that these are regarded as unprotected and in the public domain. This, in turn, means that such material is 'free to use'.[116]

And so, indigenous peoples, their worldviews and ownership systems are excluded from a dominant legal system such as copyright. Gervais' observation about existing legal systems in dominant society is fitting here: "the way laws are instituted and interpreted in any given spatial and temporal context is clearly linked to the dominant cultures' beliefs and social mores. Law and legal ideologies are a facet of culture [...] There is a risk of cultural hegemony when imposing dominant cultural values [...]".[117] In tandem with the lack of recognition of indigenous ownership systems under national laws, Bannerman notes how indigenous peoples are also excluded from negotiating on the international level, such as the international norm-setting of WIPO. The "long absence of indigenous peoples' voices", she argues, reflects "the historical absence of indigenous peoples' [sic] as creators of literary and artistic works".[118] According to Younging, all of this has resulted in a continuation of *gnaritas nullius*, a variation of *terra nullius* declaring indigenous peoples' lands as 'belonging to no one' and "flow[ing] into the public domain along with Western knowledge [...] again reduc[ing] the capacity for Indigenous people's control and decision making over their knowledge".[119]

Similar exclusion and diverging cultural values are visible in management and categorisation systems in museums, as indicated above, and this continues in the digital sphere, as briefly explained next.

4.3 Digitisation: opportunities and challenges

The tensions surrounding control over colonial collections, TK and TCEs extend into the digital realm. Digitisation of 'contested collections' provides opportunities and challenges. The most obvious opportunities regard digital repatriation, access, (re)creation, (re)connection and sharing. However, digitisation evokes tensions of (widespread) internet access to potentially sensitive material and application of 'dominant' technologies, i.e. developed with dominant standards and values in mind, potentially countering decolonisation agendas. Like CHIs themselves, technology and technological development are not neutral either[120] and represent certain (dominant) values. Together with the specific context sketched above, one could speak of a 'double whammy': dominant values inherent in technologies coinciding with dominant values in cultural heritage organisation and management vis-à-vis values and knowledges of source communities. As Hasselbalch states with regard to the development of information infrastructures: "Each standard and each category valorizes some point of view and silences another".[121]

So the question occurs as to who determines and shapes access. Is that a universally accepted value with regard to cultural heritage, or an imposed one? Consider material concerning secret or sacred knowledge, or that is culturally sensitive and highly contested, such as ancestral remains.[122] Relatedly, concerns arise of digitisation as a 'new form of colonialism', because: who has the right to decide on digitisation of cultural

116. Cf. Breemen (n 113).

117. Daniel J. Gervais, 'Spiritual But Not Intellectual? The Protection of Sacred Intangible Traditional Knowledge' (2003) 11 *Cardozo Journal of International and Comparative Law* 486-487. Cf. also Sally Engle Merry, 'Changing Rights, Changing Culture' in Jane K Cowan, Marie-Bénédicte Dembour and Richard A Wilson (eds), *Culture and Rights: Anthropological Perspectives* (Cambridge University Press 2001) 41-2, stating that *"[l]aw is a cultural system that can be imposed on other cultural systems. Consequently, the relationship between law and culture becomes deeply problematic in situations involving legal transplants, when law is appropriated from one society to another or imposed by one society on another through colonialism or conquest"*.

118. Sara Bannerman, *International Copyright and Access to Knowledge* (1st edn, Cambridge University Press 2016) 187.

119. Younging (n 103) 175-76; *See also* 156.

120. Cf. Hasselbalch (n 8) 12, 14; *See also* on p. 7-8, referencing Hughes: *"Notably, Hughes illustrated how each developmental phase of a technological system produces, as specific "culture of technology", which is the sum of this complex set of interests. The technology culture is therefore, according to Hughes, also the basis of a momentum of a technological system, and, importantly competing cultures must convert to the dominant culture of the momentum or perish"*. She also references for example critical and feminist data scientists on ""oppressive" data science cultures", reflecting in goals and priorities set for the very data designs of technologies, resulting for example in underrepresented or overrepresented minority groups. She further states: *"In other words, the cultural foundation of a technological system, what we have also referred to here as its "shape", the "knowledge culture" behind, its "technological style", we may also see as a prioritization of inherent values of a cultural system";* Hasselbalch (n 8) 8-9.

121. Hasselbalch (n 8) 9.

122. See the work of Christen and Anderson (n 3) with regard to 'responsible access'.

material?[123] Decision-making by institutions seems to underline their position of power, and arguably extends the sense of 'taking' and 'removal' (at least control) over the material from the communities of origin. As scholars note: "[t]he same critiques can be levelled against data extraction that traditionally have been levelled against tangible item removal"[124] and "[d]ocumenting cultural practice or cultural heritage and making that data open is not a neutral act and may not always be a good thing".[125] In fact, Pavis and Wallace have problematised the recommendation of Sarr and Savoy in their report on restitution of African cultural heritage of adopting a 'radical practice of sharing' with regard to digitised materials and provide access to this via a platform of free and *open access* to all documentation and images.[126] As they state that this blanket open access is not at all common for French institutions themselves, they argue against the adoption of this Western value for restituted materials, which otherwise would have "the potential to sustain the very colonial approaches the Report takes great care to denounce".[127]

And then, when digitisation does take place, this runs the risk of – apart from imposing values such as open access – exactly following and copying dominant epistemological standards that have been in place for a long time. Digital systems follow dominant standards and values over non-dominant knowledges in design and organisation choices and structures, but also in tagging, identifying, terminology, so in meta-data surrounding collections and objects.[128] Yet, for example with regard to the latter, as is noted in literature: "naming is power".[129] And so, metadata that is gathered by institutions – let alone by generative AI – takes away this power from communities of origin. Toner, in fact, argues for "expand[ing] the categories of metadata to include culturally-significant styles and types of knowledge".[130] What may be needed here, also setting the stage for the use of AI in heritage institutions, is a perspective of decolonisation, or: "the process of removing and reducing colonial structure and influence to the greatest extent possible".[131] Furthermore, this may be complemented by a necessity to 'slow down', as will be described in the next section. In other words: "partnering with and listening to these source communities facilitates such returns [i.e. digital and physical repatriation] so that they may have control over their own cultural heritage".[132] This perspective, too, is necessary to include in any design and adoption of AI tools in CHIs.

5. 'Slow archives' approach: lessons, values and tools

In March 2023, several prominent 'Big Tech' people published an open letter, titled: 'Pause Giant AI Experiments'. They warn for the risks powerful AI poses to humanity and want safety protocols to be

123. Crawford and Jackson (n 112) 82; Cf. also Mathilde Pavis and Andrea Wallace, 'Response to the 2018 Sarr-Savoy Report. Statement on Intellectual Property Rights and Open Access relevant to the Digitization and Restitution of African Cultural Heritage and Associated Materials' (2019) 10 JIPITEC, 117, who hold: *"The management of intellectual property is a cultural and curatorial prerogative, as is the initial decision about whether and what materials to digitize. These prerogatives should belong to the communities of origin".*

124. Crawford and Jackson (n 112) 80. They state further: *"In other words, yet another possibility is that the originating people or place must still have some or complete control of the data that originated from them and through them".*

125. Crawford and Jackson (n 112) 82, citing Keir Winesmith and Suse Anderson, *The Digital Future of Museums: Conversations and Provocations* (Routledge 2020) 98.

126. Sarr and Savoy (n 92) 66-67.

127. Pavis and Wallace (n 123) 117.

128. Cf. Krupa and Grimm (n 108) 49.

129. Krupa and Grimm (n 108) 49, citing Michelle Caswell, Ricardo Punzalan and T-Kay Sangwand, 'Critical Archival Studies: An introduction' (2017) 1 *Journal of Critical Library and Information Studies* 1-8.

130. Peter G. Toner, 'History, Memory and Music: The Repatriation of Digital Audio to Yolngu Communities, or, Memory as Metadata' in Linda Barwick and others (eds), *Researchers, Communities, Institutions, Sound Recordings* (University of Sydney 2003) 14-15; He holds: *"With the development of software which is designed to recognize and respect indigenous forms of knowledge management, we can devise means of increasing the value of collections for both archives and local communities"; See* also section 5 of this paper, as this perspective resonates with the practical tools of the slow archives.

131. Krupa and Grimm (n 108) 47.

132. Compare also Krupa and Grimm stating: "we emphasize that partnering with and listening to these source communities facilitates such returns [i.e. digital and physical repatriation] so that they may have control over their own cultural heritage"; Krupa and Grimm (n 108) 48.

developed for advanced AI design and cooperation between developers and policymakers.[133] Whereas the letter calls for a pause of six months, the 'slow archives' approach to examining "structures, practices, and processes of collection, cataloging, and curation to expose where cultural authority is placed, valued, and organized withing archival workflows" is also about taking a step back, but not necessarily in a temporal sense. As Christen and Anderson argue: "Slowing down is about focusing differently, listening carefully, and acting ethically".[134] This section explains the approach as developed in the context of digital community archiving, it's central values and how these can be operationalised in practice. This should contribute to mapping the potential for extending the 'slow' approach to other contexts, such as the design and use of AI in the GLAM context more broadly.

5.1 Slowing down: theory and values

As we have observed elsewhere and elaborated above, source communities historically used to be structurally excluded from dominant laws governing the production and protection of culture, such as intellectual property laws. Meanwhile, human rights law has increasingly acknowledged their position over the years.[135] In the context of CHIs, this position often concerns the conditions under which materials may be made accessible. Although multiple stakeholder views should be taken into account, structures of injustice may still underlie GLAM institutions' collection policies. To counter this, Christen and Anderson propose a 'slow archives' approach, which we connect to human rights values.

The 'slow archives' approach is concerned with "alternative distributions of control" over archival materials, acknowledging "the multiplicity and plurality of knowledge".[136] Consequently, the approach centers on reevaluating workflows and in that sense is a mode of decolonising processes.[137] According to Christen and Anderson, "[s]low archives are [...] produced, created, and curated through a commitment to and ethics of mutuality that recognizes, respects and prioritizes Indigenous communities' values, goals, relationships, needs and protocols".[138] Thus, the 'slow archives' approach forms an alternative to dominant epistemological strategies.

From the description of the 'slow archives' approach and its fundamental implications, we can tease out several underlying principles or values. On the one hand, these values are grounded in fundamental rights – think of self-determination, sovereignty and participation in decision-making processes.[139] On the other, various values appear to be shared already by both GLAM institutions and recent policy initiatives on the development of AI applications as highlighted in section 2, such as trust and non-discrimination. Slowing down, then, enables us to expose "modes of ethical archives" which manifest principles of "*accountability, engagement, relationality, and reciprocity*" in conversation with dominant archival practices.[140] The next step then regards tools to operationalise the identified values in practice.

5.2 Practical epistemological tools: labels, metadata, contextualisation

As explained, values including sovereignty, self-determination and autonomy may be served by implementing 'slow archives' modalities, "building new logics, structures, pathways, and frameworks" that prioritise non-dominant knowledge systems.[141] Arguably, operationalising these values requires more than legal solutions; rather, "conscious applications of traditional (though adaptable) cultural protocols to bend technology and redefine legal frameworks to meet specific cultural and social ends" are needed.[142] In addition, as indicated

133. *See* the letter, Future of Life Institute, 'Pause Giant AI Experiments: An Open Letter' (2023) https://futureoflife.org/open-letter/pause-giant-ai-experiments/ accessed 24 May 2024.
134. Christen and Anderson (n 3) 90.
135. Christen and Anderson (n 3) 90.
136. Christen and Anderson (n 3) 99.
137. Christen and Anderson (n 3) 87.
138. Christen and Anderson (n 3) 91.
139. Cf. Breemen and Breemen (n 56) 217-218, referring to, among others, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007) and the ICESCR (n 14).
140. Christen and Anderson (n 3) 99.
141. Christen and Anderson (n 3) 91.
142. Kimberly Christen, 'Balancing Act: The Creation and Circulation of Indigenous Knowledge and Culture Inside and Outside the Legal Frame' in Sean Pager and Adam Candeub (eds), *Traditional Culture in the Internet Age* (Edward Elgar 2012) 233.

in the literature, information and communication technologies may offer tools to help offset (historical) misrepresentations and stereotypes and distribute and create non-mainstream perspectives.[143] Taken together, engaged and ethical digital platforms are being developed – initiatives which stress "reciprocity, engagement, and accountability through design, implementation, and use".[144] Such initiatives do not function top-down, but bottom-up. This section discusses some examples, including labeling, which may offer inspiration for the design and use of culturally aware AI.

To start with, in the 'slow archives' approach, labels are seen as "*disruptive tools*" forcing us to go about digital archiving differently, based on "the sets of relationships required and enabled through collaborative curation models and methods".[145] Labels have been developed from the felt need for "a digital access tool" that meets community protocols regarding handling their heritage.[146] In our view, as we will elaborate below, labels therefore contribute to enhancing source communities' self-determination and sovereignty regarding the use of their digital heritage.[147] Indeed, labels are a tool to refigure archival values, meeting "modern societal needs and expectations"[148] and part of "community software development model[s]" or content management systems matching the "specific curatorial, informational, and access needs" of communities.[149] So far, labels have been developed as part of various projects.

The prime example is *Mukurtu CMS*, a "community digital access platform"[150] which began as a "dedicated, stand-alone" project with one community in 2007.[151] Due to its "flexible and adaptable" character, the "cultural protocols for managing circulation and access to material" can be customised according to other communities' needs.[152] The aim is to empower communities to "manage, share, and exchange their digital heritage in culturally relevant and ethically-minded ways", fostering relationships of respect and trust.[153] More concretely, *Mukurtu* offers an infrastructure and interface enabling communities to share materials via their own protocols, through an upload and tagging system as well as labels, which "identify and clarify community-specific rules and responsibilities regarding access and future use of traditional knowledge", including gender restrictions or 'community use only'.[154] The platform's characteristics, offering "the possibility of parallel and multiple sets of metadata"[155], strongly resonate with today's concerns on the use of AI the GLAM context, such as the creation of technical possibilities for reflecting a multitude of voices concerning cultural materials. In this regard, the following explanation by Christen and Anderson is worth citing:

> *"There is the option for multiple records—and protocols — to be added to any digital heritage [item]. Alongside the content, expanded metadata fields based on local needs and vocabularies including "traditional knowledge" and "cultural narratives" allow for elaborate, diverse, and multiple sets of narrations, attributions, and parameters. These sets of records allow for diverse and collocated narratives, knowledge, and perspectives. That is, tribal knowledge, stories, names, and languages can sit side by side with each other, thus creating parallel and relational metadata that recreates metadata as a storied narrative rather than defined and secluded fields of information".*[156]

143. Kathleen Burns and others, 'Indigenous Librarianship' in Marcia J. Bates and Mary N. Maack (eds), *Encyclopedia of Library and Information Sciences* (3rd edn, Taylor and Francis 2009) 2340.
144. Christen and Anderson (n 3) 100.
145. Christen and Anderson (n 3) 92.
146. Christen and Anderson (n 3) 101.
147. Breemen and Breemen (n 56) 235.
148. Kimberly Christen, 'Tribal Archives, Traditional Knowledge, and Local Contexts: Why the "s" Matters', *Journal of Western Archives* (2015) 6 (1) Journal of Western Archives 3 https://digitalcommons.usu.edu/westernarchives/vol6/iss1/3/ accessed 9 April 2024, citing McKemmish, Iacovino, Russell, and Castan 2012.
149. Christen and Anderson (n 3) 102.
150. Christen and Anderson (n 3) 99; *See* Mukurtu, 'Mukurtu CMS' https://mukurtu.org/ accessed 24 May 2024.
151. *See on this:* Christen (n 141) 331.
152. Christen and Anderson (n 3) 102.
153. *See* Mukurtu, 'About Mukurtu' https://mukurtu.org/about/ accessed 24 May 2024.
154. *See* Local Contexts, 'Traditional Knowledge (TK) Labels' https://localcontexts.org/labels/traditional-knowledge-labels/ accessed 24 May 2024.
155. Christen and Anderson (n 3) 102.
156. Christen and Anderson (n 3) 102.

As such, labels cannot only be customised, but also function as tags which "provide a flexible option for conveying important information" about cultural materials – not only on responsible stewardship, but also "information that might be considered missing (for instance, the name of community from where it derives)".[157] According to James Francis (Penobscot), the tools enable "substantive changes not just to the record, but to the *process*", from a mentality of 'taking' to taking time to rethink a strategy for dialogue, rebuilding relationships and caring for.[158] Summing up, "decolonial archives [...] operate through the *co*-construction of knowledge based on interactions between storytellers and listeners" countering dominant perspectives.[159] The aim is for the materials to be understood "culturally, linguistically, and historically".[160] Contextualisation seems to be a keyword, keeping together context and content in the digital realm.

The described epistemological tools offer inspiration for the use of AI by CHIs. Notably, Christen and Anderson contrast the community-based slow archives approach to "'large-scale aggregators'". They point out how such aggregators aim at easy accessibility, but are often uninformed, 'scraping' and reproducing metadata which is often inaccurate and may be offensive, although current technologies would enable them to "honor and respect sharing protocols". On the contrary, *Mukurtu*'s features enable sharing based on relationships of trust,[161] while safeguarding polyvocality. These features should inform the use of AI by CHIs.

Other initiatives have developed from *Mukurtu*. For instance, Local Contexts is another community project and a "collaborative effort [...] in conversation with international legal and cultural efforts", working with the current set of TK labels which can be customised according to context.[162] In addition, collaborations with non-Indigenous institutions have arisen. Attention for the "incorporation of cultural competency standards" across library practice is increasing[163], as evidenced by cultural protocols on handling indigenous heritage and indigenous thesaurus projects intended to counter the observation that indigenous voices are not always represented in knowledge organisation tools such as the major library classification systems. Such projects consequently strive for accuracy and culturally appropriate representation.[164] Moreover, the US Library of Congress joined forces with *Mukurtu* and Local Contexts in 2018, attaching TK labels on attribution, outreach and non-commercial use to a selected digital collection.[165] Clearly, apart from "routine relabeling" to keep its catalogues current, the Library of Congress has been open to remove contentious terms from subject headings in view of other societal discussions[166] Given previous observations of polyvocality risks that AI poses for the GLAM sector, the question is whether additional context should be provided here to reflect multiple perspectives on contemporary sensitive issues.

In sum, the 'slow archives' movement and its epistemological tools lead to an "emergent ecosystem" of "structures – legal and non-legal, curatorial, managerial, and technical" that contributes to an "ethics of care, built collaboratively and from relations of respect" and "*collaborative curation* models by adding steps to all of our workflows that account for multiple voices, values and temporalities".[167] As labeling is already inherent in AI technology, the 'slow' mindset offers inspiration for a theoretical framework on the design of 'cultural AI' in the GLAM context. This brings us to the next section.

157. Christen and Anderson (n 3) 105.
158. James Francis as referred to by Christen and Anderson (n 3) 108.
159. Christen and Anderson (n 3) 100.
160. Christen and Anderson (n 3), 108.
161. Christen and Anderson (n 3) 103.
162. Christen (n 147) 9; *See also* Local Contexts, 'Traditional Knowledge (TK) Labels' https://localcontexts.org/labels/traditional-knowledge-labels/ accessed 24 May 2024.
163. Alexandra Rivera, 'Indigenous Knowledge and Cultural Competences in the Library Profession: From Theory to Practice' (paper presented at the *IFLA World Library and Information Congress*, Singapore, 2013) 1.
164. Breemen and Breemen (n 56) 232-33.
165. *See* Breemen and Breemen (n 56) 234; Library of Congress, 'Ancestral Voices: Rights and Access' https://loc.gov/collections/ancestral-voices/about-this-collection/rights-and-access/ accessed 24 May 2024; Critically: Dana Reijerkerk, 'UX Design in Online Catalogs: Practical Issues with Implementing Traditional Knowledge (TK) Labels' (2020) 25(8) *First Monday* https://firstmonday.org/ojs/index.php/fm/article/view/10444 accessed 24 May 2024.
166. Cf. Jasmine Aguilera, 'Another Word for 'Illegal Alien' at the Library of Congress: Contentious' *The New York Times* (New York, 12 July 2016) https://www.nytimes.com/2016/07/12/us/another-word-for-illegal-alien-at-the-library-of-congress-contentious.htmlaccessed 24 May 2024.
167. Christen and Anderson (n 3) 112.

6. Outlook: 'values by design' – proposal for a conceptual framework on 'slow GLAM' and 'cultural AI'

Law and technology mutually influence each other, as technological developments may require new (or new interpretations of) regulation, while the law may foster or hinder such technologies. As we have seen, in its most recent endeavors the European Commission pursues the regulation of 'human-centric' AI in view of safeguarding fundamental rights and values, while encouraging diverse stakeholder participation in the design of AI.[168] Indeed, "[r]esponsible, [t]rustworthy AI requires awareness from all parties involved, from the first line of code".[169] Culture, in turn, turned out to influence both technology and regulation. Whereas GLAM institutions are arguably not neutral, technological development was found not to be neutral either. Values and interests underlie the "culture of a technological design" and some authors argue that these values should be made visible as a "choice to do AI ethically and responsibly".[170] In this regard, especially in the context of digital archiving – and, by extension, the use of AI in the GLAM sector – "the *process* is as essential as the *product*"[171], sometimes needing a structural shift in a 'slow' sense, i.e. rethinking archival standards and structures. At the same time, both processes and products can be subjected to a 'by design' approach.

These observations have formed the backdrop of our paper, with input of histories of, and developments in, collecting and unlocking cultural heritage – AI being the latest development – and various theories. Drawing on cultural AI, regulation by design, and value alignment, this paper applied a law & humanities perspective to examine the 'slow archives' approach, its underlying values and practical (epistemological) tools to safeguard fundamental rights and values in the context of digital archiving, in view of the envisaged output: the contours of a conceptual framework for the value-based regulation by design of culturally sensitive AI in GLAM practice. In this respect, some conclusions and recommendations are the following.

First, central notions are 'infrastructure' and 'design'. These resonate in the origin of collections (and with this, of CHIs themselves), the shaping of these in specific periods of time (including for example periods with colonial ties), the digitisation of these collections according to dominant standards, values and terminologies, and now also in the application of AI tools to these digitised collections. As such, transparency about infrastructure origins, design choices and their accompanying values should be at the basis of any reflective exercise as to how to flag and raise awareness about dominant views and bias in unlocking cultural heritage online. Instead, a 'slow' approach of listening and acknowledging knowledges and worldviews of source communities should be adopted.

Second, as another central notion of the 'slow archives' approach, 'contextualisation' forms a valuable asset for the design of culturally aware AI. So does the development of cultural protocols on handling digital heritage, which might be extended to AI. But it is mostly the labels that can be tailored to the needs of communities or in non-indigenous contexts, as this paper elaborated on, while providing space for multivoiced metadata. Labels therefore strongly resonate with a 'by design' approach for AI and as such showcase great potential to safeguard underlying fundamental values. As such, 'cultural AI' in combination with a 'by design' approach moreover ties in with Christen's call for "encoding culture" in the digital content management cycle.[172] If anything, this mindset of rethinking the design process offers inspiration for a 'by design' framework.

Third, as touched on above, the central values which should be safeguarded and operationalised via a combined 'slow' and participatory 'by design' mindset when regulating AI in the cultural heritage context, include trust; sovereignty and self-determination; and non-discrimination and transparency. More concretely, as indicated, as tools of the 'slow archives' approach, TK labels were highlighted as an example where

168. *See* among others European Commission (n 20) Article 69(2).
169. Lauritz Kop, 'EU Artificial Intelligence Act: The European Approach to AI' (2021) 2/2021 *Stanford–Vienna Transatlantic Technology Law Forum: Transatlantic Antitrust and IPR Developments* 10.
170. Hasselbalch (n 8) 14.
171. Christen and Anderson (n 3) 111.
172. Christen (n 141) 326.

source communities employ technology for furthering their own purposes, charting "a course within, as well as apart from" mainstream technological standards and regulation.[173] As we already noted elsewhere[174] and just above, we can even consider TK labels as a 'by design' approach, comparable to the more well-known 'privacy by design' concept which refers to embedding privacy principles in systems from the outset of their design to counter privacy concerns and meet data protection requirements.[175] Embedding principles concerning the teased out values would then lead to 'trust by design', 'sovereignty and self-determination by design' and 'non-discrimination and transparency by design', or, in the latter case, at least awareness of potential biases, making values explicit and enabling value alignment via space for alternative perspectives and narratives.

Overall, then, histories of collecting and repatriation may also echo through in digital developments and arguably also extend to the adoption of generative AI tools, which are rapidly growing in application and pervasiveness, including in the cultural heritage sector. The same, then, should go for increased attention for non-dominant voices, as is already the case in human rights fora. Moreover, where values remain a cornerstone of regulation in the field of AI, and where labeling tools are already central to the classification and increasingly in the use of AI applications by GLAM institutions, attention for 'cultural AI' and 'slow' archiving approaches enable us to construct a conceptual framework for value-based regulation by design for AI in the cultural heritage context, stressing and operationalising the mutual relationship between law, technology and culture.

173. Christen (n 141) 336.
174. Cf. Breemen and Breemen (n 56).
175. Cf. Seda Gürses, Carmela Troncoso and Claudia Diaz, 'Engineering Privacy by Design' in Serge Gutwirth, Ronald Leenes and Paul De Hert (eds), *Computers, Privacy and Data Protection: An Element of Choice* (Springer 2011) 259.