Safeguarding Cultural Heritage in the Digital Era – A Critical Challenge

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Abstract

This paper explores the disruptive impact of digitization on cultural heritage preservation, focusing on the challenges posed by intellectual property rights, access, and enforcement. It emphasizes the need to balance innovation and preservation in the digital landscape, addressing issues such as copyright complexities, the commodification of cultural knowledge, and the Western-centric bias in policy shaping. By fostering global cooperation, cultural sensitivity, and public awareness, we will aim at achieving an inclusive and sustainable approach to safeguarding our diverse cultural heritage in the digital era.

Keywords Cultural Heritage · Inclusive Culture · Digitization · (In)Tangible Heritage · Intellectual Property Rights · Access · Enforcement · Cultural Rights · Digital Content · Artificial Intelligence

1 Understanding Cultural Heritage and the Digitization Process

Cultural heritage is the embodiment of our shared human history, encompassing the tangible artifacts, intangible traditions,[1] languages, rituals, and knowledge that have been passed down through generations. It reflects the essence of who we are, where we come from, and the collective experiences that have shaped our societies. Preserv-

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[1] 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (CICH): https://ich.unesco.org/en/convention.

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ing and safeguarding this rich tapestry of cultural heritage has always been a critical mission, allowing us to connect with our roots, foster a sense of identity, and learn from the lessons of the past.

In the digital era, safeguarding cultural heritage has become a vital concern. As technology advances and societies digitize vast repositories of historical artifacts, works of art and (in)tangible traditions, the preservation of our diverse cultural heritage takes on new facets and challenges. Digital initiatives are opening up considerable horizons for wider access, interactive experiences and the dissemination of knowledge. Furthermore, propelled by the pandemic, culture has wholeheartedly entered the digital world [14].

Digitization of cultural content, such as museum collections or libraries, digital broadcasting of artistic performances, or digital born art and heritage are happening at a fast pace. The digital revolution offers unprecedented opportunities for cultural heritage preservation. By digitizing artifacts, artworks, historical documents, and traditional practices, we can ensure their wider accessibility to people around the world, regardless of geographic boundaries or physical limitations. Virtual museums, 3D reconstructions of archaeological sites, and immersive experiences using augmented reality (AR) have the potential to transport audiences to distant civilizations and historical moments, allowing them to connect with the past in ways never before imaginable.

In their paper, **Klinowski and Szafarowicz** [11] use the notion of "virtual museum" to acknowledge this "virtual space created by a cultural institution", which allows wider access to the public of their collections. Operating as powerful semiotic entities, these virtual museums utilize symbols, signs and representations to artistically and skillfully communicate cultural meanings and ideologies ascribed to them. As such these museums serve as dynamic augmented reality (AR) mediators to generate and even create new heritage narratives which further impact visitors' emotions, reinforcing cultural values and encouraging introspection.

In the digital age, participatory digital cultural practices have experienced remarkable growth, enabling users to actively participate in the creation, utilization, and transmission of culture and cultural heritage. These practices, such as crowd sourcing, storytelling, and citizen science, have surged in popularity, facilitated by digital tools interwoven with artificial intelligence (AI) and augmented reality (AR) capabilities. Crowdsourcing harnesses collective wisdom to undertake diverse cultural projects, while storytelling democratizes the sharing of personal and community narratives [12]. Citizen science engages individuals in the monitoring and preservation of cultural treasures. By integrating these practices with AI and AR technologies, participatory digital initiatives empower people to forge a more inclusive and immersive cultural heritage experience while safeguarding our shared heritage for generations to come [2, 18, 19].

However, this digital transformation also presents unique challenges. As we transition from traditional preservation methods to digital repositories, we encounter issues related to data integrity, interoperability, and long-term sustainability. The rapid pace of technological advancements also raises concerns about digital obsolescence, where digital files become unreadable or unusable due to outdated formats or hardware. Moreover, the ease of digital replication poses ethical considerations regarding

the representation and ownership of cultural artifacts, especially when dealing with sacred or sensitive materials.

To safeguard this rich collective heritage for future generations, advanced digitization techniques, robust data management strategies and collaborative efforts between governments, institutions and communities are essential.[2] By adopting responsible digital preservation practices and fostering a deep appreciation of cultural heritage, we can ensure that the echoes of the past will resonate powerfully, enriching the present and inspiring the future.[3]

In our Special Issue guest edited by Marie-Sophie de Clippele and Anne Wagner entitled "**Towards Digitization of Cultural Practices and Contents: Issues, Limits and Legal Tools**", the advent of the new online reality prompts a focused exploration of relevant legal issues. Our Special Issue consists of fifteen thought-provoking papers contributed by experts in the field. These papers offer valuable insights into the legal ramifications and complexities brought about by the digital landscape. Through comprehensive analyses and discussions, the contributors to our Special Issue delve into the challenges posed by the ever-evolving digital world.

2 Inadequate Intellectual Property Rights for Digital Cultural Content

The emergence of new digital cultural content has highlighted the inadequacies of existing intellectual property rights regimes in effectively addressing the challenges posed by the digital era. Traditional copyright laws and frameworks often struggle to accommodate the unique complexities of digital cultural assets, such as user-generated content, virtual reality experiences, and digital reproductions of historical artifacts. Issues related to ownership, licensing, and attribution become more intricate in the digital realm, leading to uncertainties and legal disputes. As technology continues to evolve, it is essential for policy-makers and legal experts to explore innovative solutions and updates to intellectual property laws that strike a balance between protecting creators' rights and fostering wider access to and preservation of our diverse digital cultural heritage. Digitizing in 2D or 3D an artwork does not mean it is copyrightable for instance, the digital version should be an original work in itself which is not often the case. Other intellectual property rights are also conditional (novel invention for a patent, competition for a database protection, etc.), and therefore leave digitized cultural content in limbo [6].

Our Special Issue, part I "*Inadequate Intellectual Property Rights for Digital Cultural Content*", aims to unravel the complexities surrounding copyrights in the digital age. By examining the intricacies of cultural artifacts, the role of collective management organizations, and the challenges posed by hybrid artistic expressions,

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[2] See https://www.unesco.org/en/articles/cutting-edge-protecting-and-preserving-cultural-diversity-digital-era?TSPD_101_R0=080713870fab2000fde13fd9f5fbf17c2668615e5174470201dc98c50125b69c9b6f2860d551b5390847b32266143000b9870882765fdb4dcc7c97cccc66063ff8dce01c74e070-d7ac4792898571b7b53c4e633cdcf6ba5dfbab7e638d9d40bd Accessed 15 July 2023.

[3] https://www.digitalmeetsculture.net/wp-content/uploads/2019/06/ReportonCulturalHeritageDigitisationOnlineAccessibilityandDigitalPreservation.pdf Accessed 26 July 2023.

our contributors will highlight the path policy-makers can take to create a copyright framework that encourages creativity, facilitates fair remuneration and maximizes access to our rich cultural heritage. Only through collaborative efforts and innovative legislative measures can we navigate between public and private law mechanisms and nurture a thriving ecosystem for generations to come.

As **Peña, Jaramillo et al.** [16] argue for Colombian law, digital heritage is not easily protected by intellectual property rights (IPR). The authors therefore provide recommendations to improve Colombian IPR in four aspects: respect for the variety of copyrights, exceptions and limitations, collective management of rights and authorizations, clear usage and access policies. A similar finding is observed by **Markellou** [13] concerning the outdated Greek legal framework for digital cultural heritage. She insists on maximizing access at a lesser cost – Greek procedures are heavily bureaucratic and costly – and actively investing the notion of public domain to that effect.

Hybrid artistic objects, i.e. artistic performances that are digitally broadcasted, also impact IPR and, as **de Brogniez and Vandenbulke** [3] point out, raise issues of effectiveness of related rights for performers, of creating new models of exploitations and new authors and of considering the recording as a new original work. These changes in turn disrupt the categories of public funding, as for instance a theatre play does not fall in the same funding category as an audio-visual work.

European Union law certainly attempts to take these new developments into consideration with recent legislations on data as digital single market. However, **Klinowski and Szafarowicz** [11] consider that recent EU legislation is still lacking effective and satisfying tools for digitization and sharing of museum collections. They analyze thoroughly the Digital Single Market Directive 2019/790[4] to demonstrate that there are still shortcomings: a limited scope of application, ambiguities of the concept of "works of visual art", focus on reproduction and not sharing, the possibility of preventive censorship. According to both authors, copyright has even a chilling effect on sharing collections online as museums fear liability and infringement on contract law or data protection.

Some culture-related cases raise specific IPR questions. **Aroni** [1] wonders if user-generated content from digital games creates new copyright. The game itself is most often protected by copyright but the interplay between users (players) and game developers, also called an avatar, is not necessarily covered by copyright. Yet through a licence system, user's rights may be clarified, with the help of authorial tools and contractual instruments, such as the End User Licence Agreement or the Terms of Service Agreement.

The inking culture of tattooing also challenges traditional copyright regimes. If it is now clear, at least in UK law, that an original tattoo is copyrightable work, it seems not to be the case for AI-generated tattoos. Closely looking into the practices of the tattoo community, **Stockton-Brown** [21] argues that the community should develop "extra-legal norms" to decide who is the author of an AI-generated tattoo. She builds further on models of inclusive property rights from Dusollier and the Public Open Collaboration Creation (POCC) of Mendis to substantiate her argument for shared and open copyright ownership and authorship.

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[4] See https://eur-lex.europa.eu/eli/dir/2019/790/oj.

De Clippele [4] also draws further on models of shared rights, following the movement of the cultural commons. But she wonders if they are necessarily culturally diverse, especially with regards to platforms sharing cultural content.

3 Cultural Right to Access Digital Content: Enforcement and Western Bias

The cultural right to access digital content and practices is a fundamental aspect of cultural heritage preservation and knowledge dissemination. However, this right often faces challenges in terms of proper enforcement, limiting its effectiveness. Additionally, there is a prevailing Western-centric approach in shaping policies and frameworks around digital cultural content, which may not adequately reflect the diverse cultural perspectives and needs of communities worldwide. Achieving a more inclusive and robust implementation of this cultural right requires global cooperation, sensitivity to local contexts, and proactive measures to bridge the digital divide, ensuring that all individuals can fully participate in and benefit from the digital cultural landscape.

In Part II of our Special Issue, titled "*Cultural Right to Access Digital Content: Enforcement and Western Bias*", our contributors will critically examine the assertion that developing a digital strategy to enhance access and participation in culture and cultural heritage promotes democratization and a sense of collective belonging among citizens. Despite the crucial role of access to digitized culture in upholding cultural rights, its implementation often falls short, particularly for marginalized communities. While digitization is valuable, it can inadvertently reinforce structural barriers, further exacerbating challenges faced by vulnerable groups.

This is what **Higgins, Ferri and Donnellan** [7] found out after broad interviews in twelve European countries. Vulnerable groups (minorities and people with disabilities) still face stereotypical and negative portrayals when developing access to digital content. The authors insist on implementing effective policies to "bridge the digital divide" and fulfil cultural rights in an inclusive way.

Outside Europe, discrimination may happen with regards to First Nations, debauched of their land, traditions and knowledge, due to the commodification of knowledge. Focusing on the situation in Australia, **Keeney and Jones** [10] strongly warn against appropriation of native rites and rights by considering their knowledge as cultural capital to be exploited by public institutions and private companies. Similarly, **Paul** [15] demonstrates, through a linguistic analysis of international documents, that indigenous peoples and colonized communities are left out when their traditional knowledge is digitized and fails to be properly protected. She denounces the neoliberal policies in international trade and IPR mechanism and calls for a decolonial approach. **Hofman and Villagran** [8] warn for privacy protection when putting libraries online on third party platforms. This might generate digital surveillance, particularly of the queer community in the United States, who then risks suffering discrimination. To the authors, datafication of our online lives also impacts on sexual privacy.

4 Disruptive Impact: Digitization of Cultural Content and Legal Principles

The digitization of cultural content and practices has introduced significant disruptions to fundamental legal principles. As cultural heritage transitions into the digital realm, traditional legal frameworks face new challenges in effectively addressing issues of copyright, ownership, and cultural preservation. The ease of digital replication and distribution has complicated traditional notions of intellectual property rights (IPR), leading to ongoing debates over fair use, licensing models, and proper attribution. In the digital age, it becomes increasingly challenging to strike a balance between promoting creativity and innovation while safeguarding the rights of creators and the interests of cultural heritage custodians.

Moreover, the digital landscape raises pressing concerns regarding the protection of indigenous knowledge, traditional cultural expressions, and intangible heritage. Many indigenous and local communities fear that the digitization and dissemination of their cultural practices may lead to misappropriation, exploitation, or cultural commodification. Existing legal mechanisms struggle to adequately address these issues, resulting in a perceived Western-centric bias in shaping digital cultural content policies. The need to incorporate diverse cultural perspectives and ensure equitable representation and participation in the digital cultural space is essential to honor the cultural rights and heritage of all communities.

In Part III of our Special Issue, titled "*Disruptive Impact: Digitization of Cultural Content and Legal Principles*", our contributors will tackle the complex challenges posed by digitization, necessitating a comprehensive reassessment and adjustment of legal principles. This process will entail fostering international collaboration, promoting cultural sensitivity, and implementing forward-thinking regulations to ensure responsible and inclusive digitization of cultural content. By adopting these measures, we can safeguard the valuable heritage for the benefit of both present and future generations.

Digitization is happening at such a wide speed and spread, it is almost colonizing human activity, as **Jansen and Schreiner** [9] note. Law is somehow captured by digitization, digit after digit, taking its own course, even if basic legal institutions remain. Comparing the evolution to the mechanization of art by Walter Benjamin, the authors argue that law coming from a machine (*lex ex machina*) cannot exist and digitization can neither replace judges, institutions nor lawyers as such. Otherwise, who would control machine-made law? They are therefore circumspect about the development of NFTs,[5] regarding the lack of instrumental power control: who controls the digits for the art collector if not a blockchain AI?

Rochford [17] points out the specific challenge of state sovereignty and jurisdiction when confronted to online communication. Cyberspace has nothing to do with State borders and thereby specifically challenges law enforcement.

Disrupting classical views on ownership of (digital) cultural goods is also at stake in the restitution debate, especially of colonial collections. **Stec and Jagielska-Burduk** [20] provide an original working model to help solve the issue: based on dual

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[5] NFT stands for Non Fungible Tokens.

ownership, a digital copy of the artwork would be minted with a NFT (therefore used in another context than purely speculative), and a new property right would be created which recognizes shared ownership.

Finally, examining closely the interaction between public and private law mechanisms, **Galdia** [5] argues copyrightable content should be redefined through legislative tools, to better cover the online world, especially for cultural content, and foster cooperation with new technology tools.

5 The Way Forward: Balancing Innovation, Preservation and Environmental Challenges

Cultural heritage preservation lies in striking a delicate balance between conservation of the past and transition to the future. The rapid advancements in technology offer exciting opportunities for digitizing, documenting, and disseminating cultural heritage, providing broader access and immersive experiences for global audiences, present and future. Virtual reality, artificial intelligence, 3D scanning, and interactive platforms present powerful tools to engage people with cultural artifacts and historical sites in unprecedented ways. Embracing these innovative technologies can breathe new life into cultural heritage, fostering a deeper appreciation and understanding among diverse communities.

Balancing innovation with the preservation of cultural heritage's authenticity and integrity is crucial, necessitating ethical digitization practices, respectful representation, and the protection of rights for communities and indigenous peoples. This delicate tapestry of traditions, practices, and identities, embodying the wisdom of our ancestors, as expressed by contributors in this Special Issue, must be safeguarded against exploitation and misrepresentation. To achieve this, an inclusive approach that involves local communities in decision-making processes for digitization initiatives is essential, fostering sustainable preservation through citizen science, crowdsourcing, and community-driven projects, thus ensuring collective stewardship and reverence for cultural heritage.

Furthermore, in the face of climate change, protecting cultural heritage becomes imperative as the world faces increasingly severe environmental challenges. Rising sea levels, extreme weather events, and temperature fluctuations threaten to erode and destroy cultural artifacts and heritage sites. If the stones disappear, the culture that underpins them is equally susceptible to oblivion. Therefore, protecting cultural sites from climate change goes hand in hand with safeguarding the digital (and even intangible) facets of such heritage. Research, mitigation strategies, and adaptation measures are essential for preserving our rich cultural heritage and ensuring its relevance in the digital age.

Preserving cultural heritage in the face of climate change also requires the integration of climate resilience strategies into preservation efforts. This involves adopting sustainable practices in the management and maintenance of cultural sites, using environmentally-friendly materials for conservation, and implementing adaptive measures to protect heritage from climate change. In the face of ever-changing climatic challenges, our approach to preserving cultural heritage must constantly evolve,

incorporating new research, new (digital) technologies and new policies to respond effectively to evolving threats. A comprehensive and collaborative approach to (intangible) property rights, shared responsibilities and climate protection is becoming essential to safeguarding the legacy of our diverse cultural heritage. By recognizing the need for continuous adaptation and learning, we can secure the legacy of our rich cultural heritage in the midst of the dynamic challenges of climate change. The *International Journal for the Semiotics of* Law will soon organize a Special Issue around this topic over the next few years.[6]

References

1. Aroni, G. 2023. Games as Authorial Platforms? An exploration of the legal status of user-created content from Digital Games. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09976-z.
2. Cecotti, H. 2022. Cultural Heritage in fully immersive virtual reality. *Virtual Worlds* 1: 82–102. https://doi.org/10.3390/virtualworlds1010006.
3. de Brogniez, M., and A. Vandenbulke. 2023. The Audiovisual Broadcast of Performing Arts: from the stage to the screen—legal issues. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09983-0.
4. de Clippele, M. S. 2023. Are Digital Cultural Commons culturally diverse? *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-10020-3.
5. Galdia, M. 2023. Cooperation or Confrontation between New Technologies and Law of Information. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09978-x.
6. Blackwell Christopher, W. 2013. Hijacking Shared Heritage: Cultural Artifact and Intellectual Property Rights. *Chicago-Kent Journal of Intellectual Property Volume* 13(1): 137–164.
7. Higgins, N., D. Ferri, and K. Donnellan. 2022. Enhancing Access to Digital Culture for vulnerable groups: the role of public authorities in breaking down barriers. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-022-09959-6.
8. Hofman, D., and M. A. L. Villagran. 2023. Queer privacy protection: Challenges and the fight within libraries. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09994-x.
9. Jansen, B., and A. Schreiner. 2023. Captured by digitization. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-022-09958-7.
10. Keeney, G., and D. S. Jones. 2023. The debauched Commons: a Dark Parable. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09972-3.
11. Klinowski, M., and K. Szafarowicz. 2023. Digitisation and sharing of collections: Museum Practices and Copyright during the COVID-19 pandemic. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09986-x.
12. Marek, H. M. 2022. Navigating intellectual property in the landscape of digital cultural heritage sites. *International Journal of Cultural Property* 29(1): 1–21. https://doi.org/10.1017/S0940739122000054.
13. Markellou, M. 2023. Cultural Heritage accessibility in the Digital Era and the Greek Legal Framework. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-10027-w.
14. Noehrer, L., A. Gilmore, and C. Jay et al. 2021. The impact of COVID-19 on digital data practices in museums and art galleries in the UK and the US. *Humanit Soc Sci Commun* 8: 236. https://doi.org/10.1057/s41599-021-00921-8.

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[6] Please visit IJSL at https://www.springer.com/journal/11196/updates.

15. Paul, J. 2023. Traditional knowledge Protection and Digitization: a critical decolonial discourse analysis. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09989-8.
16. Peña, K. I. C., Y. A. M. Jaramillo, and Peña. 2023. A.M.C. Instruments for the Legal Protection of Digitized Cultural Heritage in Colombia. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09980-3.
17. Rochford, F. 2023. Mind-forg'd Manacles': virtual experience and innocent publication. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09971-4.
18. Roussou, M. 2001. "Immersive Interactive Virtual Reality in the Museum". https://www.researchgate.net/publication/2861971.
19. Shehade, M., and T. Stylianou-Lambert. 2020. Virtual reality in Museums: exploring the Experiences of Museum Professionals. *Applied Sciences* 10/11: 4031. https://doi.org/10.3390/app10114031.
20. Stec, P., and A. Jagielska-Burduk. 2023. Digital Restitution of Cultural Goods: in search of a Working Model. *International Journal For The Semiotics Of Law*. https://doi.org/10.1007/s11196-023-09973-2.
21. Stockton-Brown, M., Ghosts, and Punks. 2023. The Aesthetics of Copyright Law in Graphic Novels and Comics. *International Journal For The Semiotics Of Law* 36: 509–527. https://doi.org/10.1007/s11196-022-09961-y.