INTERNET POLICY REVIEW

Volume 15 **Issue** 3

RESEARCH ARTICLE

OPEN ACCESS

PEER REVIEWED

Who is writing history? Content moderation and historical narratives in the virtual worlds

Nil Bosch Navarro *Autonomous University of Barcelona (UAB)*
Anna Capellà i Ricart *Autonomous University of Barcelona (UAB)*
Andres Chomczyk Penedo *Pontifical University Comillas*

DOI: https://doi.org/10.14763/2026.3.2121

Published: 24 September 2026
Received: 16 November 2025 **Accepted:** 31 July 2026

Funding: The authors have received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101135556. Currently, only Dr. Bosch Navarro is being directly funded by this source.
Competing Interests: The author has declared that no competing interests exist that have influenced the text.
Licence: This is an open-access article distributed under the terms of the Creative Commons Attribution 3.0 License (Germany) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. https://creativecommons.org/licenses/by/3.0/de/deed.en
Copyright remains with the author(s).

Citation: Bosch Navarro, N., Capellà i Ricart, A., & Chomczyk Penedo, A. (2026). Who is writing history? Content moderation and historical narratives in the virtual worlds. *Internet Policy Review*, *15*(3). https://doi.org/10.14763/2026.3.2121

Keywords: Historical narratives, Metaverse, Content moderation, Digital Services Act (DSA), Virtual worlds

Abstract: Extended reality (XR) technologies can facilitate virtual access to cultural heritage, including historical sites and digital artifacts, within persistent, interactive virtual environments, relying on user participation to nourish the database utilised by the system. This can imply a shift in the construction of historical narratives' methodology. These virtual worlds, such as the metaverse, rely on content for their composition, triggering the question of how its moderation should be handled, particularly when it is provided by the very users who engage in these digital realms. As such, in this paper we study the transition of historical narratives from a controlled environment to virtual worlds and the legal implications of the inclusion of non-expert people and private actors through content moderation mechanisms in the development of historical narratives through a cross-disciplinary approach between historical and legal analysis. The paper highlights existing tensions and points towards both future areas where further research is needed but also to possible solutions to these issues.

This paper is part of **Governing the metaverse through the lens of the public sphere**, a special issue of *Internet Policy Review* guest-edited by Annelieke A.M. Mooij and Sunimal Mendis.

Introduction

In historical theory, the notion of narrative and its cognitive value has been the subject of scholarly debate (Kreiswirth, 2000; Macintyre, 2007). It is considered that historians work with facts and sources, organise them and produce a discourse. However, the nature of this discourse remains a critical question (Berger, Brauch & Lorenz, 2024). There are different ways of understanding a specific historical fact, and narratives are the key element to determining the "issue of the explanation" (Carrard, 2015). Historical narratives are subject to trends, such as decentralised discourses, the interplay between collective and individual experiences of the past, and the role of subjectivity and emotions.

Extended reality (XR) technologies can be used in a wide range of applications, and they are particularly relevant when applied for the creation and operation of virtual worlds; however, other related technologies are also associated with these processes, making it necessary to briefly address their differences (Murala & Panda, 2023). In this sense, we can distinguish between the technologies that make these virtual worlds possible and the concrete applications that rely on these developments. Firstly, it is possible to identify between technologies that enable extended, augmented, virtual, or mixed realities (XR, AR, VR, and MR, respectively). Particularly pertinent for our contribution, XR technologies have resulted in the development of devices such as headsets and zero-touch motion sensors that allow users to interact with virtual worlds, creating highly immersive experiences (Alhakamy, 2024). Secondly, these technologies can be applied in very different contexts that engage with historical narratives, such as virtual heritage projects or educational and touristic experiences. In turn, these applications might also engage with other technologies; for example, XR is increasingly integrated into relevant concepts such as city digital twins (Shahat et al., 2021) and its former evolution (Vaienti et al., 2023).

These technologies enable users to actively engage with and shape the historical narratives, creating highly personalised experiences of historical facts, places, or figures (Puig et al., 2020; Anwar et al., 2025). As such, users are allowed to actively craft their own understanding of the past, introducing them as a new agent into the process, and making it necessary to reconsider the role of the content – what

is told – and its agency – who tells –. As part of this trend, and for the purposes of providing a concrete working example for this paper, we rely on the work conducted in the European-funded project "Transforming European Industrial Ecosystems through eXtended Reality enhanced with human-centric AI and secure, 5G-enabled IoT" (INDUX-R); among its many applications (5 in total), it envisages developing a four-dimensional (4D) reconstruction application for cultural tourism, combining machine learning (ML) algorithms and photogrammetric approaches to recreate a textured 4D city model at a global scale and across different periods of time.[1]By integrating XR technologies, this solution enables users to explore history through guided and personalised experiences, shaping their own understanding of the past. In particular, the application allows for crowdsource materials, included from the very user employing the application, to nourish the databases upon which the models are recreated and displayed as well as from where information pertaining to sites is obtained.

A virtual reconstruction may faithfully represent and explain the historical architecture and spaces of a city, while at the same time omitting historical phenomena such as displacements of population, the condition of women, poverty dynamics, or social segregation, as occurred in Paris under the Haussmannian reforms undertaken during the nineteenth century (Harvey, 2006). From a historical perspective, such omissions could constitute an incomplete or selective narrative, while remaining entirely lawful from a legal perspective. Nevertheless, omissions and selective contents can be considered, in certain scenarios, as denial and distortion, falling within the scope of illegal categorisation. UNESCO's approach to the Holocaust constitutes a clear example, as it distinguishes between legitimate different interpretations and the minimisation and misrepresentation of the extermination policies practiced by the Third Reich and its collaborators, which is considered as denial and distortion of history (UNESCO, 2022).

The Digital Services Act (Regulation (EU), 2022), that has as one of its core concerns content moderation activities (Leerssen, 2023), might be applicable to user interaction in virtual worlds because despite metaverse implementations are promoted as the embodiment of a truly user-based Web 3.0, they rely on a centralised entity to host and run the virtual world in question. In this regard, intermediary

1. Other types of virtual scenarios with historical background already existent today are a guided virtual tour on the ancient city of Rethymo (Crete, Greece) using three hundred sixty–degree (360°) immersive video applications for Head Mounted Display (HMD) (Argyriou et al., 2020), the virtualisation of the neolithic village of La Draga (Banyoles, Spain) employing both 360° video with Samsung Gear glasses and a gamified and interactive HTC Vive headset (Puig et al., 2020). For more information on different applications, see: Lu & Zhang, 2026; Zhang et al., 2026.

services under the DSA scope engage with different types of materials uploaded by their users. Some of them might be considered as illegal while other types could be incompatible with the terms and conditions associated with the provision of such services. In the article we follow the premise that a wide range of historical narratives will likely fall into the category of "information incompatible with the terms and conditions". This provides platforms with a substantial amount of power to determine which discourses and narratives, as well as their counterpoints, are allowed in their services. However, user uploaded content involves the exercise of their right to freedom of expression.

In this context, identifying who is in charge of determining what is acceptable and what is not in a given virtual world comes to the foreground. As such, content moderation challenges in this context include: (i) preventing user-generated content that contains certain historical narrative from spreading (for instance, hate speech and harassment or real-time user interactions within culturally sensitive digital spaces), and (ii) managing the complexities of diverse jurisdictional laws regarding cultural content. In this respect, an effective moderation is crucial for maintaining historical accuracy, safeguarding cultural authenticity, and ensuring respectful and inclusive virtual experiences for global users.

Based on this, we propose the following research question: "To what extent do content moderation obligations under the DSA influence the construction, dissemination, and perception of historical narratives in XR environments, such as the metaverse?" This contribution intends to address the balance between ensuring the diversity of historical narratives, and by extension the freedom of expression, while also avoiding the spread of misinformation and disinformation or the creation of risks and harms to society through illegal content.

First, we will analyse the transition of historical narratives from a controlled environment to the metaverse (Section 1). Next, we will study the legal implications of the inclusion of non-experts in the development of historical narratives and therefore, the use of content moderation mechanisms (Section 2). Lastly, we will provide some conclusions.

1. Historical narratives: from a controlled environment to the metaverse

The construction of historical narratives has taken place within a vast range of social, economic, political, and cultural contexts. From the earliest forms of oral tradition, it evolved to encompass a wide diversity of actors such as politicians, the

press and mass media, and institutions ranging from the State and the Church, to the most recent social movements, merging both collective and individual forms of understanding the past with their own logics, comprising both preferences and silences (Trouillot, 2017). Academia played a crucial role in establishing professional standards for the interpretation, validation, and production of historical knowledge, particularly in the 19th century with the consolidation of epistemological and methodological practices (Bloch, 1999).

The recent advances in the metaverse are introducing historical narratives into an unprecedented multi-sided context (Helmond & van der Vlist, 2019): platforms, users, and service providers are new categories and actors that play a key role in their production, dissemination, and interpretation. However, if users are permitted to actively engage in this process, it challenges this long-standing and consolidated framework by decentralising historical narrative production and expanding the number of actors involved. Hence, in this section we analyse how historical narratives have been constructed so far (1.1) and how XR technologies are transforming historical narratives (1.2). In doing so, we address and pose key questions concerning the epistemic consequences of this shift.

1.1 Approaching the past: how historical narratives are shaped

Narrative is deeply embedded in human nature, functioning as a fundamental mechanism for understanding the reality and organising knowledge (Kreiswirth, 2000; Macintyre, 2007). The constructed nature of historical narratives reflects the influence of their social and cultural mediums (Duby, 1985). Societies project their values and interests into historical narratives to establish a coherent sense of identity and continuity. However, this process is filled with challenges. As Strawson (2004, p. 447) contends, "*the more you recall, retell, narrate yourself, the further you risk moving away from accurate self-understanding, from the truth of your being*". While academic history continues to provide a critical reference point for historical narratives, now it must coexist with new modalities of engagement that are reshaping the way we approach the past. This subsection examines how historical narratives are constructed and interpreted, providing a foundation for exploring how emerging technologies reshape our engagement with the past.

Traditionally, academic interest in historical narratives has been central to the study of historiography. As Humboldt (1967, p. 57) remarked at the beginning of the 19th century "*The historian's task is to present what actually happened*". However, the same author poses a critical question, signalling the interpretative nature of this task: "*The historian must, therefore, not exclude the power of the idea from his*

presentation by seeking everything exclusively in his material sources (...)" (Von Humboldt, 1967, p. 71). These fragments evoke the inherent complexity of representing and transmitting history. Since the chronicle-based approach that was present in classical authors such as Herodotus and Thucydides, history has evolved to incorporate and value the agency of the author, placing perspective at its core.

Consequently, metatheoretical approaches became acquainted with the involvement of the qualitative elements of explanation in history (Carr, 1961). Building on the distinction between the proper events – *res gestae* – and their recounting – *historiam rerum gestarum* – (Hegel, 1999), academia has engaged in a prolific debate concerning the differentiation between the historical facts and their representation. This discussion traces back its origins to the 19th century, when Leopold von Ranke established methodological standards for the discipline, emphasising approaching the past "*as it really was*" (von Ranke, 1885, p. xiii). At the time when European nations were constantly defining their identities with the active participation of historians (Benda, 1932), this question served to raise the awareness of the interweaving relation between the object and the subject (Danto, 1965). Why do we recount a particular historical event?

Narratives play a crucial role in defining its nature and boundaries (Carrard, 2015). The *narrative turn* experienced during the 1970s and 1980s placed language, meaning, and interpretation at the heart of the epistemological studies, seconded by an acknowledgement of the literary and narrative forms in historical writing (White, 1973; Ricoeur, 1984). Hence, history was increasingly regarded not only as a reality expressed through narrative, but as one produced and constituted by it, acknowledging the significance of structured discourses (White, 1973).

The increasing introduction of narratives in the historiographical landscape marked the emergence of specific categories. Chief among them was contingency, emphasising the unpredictable and non-linear nature of historical processes. Moreover, narrative plots introduced structural elements – such as emergence, consolidation, and decay – that allowed historians to characterise their objects of study with greater nuance. At the same time, this narrative turn brought readers closer to the lived experiences of historical actors, capturing its fragmentation and complexity.

However, primary sources remain an essential pillar. Tuchman (2009) emphasised the capital role of historical facts, presenting them within a chronological-narrative structure. Yet, even within fact-driven studies, interpretation remains unavoidable, as metatheoretical approaches underscored (Febvre, 1953). Hence, history

has been understood as a constant exercise of rewriting. Following the principles established by Schaff (1988), history is continuously rewritten due to 1) present variables and 2) the enduring effects of past events on the present. Consequently, historical narratives often project the interests of the present on the screen of the past (Becker, 1921).

Thus, the selection and interpretation of historical facts are influenced by narrative frameworks shaped by specific context of interests (Berger, Brauch, & Lorenz, 2024). An illustrative case is the evolving concept of "fathers of Europe". Initially, this term referred to prominent male individuals that contributed in setting the foundations of the European Communities (Martin, 2021). Over time, it evolved to include other political figures, even from before the creation of the Treaty of Rome of 1957 (Ailes, n.d.), with European institutions adamant to consolidate them as a symbol (Cohen, 2007). Recently, this concept has incorporated salient women such as Anna Lindh or Simone Veil, whose contributions are increasingly acknowledged in the European integration process (European Commission, 2021). Whether historical narratives developed within the metaverse will influence this evolution remains an open question, underscoring the need for critical engagement.

1.2 Reconstructing the past: virtual worlds' impact on historical narratives

Past events can be brought back to life through immersive experiences, such as trips to ancient places, simulations, or the interaction with virtual avatars. In this sense, the traditional tomes of history are taking a further step back, much as they did with the rise of the internet, presenting new challenges in educational contexts (Villena-Taranilla & Diago, 2025).

Academia plays a crucial role in conforming the form of historical content, grounded in a shared scientific methodology. This process is influenced by the social contexts and power dynamics affecting historians themselves. As such, metaverse technologies could bring about a significant transformation thanks to the involvement of users to include marginalised or silenced voices; however, if users are treated as mere passive content consumers, the resulting narratives may risk oversimplification and the reinforcement of dominant perspectives. Such narratives can challenge traditional historical frameworks by introducing new trends: the rise of decentralised storytelling, the interplay between collective and personal memory, and the heightened influence of subjectivity and emotional engagement (Anwar et al., 2025).

Although storytelling has been present since the dawn of humanity, evolving from the long-standing oral tradition to most recent social media content, digitalisation increases the role of the individual in its configuration. Two-dimensional books, teachers, and material collections are being integrated into an absorbing virtual system, where content is focused on bringing the user closer to the past.

One of the most relevant elements is the inclusion of primary source materials in the adoption of an in-person perspective, allowing users to experience the historical events from the point of view of the main protagonists. As an example, in the INDUX-R application, avatars of historical personages are the ones that guide the participants throughout the architectural evolution of the historical sites (e.g. Prague's Old Town Square architectural evolution explained by Jan Hus). By stepping into the shoes of the main protagonists, XR technologies foster an empathetic perspective and foment building emotional connections (Papadopoulou et al., 2024). As a result, this modality is blurring the line between historical interpretation and personal experience. A key issue is who and how these primary sources can be introduced into a given virtual world, as the inclusion of historical narratives in the metaverse entails a critical risk in terms of content. The availability of multiple unchecked sources can lead to offering inaccurate information of historical events, an aspect that has been studied in, for example, the case of the Holocaust (Grabowski & Klein, 2023). Research detected a promotion of one-sided views, even with incorrect data that actually contributed to the propagation of antisemitism and Holocaust denial (Guhl & Davey, 2020). Furthermore, if this is combined with the use of artificial intelligence (AI), it can extensively reiterate hegemonic discourses and practices, thus amplifying power inequalities across the domain of collective memory leading to situations, such as AI content inventing facts, deepfakes, or even just focus on the most well-known aspects of historical facts oversimplifying its complexity, among others (Makhortykh et al., 2024).

Overall, considering the treatment that certain individuals, groups, and communities receive in online platforms, such as women, Africans, jews, or antifascists, a balanced approach to the past can be jeopardised in favour of discriminatory contents. For example, within the framework of INDUX-R application developed for cultural tourism, it was studied how without any content moderation, the platform could be used to spread discriminatory content. In this respect, the capabilities of algorithms raise ethical implications for historical content (UNESCO, 2021) and heritage (European Heritage Alliance, 2020). It is acknowledged as a social problem in the debates held in the context of the European Citizens Platform on hatred in society. During the most recent working period, the relationship between con-

flict and historical legacy was a central topic of debate. Most notably, historical legacy was identified as a source of hate discourse, highlighting the need for proactive measures to prevent its further spread (European Commission, 2024). In this sense, it is feasible to highlight that certain historical narratives might cause legal effects.

2. Moderating popular historical narratives: legal ramifications of crowdsourced virtual worlds content

In this section we analyse the evolving role of users from the web 1.0 to the web 3.0 (2.1), the right to freedom of expression that these users have to communicate their own historical narratives (2.2), the characterisation of content and its moderation mechanisms (2.3), how to address historical narratives content moderation through DSA mechanisms (2.4), and the particular role that historians, as expert scientists on the matter, can have in the context of the DSA (2.5).

2.1 From the web 1.0 to the web 3.0: the evolving role of users

Online content, just like the internet, has undergone evolutionary phases, often categorised as Web 1.0, Web 2.0, and Web 3.0; these represent a progressive shift from passive consumption to active participation, and, eventually, user-centric ownership and decentralised control (Cormode & Krishnamurthy, 2008; Goddard & Byrne, 2010).

During Web 1.0 (early 90s to early 2000s), users were primarily passive consumers of information, with static websites, presenting content in a largely unidirectional flow from creators (often businesses, institutions, or early webmasters) to users. The user's role was akin to that of a spectator. Content moderation, while not explicitly termed as such, was largely centralised, managed by the few entities that published online.

The advent of Web 2.0 (mid-2000s) ushered in a revolutionary era of interactivity and user-generated content (Chada et al., 2025). Social media platforms, video-sharing sites, blogs, and wikis empowered users to not only consume but also create, share, and connect on an unprecedented scale. The user transitioned from a mere reader to a publisher, commentator, and co-creator. Centralised platforms assumed the formidable task of moderating this deluge of content, often through a combination of algorithmic detection and human review.

Web 3.0 aims to redistribute power from centralised entities back to individual users. The concept of the metaverse, an immersive, persistent, and interconnected

virtual space, is intrinsically linked to this ethos (Rosati, 2023). Here, users are expected to have greater autonomy, building and shaping their virtual environments, owning digital property, and participating in governance structures. Instead of relying solely on centralised platform moderation, Web 3.0's decentralised nature suggests a future where moderation mechanisms could be distributed, governed by community consensus, or even embedded within the architecture of the digital assets themselves.

Nevertheless, it should be noted that this ideal for Web 3.0 does not necessarily correspond to how many of the developments that rely on this terminology are actually structured, particularly when it comes to the metaverse. In this sense, many developments that present themselves as Web 3.0 are, in fact, run by a centralised entity; for example, Meta's own version of the metaverse was hosted and run by the company until its recent closure. As such, and despite the promises of decentralisation, these projects find themselves 'fitting like a glove' in the current regulatory paradigm for online services. While this would go against the very premise of a 'user-run' and 'user-controlled' environment based on decentralised governance, it would enable the application of mechanisms found in legal rules as the DSA (a more elaborated analysis on this will follow later in section 2.4).

2.2 The side effect from users' participation: the right to freedom of expression

In the INDUX-R application, users nourish the databases upon which the models are recreated and displayed as well as from where information pertaining to sites is obtained. By directly introducing users in the process of content creation, they also exercise their right to freedom of expression (Leerssen, 2015). This basic right has been recognised across the globe and in different legal instruments. However, the exact extent of the protected speech varies between legal regimes, but a stark difference between the "old" and the "new" world can be identified; *"(...) while the French Revolutionaries made freedom of expression a "precious right," the Americans wanted from the beginning to make it a "sacred right" (...)"* (Zoller, 2009, p. 805). As a result, there are distinct approaches to several issues, such as *"(...) defamation, hate speech or protecting minors from violent or sexually explicit content*" (Pollicino & Bassini, 2014, p. 514).

Despite this difference, EU scholars still acknowledge the fundamental role that this right has in the configuration of a free society (Bychawska-Siniarska, 2017). However, the exercise of this right cannot be used to lead to the destruction of the rights and freedoms granted by the European Convention on Human Rights, and

can find its limits in, for example and according to the European Court of Human Rights (ECtHR), the incitement to violence (ECtHR, 1999), hate speech and racism (ECtHR, 2004; ECtHR, 2012a), and Holocaust denial and references to Nazi ideology (ECtHR, 2012b). Given the critical nature of this right, a well-nourished case law has emerged defining the criteria to determine if a speech is protected or not by freedom of expression, always taking into account particularities of the case (Benedek & Kettemann, 2020).

When certain narratives, supposedly under the protection of the right to freedom of expression, are used as a deliberate distortion or denial of established historical facts that constitute other narratives, this might infringe legal rules, if existing (see section 2.4). However, the true challenge, as will be explored further, lies in how to reconcile seemingly lawful narratives that clash between each other through content moderation.

2.3 Characterising content and its moderation mechanisms

As noted in the literature, the terminology used to address the different types of content depends on the prism used to do so, as noted by de Hert and Chomczyk Penedo (2023). In their work, they argue that the law, broadly construed, relies on the idea of harm to classify content and, if necessary, requires its moderation to avoid it. As such, they distinguish between lawful, lawful but harmful, or unlawful and harmful content, regardless of the concrete legal terminology employed, such as illegal content, misinformation, and disinformation, among others. At the same time, illegal content might also be further differentiated into categories such as denialism, hate speech or discrimination, among others. Some of these categories are particularly relevant for our analysis as they engage with certain activities that resonate with historical narratives. For example, denialism of the Holocaust goes hand in hand with narratives vindicating the Nazi regime and other related political movements.

In this respect, we can now question who exactly should be in charge of moderating online content. According to Palladino, Redeker, and Celeste (2025), many civil society organisations acknowledge that because of the volume and speed of online communication, the legal system exclusively cannot properly address the issues posed by illegal and harmful content. Along the same lines, Chystoforova and Reviglio (2025) positively highlight the EU's efforts towards co-regulation in this matter. This issue long predates the emergence of online activities, with an abundant stream of legislation, case law, and doctrinal analysis (Bellanova & de Goede, 2022; Dias Oliva, 2020; Gillespie, 2018). In this respect, it is possible to draw a

common line across the years: those who are in a position to control the flow of information are, generally, tasked with this mission. However, this general obligation provides for three main exceptions: (i) there is no active monitoring obligation; (ii) if these intermediaries do not mingle with the content, they shall not be held liable; and (iii) until a concrete and lawful request to take down content, there is no liability for these entities.

The European context, as it is the main scope of this contribution, does not provide a much different perspective on this phenomenon. From Member States legislation to the previous eCommerce Directive and now under the DSA, the general approach seems to fit with the global trend in content moderation. In this respect, the DSA stipulates that there is no general monitoring obligation for providers of intermediary services under its Article 8. At the same time, Articles 4 through 6 provide for the safe harbour provision regarding their liability. And, finally, Article 9 determines how these intermediaries should react upon the reception of a notification to take down content.

Following Bovenzi (2025), an important remark to be made is that the DSA engages with content, and by extension with its moderation, only when it is (a) illegal or (b) incompatible with the terms and conditions of the intermediary service engaged. As for the first category, the DSA, under its Article 3(h), defines this type of content as any which is incompatible with the law, broadly construed to encompass from EU law to Member State legislation.

While this general framework is fit-for-purpose when dealing with cases where there is illegal content; the situation, however, begins to turn more difficult when engaging with content that infringes the terms and conditions of the service. Despite the fact that Article 14 prescribes that the mechanism to moderate content should be made transparent, the available literature has argued that these practices have been loosely explained in these terms and conditions (Quintais et al., 2023). In particular, we can question whether these practices, both the act of moderating content as well as how this is made public, are respectful of the right to freedom of expression, particularly when automatic content moderation techniques are applied (Benedek & Kettemann, 2020). For example, Flynn et al. (2024, 2025) expose that marginalised communities experience high(er) rates of online discrimination and abuse, and platforms commonly prioritise free speech basing their decision on inconsistent, contradictory, and non-transparent platform content moderation policies.

Moreover, the DSA introduces further obligations to a selected group of intermedi-

aries: the very large online platforms. In this sense, the DSA mandates the performance of risk assessments, under its Article 34, that must consider the existence of systemic risks present in their operation. One example of this would be the dissemination of illegal content through their services or actual or foreseeable negative effects on civic discourse, among others. With the purpose of mitigating these systemic risks, Article 35.1.c DSA includes content moderation processes as mitigation measures. Certain historical narratives might, in concrete scenarios, trigger many of these feared risks.

2.4 Bridging between the DSA and historical narratives: how to address content moderation

Our guiding example, the INDUX-R project, introduces content moderation mechanisms by incorporating the figure of the moderator, whose responsibility consists of validating uploaded material before its publication, with the capacity to accept or decline it based on their users' privileges within the platform. Furthermore, it is complemented by the figure of trustworthy users, who are enabled to moderate the content relating to a particular city or area. In this case, as a university was involved in the design, development, and implementation, a historian played a critical role in its interdisciplinary team. Although the moderation mechanism envisaged by INDUX-R does not constitute by itself a direct exercise of the dispositions established under Article 22 of the DSA, it demonstrates the practical need to balance between crowdsourced information with the capacity to assess whether such information should become part of a shared historical knowledge. Participation makes the need for an expert assessment particularly important in a context of citizen science (Heinisch et al., 2021).

The relevance of such moderation becomes particularly evident when the content being assessed does not concern merely factual claims, but also the interpretation and representation of historical events and places. As we have referred previously, even the Holocaust admits, while affirming the existence of extermination practices by the Third Reich and its collaborators, different legitimate interpretations covering aspects such as violence during military occupation in the context of Second World War (Mazower, 2008; Kay, 2006), and extermination policies targeted on Romani people (Weiss-Wendt, 2025), prisoners of war, or political opposition, among others. Furthermore, the case illustrates why it cannot be reduced to a "true" or "false" dichotomy when evaluating historical claims about a specific subject. The INDUX-R application is designed to represent buildings across different historical periods and to provide users with access to historical routes, both guided and personalised, interacting with multimedia narratives and contextual informa-

tion. Historical reconstruction involves decisions concerning not only factual accuracy, but also the selection and visualisation of its information. A reconstructed building and its associated information may comprehensively represent a particular moment, while excluding other periods or interpretations, thereby influencing how users understand it.

The Országház – Hungary's Parliament building – provided a practical case. It may represent a grand symbol of national sovereignty resurgence and constitutional governance of Austro-Hungarian political tradition in Budapest. But at the same time, it can be interpreted to symbolise the oppression associated with the communist regime that ruled the country from 1949 to 1989. Therefore, moderation is not only limited to determining whether information is accurate, but also how it is selected, contextualised, and represented, reinforcing the relevance of incorporating content moderation mechanisms and expert knowledge.

Although the metaverse is often associated with Web 3.0 and decentralisation, most existing applications follow a Web 2.0 model, with notable exceptions. [2]As noted by Bovenzi (2025), the law, namely in this case the DSA, does not distinguish between centralisation and decentralisation for the purposes of determining whether the law itself is applicable or not; in any case, the adoption of one approach over the other would entail more or less difficulty for the purposes of assigning roles. In this sense, the DSA is applicable, as per its Article 2(1), to '(…) intermediary services offered to recipients of the service that have their place of establishment or are located in the Union, irrespective of where the providers of those intermediary services have their place of establishment.' In this sense, we agree with Bovenzi's (2025) remarks that the DSA structuring might become outdated in the future, once truly Web 3.0 metaverse services are available; however, for the time being, most viable metaverse applications do fit this scheme, hence making the case for the analysis of such interplay.[3]

2. We acknowledge that the literature is controverted around the issue of Web 3.0 services and how to determine whether certain application is provided on a decentralised basis or not; in this respect, we can pinpoint, for example, the debate around blockchain technologies, which are usually taken as a building block on Web 3.0, and when a blockchain is truly decentralised, as presented by Moerel (2018) and Finck (2018). While some guidance emerged in recent years, such as EDPB's work (2026), the matter should be approached on a case-by-case methodology to adequately capture the operation details. As it can be appreciated, much of this debate has taken place around data protection law, but in recent years similar reflections have emerged with regards to the metaverse and other virtual worlds and whether they engage with rules such as the DSA (Bovenzi, 2025; Pellegrini, 2024).

3. In turn, Article 3(g) defines these as '(…) one of the following information society services: (i) a 'mere conduit' service, consisting of the transmission in a communication network of information provided by a recipient of the service, or the provision of access to a communication network; (ii) a 'caching' service, consisting of the transmission in a communication network of information provid-

One key challenge is preventing the spread of user-generated content that conveys problematic historical narratives, such as hate speech or harassment, particularly within culturally sensitive digital spaces. Another layer of complexity is added to this issue from managing diverse jurisdictional laws related to cultural content that might have implications for what is illegal or not. Effective moderation in these contexts is crucial for maintaining historical accuracy, safeguarding cultural authenticity, and ensuring respectful and inclusive virtual experiences for global users.

In this respect, EU authorities have taken note of this. For example, the European Parliament adopted a resolution entitled *"European historical consciousness",* [4]where it has expressed deep concern about digital channels being increasingly abused for the circulation of disinformation. However, and returning to our main concern, the categorisation of historical narratives within the existing classification for content might not be straightforward.

As a starting point, we can explore whether historical narratives can be considered as illegal content, as described in the DSA. Certain EU Member States penalise the reproduction of specific historical narratives as imprisonment or as administrative penalties. For instance, in Germany, article 86 of its Criminal Code states that disseminating, making available, producing, stocking, importing or exporting propaganda material of the former National Socialist Party, incurs a penalty of imprisonment for a term not exceeding three years or a fine. Another example would be Spanish Law 20/2022, of 19 of October, of Democratic Memory, that foresees in Article 62 administrative penalties in case there is a personal or collective exaltation of Franco's dictatorship, when it entails discredit, contempt, or humiliation of the victims or their families.

While this approach might provide certainty regarding whether a particular historical narrative can be considered illegal or not, they might not be able to adequately cover historical events without clear boundaries. In this sense, for example, the Spanish Law 20/2022 mentioned above, except for its preamble, does not specifically tackle the long postwar period. Therefore, for example, phenomena such as guerrilla warfare or concentration camps fall within the scope of the law, or do

ed by a recipient of the service, involving the automatic, intermediate and temporary storage of that information, performed for the sole purpose of making more efficient the information's onward transmission to other recipients upon their request; (iii) a 'hosting' service, consisting of the storage of information provided by, and at the request of, a recipient of the service; (...)'.

4. European Parliament resolution of 17 January 2024 on European historical consciousness (2023/2112(INI)) (C/2024/5721), P9_TA (2024)0030.

they not? This presents a clear situation of incertitude that can have a concrete impact on content moderation practices, considering the ambiguity of which historical narratives specifically must be addressed.

Besides the limitations that the law faces in addressing in a comprehensive manner certain historical narratives, we can question whether these EU Member States' laws are adapted to the online, transnational, and virtual world. In this respect, we can highlight the cited provisions from the German Criminal Code, which refer to "the public in Germany" or "the dissemination in Germany". While these provisions might make sense for physical dissemination activities, they begin to show some cracks when content is shared online or in virtual environments that can have an impact on a broader public beyond Germany.

As noted by Ó Fathaigh et al. (2025), if certain content is deemed as illegal in one Member State, then its effects – insofar as the DSA is concerned – have European-wide consequences. Despite this, the cracks in this type of legislation, as noted above, leave room for interpretation and, hence, cannot be labelled automatically as illegal content, within the terms of the DSA. In scenarios where the underlying content has received wide-spread repudiation from society at large global scale, such as fascism (Jacoby, 2016), an expansion of local practices to a broader audience might be plausible. It is here where platform terms and conditions have a considerable degree of influence and relevance, as online service providers contribute to the (un)realisation of human rights (Celeste, 2019).

The European Commission (2026) states that *"clear and specific statements of reasons for their content moderation decisions"* must be given by providers of online services, considering that sharing online content represents a manifestation of the right to free speech and platform users' fundamental rights. As a result, governance of content moderation needs to provide mechanisms that ensure a fair and transparent moderation process, limiting censorship and possible arbitrary scrutiny carried out by the internet intermediaries (Bovenzi, 2025).

Certain historical narratives, despite not being categorised as illegal content, can promote hate speech that, in turn, is itself categorised as illegal. In this respect, different legal instruments might have implications for those narratives. For example, the "*Code of conduct on countering illegal hate speech online +"* stipulates that content uploaded in a virtual platform considered as hate speech should be removed in less than 24 hours, upon notification. There is still uncertainty about the impact of this interactive space on validating or promoting content that the platform must determine to be in agreement with its terms and conditions, and that

can create historical narratives that diminish EU democracies. Considering the different content moderation mechanisms, centralised such as algorithmic decision-making systems, human review, internal complaint handling systems, and decentralised mechanisms such as notices submitted by trusted flaggers, it must be examined which one of them or multiple of them can be more suitable to balance content moderation and freedom of speech regarding historical narratives.

2.5 Academia's responsibility to society: the role of historians as potential trusted flaggers

Despite the public potential participation in the configuration of historical narratives, and the benefits that they might bring to the table, historians still have a critical role in the scientific discourse of their discipline, and their relevance might actually become more significant with the active participation of citizens. In this regard, the figure of trusted flaggers, under Art. 22 DSA, might serve as a relevant mechanism that allows a return to a more "scientific" approach to historical narratives. In this respect, and while their figure is not new when dealing with this phenomenon (Appelman & Leerssen, 2022), their inclusion in EU legislation might contribute to address current gaps identified in the construction of historical narratives. In the INDUX-R system there is the figure of the "trustworthy user", who in the project was a historian, who is permitted to moderate the uploaded content related to a particular city or area.

Trusted flaggers, as articulated in Article 22 DSA, are legal entities with a "particular expertise" on a given topic with "competence in tackling illegal content" and capable of acting "in a diligent, accurate and objective manner". If we are to take these three "requirements" and apply them to historians, we can argue that they meet two out of three without much consideration: they have the necessary skills to assess history, on the one hand, and on the other hand have developed their own methods to produce a scientific objective and valid output. The main concern is whether historians are competent to tackle illegal content found on the web. In this respect, we can also argue that one of their main interests is that online content, which might be considered as a primary source for their work, remains as untainted as possible.

In order to make this approach workable, firstly, it is necessary to assess who would certify as a trusted flagger, as Article 22(2) DSA conditions the granting of such status to an entity applying for it. While not exclusively, universities have long been the nucleus upon which scientific knowledge has been created, including that pertaining to history. A major benefit from adopting this approach lies in

the fact that historians do not necessarily have to work alone; cross-disciplinary teams, particularly with legal and social media scholars, can collaborate in the analysis of historical narratives presented in the field. In this sense, there have been recent calls by scholars regarding the social responsibility due by universities to the larger public and their task to ensure that scientific knowledge is trustworthy (de Rijcke, 2026). For example, and concerning the particular issue of handling contested historical interpretations, these historians might act in tagging the content as contested, even linking to the diverging positions, so that other users can be aware that it is open to other interpretations.

However, the reliance on universities and research institutions opens the door to having to deal with core problems of these organisations, such as ensuring that academic independence is preserved while balancing that contested historical interpretations are adequately handled. For example, tenured scholars do enjoy academic freedom to pursue their own research agenda, which in some cases might lead to controverted positions. Despite this, academic freedom, at least in the European context, constitutes a foundational (and necessary) building block of its university system (European University Association, 2025). As such, and although it may not be infallible, it constitutes a barrier to protect "trusted flaggers" from becoming a privatised (for example, when research is being done within the context of a sponsored chair) or state-adjacent gatekeeping apparatus (for example, when a project is funded by a public body).

Universities can learn from experiences from other trusted flaggers as well as related bodies and their governance schemes to facilitate the adoption of a solution between this privilege for scientists and obligation for universities. For example, and despite the criticism that can be made about it, Meta's own Oversight Board is composed of a wide range of profiles and is governed by clearly defined and legally binding documents.

Perhaps the main limitation behind this approach is that trusted flaggers can only operate against "illegal content", and, in principle, it seems that they are not able to engage with content that is incompatible with the terms and conditions, the main area of legal problem with historical narratives. However, as noted by van de Kerkhof (2025), it seems possible that trusted flaggers can also engage with this category of content.

While there are several areas of concern regarding trusted flaggers, one of the main preoccupations is the impact on users' right to freedom of expression, particularly if the former has a particular interest that they are representing (Appelman

& Leerssen, 2022; van de Kerkhof, 2025). In this sense, academic communities might serve as a truly impartial actor that contributes to this process of assessing historical narratives. While scientists themselves might be exposed to biases and prefer one narrative over the other, the broader collective, in their pursuit of scientific facts, could serve as a valid source to assess whether something deserves to be communicated or, rather, it is merely a façade for hate speech and other illegal activities.

Conclusions

The advent of virtual worlds, from those enabled by XR technologies up to the metaverse, signals a profound shift in how historical narratives are constructed and disseminated. Traditionally, academics and scientific communities curated these narratives, grounding them in established methodologies and epistemological standards. However, decentralised virtual worlds flip this process, introducing new actors, most notably private sector companies and individual users.

This paradigm shift raises several critical questions. Firstly, the predominant role of the private sector in harnessing the potential of these technologies begs the question of how to bring back the scientific method into the construction of historical narratives. Furthermore, it is possible to wonder about the effective control of the significant influence of private actors in defining historical narratives, and about what role the public at large could have in this new landscape.

Secondly, the user-centric nature of these technologies, promoting individual experiences, brings to the forefront the critical question of what is told about a historical fact and in which specific manner. It remains an open question whether the interplay between collective and individual experiences of the past, and the role of subjectivity and emotions, will be adequately considered in a virtual world. In particular, this also leads to concerns about the future of empirical sources for historical events.

Ultimately, this new scheme for constructing historical narratives has a direct and significant impact on historical accuracy, authenticity, and inclusivity. The potential for unchecked sources to spread inaccurate information, as seen in the context of the Holocaust, and the risk of AI-automated content inventing facts or amplifying power inequalities, are serious concerns. The challenge lies in ensuring a balanced approach to the past, preventing discriminatory content, and addressing how the capabilities of algorithms ethically impact historical content and heritage. The relationship between conflict and historical legacy as a source of hate discourse fur-

ther highlights the urgency of proactive measures, adjusted to the corresponding level of compliance required for the specific operator, as the DSA does not impose the same obligations to all intermediary service providers.

In this respect, there are several concrete paths for improvement, based on this approach. On a minimal level, and following Article 14 DSA, it is possible for the involved operators to disclose how they intend to engage with the sources used to reconstrue a given historical situation as well as how these will be ranked and incorporated. Moving to another layer of further compliance, the European Board for Digital Services, as per its tasks under Article 63(1) DSA, should encourage the engagement of the scientific community as a trusted flagger under this legal rule as well as the adoption of codes of conduct that recognise the specialisation degree held by this community, when trusted flaggers can be called upon. Thirdly, metaverse operators, particularly those who might be obliged to carry out impact and risk assessments under the DSA, should contemplate teaching their user base on the ramifications of their actions when it comes to historical narratives.

User-generated content requires a delicate approach when being moderated. In this respect, the exercise of the right to freedom of expression triggers the need to adopt adequate safeguards when balancing the different interests involved. Scientific methodology, with its discipline standards, systemic approach to sources and critical interpretation, can provide the necessary support for addressing it. Although historians are themselves inserted in perspectives and may be influenced by their own biases, their expertise constitutes an invaluable asset in a context characterised by the proliferation of crowdsourced – and sometimes unchecked – information within digital environments, while reducing the risk that contested interpretations of the past are presented as established and uncontested facts. This, in turn, has the potential to strengthen democratic values by helping to ensure that the past is not instrumentalised either to exclusively legitimise those in power or to justify particular political programs. The DSA, through the figure of trusted flaggers, may provide a framework for incorporating this role, provided that the individuals involved are suitably prepared for this challenge.

References

Ailes, M. (2012). Charlemagne 'father of Europe': A European icon in the making. *Reading Medieval Studies*, *XXXVIII*, 59–76.

Alhakamy, A. (2024). Extended reality (XR) toward building immersive solutions: The key to unlocking Industry 4.0. *ACM Computing Surveys*, *56*(9), 1–38. https://doi.org/10.1145/3652595

Anwar, M. S., Yang, J., Frnda, J., Choi, A., Barghaei, N., & Ali, M. (2025). Metaverse and XR for cultural heritage education: Applications, standards, architecture, and technological insights for enhanced immersive experience. *Virtual Reality*, *29*, article 51. https://doi.org/10.1007/s10055-025-01126-z

Appelman, N., & Leerssen, P. (2022). On 'trusted' flaggers. *Yale Journal of Law and Technology*, *24*, 452–475.

Argyriou, L., Economou, D., & Bouki, V. (2020). Design methodology for 360° immersive video applications: The case study of a cultural heritage virtual tour. *Personal and Ubiquitous Computing*, *24*(6), 843–859. https://doi.org/10.1007/s00779-020-01373-8

Becker, C. (1921). Mr. Wells and the new history. *The American Historical Review*, *26*(4), 641–656. https://doi.org/10.2307/1836730

Bellanova, R., & Goede, M. (2022). Co-producing security: Platform content moderation and European security integration. *JCMS: Journal of Common Market Studies*, *60*(5), 1316–1334. https://doi.org/10.1111/jcms.13306

Benda, J. (1932). *Esquisse d'une histoire des Français dans leur volonté d'être une nation [An outline of the history of the French people in their quest to be a nation]*. Librairie Gallimard.

Benedek, W., & Kettemann, M. C. (2020). *Freedom of expression and the internet* (Updated and revised 2nd). Council of Europe Publishing.

Berger, S., Brauch, N., & Lorenz, C. (2024). *Analysing historical narratives: On academic, popular and educational framings of the past*. Berghahn Books.

Bloch, M. (1999). *Historia e historiadores [History and historians]*. Akal.

Bovenzi, G. M. (2025). Content moderation in (decentralized) metaverses. *Interactive Entertainment Law Review*, *8*(2), 145–156. https://doi.org/10.4337/ielr.2025.0010

Bychawska-Siniarska, D. (2017). *Protecting the right to freedom of expression under the European Convention on Human Rights: A handbook for legal practitioners*. Council of Europe. https://rm.coe.int/handbook-freedom-of-expression-eng/1680732814

Carr, E. H. (1961). *What is history?* Macmillan.

Carrard, P. (2015). History and narrative: An overview. *Narrative Works*, *5*(1), 174–196.

Celeste, E. (2019). Terms of service and bills of rights: New mechanisms of constitutionalisation in the social media environment? *International Review of Law, Computers & Technology*, *33*(2), 122–138. https://doi.org/10.1080/13600869.2018.1475898

Chada, L. M., Parashar, H. V., Singh, I., Rastogi, M., Singh, S., & Raja, S. P. (2025). A comparative analysis of Web 3.0, Web 2.0, and Web 1.0: Evolution and implications. *International Journal of Learning and Change*, *17*(1), 1–55. https://doi.org/10.1504/IJLC.2025.143530

Chystoforova, K., & Reviglio, U. (2025). Framing the role of experts in platform governance: Negotiating the code of practice on disinformation as a case study. *Internet Policy Review*, *14*(1). https://doi.org/10.14763/2025.1.1823

Cohen, A. (2007). Le « père de l'Europe »: La construction sociale d'un récit des origines [The 'father of Europe': The social construction of an origin story]. *Actes de La Recherche En Sciences Sociales*, *166–167*(1), 14–29. https://doi.org/10.3917/arss.166.0015

Cormode, G., & Krishnamurthy, B. (2008). Key differences between Web 1.0 and Web 2.0. *First*

Monday, *13*(6). https://doi.org/10.5210/fm.v13i6.2125

Danto, A. (1965). *Analytical philosophy of history*. Cambridge University Press.

de Hert, P., & Chomczyk Penedo, A. (2023). Truth, lies and opinions censored on social media platforms to end misinformation: Saying 'goodbye' to the traditional selective approach of law in matters of truth? In J. Bauwens, V. Ginis, T. Meyer, B. Kerkhove, & K. Verstrynge (Eds), *A question of truth* (pp. 144–150). ASP Academic and Scientific Publishers. https://researchportal.vub.be/en/publications/truth-lies-and-opinions-censored-on-social-media-platforms-to-end/

de Rijcke, S. (2026). Six principles for supporting academic freedom in universities. *Nature*, *657*(8133), 876–879.

Dias Oliva, T. (2020). Content moderation technologies: Applying human rights standards to protect freedom of expression. *Human Rights Law Review*, *20*(4), 607–640. https://doi.org/10.1093/hrlr/ngaa032

Duby, G. (1985). Le Dimanche de Bouvines [Bouvines' Sunday]. *Gallimard*.

European Commission. (2021). *EU pioneers: The trailblazers who helped build today's Europe*. Publications Office. https://data.europa.eu/doi/10.2775/428391

European Commission. (2024). *Final recommendations. Tackling hatred in society*. https://citizens.ec.europa.eu/document/download/f924a377-713c-46a4-a92c-a63973b4618e_en?filename=Tackling_Hatred_in_Society_Final_recommendations_EN.pdf

European Commission. (2026). *The impact of the Digital Services Act on digital platforms*. European Commission. https://digital-strategy.ec.europa.eu/en/policies/dsa-impact-platforms

European Data Protection Board. (2026). *Guidelines 02/2025 on processing of personal data through blockchain technologies* (Version 2.0). https://www.edpb.europa.eu/documents/guideline/guidelines-022025-on-processing-of-personal-data-through-blockchain_en

European Heritage Alliance. (2020). *European Heritage Alliance manifesto. Cultural Heritage: A powerful catalyst for the future of Europe*. https://www.europanostra.org/wp-content/uploads/2020/09/20200915-EHA-MANIFESTO-layout_high-res.pdf

European Parliament and Council of European Union. (n.d.). *Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and Amending Directive 2000/31/EC (Digital Services Act)*. Retrieved https://eur-lex.europa.eu/eli/reg/2022/2065/oj

European University Association. (2025, February 4). *How universities can protect and promote academic freedom: EUA principles and guidelines*. European University Association. https://www.eua.eu/publications/positions/how-universities-can-protect-and-promote-academic-freedom.html

Febvre, L. (1953). *Combats pour l'histoire [Battles for history]*. Librairie Armand Colin.

Finck, M. (2018). *Blockchain regulation and governance in Europe*. Cambridge University Press. https://doi.org/10.1017/9781108609708

Flynn, A., Powell, A., & Hindes, S. (2024). An intersectional analysis of technology-facilitated abuse: Prevalence, experiences and impacts of victimization. *The British Journal of Criminology*, *64*(3), 600–619. https://doi.org/10.1093/bjc/azad044

Flynn, A., Vakhitova, Z., Wheildon, L., Harris, B., & Robards, B. (2025). Content moderation and

community standards: The disconnect between policy and user experiences reporting harmful and offensive content on social media. *Policy & Internet*, *17*(3), 70006. https://doi.org/10.1002/poi3.70006

Gillespie, T. (2018). *Custodians of the internet: Platforms, content moderation, and the hidden decisions that shape social media*. Yale University Press.

Goddard, L., & Byrne, G. (2010). Linked data tools: Semantic web for the masses. *First Monday*, *15*(11). https://doi.org/10.5210/fm.v15i11.3120

Grabowski, J., & Klein, S. (2023). Wikipedia's intentional distortion of the history of the Holocaust. *The Journal of Holocaust Research*, *37*(2), 133–190. https://doi.org/10.1080/25785648.2023.2168939

Guhl, J., & Davey, J. (2020). *Hosting the "Holohoax": A snapshot of Holocaust denial across social media*. Institute for Strategic Dialogue (ISD).

Harvey, D. (2004). *Paris, capital of modernity*. Routledge. https://doi.org/10.4324/9780203508619

Hegel, F. (1999). *Lecciones sobre la filosofía de la historia universal [Lessons on the philosophy of world's history]*. Alianza.

Heinisch, B., Oswald, K., Weißpflug, M., Shuttleworth, S., & Belknap, G. (2021). Citizen humanities. In K. Vohland, A. Land-Zandstra, L. Ceccaroni, R. Lemmens, J. Perelló, M. Ponti, R. Samson, & K. Wagenknecht (Eds), *The science of citizen science* (pp. 97–118). Springer. https://doi.org/10.1007/978-3-030-58278-4_6

Helmond, A., & Vlist, F. (2019). Social media and platform historiography: Challenges and opportunities. *TMG Journal for Media History*, *6*(1), 6–34. https://doi.org/10.18146/tmg.434

Jacoby, T. (2016). Global fascism: Geography, timing, support, and strategy. *Journal of Global History*, *11*(3), 451–472. https://doi.org/10.1017/S1740022816000231

Kay, A. J. (2006). *Exploitation, resettlement, mass murder: Political and economic planning for German occupation policy in the Soviet Union, 1940-1941*. Berghan Books.

Kreiswirth, M. (2000). Merely telling stories? Narrative and knowledge in the human sciences. *Poetics Today*, *21*(2), 293–318. https://doi.org/10.1215/03335372-21-2-293

Leerssen, P. (2015). Cut out by the middle man: The free speech implications of social network blocking and banning in the EU. *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, *6*(2), 99–119.

Leerssen, P. (2023). An end to shadow banning? Transparency rights in the Digital Services Act between content moderation and curation. *Computer Law & Security Review*, *48*, 105790. https://doi.org/10.1016/j.clsr.2023.105790

Lu, P., & Zhang, J. (2026). A study of projection mapping technology for cultural heritage conservation and sustainable development. *Sustainability*, *18*(18), 9221. https://doi.org/10.3390/su18189221

Macintyre, A. (2007). *After virtue: A study in moral*. Notre Dame University Press.

Makhortykh, M., Urman, A., Ulloa, R., Sydorova, M., & Kulshrestha, J. (2024). Does it get better with time? Web search consistency and relevance in the visual representation of the Holocaust. In E. Pfanzelter, D. Rupnow, É. Kovács, & M. Windsperger (Eds), *Connected histories: Memories and narratives of the Holocaust in digital space* (pp. 13–32). De Gruyter Oldenbourg. https://doi.org/10.15

15/9783111329154-002

Martín de la Torre, V. (2021). *L' Europe, un saut dans l'inconnu: Les fondateurs de l'Union Européenne (1948-1957) [Europe, a leap into the unknown: The female founders of the European Union (1948-1957)]*. Editions L'Harmattan.

Mazower, M. (2008). *Hitler's empire: Nazi rule in occupied Europe*. Allen Lane.

Moerel, L. (2018). Blockchain & data protection and why they are not on a collision course. *European Review of Private Law*, *26*(6), 825–851. https://doi.org/10.54648/ERPL2018057

Murala, D. K., & Panda, S. K. (2023). The role of immersive reality (AR/VR/MR/XR) in metaverse. In A. Chandrashekhar, S. H. Saheb, S. K. Panda, S. Balamurugan, & S. Peng (Eds), *Metaverse and immersive technologies* (1st edn, pp. 159–189). Wiley. https://doi.org/10.1002/9781394177165.ch6

Norwood v. United Kingdom, App no. 23131/03 (ECtHR 3 November 2004).

Ó Fathaigh, R., Buijs, D., & Van Hoboken, J. (2025). The regulation of disinformation under the Digital Services Act. *Media and Communication*, *13*, 9615. https://doi.org/10.17645/mac.9615

Palladino, N., Redeker, D., & Celeste, E. (2025). Civil society's role in constitutionalising global content governance. *Internet Policy Review*, *14*(1). https://doi.org/10.14763/2025.1.1830

Papadopoulou, A., Mystakidis, S., & Tsinakos, A. (2024). Immersive storytelling in social virtual reality for human-centered learning about sensitive historical events. *Information*, *15*(5), 244. https://doi.org/10.3390/info15050244

Pellegrini, C. (2024). Applicable law in the metaverse: A European international private law perspective. In L. A. DiMatteo & M. Cannarsa (Eds), *Research handbook on the metaverse and law* (pp. 375–397). Edward Elgar Publishing. https://doi.org/10.4337/9781035324866.00033

PETA Deutschland v. Germany, App no. 43481/09 (ECtHR 8 November 2012).

Pollicino, O., & Bassini, M. (2014). Free speech, defamation and the limits to freedom of expression in the EU: A comparative analysis. In A. Savin & J. Trzaskowski (Eds), *Research handbook on EU internet law* (pp. 508–542). Edward Elgar Publishing. https://doi.org/10.4337/9781782544173.00032

Puig, A., Rodríguez, I., Arcos, J. L., Rodríguez-Aguilar, J. A., Cebrián, S., Bogdanovych, A., Morera, N., Palomo, A., & Piqué, R. (2020). Lessons learned from supplementing archaeological museum exhibitions with virtual reality. *Virtual Reality*, *24*(2), 343–358. https://doi.org/10.1007/s10055-019-00391-z

Quintais, J. P., Appelman, N., & Fathaigh, R. Ó. (2023). Using terms and conditions to apply fundamental rights to content moderation. *German Law Journal*, *24*(5), 881–911. https://doi.org/10.1017/glj.2023.53

Ricoeur, P. (1984). *Time and narrative*. Chicago University Press.

Rosati, E. (2023). The localization of IP infringements in the online environment: From Web 2.0 to Web 3.0 and the metaverse. *Journal Of Intellectual Property Law and Practice*, *18*(10), 720–742. https://doi.org/10.1093/jiplp/jpad061

Schaff, A. (1988). *Historia y verdad [History and truth]*. Crítica.

Shahat, E., Hyun, C. T., & Yeom, C. (2021). City digital twin potentials: A review and research agenda. *Sustainability*, *13*(6), 3386. https://doi.org/10.3390/su13063386

Strawson, G. (2004). Against narrativity. *Ratio*, *17*(4), 428–452. https://doi.org/10.1111/j.1467-9329.2004.00264.x

Sürek v. Turkey (No. 3), App. 24735/94 (ECtHR 8 July 1999).

Trouillot, M.-R. (2017). *Silenciando el pasado. El poder y la producción de la historia [Silencing the past: Power and the production of history]*. Comares Historia.

Tuchman, B. W. (2009). *Practicing history: Essays*. Ballantine Books.

UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000381137

UNESCO. (2022). *History under attack: Holocaust denial and distortion on social media*. UNESCO. https://doi.org/10.54675/MLSL4494

Vaienti, B., Petitpierre, R., Lenardo, I., & Kaplan, F. (2023). Machine-learning-enhanced procedural modeling for 4D historical cities reconstruction. *Remote Sensing*, *15*(13), 3352. https://doi.org/10.3390/rs15133352

van de Kerkhof, J. (2025). Article 22 Digital Services Act: Building trust with trusted flaggers. *Internet Policy Review*, *14*(1). https://doi.org/10.14763/2025.1.1828

Vejdeland and Others v Sweden, App. 1813/07 (ECtHR 9 February 2012).

Villena-Taranilla, R., & Diago, P. D. (2025). Challenges and implications of virtual reality in history education: A systematic review. *Applied Sciences*, *15*(10), 5589. https://doi.org/10.3390/app15105589

Von Humboldt, W. (1967). On the historian's task. *History and Theory*, *6*(1), 57–71. https://doi.org/10.2307/2504484

Von Ranke, L. (1885). *History of the Latin and Teutonic nations, 1494–1514*. Sons.

Weiss-Wendt, A. (Ed.). (2025). *A people destroyed: New research on the Roma genocide*. University of Nebraska Press.

White, H. (1973). *Metahistory: The historical imagination in nineteenth-century Europe*. Johns Hopkins University Press.

Zhang, J., Zhu, T., & Chang, X. (2026). Educational games of museums: A literature review. *Games and Culture*, *21*(3), 553–587. https://doi.org/10.1177/15554120241270058

Zoller, E. (2009). Foreword: Freedom of expression: 'Precious right' in Europe, 'sacred right' in the United States? *Indiana Law Journal*, *84*(3), 803–808.

Published by

Alexander von Humboldt Institute for Internet and Society

CAIS Research for the Digital Age

in cooperation with

CREATe

cnrs centre internet et societe

R&I IN3 Internet interdisciplinary Institute Universitat Oberta de Catalunya

University of Tartu Johan Skytte Institute of Political Studies