From Sports Collectibles to the Digital Humanities: the Evolution of Technology and the Transformation of Consciousness

By Luca Baraldi

For several decades now, we have been living through rapidly accelerating technological change, at a moment in history in which digitization is remaking the relationship between knowledge and humanity.

Until recently, the act of passing down our history from generation to generation was entrusted to the voluntary or involuntary production of material witnesses. But in today's growing digital ecosystem, historical memory has turned into data, computer architectures, and algorithmic interpretations. It is important not to approach this in purely technological terms, but instead as a real epistemological revolution. This not only changes the way we do things; it is also changing the ways we perceive them, know them, interpret them, and rework them. History, culture, and knowledge are all part of an evolving information ecosystem, which today, more than ever, is based on the possibility of direct interaction, immediate accessibility, and dynamic modularity. All of this requires new skills and new methodologies, born from an encounter between humanistic knowledge and technology. Starting today, Gruppo Panini Cultura is a major player in this revolution. The Group was founded as the next step in a corporate history which has always combined technological evolution with the desire to disseminate knowledge. The companies that form the Group share the will to rewrite the ways of preserving and enhancing our cultural heritage by pursuing a business model that merges tradition and innovation.

DIGITAL HUMANITIES: THE NEED FOR AN EPISTEMOLOGICAL ENCOUNTER

Digital humanities represent a growing field of research and experimentation, where innovative approaches to the study and preservation of culture unite the humanities with digital technologies and bring a practical

perspective to theoretical ideas. Yet despite their widespread visibility, they run the risk of being misunderstood and oversimplified when public discourse fails to recognize the real difficulties and the challenges to our beliefs about art. On the one hand, Digital humanities celebrate the power of technology in cataloging, making accessible, and interpreting cultural data. On the other hand, it is easy to forget that simply using new technological tools is not enough, by itself, to really transform the process of acquiring knowledge. As highlighted by Johanna Drucker, one of the leading voices in the field of digital humanities, data are never neutral (Drucker 2011), nor can a representation of phenomena or cultural objects be considered scientifically reliable as if it were really observer-independent. Every technical or methodological choice we make in the digitization process - from the selection of material to be digitized, to how data is to be accessed and used - reflects a set of epistemological and value-based decisions. Cultural data, therefore, cannot be simply considered as objects to be stored and preserved, but represent a continuous engagement between the past and the present, between historical memory and contemporary needs. It may seem obvious that digital technologies introduce a condition of despatialization, that is, the possibility of freeing the informational value of an object from its physical context. This leads to real and potentially immediate methodological challenges involving new strategies for the conservation, exploita-


tion, and use of cultural heritage.

One of the most critical aspects of the digital humanities is therefore the too frequent reference to the mere application of technological tools to the humanities, without thinking of it as a real epistemological encounter (Masson 2017). This means that different forms of knowledge, humanistic and technological, run the risk of relating to each other in a passive, purely functional way, without the activation of processes of real exchange, which would have the purpose to create new methodologies and new paradigms of understanding. Today there is a clear need to take steps to construct a serious dialogue between epistemologies, between ways of knowing and producing knowledge, which is not limited to not limited to simply coexisting perspectives, but that generates a creative and innovative synthesis.

The risk of not recognizing this
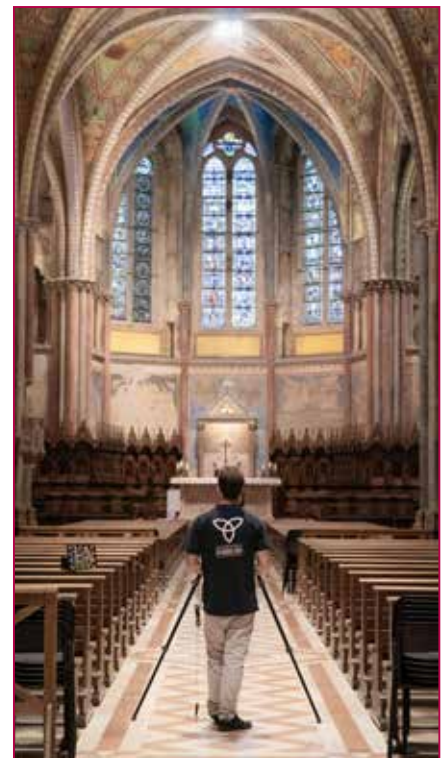
challenge is clear. The use of technology, as well as unquestioned enthusiasm for innovation at any cost without an adequate critical perspective, runs the risk of flattening cultural and historical complexity, impoverishing its wealth, and hiding the most relevant information. The digital humanities theorist David M. Berry has neatly described this phenomenon as computational turn, seeking to highlight its potential and risks: a shift towards a world view dominated by the quantification and standardization of processes of knowledge (Berry 2011). However, as Berry points out, the value of the digital humanities comes from examining how technology is used, studying its true value, and taking advantage of new perspectives and opportunities.

To fully realize the potential of the digital humanities, we need methodologies that go beyond the mere digital reproduction of cultural materials, seeking to understand their meaning and determine their purpose. An approach is needed that integrates the accuracy and efficiency of digital data with the humanities' ability to interpret and to explain the context of works of art. This is the vision of Gruppo Panini Cultura, which works daily to offer the most advanced technologies, working to create and enable a synthesis between humanistic knowledge and technological innovation.

THE GEOPOLITICS OF KNOWLEDGE: PRESERVING HISTORY AS A POLITICAL RESPONSIBILITY

In the age of digital geopolitics, it is important to understand that the conservation of the cultural heritage is not only critical for the preservation of historical memory, but it is also an important political issue, and the digital humanities must inevitably face that fact (Grincheva 2024).

History is not a neutral concept. In its substance, in the tangible product of its assertions and its symbolic interpretations, it is a multi-faceted battle for identity, power and influence. If it is true, as Michel Foucault wrote, that history is the result of a relationship of forces (Foucault 1969), in today's world of platforms and the attention economy, strength is also expressed through the governance of digital platforms. To preserve memory and to control its digitization today means controlling the collective narrative of society as well as the elements of facilitation of, or resistance to, the ways of consuming and enjoying culture.

In this context, the digitization of cultural heritage is at the center of a broader reflection on the geopolitics of knowledge (Fiormonte 2017). It is not only about preserving documents, works of art or historical objects, but about establishing who has the

right to define the past and have access to it, through the creation of tools for information processing and public use. When the power to preserve and transmit cultural memory is concentrated in a few hands, we run the risk of privatizing memory and knowledge (Mhalla 2024). That is a risk we run today, through the progressive centralization of digital platforms outside of our own cultural and social-political context.

The act of preserving history thus becomes a political responsibility. How can we ensure that a digitized cultural heritage remains accessible to all? How can we ensure that digital assets do not become tools of control, manipulation, or exclusion? Gruppo Panini Cultura is at the forefront of these challenges. By participating in digitization projects linked to the National Recovery and Resilience Plan (PNRR), the Group is contributing to the conservation of some of Italy's most valuable cultural resources, such as the State Archives in Rome and Florence and the Biblioteca Nazionale Braidense in Milan. However, its role is not limited to a purely technical task, nor do they wish it to be. It is a mission with profound political and social implications.

THE CONSERVATION OF MEMORY AND THE DATA ECONOMY: THE FUTURE OF DIGITAL CULTURE

The preservation of memory in the age of digitization is closely linked to the dynamics of the data economy, where data — its detection, collection, organization and interpretation — are its founding and fundamental character. In this new economic ecosystem, based on the capitalization of information potential, digitized cultural goods are no longer mere objects of study or conservation, but become real economic assets, acting in a global system of exchange, storage, and potential monetization (Zhang 2024). Obviously, this evolving situation offers new opportunities but raises a number of strategic, ethical, and technological questions which we must not ignore.

One of the most important problems that we have been facing since the introduction of digitization technologies (not only for the cultural heritage) concerns the durability of digital data. Unlike physical objects, whose durability is related to the physiological longevity of materials, digital data is subject to rapid technological obsolescence. Digital formats, management software, hardware interfaces and technological infrastructures are changing rapidly, making it strategically necessary to define a policy or institutional strategy capable of adapting to changing technologies, to ensure the survival of historical memory and its verifiability.

A second problem concerns data security, both in terms of data integrity and of ensuring the correct conditions for access and use. The digitized cultural heritage, which certainly represents an invaluable treasure from a historical-cultural point of view, is acquiring an increasingly significant role in the context of a resurgent soft power, with growing geopolitical and economic implications (Andreula 2022). This makes it a potential target for cyberattacks and misappropriation or manipulation by state or private actors (Loiseau 2020). Although we are more likely to think of cybersecurity problems in other contexts, security and data integrity are major issues here as well, both at a strategic level and at the infrastructure level.

Finally, there is the question of monetization. The pervasive presence of generative artificial intelligence has raised the issue of the informational potential of digitized assets as economic assets, perhaps for the first time in such a disruptive manner. Beyond the purely legal issues,
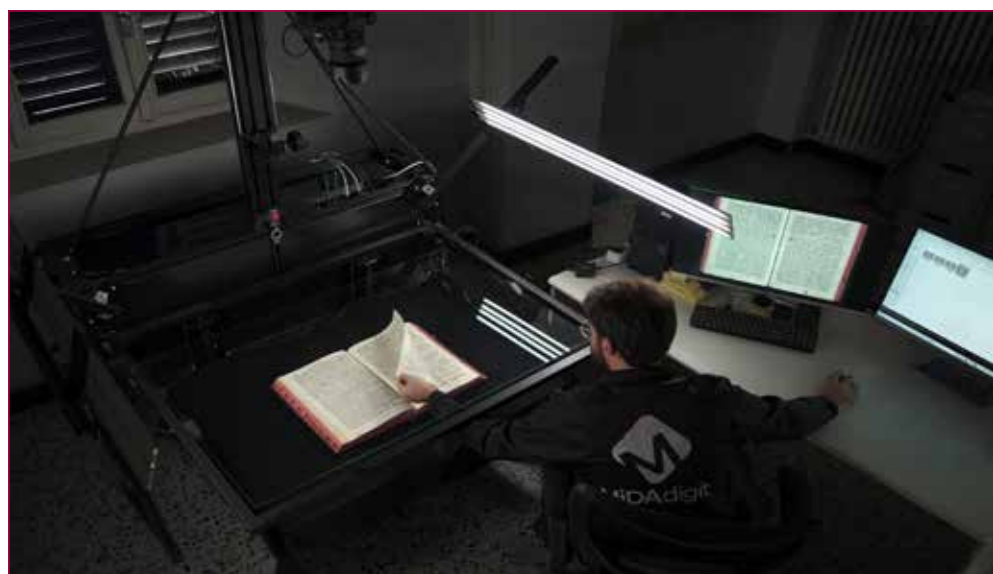
which suggest a necessary evolution of the industry's doctrine (Thongmeensuk 2024), for the first time, the digitized heritage can be exploited as complex information capital, where metadata can legitimately acquire economic value (Hansson 2023). If digitized cultural heritage becomes an integral part of the data economy, how can we be sure that the economic benefits deriving from its use are distributed fairly? Who controls access to and use of cultural data? Is it possible to prevent digital culture from becoming an object of commercial speculation, and from losing its educational and public value? Many questions will require urgent answers, to protect strategies and methodologies that promote the advancement of the whole concept of heritage and the way in which its value evolves and constantly changes, in the midst of all this accelerated technological implementation.

Gruppo Panini Cultura has decided to gather specialist expertise into a single vision, in order to deal with the strategic, design and operational complexity of advanced digitization and digital humanities projects, and to ensure a constant state of methodological and technological evolution.

Franco Cosimo Panini Editore has a long tradition in art publishing and the faithful reproduction of high-quality facsimiles, showing how fine craftsmanship and attention to detail can be incorporated into museum and cultural management. This legacy enables the group to face the challenges inherent in the preservation of the quality and integrity of the cultural heritage and to provide solutions that maintain the aesthetic and historical value of digitized objects, ensuring all forms of their future enjoyment and use.

Haltadefinizione is at the forefront of advanced digitization, using technologies such as ultra-high definition and 3D formats to ensure highly detailed reproduction of works of art. This not only allows the masterpieces of the past to be preserved in a safe and faithful way, but also makes them accessible and usable in new and interactive ways. This novel approach addresses the issue of accessibility to cultural heritage, allowing anyone to view what would otherwise be limited to a physical and local experience, so that study and research can expand beyond physical barriers.

Hyperborea makes a fundamental contribution to the management and exploitation of cultural data. Its highly specialized software organizes complex archival assets and makes them available for use, responding to increasing demand for modularity and scalability of digital solutions. Designing structured digital libraries means not only archiving but creating a network of knowledge that can be constantly updated, safely consulted and that is open to multi-level use, promoting the sustainable monetization of content without compromising its public value.

Mida Digit specializes in large digitization projects and is capable of dealing with the vast complexity and variety of cultural materials. From historical documents to three-dimensional artefacts, the company ensures that each object is treated with the most advanced and appropriate technologies, to ensure its physical integrity. This is particularly crucial in a landscape where the risk of technological obsolescence is high, and digitization techniques must con-

stantly adapt to new quality and preservation standards.

Finally, Memooria represents the innovative drive of the group, with a research and development-oriented approach that focuses on building hardware and software solutions designed to ensure the security and long-term usability of digitized cultural heritage. Because of its drive for innovation, the group can successfully address the challenges posed by managing large volumes of cultural data, preserving not only public access to these contents but also their integrity and protection against cyber threats.

Together, these companies offer an integrated response to the challenges of the digital humanities, providing specialist expertise ranging from ultra-high resolution digital acquisition to complex archive management and the public use and active enjoyment of the cultural heritage. Gruppo Panini Cultura is a synthesis of technical and humanistic knowledge, able to deal with the problems related to the preservation of memory in the digital age in a strategic and innovative way.

TOWARDS AN INNOVATIVE CULTURAL ECOSYSTEM: QUESTIONS STILL OPEN

How can we ensure that the digitization of the cultural heritage is truly inclusive and accessible to all, without creating new forms of exclusion or inequality? What are the ethical limits to monetizing digital culture, and how can we balance the need for economic sustainability with preserving the public and democratic value of the cultural heritage? How can we develop digital technologies and infrastructures that are able to guarantee the durability and security of cultural data, without relying solely on market logic or political pressures? The future of the digital humanities seems to be more than ever marked by a dense set of questions that require answers. The evolution of technology, the introduction of digital systems with increasingly autonomous operational capabilities, the rapid transformation of the geopolitical scene and the increasingly pervasive impact of the platform economy are just some of the variables that contribute to making the current scenario difficult to predict. What does remain constantly clear is the cultural, social, and political responsibility that comes from the conservation of history and cultural heritage in a correct way, with an educational aim that reaches out to all, is inclusive and empowering, and remains clearly so. If we fail to answer these many open questions correctly and consistently, not only will we risk compromising the preservation of our past, but we may also impede our ability to carry our culture forward into the future, to ensure its vitality, autonomy, and legitimacy (Chaves 2023). Never before this moment has technology made it so necessary for us to foster a dialogue between disciplines and perspectives, to ensure that knowledge is not misrepresented or manipulated, to protect individual and social freedom and to avoid losing the distinction between what is true and what pretends to be true, about the past.

REFERENCES

Drucker, J. (2011). Humanities approaches to graphical display. Digital Humanities Quarterly, 5(1), 1-21.

Masson, E. (2017). Humanistic data research: An encounter between epistemic traditions.

Berry, D. M. (2011). The computational turn: Thinking about the digital humanities. Culture machine, 12.

Grincheva, N., & Stainforth, E. (2024). Geopolitics of Digital Heritage. Elements in Critical Heritage Studies.

Foucault, M. (1980). L'archeologia del sapere (1969), trad. it. di G. Bogliolo, Milano, Rizzoli (BUR).

Fiormonte, D. (2017). Digital humanities and the geopolitics of knowledge. Digital Studies/Le Champ Numérique, 7(1).

Mhalla, A. (2024). Technopolitique: comment la technologie fait de nous des soldats. Seuil.

Zhang, T., Jiang, Y., Liu, M., Jiang, Y., Yu, B., & Chen, Y. (2024). The digital economy brings new opportunities for arts and culture. Cambridge Explorations in Arts and Sciences, 2(1).

In reference to the project Ephemerality and Loss in Digital Humanities Projects, diretto da Wymer, al Duke: https://humanitiesunbounded.duke.edu/ ephemerality-and-loss-digital-humanities-projects

Andreula, N., & Petruzzelli, S. (2022). Meta-soft power: Flipping the scales between art & culture. RAISINA FILES, 144.

Loiseau, H., Ventre, D., & Aden, H. (Eds.). (2020). Cybersecurity in Humanities and Social Sciences: A Research Methods Approach. John Wiley & Sons.

Thongmeensuk, S. (2024). Rethinking copyright exceptions in the era of generative AI: Balancing innovation and intellectual property protection. The Journal of World Intellectual Property, 27(2), 278-295.

Hansson, K. (2023). Metadata as imaginary demands: Exploring metadata markets in digital heritage with speculative design. Journal of the Association for Information Science and Technology.

Chaves, D. A. D. L., & Alvarez, E. B. (2023). Scientific divulgation before the post-truth and the crisis of credibility of science in the context of Digital Humanities. Transinformação, 35, e237317.

ABSTRACT

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