

How bits and bytes widen cultural heritage boundaries

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Abstract

Cultural heritage, tangible and intangible, natural or cultural, movable or immovable, is a valuable inherit from the past, and a basic need for contemporary society. Lined up with the 2005 Faro Convention and the United Nations Organization 2030 Agenda, governments and institutions that work in the cultural heritage sector, supported by international and national public policies and programs, have engaged ways for cultural access and heritage preservation.

Memory institutions (like Libraries, Archives and Museums) are active intervenient in the cultural heritage sector and have benefited from the digital environment by engaging massive collections digitization both for access and preservation of cultural heritage.

The aim of this paper is to underline how cultural heritage institutions are converging and collaborating in the World Wide Web, thus the digital world, where bits and bytes are all equal, have widen cultural heritage boundaries.

Keywords: *Memory institutions, Digital heritage, Collaborative heritage*

1. Introduction

[UNESCO](#) documents states that heritage is our legacy from the past, what we live with today, and what we pass on to future generations. Its value makes it like something that should be passed from generation to generation. In fact, talking about heritage is talking about shared moral responsibility about what heritage legacy we leave to the future generations, and about «responsible cooperation» of contemporary society, combining public power, economic world and volunteer solidarity (Martins, 2020: 8).

The [European Cultural Convention](#) (1954) was a strategic document focusing on cultural heritage, stipulating that “Each Contracting Party shall take appropriate measures to safeguard and to encourage the development of its national contribution to the common cultural heritage of Europe.” (Article 1).

In 2003, the [Charter on the Preservation of Digital Heritage](#) states that the digital heritage is also a common heritage. UNESCO recognizes that “resources of information and creative expression are increasingly produced, distributed, accessed and maintained in digital form, creating a new legacy – the digital heritage” and he principles established in the Charter have concerns with access, preservation, need for action, digital continuity, protection and preservation of born digital materials.

In 2005, the [Convention on the Value of Cultural Heritage for Society](#) (or Faro Convention) was adopted by the Committee of Ministers of the Council of Europe and come into force in June 1st, 2011, with all the parties agreeing to promote an understanding of the common heritage of Europe. It's aims are to: a) recognise that rights relating to cultural heritage are inherent in the right to participate in cultural life, as defined in the Universal Declaration of Human Rights; b) recognise individual and collective responsibility towards cultural heritage; c) emphasise that the conservation of cultural

heritage and its sustainable use have human development and quality of life as their goal; d) take the necessary steps to apply the provisions of this Convention concerning: the role of cultural heritage in the construction of a peaceful and democratic society, and in the processes of sustainable development and the promotion of cultural diversity; and greater synergy of competencies among all the public, institutional and private actors concerned.

To achieve these goals, the Faro convention establishes, summarily, the Rights and responsibilities relating to cultural heritage; Cultural heritage law and policies; Cultural heritage and dialogue; Environment, heritage and quality of life; Sustainable use of the cultural heritage; Cultural heritage and economic activity; The organisation of public responsibilities for cultural heritage; Access to cultural heritage and democratic participation; Cultural heritage and knowledge; and Cultural heritage and the information society.

Like (Martins 2020) stresses, it is important to remember the contribution of cultural heritage to society and human development, in order to encourage intercultural dialogue, mutual respect and peace, and the improvement of quality of life and the adoption of criteria for the sustainable use of cultural resources in the world.

The importance of global heritage can also be seen in [Heritage for Peace](#) project, of a NGO based in Girona, Spain founded in February 2013, whose mission is to support heritage workers as they work to protect their collections, monuments and archaeological sites during armed conflict. It is an international group of heritage workers who believe that cultural heritage is a common ground for dialogue and a tool to build peace. Their mission is to support heritage workers, indifferent of citizenship or religion, as they work towards the protection of cultural heritage for future generations.

The 2030 Agenda, drafted and approved by the United Nations summit in September 2015, is a key document for all countries (United Nations 2015) and presents the Sustainable Development Goals (SDGs) to be achieved during this decade (UNRIC 2016). The 17 SDGs and 139 goals have a universal ambition and concern the economic, social, cultural, and environmental areas. The cultural plan is generally cited as one of the pillars of sustainability, having the economic, social and environmental plan as contributors in interrelation with culture.

The main goal of this paper is to underline that the digital environment brought new opportunities to memory institutions (Libraries, Archives and Museums), to share their collections and documents and that cultural heritage is converging in the digital world.

2. Memory Institutions: common heritage, common goals

Cultural, heritage and/or memory institutions - like libraries, archives, museums, historical societies, zoological and botanical gardens, aquaria and arboreta, parks, monuments and sites – provide “explicit links between the past and future” and allow society “to travel in so many private dimensions of time and space at once” (Carr 2000, 123, 128), even more real in the digital world.

For the purposes of this paper, one will particularly focus on libraries, archives and museums as “memory institutions” (Dupont 2007; Gibson, Morris, and Cleeve 2007; Hjørland 2000; Kirchhoff, Schweibenz, and Sieglerschmidt 2000; Michalko 2007), although the designations of “cultural institutions” (Carr 2000; Trant 2009; Wythe 2007), “cultural heritage institutions” (Dupont 2007), “memory institutions of societies”, “collecting institutions” (Carr 2000; Hjerpe 1994), or “cultural repositories” (Bearman 1987) are also used by several authors of this sector.

Libraries, Archives, and Museums (LAM), in addition to the primary functions of acquisition, safeguarding, preservation, organization and description, also provide access to “artifacts and evidences of the world’s social, intellectual, artistic, even spiritual achievements.” (Dupont 2007, 13).

“But they do more than collect they are stewards of our culture and history, of the world and our place in it; they help us understand what otherwise would remain a mystery. They capture for us things we could never know, allow us to experience what we otherwise can only dream” (Bierbaum 2000, 5).

LAM collections and information are the memory of the world. Making them accessible is perhaps its most important function, which is why information retrieval is so relevant to the organization itself and to society in general. The contents and information of cultural records and memory heritage collected, safeguarded and made accessible by memory institutions “are what permit us to reinvent, to innovate, to grow, and to progress at all the other layers of civilization.” (Michalko 2007, 76)

“The web provides a seamless environment where the user can navigate through resources regardless of their provenance: search engines, public and governmental institutions, commercial websites, social networks, etc. There is a strong contrast between this reality of a seamless web, and the cultural heritage approach of data dissemination. Metadata modelling based on domain-model requirements has led to incompatible standards that make it really difficult to share data between libraries, museums and archives. Cultural heritage institutions maintain catalogues that exist like silos, isolated from one another, and isolated from the wider ecosystem of the web.” (Bermes 2011, 1).

Hence, memory institutions can no longer be “regarded as precious reliquaries or display cases” (which they often do) but “they should be seen as formative and interactive, creating whatever is to happen next in the cognitive life of the user.” (Carr 2000, 126).

In addition, in the digital environment, and from the user’s point of view, “it is no longer relevant whether the original materials are in a library or a museum or an archive” (Kirchhoff, Schweibenz, and Sieglerschmidt 2000, 252), consequently “researchers often need materials from all three types of institutions for any given information-seeking situation and that they want these resources in digital form.” (Tibbo and Lee 2010, 54). Besides, if “Library, museum, and archival professionals care about the distinctions between different kinds of collections and documents” most users don’t (Doucet 2007, 65), because, without physical barriers, anything can be access by anyone, simultaneously and all over the globe, on any device (Justino 2013, 33).

Libraries, archives and museums are siblings since their ancient origin, they share common goals but also, since Antiquity and throughout the Middle Ages, they inhabited the same spaces. Their history is intermingled and before the eighteenth century, in the majority of cases, “Laws, official letters, religious texts, literary works, official and private documents belong without distinction to a

totality that results entirely from an entity (with its structure) committed to the daily pursuit of its objectives" (Silva 2006, 79).

Likewise, "The cabinets of curiosities assembled by gentleman scholars in the 17th and 18th century did not differentiate materials into what we consider today museum objects, library books and archival papers." (Waibel and Erway 2009, 3).

It was only after the French revolution (1789) with the introduction of the concepts of nationalization and public access, that the separation of documents by different custodian institutions was defined. This modern creation was based on "enlightenment, revolutionary, liberal and, later, democratic conception, of collective sharing of the Memory and Culture of a People and Humanity" (Silva 2006, 79). To respond to modern society demands, workplaces and disciplinary areas were separated, and different professional categories were based on different tradition and practices. In a very straightforward interpretation, Le Coadic states that librarianship or "library science", archivist or "archival science", museology or "museum science" and media or "communication science" aren't more than mere "empiric practices of organization" (Le Coadic 1997, 517).

Consequently, libraries, archives, and museums have evolved on separate paths, based more on their differences than their similarities:

"Published recorded information objects are the focus for librarianship, their unpublished equivalents the focus for archiving, records management and document management; information management might claim to cover both, and to be an umbrella concept, non-living and living carrier of embodied information are mainly the province of museums and of zoos and botanical gardens, respectively." (Bawden 2007, 320).

But the development of information and communication technologies (ICT) and the invention of the World Wide Web and the Internet, after World War II, brought with it projects of massive digitization of records that memory institutions use to preserve originals and enable their online dissemination to reach new and broader audiences. In fact, dematerialization brought uncertainty regarding the notion of document / information, and the digital environment, where "bits and bytes are all equal" (Timms 2009, 68), broke the traditional boundaries that exist between various cultural institutions. Actually, "what makes information especially significant at present is its digital nature" (Capurro and Højstrand 2003, 343).

3. Cultural heritage convergence

With the beginning of the massive digitization of content in the 90s, and the emergence of digital archives, libraries and museums, the focus of memory institutions started to have a common denominator: access to information on a 24/7 basis.

However, this transition from the document to the information and corresponding online availability replicated, in the early days, the isolated mode of operation. Thus, and as Günter Waibel and Ricky Erway refer "When LAM descriptions and digitized content are available on the web, they tend to be hand-crafted, isolated, and largely unvisited" (Waibel and Erway 2009, 2).

In the digital age, also marked by a radical change in informational behaviour, the choice of making content available according to the types of information services and, more often than not, on your own website has proved to be a wrong option. And in fact, when the Library of Congress made their photographs available on the Flickr social network, through the Flickr Commons project, some newspapers and users welcomed that fact, completely ignoring that the Library already made them available on its own website (Springer et al. 2008).

The vision of an integrated cultural web (Trant 2009), to face content aggregators, thus culminated in a convergence of interests in memory institutions, leading to the creation of single access portals, as in the case of the city of Madrid or digital projects across institutions or regions, which, as Iljon points out, implies harmonized approaches and joint strategies (Iljon 2018, 24).

The broad vision of unified access to LAM materials allows contextualizing collaboration between memory institutions. For this, the understanding of collaboration as a continuum, from local to global (Waibel and Erway 2009).

Regarding the professional sector it is recognized that

“The practical result of the separation between professionals who, after all, have a common objective (organizing, describing, indexing and making available content recorded in support, be it paper or a hard disk) can be considered strong from the point of view corporate, disastrous in terms of adapting to the new times” (Pinto and Silva 2005, 6).

Dematerialization has shown that “The conventions that led to the establishment of professional and administrative boundaries are based on outmoded business models” (Doucet 2007, 65). In fact, one can no longer understand institutional barriers amongst memory institutions, especially when collections and information cross over and overlap frequently (like in Universities, house-museums, laboratories, or schools, for example).

Since the end of the 20th century, the greater evidence of “convergence” is the physical merging between institutions and the change of names, both for strategic political funding and visibility. Generally, one can witness an evolution of formal organizational structures for funding and managing cultural heritage resources. Therefore, the focus on information (content), that “eliminates physical distinctions between types of records” seemingly disregards “the need for organizational distinctions in the management of the systems within which these records are handled.” (Timms 2009, 68).

In 1996, the Institute of Museum and Library Services in the United States, the Office of Library Programs in the Department of Education was merged with the Institute of Museum Services, which “had a profound effect on the funding of these programs and the nature of the projects it supports.” (Martin 2007: 82-83).

In the year 2000, in the United Kingdom, the Museum, Library and Archives Council replaced the Museums and Galleries Commission and the Library and Information Commission. This reorganization of existing bureaucracies represented a strategic body that provides funding and overall direction for all three sectors (Tibbo and Lee 2010, 53; Martin 2007, 82).

In 2004, the National Library of Canada (founded in 1953) and the Canada's National Archives (founded in 1872) were brought together as Library and Archives Canada (LAC), "one hybrid institution" (Tibbo and Lee 2010, 53).

In the preamble of [Library and Archives Canada Act](#) it's stated that Canada should be served "by an institution that is a source of enduring knowledge accessible to all, contributing to the cultural, social and economic advancement of Canada as a free and democratic society."

"Its foundational charter was a document titled "Directions for Change." Visionary and strategic, both the act and the charter set LAC on a course to become a new kind of knowledge institution: a truly national institution, a prime learning destination, and a leader in governmental information management. But while governmental information management is an important function of LAC, accounting for about a third of its resources and efforts, I will focus here on the rationale for creating LAC and the lessons that we have learned from the merger." (Doucet 2007, 61-62).

Also, in Germany memory institutions have come together in a joint digital portal of libraries archives, and museums - BAM (Tibbo and Lee 2010, 53). In Norway and in Finland one can witness analogous changes (Martin 2007: 83).

Other examples of convergence are the closer relationships and cooperation programs (e.g., the Sessions of the ALA/SAA/AAM Joint Committee on Libraries and Archives and Museums (CALM) since 2003) or working groups (e. g., the working group Libraries, Archives, Museums, Monuments & Sites (LAMMS), constituted by IFLA, ICA, ICOM, ICOMOS and CCAAA (Audio-visual Archives).

In Portugal, since 1973 the [Associação Portuguesa de Bibliotecários Arquivistas e Documentalistas](#) (BAD) was created to join the efforts of Portuguese documentation and information professionals in promoting, defending and valorize the sector in Portuguese society. And since 2012 its working group "Museum's Information Systems" has seek to have an integrated vision of Museums' collections, with greater focus unitary whole of its informational interrelations.

In the academic point of view, the creation of Information Science graduations, masters and PhD's is intimately related to the paradigm shift: from a custodial, historicist, technician, empirical-patrimonialism and static academic formation, at present the aim is to educate and form new professionals in to the post-custodial, scientific, systemic and dynamic paradigm.

The [PhD in Information and Communication in Digital Platforms](#) (a conjoint program of the Universities of Aveiro and Porto which started in the academic year 2008/2009) and the [Master Degree in Information Management and Curation](#) (Resulting from a partnership between NOVA Information Management School and Faculty of Human and Social Sciences, Universidade Nova de Lisboa) show that digital culture is not a trend.

4. Shared and collaborative cultural heritage on-line

The Article 14 of the Faro Convention addresses "Cultural heritage and the information society":

The Parties undertake to develop the use of digital technology to enhance access to cultural heritage and the benefits which derive from it, by:

- a) *encouraging initiatives which promote the quality of contents and endeavour to secure diversity of languages and cultures in the information society;*
- b) *supporting internationally compatible standards for the study, conservation, enhancement and security of cultural heritage, whilst combating illicit trafficking in cultural property;*
- c) *seeking to resolve obstacles to access to information relating to cultural heritage, particularly for educational purposes, whilst protecting intellectual property rights;*
- d) *recognising that the creation of digital contents related to the heritage should not prejudice the conservation of the existing heritage.*

Memory institutions are making advantage of the seamless environment and the web 2.0 platforms. In the 21st century, one can see ongoing crowdsourcing (Borges and Silva 2019; Dunn and Hedges 2014; Roued-Cunliffe, Henriette and Copeland, Andrea 2017; A. M. S. Silva, Borges, and Marques 2018), citizen science (A. M. D. da Silva et al. 2020), and collaborative (Gibson, Morris, and Cleeve 2007) projects based on the collections and information of cultural heritage all over the world.

At the same time, one can agree with Martin when he states that: “Collaboration is emerging as the strategy of the 21st century. It is aligned with how we are thinking about our communities as “holistic” environments, as social ecosystems in which we are part of an integrated whole” (Martin 2002). Thus, all cultural institutions should have as the main purpose “to have the greatest possible amount of the knowledge they possess accessed by as many people as possible.” (Grønbaek 2014, 141).

As cultural heritage institutions started to look at each other like siblings grown apart, rather than competitors, scientific literature started talking about “convergence” (Bermes 2011; Tibbo and Lee 2010; Trant 2009; Wythe 2007), “blurred boundaries” (Gibson, Morris, and Cleeve 2007), “holistic environments” (Martin 2002), or “shared” (Grønbaek 2014), and of “interoperability” (Bermes 2011; Justino 2013), for example.

In fact, collaboration within cultural heritage institutions is regarded as something of vital importance. Thus, providing appropriate services for Web users, that no longer understand institutional barriers in the cultural heritage domain, requires to seek convergence, and to bridge the gap between libraries, museums, archives and other cultural institutions (Bermes 2011, 1-2).

Memory institutions “are inherently public facing, and many have long traditions of volunteerism and public engagement.” (Dunn and Hedges 2014, 235). Furthermore, in an interconnect, technological, and globalised world, memory institutions: “should seek to ensure that the freely available content is shared, enriched, and processed by users, whether they are citizens, students, scholars, researchers, or commercial ventures.” (Grønbaek 2014: 142).

Taking advantage of the digital possibilities, since the beginning of the 21st century, there’s a growing number of Websites that give access to integrated and heterogeneous collections, originating from different institutions, like, e. g., [Europeana](#), the [Digital Public Library of America](#), the portal [TROVE](#) of the National Library of Australia, the [Hispaña](#) - Acceso en Linea al Patrimonio Cultural, the [Mexicana](#) - Repositório del Patrimonio Cultural de Mexico, [Brasiliiana Iconográfica](#) and the portal [Rede Web de Museus](#), the [Repositório de Informação do Município](#)

[de Ponte de Lima](#) (RIMPL) (Freitas and Sousa 2016; Freitas, Sousa, and Ferros 2015), the [Botany Digital Library](#) or the [Digital Botany Archive](#), both digital repositories of the University of Coimbra (A. M. D. da Silva et al. 2020).

The examples of convergence and collaboration demonstrate that memory institutions are influential players in safeguarding and accessing cultural heritage. By opting for integrated information systems, memory institutions contribute to a better understanding of cultural heritage, because it is holistic.

The future of memory institutions undoubtedly depends on collaboration and convergence, enhanced by ICT and the growing collaborative platforms. And the future is a “return to the past”, where the cultural heritage of libraries, archives and museums was constituted as one, housed in a common space, with the ultimate goal of a holistic and integrated understanding, made possible by ICT. Today, the “common space” is possible through the digital environment. The barriers have broken down, and the similarities stand out far more than the differences.

5. Conclusion

Cultural heritage, tangible and intangible, natural or cultural, movable or immovable, is a valuable inherit from the past, and memory institutions are indispensable partners hence they share concepts, theories, methods and techniques for organizing, representing and accessing information.

With common goals of acquisition, physical and / or intellectual conservation and dissemination, and mediation of information of what constitutes collective social memory and evidence of human actions, libraries, archives and museums are even more interconnected and interdependent in the digital world. And there is no doubt that dematerialization and the digital environment did, in fact, break cultural heritage boundaries.

The change that both the Internet and electronic governance has brought to the way public institutions communicate with citizens is also reflected, of course, in memory institutions that have had to adapt to this the growth of digital life, more visibly than ever due to the current circumstances relating to the COVID-19 pandemic.

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