

Digital Cultural Heritage: Concepts, Projects, and Emerging Constructions of Heritage

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Celebrating some bits and forgetting others, heritage reshapes a past made easy to embrace. And just as heritage practitioners take pride in creating artifice, the public enjoys consuming it. (Lowenthal, 14)

Public conversation is at the core of heritage practices involving artifacts and their digital representations. This paper explores the notion of heritage as it relates to digital cultural materials, focusing on the recent interfaces between the institutional and public conjunction of heritage collections. Eliciting and recording public conversation about heritage today raises new questions about transmission of social memory. Especially the hype surrounding social media can present insights into the emergent discourse about institutional collections. This paper examines a heritage practice by which memory institutions extend their role as repositories to becoming participants in a broader discourse about heritage with the consuming public. This practice is considered by focusing on two periods—the first wave of digital library development, and a most recent trend characterized by engagement of online audiences through social networking platforms.

Digital Cultural Heritage: Relevant Concepts

The participatory nature of heritage has been emphasized in an array of approaches and theories of significance,¹ and social memory (as reviewed in Olick & Robbins 1998). Significance is related to cultural motion and public endorsement; significance processes are the basis for cultural inventions and collectivist traditions. In that sense, heritage is created through acts of collecting and preservation by institutions such as archives, libraries, museums, through processes of social memory by which popular significance becomes based on memory stores and historical materials. Therefore, "significance" is consensual, but also hegemonic because it is shaped by practices and meta-cultures that characterize their transmission, as noted in a critique of these institutional processes (Lloyd

¹ The realization of significance is through cultural motion (Urban 2005, 181). Theories of relevance do not accommodate significance (for overview of relevance see Saracevic 2006). The idea that relevance has to be linked to what is considered public knowledge and what is socially perceived as normatively relevant is not new in information science (see Patrick Wilson's work on situational relevance and cognitive authority, as well as D.J. Foskett's A note on the concept of "relevance" *Information Storage and Retrieval* 8 (1972): 77-78.

2007). The idea of significance engages institutions with social processes, emphasizes localized cultures of meaning and public knowledge. The production of that knowledge is through consumption of heritage, and re-inscription of meanings that are transferred to heritage objects. Therefore, the role of heritage practitioners is to communicate cultural imperatives while allowing for the process of signification to occur, and social significance to be established. Maintaining the cultural flow is central institutional purpose, as exemplified by the mission and collections of national libraries, which provided primary focus for a series of studies that I highlight next. The interesting question here is about the tension between cultural determinism and cultural dynamics from the grassroots.

The Digital Heritage Collections of the First Wave: A Decade in Review

The major burst of digital library development from the mid-1990s resulted in large amounts of digitized material, together with the accompanying constructions of digital cultural heritage—the purposes, politics, and audiences for tradition re-mediated in digital form. In the next section, I will explore ways in which digital collections have become a vehicle for inscription of new meanings to heritage objects, and ways in which digital production has engendered consumption to escape the hegemonic constructions of heritage. That transformative period exposed institutions to critical, self-reflexive perspectives on collections, engagement of new audiences, and the creation of new publics.

Digital Heritage Initiatives in Review

The studies I conducted on the first generation of digital libraries (1998-2002) provide examples of emergent notions of heritage (Dalbello 2004; 2005; 2005a; 2008; 2009). Together, these studies address a formative period that brought about the first generation of digital libraries in terms of institutionalization and development process, and adoption of innovation in organizational contexts ranging from (American and European) research libraries to national libraries. The focus on social transmission of culture, national culture and trans-nationality, the transformation of documentary practices (technology and content) in new media environment. The notions of continuity vs. innovation are central to each of the studies. Constructionist framework led to insights about the phenomenology of emerging forms and organizational processes. All of these studies are addressing organizational change, as well as the public life of heritage.

The next section presents the background and the purpose of that research (Study 1: Dalbello 2004; Study 2: Dalbello 2005 and 2005a; Study 3: Dalbello 2008 and 2009). (For further details of methods, materials, procedures consult the published articles.) The studies combine conceptual and empirical approaches. The examples presented here are drawn from the studies, and the findings selectively presented to put forth relevant propositions about the emerging field and practice of digital cultural heritage.

The background and purpose of each of the studies to be presented next, is followed by an overview of emergent heritage processes presented in each of the studies:

Study 1 (Cultural Production). The *Institutional Shaping of Cultural Memory* paper is a survey of earliest digital collections in North American libraries: of the emerging content and institutional context (378 projects identified using web-registries of ARL (Association of Research Libraries) and Digital Library Federation (DLF); narrative and content analysis; theories of organizational isomorphism). The research objectives were to (1) Characterize institutional environments in which digital library projects are found and identify *transformative* and *inertial* models, and (2) Analyze content of existing projects in terms of: *semantics* (subject focus, story-telling tools) and *pragmatics* (display techniques, document characteristics) led to identifying how digital libraries afford to combine collections in presenting “stories” and cultural narratives.

Study 2 (Constructionism). A two-part study titled, *A Phenomenological Study of an Emergent Digital Library* focused on an emerging area of institutional operation that integrates electronic resources into routine library activities using the digital library development of the National Digital Library Project (NDLP) in the Library of Congress (1995-2000) as a case study. Combined social constructionist framework (Social Construction of Technology) and the organizational isomorphism theories were the theoretical scaffolding for the study. Seeking for commonalities of major innovation events in the library context and milestone socio-technical developments such as the Online Computer Library Center (OCLC) in 1967, with the Library of Congress’ NDLP (1995-2000) contributes an understanding about the “technology” perspective in library history. The method of contrasting a constructionist approach (realist narratives) with an objectivist history (chronology) produced unique knowledge about the initial “digital library boom” from a phenomenological perspective of the development team.

Study 3 (Cultural Variability). In *Cultural Dimensions of Digital Library Development* two-part study, the national characteristics and models of development in five national libraries in Europe and the Library of Congress were studied in a transformative period of the initial burst, from the late 1980s to mid-1990s when the DL initiatives were developed to 2002. A rich description of the period, and the emergent models of DL development, at the tail-end of the initial burst, is given from a perspective that connects organizational and national cultures. These cultures shaped the digital library systems at the innovation stage.² The findings presented were about patterns and chronologies of development, conceptualizations of heritage, and the role of national libraries in construction of ideas of heritage. Libraries studied were: *Biblioteca nacional de Portugal* (further: The National Library of

² Theories of cultural production and institutionalization, organizational isomorphism, and the impact of national culture on organizational strategy formulation informed the design of the study and analysis with an outcome of a rich description and identification of the emerging models of heritage developed in each of the national libraries at that time.

Portugal), *Bibliothèque nationale de France*, *Die Deutsche Bibliothek*, the National Library of Scotland, and the British Library.

While Study 1 (Cultural Production) surveyed digital initiatives through existing web registries, Studies 2 (Constructionism) and 3 (Cultural Variability) are based on interviews with policy makers and developers of digital libraries. Therefore, the first study has a descriptive quantitative component of development trends and digital artifacts, while the latter studies offered qualitative insights based on semi-structured interviews.

Select findings from these studies about emergent dimensions of digital cultural heritage are presented next:

Study 1 (Cultural Production): The *Institutional Shaping of Cultural Memory* identifies dominant and emergent typologies of digital heritage framed in the context of “narrative coherence” (of digital displays with larger historical narratives, as opposed to limited, local and self-referential expressions that operate in limited meaning frameworks of local, restricted and non-transferable knowledge). The study found that dominant forms, defined by the university research libraries as major players in this first wave of development, were inertial—replicating the existing constructions about heritage and audiences for their collections, and the centrality of their own collections in the digitization efforts from 1998. The alternative emergent forms that focused on participatory and novel presentation of materials were primarily found in the public library and museum settings.

Some of the representational strategies in these first digital libraries (often just websites and web displays of gems from the libraries’ collections) were identified as focused on local significance rather than aiming for digital convergence (and narrative coherence in a generalized sense).³ The representational strategies that were identified as limiting narrative coherence, was the episodic and impressionist nature of web displays, their tendency to focus on institutional treasures and less well known and local aspects of institutional histories. Displays of digital surrogates of founding documents or portraits of founding fathers of a university were instances in which context was a key ingredient for construction of a meaningful interpretation of these items. These token heritage items are intelligible to insiders, who can understand them within restricted codes of significance but how does this contribute to a general framework of virtual digital heritage. Moreover, the emerging digital heritage was a very spotty roadmap for the physical collections it represented, rather than tying in the object within an encyclopedic world of knowledge, based on a blueprint for a Digital Propaedia. An overall emphasis on items of local significance, with items of universal relevance embedded in meanings limited and defined through institutional collections and collecting contrasted then

³ The assumptions of this study, considered reasonable at the time, were that projects that lack that universal (larger narrative) coherence were somehow limited.

dominant narrative of global access through global networks to the world's knowledge, a technological dream of a seamless digital heritage network.

The focus on the local is exemplified in numerous cases of these early displays. The history of Austin's Creeks, "A Pictorial History of Duke University's Mascot, Blue Devil," or the history of Hofstra University campus are typical examples of that approach. Such early web exhibits were narratives of popular local significance. (How national perspectives of heritage were performed at this time will be discussed in subsequent sections.) Self-reflexivity, and the celebration of the obscure also had grassroots significance. The term "glocal" (no longer in broad usage) was then coined to indicate such presentation of local context in a global environment. It is notable that the discourse of global and local dominated assumptions about the impact of a technological global network and its role in facilitating convergence of a global heritage. The utopian discourse dominating early stages of digital library development clearly diverged from the practice of heritage building itself, which was practiced on a trajectory of a paradoxical inversion of the ideologies of development that informed funding and constructions about the purpose of digital libraries.

In effect and right from the start, digital cultural heritage was localized in cultural communities of small reach and specialization, without much concern or awareness of a broader audience or scalable meanings; the hidden away, invisible, indistinct and intimate in contrast to public, visible, articulated and official. One of the conclusions of the study was: "At present, digital libraries are creating memory by celebrating local heritage (of their collections)" (Dalbello 2004, 289) and therefore they were primarily about self-expression in a localized sense. The statement may seem trivial now, when social networking sites provided platform for self-presentation and disclosure in just a few past years. The study further pointed to the potential of digital libraries to be sites for knowledge production, tapping into knowledge bases of communities, and the transmission of knowledge to reproduce locality, as noted by Arjun Appadurai who recognized the potential of this dynamic contact of people and technology (1996, 181). The actual developments reflected tensions of the institutional (expert) and particular (enthusiast) visions. The dominant constructions by proponents of digital utopianism saw the digital transformation of print and paper heritage as uttermost point of technocratic achievement accompanied by global connection. This same viewpoint produced ideas about the loss of memory, and print-digital disjuncture at its dystopian end, in the first wave of development. Meanwhile, armies of enthusiasts went about their digital heritage work quietly, invisibly and persistently. In the world of libraries, an outcome of subaltern, non-hegemonic visions were the "living libraries" that emerged at the same time. The New Orleans Public Library, the Bridgeport Public Library are some of the examples of digital heritage movement in public libraries, based on continuing the traditional democratic role of the American public library. Interestingly, these "living libraries" tapping into community memory were not originating from the dominant wave of

development in the universities and special collections but at the fringe represented by public libraries. Public libraries were represented by 17 projects at the time Study 1 was conducted, which was 4.5 percent of the overall sample examined (Dalbello 2004, 275). And yet, this was the most interesting emerging trend in the realm of heritage circulation, which held promise for ongoing developments. As noted earlier, this trend was at the periphery of dominant institutional responses to digitization, and focused on insider and local visions.

In one such instance the dynamic connection of people and technology happened during the organization of a digital exhibit by the Idaho Museum of Natural History, Pocatello, which prompted community involvement and identification of a number of previously unidentified historical photographs of Idaho Indians, taken between 1895 and 1912 by Danish photographer Benedicte Wrensted. She was the topic of an early web exhibit curated by anthropologist Joanna Cohan Scherer.⁴ “Benedicte Wrensted: An Idaho Photographer in Focus” engaged community memory as noted in this description of the project: “One of the goals of this exhibition has been to demonstrate the ways in which photographs, even those a century old, can be placed in historical context. Only 1% of the Wrensted images at the NARA [National Archives and Records Administration, in Washington, D.C] were identified at the onset of the project.⁵ Once they were shown to the descendants at the Fort Hall Indian Reservation, the families of origin were discovered. Individual names were recovered from written records, and today 84% of Wrensted subjects have been identified.” (From description of the project, at: <http://anthropology.si.edu/wrensted/intro.htm>).

An emergent trait of early digital collections was a novel connection to the local (as a dominant trait); nevertheless, the particular engagement with the local communities to establish a heritage participatory model was limited to the fringe of public libraries and the museum exhibit (which involved mediation of a professional (scholar, curator) to enact community processes).⁶ Their partial and fragmented nature overall were not conducive for building scaled narratives of heritage, and producing (some generalized, universal) narrative coherence of the emerging digital cultural heritage. As shown in this example, the interpretive dimension for the local is in the interpretive communities. Making explicit previously implicit knowledge bases is a form of translation of collections and source

⁴ The project website which has since moved from the home page of the Idaho Museum of Natural History to the University of Virginia, to The Smithsonian website (accessed at: <http://anthropology.si.edu/wrensted/intro.htm>).

⁵ About the provenance of the collection, from the project website: “The 148 glass plate negatives had been housed in the NARA since the 1930s, unattributed and unidentified, these evocative images had nevertheless been widely reproduced. We know today that they are the work of Benedicte Wrensted, taken between 1895 and 1912. An additional 148 glass negatives housed since the 1940s in the Idaho Museum of Natural History, Pocatello were also unattributed. A number of these were taken by Benedicte Wrensted as well.” (Retrieved April 19, 2009 from <http://anthropology.si.edu/wrensted/intro.htm>).

⁶ A central role of Joanna Cohan Scherer, who was the scholar-curator tracking the provenance of a historical photo archive in the context of its history in Native American community, is very relevant in this sense.

heritage artifacts from the past into the relevance and their significance in the present. The social memory is at play as heritage artifacts are transformed into digital heritage once they became accessible via the open web. In this example, the digital heritage promotes a regime of access that displaces the protocols of scholarly use of physical collections. (This important impact of digitization is examined by Marianne Martens (2009) in her comparison of “bricks-and-mortar collections” to digital collections in a paper published in this proceedings volume. The “democratization” discourse associated with open access (as noted by Mentor Cana (2009) in his paper published in this proceedings volume). In the cases considered, this process of democratization was inherent in the discovery and self-discovery incorporated in the community and inscribed in community memory. Further, the “access to the historical record of everyday experience and multiple perspectives [was] exemplified by projects such as the Library of Congress’s featuring African Americans’ experience of the Civil War ... ‘Bridgeport Working: Voices from the 20th Century’ documents everyday life, and the history of Philadelphia’s Chinatown features oral history” (Dalbello 2004, 290). At that time public libraries started responding in kind, pushing their local history collections online. The local projects now represent some of the most interesting examples of unintended effects of digital library development in the sense that they came from a periphery into the mainstream. The dominant early projects in which digital surrogates were displayed as collections of fascinating objects and assemblages without unifying narratives that place collections within an authentic context or interpretive framework, or supplying entry-points and protocols for audience engagement that could unify the “digital clutter.” Another finding was that the “academic libraries that were dominating the development of digital collections” were also engaged in discourses about the proper communities of users for the collections, which were rigidly defined within the traditional mission of parent institutions and thus limited to scholarly purposes (Dalbello 2004, 291). The process of hybridization of culture and intra- rather than extra-territorialization (localization rather than delocalization, local rather than global scope and global digital convergence) was at play in the early developments.

Study 2 (Constructionism). The two studies of *A Phenomenological Study of an Emergent Digital Library* analyze a different debate about heritage concerns in the framework of national heritage, by focusing on the National Digital Library Initiative at the Library of Congress (1995-2000) and its public icon, the American Memory collection. The Social Construction of Technology analytical framework used to study the technological frames around heritage collections brought out much ambiguity about the meaning of development work, as exemplified in this quote from one of the interviews with one of the study participants (and member of digital library development team):

What’s new and different that we can bring to light through digital technology? ... and so I think we’re still struggling with that. I mean it’s easy, you set the scanner up and you go *[shuffles paper to demonstrate activity of routine scanning]*, you know item 1 through 50,000. I don’t

need to think about it, I've just scanned it. I've used the digital technology like photocopier. And I throw a little text in there, and I throw a bibliography together and I call it a day. And I'm saying that ... I think that we needed to do more and there needed to be more involvement with finding out what researchers wanted and talking with the reference staff and the specialists about the stories that they thought were worth telling. So I think that's to me an important thing that we can do now that we couldn't do easily then. Because you know it was a production, you know, the train left the station; it was on its way to do 5 million images, you know, don't bug me with stuff that I don't need to think about. (P2)
(Dalbello 2005a, e42)

The cultural debate about the usability of the collections became primary only in the aftermath of the project, and most of the participants in this study (7) referred to the development of the collection in relation to a mechanistic (and external) goal of five million images in five years, which provided unifying principles and a symbol for the developers themselves and how they communicated with politicians, donors, administrators, and the general public.

The study has shown that there were two divergent frames about technology: one in which technology is central and visible and one in which technology is seen as instrumental and one focusing on integration with the broader social context, and within a larger framework of “technological progress”:

So there is a sense in which these electronic approaches, digital approaches, are for me an expression of, you know, a **one or two hundred year long impulse** [*emphasis MD*] to provide access to things and help people find what they need to answer their own questions.
(P1) (Dalbello 2005a, e45)

The distinct orders of meaning around digitization included curatorial perspectives in units most centrally involved in the digitization (The Prints and Photographs Division, Manuscript Division, and Maps Division primarily). The frames that curators (as gatekeepers for scholarly uses of materials and mediating the interests of scholars) brought to development were significant but not necessarily the only driving force for defining the collections and the meanings of digital heritage (constructed in the context of scholarly communication), as noted here as one of the developers saw the response of curatorial staff, the subject experts, to digitization:

They [Manuscripts Division, added MD] knew they would be providing access to their collections. . . . The collection was heavily used by the researchers but they [curators in general, Manuscripts Division?, added MD] wanted to preserve it for the future. So while we don't do preservation scanning here at the library necessarily, . . . they knew that the digital items will be served first and that if the researchers would want to see the collection, they would be allowed access to it. They knew it would be an access point for researchers. So, I think they came into it knowing what they wanted out of it and were excited for the process for this particular one. But I think in terms of the five year, they were kind of at the end of the acceptance of digital things. (P3)

The tension between preservation and unrestricted access for heritage collections was at play here. “Being at the end of acceptance of digital things” for some among the curatorial experts in the Library of Congress was connected to the realization that comes from open access, and through appropriation of heritage. In that realm, expertise cannot be performed in a traditional sense. These concerns couched the vague constructions of digitization as preservation/access activity. These debates were connected to the problem of whether preservation (conservation) or access was the core functionality of digital collections, and this internal debate is well documented in the interviews. Institutionally determined criteria for selection and digital library collection development were sorted by one of the study participants in the following order of importance: (1) significance of collection and use level, (2) preservation and conservation need, (3) donor interest, (4) rights management plausibility, (5) heritage worthiness (American content), (6) technological plausibility, (7) availability of descriptive information to provide metadata, and (8) comprehensiveness of collections to meet the school curriculum for teaching American history (Dalbello 2005a, e62).

Meanwhile, the interest of the public (users at large; non scholars) became one of the surprising effects and was used in argumentation and justification for the online collections integral to an emerging discourse with the public. Most notably there was an increased expectations from new groups of users (K-12, i.e. primary school students and teachers),⁷ who have become the new audiences for the collections in the “Library of Last Resort” when it comes to reference (this implies the practice in which the potential users are obliged to exhaust their local resources, such as the public library, prior to contacting the Library of Congress). The phrase was used repeatedly by the former members of the digital development team members to indicate how that mission has changed, with more reference queries coming to the Library directly, as it became involved with public education (without intermediaries):

Maybe even [in] 1997, I can remember speaking with [gives name], who is head of reference at [division name]. She said, “Oh we cannot answer these reference questions about these online collections; we can’t even see them [the terminals for online access have not been installed in the division]. We don’t even know it’s there.” But when the maps started coming out, we had those little insular divisions that are used to answering questions about their collections, and only their collections, and they are used to answering them, you know, when they’re ready to.
... And all of a sudden, there is an online map collection that tons of people are looking at, and they have questions about it. And so, you know, all these reference questions [went to] ... staff that [were] not just necessarily prepared or excited about this new technology bringing people to their collections. And so, that’s the

⁷ The involvement with primary school students and teachers was not entirely unexpected, but was met by the library through gap analysis conducted in collaboration with the Center for Children and Technology, and the Ameritech Competition in 1998.

one thing I can say units were affected by the process, the old library being, you know in their eyes, . . . bombarded by the work of these other people who aren't even librarians. (P6) (Dalbello 2005a, e56)

The pressure of the public, which became an active participant, was recognized early on, and even seen as an emergent and unintended consequence for which the library was not fully prepared. As socio technical system, the National Digital Library Program and its public face American Memory provided a field of engagement for the American public and a diversity of users (not only scholars and researchers) not yet fully comprehended then. That absorption into the public discourse was surprising for the developers who were at the beginning of that transformative process. The emergent discourse about shift in regimes of institutional property and institutional mission, and professional engagement in encouraging participation, appropriation and interpretation is articulated in this quote:

I think it's a sense of empowerment that you can use these materials without the intervention of the third party, that you get to interpret them yourselves. And for a teacher that you perhaps get to put your own spin on it. And when you pull one picture off the screen and can make it any size you want, I think that there's more of a feeling that you are touching, holding a real photograph than if it's an illustration in your book. So, I think there is the feeling that you are more in control. And, I do think that in the background of all the AM [American Memory, added MD] and the fact that we're using this K-12 audience was also the technology feature that the audience . . . knows how to use the Web. . . . So all of these factors are pulling themselves together, the thrill of technology, whether it's cutting and pasting and doing your own textbook, the feeling like you don't have any intervention, that you are dealing with the materials yourself and just the fact that it's on a computer and it's cool. All of that, I think, makes it different. . . . And that last thing is the copyright challenge, the feeling that it's yours when it's not. No one would think that if I rip this page out of a textbook, I could photograph, I could photocopy this picture at will. It wouldn't occur to them; they are not, we are not socialized this way. We understand that it's a book; somebody else owns it. When you download it from the Web . . . you shouldn't have done that. Right? And you certainly should not take it and make a zillion copies you tore out of the book and distribute it. But when you click it on the Web, it does not feel the same. . . . Which is why we're looking to make sure that there's no ownership in those works themselves so that we can encourage this kind of recombination and creativity. (P5) (Dalbello 2005a, e63)

This perspective focuses on appropriations by individuals. Although there was a vague realization that the digital representations structured collections will prompt new uses and new grounds on which to understand these uses, it was not clear how the "technological frames" (meanings around technology co-constructed in a social group, according to the constructionist framework) were to develop around the digital heritage collections, or, the public discourses with heritage mediated through digital collections.

The realization of this Shift belongs to the next stage of digital library development, as noted in the analysis of The (Flickr) Commons experiment in 2008, which is discussed in a subsequent section of this paper. The development was not aimed to follow a blueprint for American national heritage, although “heritage worthiness (American content)” (see criteria above) was noted as lower-priority concern.

The findings in Study 2 confirm that a grassroots dimension of public engagement forced new definitions of existing collections and the digital heritage development efforts.

So far, the emergent patterns were centered on unintended consequences, surprises, creative outcomes associated with emerging digital cultural content, and with heritage constructed through consumption processes. Quite distinct models of digital cultural heritage were identified in studying the digital initiatives in five European national libraries, which are discussed next.

Table 1. Transformative Process Timeline Summary for National Digital Libraries

Timeline	Development Stages in National Libraries				
	Biblioteca nacional de Portugal	Bibliothèque nationale de France	Die Deutsche Bibliothek	Scottish National Library	The British Library
1988					
1989		idea of digitization and the new library building project		preservation microfilming	
1990	national bibliographic data sharing (national libraries' consortium)	first phase of digitization	collective/cooperative library experimentation >	experimentation with digital imaging	experimental digitization of treasures
1991					
1992					
1993					
1994					
1995	joining <i>Biblioteca Universalis</i> project >				
1996					
1997	public campaign CD-ROM distributed with national newspaper				
1998			national information infrastructure prototyping >		
1999	contextualization of digital objects (Thematic Sites)	from comprehensive to selective thematic-encyclopedic library >		digitization strategy initiated	
2000					
2001				systematic program of development >	restructuring phase >
2002	from experimental to functional DL >	< second project phase		from experimental to functional public DL >	from digitization initiatives to e-strategy >
2003					
2004+			model for Virtual German Library >		

NOTE: The process dimension rather than events and operations are presented, based on experience of study participants. Therefore this table may not correspond exactly to official timelines. This table reproduced from preprint version of the article (cf. Dalbello 2009, 61).

Study 3 (Cultural Variability). In *Cultural Dimensions of Digital Library Development* explores the emergent national digital libraries in Europe, in five case studies. The underlying assumption was that a national library (as territorially defined units of political and cultural power) is a prime arena for the construction of a digital national heritage and that this process is in a dialogue with the European “heritage space” and global cultural heritage. The cultural analysis framework presented the culture dimension (of digital heritage) as an outcome of multiple and interacting systems of meanings, including national, organizational, and professional culture, as well as innovation culture contingencies innovating teams (Dalbello 2008, 8).

In this study, the conceptualization of heritage did not aim at objectification of heritage in the form of operational units such as heritage projects, content, or meaning but rather philosophies of heritage development (structures rather than instances), as shown in the time grid in [Table 1](#). The transition point in 2002 was a mid-point at the tail end of the experimental phase, the so called Grand Challenges-Grand Responses phase starting in mid-1990s in most cases (see table above for precise definitions) and ending with some form of restructuring in most of the libraries, with closure reached when the first fully functional interactive digital libraries were released for the public (Dalbello 2009, 60). At that time of launching the public versions of national digital libraries, the public responses were considered primarily as idealized projections of an implied public to tradition institutionally defined. Usability testing and the user studies were integral to development (as reported in *Bibliothèque nationale de France*, and The British Library case studies), thus it was not the heritage audiences or an interacting public, but users of digital artifacts that were at the center of use constructions. The “heritage imperative” guided development of content as a pledge by which the public and memory institutions enter a public discourse, as shown in this example from the National Library of Portugal:

And we try to keep the name [Memory of Portugal] because this way people will recognize it more easily. So, for example, for the Memory of Science—but this is true for the other memories—we choose a person from the scholarly world which will be representative for the task of choosing the contents, the more relevant contents. That person will go and see the contents that exist at the National Library, but not only at the National Library, at the National Archives, at other libraries in Portugal, and if possible they can direct us to contents that exists in other libraries in other parts of the world. (P1)
(Dalbello 2009, 25)

Thus, each national library maintains an interpretive authority as it provides an overarching structure for development and consideration of circulation of culture (transitions of old to new, mediated as digital cultural heritage), and adjoined global digital heritage narratives (such as the “Travels of the Portuguese” digital collection). Technical capabilities were perceived as secondary. In contrast, they were primary in the discourse around treasures (units of heritage), technology and librarianship, as

well as organizational frameworks at the National Library of Scotland. The British Library model emphasized globalized strategies and networks in which treasures (constructed in a non-national sense) were dominant aspect of discourse. *Die Deutsche Bibliothek* emphasis was on connectivity, property regimes, and institutional process rather than units of heritage.

The National Library of Portugal was categorized in my study together with the *Bibliothèque nationale de France*. The typology used to categorize national digital initiatives and development strategies distinguished institutions that operate on the “heritage imperative” of national memory (with emphasis is on the control of content and structural integration, encyclopedic and hierarchical structuring of collections) from the decentralized and adaptive models. (See dimensions for comparison are in Appendix A).

The emergent constructions of heritage involved the public heritage consciousness is some of the philosophies of development. The National Library of Portugal digital initiative had a strong public component prior to the launching an official national program, as reported in this recollection of the early days of the program:

And it started [*besitates*] in 1996 ... as a pilot experience and not meant for Web access, but just for a pilot CD-ROM with contents that were chosen according to an idea of making a sample of the most prominent Portuguese writer and their most prominent works. So this CD-ROM was somehow the first attempt to build a digital library, although it was in [the form of] a CD. ... And also because we were digitizing in OCR a modern edition and in image mode a former edition, it looked very nice, because people could, well, at home, print their own version of the sixteenth-century book—it's not very quality-like but, nevertheless, people like to see this sort of things and they, they feel that they have a piece of their own heritage in their hands. (P1) (Dalbello 2009, 21)

.... Of course this [CD] was portable, and it was distributed with a large newspaper in Portugal. Every Sunday they distributed a book, or something like that. So it was distributed on a Sunday. Two Sundays, I must say. So people bought their newspaper, and with a little more money they bought the CD as well. (P1) (Dalbello 2009, 21-22)

The public, being able to “feel that they have a piece of their own heritage in their hands,” can experience the familiar as a new marvelous through digital technology (CD-ROM) distributed in an old staple of print, the daily newspaper. Thus, documentary cultures of digital and print objects converge. “And we never cease to walk on that path [i.e., contextualizing digital objects in the authentic culture of circulation of the physical object]. We are always taking in[to] consideration the artifact itself. So, I can say that we launched the lines, the first lines of action. So [it] was not just to, you know, digitize a lot of things without any context, but building a context for the works that were being chosen for the digital library. So that people could have a sort of access and not just a lot of images that they could search. This CD-ROM was rather successful, and very popular ...” (Dalbello

2009, 22). The involvement of the public response in negotiation of heritage, and grassroots participation was one of the surprising effects of the process as noted by the study participant, so it was not surprising that the public launching of the National Digital Library (the Memory of Portugal) on February 1, 2002, attracted significant grassroots response:

We had been having offers from people that write about certain topics that they find in the digital library, and they say, “Well, I have this text and I’d like you to have it and put it on the Web if you want it because it is about this author or it is about this work,” or so on and so forth. And so I think that is also very good. I mean we also have a little bit of inviting people to send us comments or send us texts that they would like to be published on the Web. (P1) (Dalbello 2009, 24)

The launching of a CD-ROM in 1997 had already forged a link between a new document form—the literary canon that was at the core of the heritage concept in this case—and the public. Thus, the launching of the Memory of Portugal was a way to bring distinct and chaotic prior developments from 1998 (thematic sites about a writer or an event, which were intermediary structures in that development) under a common concept. This emblematic articulation of a heritage space in the case of one of the national libraries follows a path that heritage cultures often do as grassroots forms become institutionalized. The power of public engagement with digital library development throughout the experimental phase (of building thematic sites) that preceded systematic digitization became “pure librarianship and technological work” in the words of the same participant in this study, which refers to heritage practice being translated to routine operations and coordination work of the national library. An understanding of how digital heritage delivered by national libraries (primary memory institutions and repositories of national heritage) could impact the perspective of what is or is not part of that digital heritage canon is central to understanding the cultural imperative guiding development efforts in national libraries in the early era of digital heritage projects.

The public acceptance overall was a very important dimension of development across the cases studied, and often noted to be a surprising and unintended effect of digitization, and the display of digitized treasures. The surprising interactions of the public with the collections were important in the narratives of digital development and for creators of these libraries. These incidental developments had a legitimating role for the emerging digital heritage cultures, confirming what theorists of heritage have noted that heritage cultures depend on having legitimacy through public endorsement (Lowenthal 1998). A particular case of the convergence of media, the publics, and social media technologies, and their effect on heritage culture is discussed next.

Digital Heritage In the Public Eye

The involvement and the public in heritage practices of the collecting institutions discussed here (national, research, and public libraries) is serendipitous yet central to arguments about public “significance” of digital collections of the first wave and the subsequent developments. Meanwhile,

the digital heritage tsunami of global impact continues. These efforts and their effects are assessed in a number of expert surveys focusing on sustainability, technologies, access and impact (cf. Zorich 2003; Proffitt & Schaffner 2008; Blue Ribbon Task Force on Sustainable Digital Preservation and Access 2008; Eschenfelder 2009; Ourouk 2009). The intellectual public takes part in this debate around public resources and aggregate impact, as noted by January 29, 2009 article on the NSDL program published in *Science*. The UNESCO charter on the Preservation of Digital Heritage adopted in October 2003 has contributed to the articulation of digital heritage as a global phenomenon (de Lusenet 2007). The aggregation of information about initiatives on the national and regional levels, as well as the ever-larger scale of collaboration and consolidation, is a dominant institutional trend. For an analysis of a European heritage space, cf. Zinaida Manzuch (2009). These initiatives involve publicly funded heritage institutions and governments. In most countries, national heritage institutions are officially sanctioned, and heritage constructs reflect the vision and responsibilities of these institutions. The engagement of public discourse regarding institutional documentary heritage has most recently focused on controversies about proprietary regimes, when the Google Books Library Project to scan millions of the world's books in the public domain was announced in 2004 (cf. Béquet's *Gallica vs Google* (2009)).

The Library of Congress Flickr Pilot: The Commons Framework

When the Library of Congress turned to the social media site Flickr, involving the community of this popular photo-sharing site⁸ with its photographic heritage material, the Commons model for digital heritage was born. The pilot launched on January 16, 2008, consisted of a sample of 4,000 historical photographs from the Great Depression and the World War II home front, and news photos from the early 1900s, which were gradually uploaded to Flickr. According to the Library of Congress report issued on October 30, 2008, the response was surprising, resulting in 500,000 views a month, and over 10 million total views (Springer et al. 2008a, 3). The “unanticipated explosion of interest” in the LC Flickr account brought forth these puzzling questions about the audience response and the interpretive communities of the Flickr heritage commons:

The surprise and pleasure at the positive reception to the Library's pilot has been well documented. Why were we welcomed so warmly? Why did people tag our photos? Was it a type of altruism bred by media sharing sites like Flickr? Was it the fact that we specifically asked for help to tag our photos? Did some Flickr members approach the task as a game? Does releasing public content with no known restrictions create a sense of democratic access or increase the sense of public ownership and shared stewardship for public cultural heritage resources? (Springer et al. 2008, 15)

⁸ Flickr is a Web 2.0 image-focused community site established in early 2004. More at: <http://www.flickr.com>. “Flickr had a vibrant and large photosharing community (gaining in name-recognition and market share in mid-2007); it was built to allow tagging, comments, and notes; the community conversations were focused on photos and photography” (Springer et al. 2008, 15).

In response to the need to adapt Flickr policy on rights management to cultural memory institutions' framework prompted Flickr to initiate The Commons (www.flickr.com/commons) for other cultural heritage organizations in the Flickr community. By the end of the year, the commons attracted international participation of ten museums and libraries from six nations following the lead of the Library of Congress (Springer et al. 2008, 4). The Commons project now includes large-scale cultural heritage organizations involvement. At the time of writing this paper, there were 20 participating institutions of The Commons (listed in Appendix B). Although the semantics of "the commons" refers to copyright (right ownership), not commons for heritage appropriation, this is exactly what happened. The "commons" attracted cultural institutions and the Flickr community in public discussion about the uploaded materials.

The portal for each institution leads to image collections searchable and viewable through an identical interface, and sorted by latest additions. Each institution is represented through photo streams (image sequences for each of the collections which are arranged in their institutional orders but also adjusted to online attention spans to attract browsing across the collections) featuring photographs and videos. While comments are sporadic, some images attract attention and prompt dialogue, presenting a range of viewing experience, from a sense of wonder, to associative links. The playful and carnivalesque nature of popular response provides new interpretations and inscription of meaning upon the images. Thus the archive has become an index of visual experience, storytelling, reasoning, and knowledge bases. These comments, as well as annotations implanted in images, leave traces of public conversation, and point to a vibrant appropriation of heritage objects by new audiences. The skeptics feared that "fan mail, false memories, fake facts, and uncivil discourse obscure knowledge" would be the dominant form of discourse (Springer et al. 2008, 35). Quite to the contrary, the LC report concluded that the public conversation did in fact contribute to better understanding of the collections through constructive contribution of the Flickr Collective's intelligence. This led the writers of the report to conclude that "taking the pictures to the people" increased the ability of the public "to connect with photos" and "increases the sense of ownership and respect that people feel for these photos" while the Flickr technologically advanced features for display enabled this connection, which would otherwise be were beyond the capabilities of LC systems (Springer et al. 2008, 35-36).

Conclusion

This paper highlighted the potential of digital heritage to be engaged outside of the institutional models that have guided the development of digital libraries. This paper explores directions that developed on the fringe of digital library innovation, represented by the efforts of public libraries and museums to bring out the local and expose their collections to public appropriation, the tensions

between professional/expertly and the amateur/enthusiast efforts, and those that demonstrate how heritage is constructed through consumption processes. Such processes, it is argued, are forms of social memory most relevant for the emerging construction of digital heritage. The examples presented here demonstrated how “the artifice created by heritage practitioners” in the process of its “consumption” becomes transformed, appropriated, becomes public shared identity, “not what “historians have dreamed up” (Lowenthal 1989, 14). The exposure of collections to the public often led to unintended consequences for the cultural heritage organizations, affirming their lofty ideals about appropriations of the institutional heritage space by the public.

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Appendix A: National Culture Orientation with Associated Attitudes and Behavior

External Adaptation		
Relationship with the environment defined as:		
<i>Controlling vs. Adapting</i>		
<p>Uncertainty and Ambiguity</p> <p><i>Reduction / Tolerance</i></p> <p><u>Matching Attitudes and Behaviors:</u></p> <p>Polyocular vision for interpreting ambiguous information vs. generalized knowledge (adapts better to uncertainty and ambiguity)</p> <p>Matching the requisite variety of the situation vs. reducing it.</p>	<p>Control</p> <p><i>High / Low</i></p> <p><u>Matching Attitudes and Behaviors:</u></p> <p>Frontier spirit vs. Fatalism.</p> <p>Domination of vs. Submission to the laws of nature.</p>	<p>Activity</p> <p><i>Proactive / Reactive</i></p> <p><u>Matching Attitudes and Behaviors:</u></p> <p>Doing vs. Being What one achieves vs. Who one is.</p> <p>Environment perceived as: analyzable and controllable vs. uncontrollable.</p>
<p>Truth and Reality</p> <p><i>Inductive / Deductive</i></p> <p><u>Matching Attitudes and Behaviors:</u></p> <p>Focus on empirical evidence, hard facts, tangibility vs. philosophical approaches, theoretical logic.</p>	<p>Time</p> <p><i>Past / Present / Future</i></p> <p><u>Matching Attitudes and Behaviors:</u></p> <p>Attitude to tradition as positive or neutral. Perception of time as linear vs. cyclic. Time seen as limited vs. unending.</p>	<p>Change</p> <p><i>Positive / Disruptive</i></p> <p><u>Matching Attitudes & Behaviors:</u></p> <p>Change is seen as progressive vs. disruptive.</p>
Matched to Hofstede's Cultural Index:		
<ul style="list-style-type: none"> • Uncertainty Avoidance (UAI) (Propensity for change) • Individualism vs. Collectivism (IDV) (Relationship to tradition) • Long Term Orientation (LTO) (Temporality) 		
Internal Integration		
Relationships define:		
<ul style="list-style-type: none"> • Who is involved in processing strategy formulation. • Structuring of relationships through hierarchy, peer-relationships, social vs. task orientation. 		
<p>Emphasis on Hierarchy</p> <p><i>High / Low</i></p>	<p>Peer Relationships</p> <p><i>Individual / Group</i></p>	<p>Task Orientation vs. Social Orientation</p>
Matched to Hofstede's Cultural Index:		
<ul style="list-style-type: none"> • Power Distance Index (PDI) (Dependencies) • Masculinity (Career Success) vs. Femininity (Quality of Life) (MAS) 		

From: Marija Dalbello. "Cultural Dimensions of Digital Library Development, Part II: The Cultures of Innovation in Five European National Libraries (Narratives of Development)." *Library Quarterly* 79 (1:2009): 1-72, p. 9. This table is from a pre-print version of the manuscript.

Appendix B: Participating Institutions of The Commons on Flickr

(www.flickr.com/commons)

The Library of Congress
Powerhouse Museum Collection
Brooklyn Museum
Smithsonian Institution
Bibliothèque de Toulouse
George Eastman House
Biblioteca de Arte-Fundação Calouste Gulbenkian
National Media Museum
National Maritime Museum
State Library of New South Wales collection
The Library of Virginia
Musée McCord Museum
Nationaal Archief
Australian War Memorial collection
Imperial War Museum
National Library NZ on The Commons
New York Public Library
National Galleries of Scotland
State Library of Queensland, Australia
State Library and Archives of Florida
Oregon State University Archives
nha.library
The Swedish National Heritage Board
DC Public Library Commons