WEST AFRICAN ARABIC MANUSCRIPT HERITAGE AT A CROSSROADS: DUST TO DIGITAL OR DIGITAL DUST?

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ABSTRACT

Ever since colonial times, West Africa Arabic manuscripts have been the object of ambiguous attention on the part of administrators, conservators and scholars. As a result, collections were first concealed or disclosed (depending on the predatory or protective nature of Western attentions), then targeted by modern scientific initiatives focused on bibliographic description, content analysis and preservation. A review of their accomplishments and shortcomings will help understand how many such projects often failed to meet – or even understand – the expectations of their intended and potential users. Or if they did meet such expectations, they misunderstood or underestimated the nature of the tools they employed and the rapidly evolving technological and cultural environment that nurtures and supports them. Only by understanding these evolving trends and realities, and therefore engaging information professionals equipped with the appropriate knowledge and skills to take advantage of them, will new initiatives to preserve and document West African Arabic manuscript heritage succeed in providing continuous and relevant access to its intellectual content and material culture.

KEY WORDS: Arabic manuscripts; West Africa; Mali; Mauritania; Nigeria; description; preservation; digitization; digital libraries.

LA ENCRUCIJADA DEL PATRIMONIO MANUSCRITO DE ÁFRICA ORIENTAL: ¿DEL POLVO A LO DIGITAL O POLVO DIGITAL?

RESUMEN

Desde la época colonial, los manuscritos arábigos conservados en África Oriental han sido objeto de una atención ambigua por parte de las administraciones, los conservadores y los investigadores. Como resultado, las colecciones han sido, primeramente, ocultadas o reveladas (según haya sido la naturaleza depredadora o protectora de Occidente). Más tarde, han sido objeto de iniciativas científicas modernas centradas en la descripción bibliográfica, el análisis del contenido y la conservación. Una revisión tanto de los logros como de los errores ayudará a entender cómo algunos proyectos han fallado a menudo a la hora de contemplar –o incluso entender– las necesidades de los potenciales lectores. Si se han contemplado dichas expectativas, se ha malinterpretado o infravalorado la naturaleza de las herramientas que se han empleado, así como el rápido desarrollo tecnológico y cultural que las sostiene. Sólo si entendemos las realidades y tendencias inherentes y si atendemos, consecuencia, a la información que proporcionan, los profesionales, equipados con nuevas competencias y recursos, podrán desarrollar nuevas iniciativas para preservar el patrimonio documental de África Oriental. De este modo, se conseguirá permitir un acceso continuo y relevante al contenido intelectual de dicho patrimonio y a la cultura material que representa.

PALABRAS CLAVE: manuscritos arábigos; África Oriental; Mali; Mauritania; Nigeria; descripción de documentos; conservación de documentos; digitalización; bibliotecas digitales.

DESPOLIATION, DISPLACEMENT, DISAPPEARANCE

Two events frame the evolution of manuscript discovery, description, preservation and access in West Africa. The first is the fall of Ségou, capital of the Toucouleur Empire, on 6 April 1890, during a French military campaign led by Colonel (later General) Louis Archinard against the Islamic states of western Sudan. The second is the ten-month occupation of northern Mali by Islamist militant groups between April 2012 and January 2013, which resulted in their takeover of the newly-built Ahmed Baba Institute in Timbuktu; their destruction of three fifteenth-century Sufi mausoleums and UNESCO World Heritage Sites; their threat to do the same with thirteen more shrines; and the secret smuggling, by staff members of the occupied Institute, of almost three hundred thousand manuscripts to Bamako, there to be stored in several, less-than-ideal locations around town. The occupation ended officially with the recapture of Gao and Timbuktu by French troops, a week of celebrations and a triumphal visit by President Hollande.[1] Yet several months later the situation remains critical,[2] and a peaceful and permanent solution difficult to imagine.

The French, and Archinard in particular (1890: 16), had had Ségou in their sights for some time. It was the capital of the powerful Toucouleur Empire, the jihad state founded thirty years before by Umar Tal (Al-Ḥājj 'Umar b. Sa'īd al-Fūtī al-Tūrī), as well as the seat of Ahmadu Seku (Aḥmad al-Kabīr), Umar Tal's son and current ruler, and his fabled treasure. After the capture of the town, Archinard had the treasure confiscated and evaluated, but it proved to be worth far less than the estimated twenty million francs. It contained approximately eighty kilograms of gold, 160 tons of silver and jewelry, as well as Ahmadu's library, formerly belonging to Umar Tal and consisting of four trunks full of manuscript and printed documents in Arabic, Fulfulde and French (Magassa 2011: 123).

Ségou's "treasure" was eventually shipped to Paris, where the books sat for a couple of years in a colonial warehouse before going to the Bibliothèque nationale, where between 1898 and 1901 they were bound and made available to researchers as part of the Fonds Arabe des Manuscrits Orientaux. Two decades later the French orientalist Edgard Blochet, Curator of the Library's Manuscript Department, included a preliminary inventory of the "Fonds Archinard" (as the collection became known and is still referred to) in his catalogue of recent Arabic manuscript acquisitions (Blochet 1925). Blochet's view of African Islam as peripheral and derivative emerges from his introduction and is further confirmed by his selection, which is largely focused on juridical and theological works from North Africa and the Middle East, and

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[1] See Rémy (2013); Blair (2013); Polgreen (2013: A12).

[2] Two suicide attacks, in March and September, made half a dozen victims in Timbuktu; in October a Malian soldier was killed during a rocket attack in Gao; and on November 2nd two French journalists were abducted and killed after interviewing a local leader in Kidal.

ignores or understates texts from or about Sudanic Africa. Almost three decades later, a more "Catholic" approach allowed Georges Vajda, a Budapest-born French specialist of Judeo-Islamic studies, to produce the first full inventory of the entire collection. Halfway through this project, Vajda published a sample of his work in progress in a journal article where he also noted, in explicit terms, the summary character of his predecessor's work.[3] A different corrective to Blochet's view came in 1959, when the Arabist H.F.C. (Abdullahi) Smith published a partial list, in English and Arabic, of "literary works from the Segu Collection bearing on the History of the Western Sudan" (1959: 1-20). A founding member of Ahmadu Bello University's Department of History and first director of its Historical Documentation and Research Centre (Arewa House), Smith was one of a handful of British and African scholars (including W.E.N. Kensdale, John O. Hunwick, Murray Last, Khalil Mahmud, Bradford G. Martin, F.H. El-Masri, Ivor Wilks and others) who in the 1950s and 1960s pioneered the study of African, Arabic and Islamic studies in northern Nigeria and Ghana through the establishment of academic departments and documentation centers to support teaching and research. Smith's article on the "Segu Collection" (or "Archives" – he almost made a point not to call it "Fonds Archinard") was the second of two contributions based on a trip he made in July-August 1958 to visit "leading museums and libraries in England and France for the purpose of surveying Arabic documentary material bearing on the history of the Western Sudan and recovering a number of these documents in photocopy for preservation in the library" (Mahmud 1964: 98). Of the Ahmadu's library, he noted that

> [T]he collection is [...] a very large one indeed. It numbers as many as 509 volumes out of the total 6000 odd volumes of Arabic manuscript which have been collected for the Bibliothèque Nationale from all over the Islamic world during the past 150 years (Smith 1959: 2).

He also pointed out that the manuscripts "have been lying there, virtually unused, for over half a century", a fact which prompted him to reflect that "to this day the great importance of the books of Segu has received no proper recognition in the world of learning", and, more broadly, that

> the scale on which source material, both in the written documents and in the archaeological fields, has been removed to Europe continues to raise obstacles to the proper development of West African historical studies [...] Somehow or other the use of such material must be recovered for West African students of history (Smith 1959: 2).

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[3] "Blochet a traité assez dédaigneusement ces documents et s'est dispensé d'en fournir une description détaillée, laissant même complètement de côté une bonne partie d'entre eux" (Vajda 1950: 229). Vajda's inventory was compiled in 1947-50 but remained unpublished until 1977, when it was included in the *Guide* (1976: 699-877).

A third and more thorough inventory of the collection was prepared by Noureddine Ghali and Sidi Mohamed Mahibou and published in 1985 as part of a larger "Project for the Conservation of Malian Arabic Manuscripts", funded by the National endowment for the Humanities with additional support from Michigan State University and the Yale University Library (Brenner and Robinson 1980: 329-332). Vajda's catalogue and Ghali-Mahibou's inventory are now available on Gallica, the BnF's digital library, as are also many if not most of the manuscripts described in these two works (with the curious difference that the manuscripts are displayed in black and white, while Vajda's typewritten catalogue is in color).

This is more than can be said of the manuscripts in the so-called "Petit fonds Archinard", a collection of objects, watercolors and hand-written materials donated in 1946 by General E. Réquin, Archinard's nephew, to the Musée de la France d'outre-mer and later transferred to the Musée du quai Branly. Fewer and of unclear provenance, these manuscripts might have been taken at Ségou or at Bandiagara, a town farther east which the French captured in May 1893. The latter hypothesis is suggested by a passage in Archinard's report,[4] resurfacing in General Réquin's biography of his uncle.[5] Except for an inventory published in 2000 (El Adnani 2000-2001), no attempts to analyze, describe, preserve, publish or make these manuscripts accessible (other than to researchers who visit the Museum in person) seem to have been made to this date; and their contents, like their provenance, continue to remain largely unknown.

If the ambiguous fate of the Ahmadu-Archinard library exemplifies the massive removal of West African manuscripts to Europe during the colonial period, and their closeted afterlife as noted by Smith, the actual pattern of disappearance and reappearance is decidedly more complex and resilient than the picture presented by Malian curator Abdel Kader Haïdara.[6] First, episodes

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[4] "Dans la maison d'Ahmadou, une assez grande salle cependant était aussi en bon état d'entretien; c'était la bibliothèque où quantité de volumes assez richement reliés à la mode indigène étaient rangés en piles. Un factionnaire fut placé à la porte et, avant que la demeure de son frère ne fût remise à Aguibou, le lieutenant-colonel Deporter passa de longues heures à tout examiner. La plupart des volumes n'avait aucune importance et n'étaient que des copies du Coran ou d'ouvrages arabes déjà connus ; quelques livres d'histoire furent cependant conservés par le lieutenant-colonel comme encore inédits et pourront, je l'espère, avec l'histoire chronologique du Macina dont j'ai déjà parlé en rendant compte de la mission du lieutenant-colonel Deporter, jeter quelque lumière sur le passé encore si obscur de toute cette région" (*Renseignements* 1896: 26).

[5] "[L]e lieutenant-colonel Deporter examina, dans la maison abandonnée d'Ahmadou, une bibliothèque restée en assez bon état, mais contenant peu des livres intéressants. Il y préleva seulement quelques ouvrages d'histoire encore inédits et susceptibles de jeter un peu de lumière sur le passé obscur de cette région" (Réquin 1946: 144).

[6] "There is no doubt that, in the past, manuscripts were hidden away for certain periods of time. This explains why most European travellers who visited the Niger River Bend, during the colonial period and soon after, did not report the existence of manuscript libraries in the area. It

like the cooperation between the Mauritanian leader Shaykh Sīdiyya Bābā and Henri Gaden, the French resident commissioner in Boutilimit,[7] prove how during the colonial period manuscripts were concealed as well as disclosed, for purposes that were both politico-diplomatic and more genuinely intellectual. Secondly, as the Petit fonds Archinard demonstrates, the removal of manuscripts from a dusty mud house in Sub-Saharan Africa to one of the world's cultural capitals may result in better conservation and preservation opportunities, but it does not necessarily makes them more easily accessible or discoverable. Thirdly, the current situation of the manuscripts smuggled out of Timbuktu should serve as a reminder that manuscripts may reappear only to disappear again, under circumstances that are unpredictable yet not entirely unlikely.

REAPPEARANCE, RECOVERY, REFORMATTING

Like his genealogy of Timbuktu's historical libraries, Haïdara's account of the disappearance of manuscripts at the height of colonization, followed by their reappearance as part of the decolonization process is difficult to corroborate, mainly because of its reliance on the oral tradition and the general lack of documentary evidence. Nevertheless, it is indicative of the peculiar risks, difficulties and complications involved in the long-term preservation of, and access to, cultural heritage in a volatile region. And this, in turn, may provide a different perspective and a valuable benchmark to assess the accomplishments and the shortcomings of several preservation initiatives undertaken so far, in order to come up with a more clear-sighted and realistic set of priorities, as well as concrete and sensible recommendations on how to implement them.

The reappearance of manuscripts was, like their former disappearance, a direct consequence of Western interest in their actuality (as tokens of Islam's political and intellectual influence in the region) and potentiality (as sources of

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is not that they failed to notice or pay attention to them, but simply that their owners carefully kept them out of European sight […] It is worth mentioning the factors that caused the disappearance of manuscripts at a certain time and their reappearance later. First and foremost were the tensions and conflicts between Muslim scholars and colonial authorities, who soon after their arrival started to seize manuscripts and take them to France […] To prevent further expropriations and thefts, West African scholars started to hide their manuscripts or conceal their repositories. Some buried them underground in leather bags, while others took them to far away locations in the desert, stored them away in abandoned caves, or simply walled off the doors of their libraries. In this way, manuscripts remained hidden for a century or longer, until after the independence (1960), when people started to revisit and reopen their manuscript caches, although cautiously at first, and with some apprehension for what might happen to them" (Haïdara 2010: 261-262).

    [7] In 1908-09, when Boutilimit was the staging area for the "pacification" campaign in the Adrar, Gaden was able to access various manuscript collections (including the Sīdiyya's family library, whose contents Louis Massignon would review in the *Revue du Monde Musulman*), while at the same time fulfilling the local marabouts's requests for books from Paris.

information about such influence). What changed since the independence was not so much the nature of this interest as its forms and motivations. The predatory approach, *à la Archinard*, was replaced by a participatory process of rediscovery, revaluation and reappropriation of Africa's past as documented by its own cultural heritage. This process started earlier and was more prominent in former British colonies, such as Ghana and Nigeria, where the new realities of self-determination and the consequent changes in the higher education curriculum resulted in a growing need of documentation to support the study of African history. In Nigeria, this new demand was met by the establishment of the National Museum in Jos and the National Archives service (with three branches in Ibadan, Enugu and Kaduna) in the 1950s, as well as by the creation of academic departments and lectureships in African History, Arabic and Islamic Studies, and related documentation centres. In the early 1960s, both the University of Ghana and the University of Ibadan, through their Institutes of African Studies, established programs to collect, microfilm, analyze and publish Arabic manuscripts from their respective areas. At Ibadan this initiative was implemented through the Centre for Arabic Documentation, started in 1963 by John Hunwick (then a lecturer in the newly-founded Department of Arabic and Islamic Studies), and followed a year later by a semestral *Research Bulletin* edited by Hunwick with Murray Last (of Ahmadu Bello University, Zaria), M.A. Al-Hajj (University of Ife), F.H. El-Masri (adjunct lecturer in the Department of Arabic and Islamic Studies) and Khalil Mahmud (recently appointed to develop an Arabic manuscript collection). In addition to articles, research notes and book reviews, the *Bulletin* featured "analytical lists" of accessions to the Centre's microfilm collection (with occasional notes on how certain manuscripts were acquired or borrowed),[8] and bibliographical references to peer publications, such as the University of Ghana's *Research Review* (started in 1965) and the interim reports of the Northern History Research Scheme at Ahmadu Bello University, established by H.F.C. (Abdullahi) Smith in 1963.

The December 1968 issue of the *Bulletin* contained Hunwick's translation (from the French) of the report of the "UNESCO Meeting of Experts on the utilisation of written sources for the History of Africa, held at Timbuktu from 30 November to 7 December 1967", which he had attended with other twenty participants, both African and European (UNESCO 1968: 52-69). The second of two meetings organized in 1967 by UNESCO "for the special purpose of technical examination of the problems of every order posed by the collection, critical study and publication of sources", it was devoted to manuscript sources and, like the earlier one (held in September at Niamey, Niger, and focused on

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[8] For example, the Accessions to the Microfilm Collection for January 1965 says that "In August, 1964, Mr. Ibrahim Mukoshy made a tour of the Sokoto area, during which he was able to borrow a total of 143 manuscripts which he brought to the Centre of Arabic Documentation for microfilming" (Centre 1965: 48).

the oral tradition as historical evidence) it recommended the establishment of "a properly equipped scientific institution [to] ensure the basic task of rescue as well as the evaluation of this rich cultural heritage" (UNESCO 1968: 63). In Timbuktu, this institution was officially opened in 1973 and, following the experts' recommendations, took the form of a center of documentation and research, and was named, after a prominent sixteenth-century local scholar, Centre de documentation et de recherche Ahmad Baba (CEDRAB).

Despite the lack of adequate funding and trained personnel, as well as the suspicious and non-cooperative attitude of private owners, the new center managed to collect approximately one thousand manuscripts by the end of the decade. This, in turn, created an urgent need for such basic preservation measures as the center could neither implement nor support independently. Consequently

> [i]n late 1976, following a research field trip by [David] Robinson to Mali, Yale University Library organized a consortium of university libraries to fund a small microfilming project designed primarily to photograph historical materials. This project was called the Malian Arabic Manuscript Microfilming Project (MAMMP). Material was filmed in Bamako, Segou, Mopti, and Bandiagara, and William A. Brown of the University of Wisconsin kindly offered to donate to this project films he had made in Macina and Timbuktu in the 1960s. Xerox paper copies of film copies of all material photographed were deposited in CEDRAB as well as in the libraries of the consortium members: Illinois, Indiana, Michigan, Michigan State, Northwestern, Princeton, St. John's (Minnesota), Wisconsin, Birmingham, the School of Oriental and African Studies, and the Hebrew University in Jerusalem (Brenner and Robinson 1980: 330).

Out of MAMMP came a more ambitious Project for the Conservation of Malian Arabic Manuscripts, funded by the National Endowment for the Humanities (NEH) for an initial two-year period (1978-80), and managed by Moore Crossey, Curator of the African Collection at Yale University Library, with the assistance of researchers Louis Brenner and David Robinson, and John Hunwick acting as a consultant. Although the goal to inventory and microfilm manuscripts held in private libraries in Mali, as well as in other repositories in West Africa, North Africa and Europe, was soon frustrated by the Malian government's decision to change its policy regulating cultural heritage, one of the project's main achievement was Ghali's and Mahibou's inventory of the Fonds Archinard.

In Mauritania, two microfilming projects started between 1979 and 1987 led to the development of separate online databases that remain, to this date, the only Web-based, publicly accessible resources of this kind. During several field trips funded by the Deutsche Forschungsgemeinschaft (German Research Foundation) between 1979 and 1997, Rainer Oßwald, Ulrich Rebstock and Tobias Mayer photographed over 2500 manuscripts (or 134,000 pages of text) from more than two hundred private libraries in Mauritania. The resulting microfilm, copies of which are preserved at the Institut Mauritanien de

Recherche Scientifique (IMRS) in Nouakchott and the University of Freiburg (Rebstock's home institution), were eventually scanned and made available in the early 2000s through OMAR (Oriental Manuscript Resource), an online database jointly developed by the Orientalische Seminar and the Institute of Computer Science, University of Freiburg (Albert-Ludwigs-Universität Freiburg), in cooperation with the Center of Informatics of the University of Tübingen (Brückner and Kandzia 2001: 401-405). Notwithstanding its limitations and weak points (low legibility of digital images due to the poor quality of the microfilm, rudimentary search and display options, unattractive interface and general lack of user-friendliness), some of which could and some could not have been avoided at the time of its implementation, OMAR was the first online database to make a large sample of Arabic manuscripts from West Africa publicly available in digital format, full-text and with basic descriptive metadata. All of its 2603 entries are cross-listed in Rebstock's *Maurische Literaturgeschichte* (Rebstock 2001), which is based on three previous catalogues documenting the German team's microfilming work in Mauritania: Rebstock (1985); Rebstock, Oßwald and Wuld (1988); Rebstock (1989).

In reviewing the third of these works, the American scholar Charles C. Stewart observed that "The criteria used for selecting the 260 private libraries from which items were filmed, much less the particular items that were filmed in each library, are not entirely clear. One of the largest private libraries, for instance, at Boutilimit, seems to have escaped the notice of the project" (Stewart 1992: 712-713). It is indeed possible that the large, private library in Boutilimit "escaped the notice" of this project, as Stewart suggests, although it is more likely that the omission was intentional, considering that the Shaykh Sīdiyya family library at Boutilimit, in the Trarza region of southwestern Mauritania, had been the object of Western scholarly attention since the first decade of the twentieth century, when the French scholar Louis Massignon reviewed its contents in a new journal (Massignon 1909: 409-418), and more consistently from the late 1960s onwards, when Stewart himself, then a graduate student at Balliol College, Oxford, started visiting the settlement (and the library) founded by the Sufi leader Shaykh Sīdiyya "al-Kabīr" (1774-1868) to do research for his doctoral dissertation.[9]

The research trips that Stewart made to Boutilimit from the late 1960s onwards helped him develop a relationship with the descendants of Shaykh Sīdiyya, and this eventually bore its fruits. In 1986, the great-great-great-grandson of the renowned southern Saharan savant contacted Stewart, now a

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[9] In fact, one of the first mentions of Stewart's interest in the subject which will inform his dissertation, as well as his first book (Stewart 1973), is a letter he sent to the Centre for Arabic Documentation in Ibadan, expressing his research interest "into the role of the Qadiriyya tariqa in the dissemination of Islam in West Africa in the period, roughly, from the mid-eighteenth century through the first quarter of the nineteenth century". The letter was duly published in the January 1967 issue of the *Research Bulletin* (p. 53).

professor of History at the University of Illinois at Urbana-Champaign, with the request to "undertake a project to microfilm the collection […] with a view to beginning a regional archive […] based on the family's library and papers" (Stewart and Hatasa 1989: 404). With funding from the National Endowment for the Humanities and the University of Illinois, between 1987 and the end of 1989 Stewart and his team filmed the contents of the Shaykh's family library and archives, committing more than 100,000 pages of text to one hundred reels of microfilm. As Stewart would recall,

> microfilming was done without benefit of electricity, since Boutilimit has none. The work had to be done in an outside archway of the family house, where lighting was good but environmental conditions were less than ideal. "This is an environment where a sandstorm is likely to come up at any momento", [...] "In fact, we lost most of February (1988) because of sandstorms."

> That's one reason why the usual 100-foot rolls of microfilm and a fancy microfilming machine were not used – "If something went wrong, we'd lose all that work", he says.

> Instead, filming was done with a regular 35mm camera and 1,700 rolls of 36-exposure Technical Pan film, a very fine-grained film used primarily in the biosciences. The camera was mounted on a specially made book box equipped with glass to keep manuscripts from blowing on windy days (Stewart 1988: 3).

Pioneering circumstances aside, what distinguishes most this project from previous microfilming initiatives in West Africa is the simultaneous creation of a bilingual (English-Arabic) computerized finding aid, for which Stewart engaged Kazumi Hatasa, a graduate student in Computer Science at the University of Illinois. Using a software called ARABDOS, which enabled the computer to handle both languages and came with a word processing software (ARABRITE), Hatasa first took advantage of a newly-released database management system, dBase II, then switched to the more flexible general programming language Turbo Pascal 3.0. The resulting Arabic Manuscript Management System (AMMS) made it possible to add, between 1989 and 2008, the records of other West African manuscript collections which had previously existed in print, such as those of the Institut Mauritanien de Recherche Scientifique (IMRS) in Nouakchott; the Ghali-Mahibou inventory of the Fonds Archinard at the BnF; the CEDRAB in Timbuktu; four collections from Ghana and northern Nigeria held at the Melville J. Herskovits Library of African Studies, Northwestern University in Evanston, Illinois; the Institut de Recherche en Sciences Humaines (IRSH) in Niamey; and twelve Mauritanian libraries catalogued by Rebstock and Ahmad ould Muhammad Yahya in Shinqīṭī and Wādān (Rebstock and Yahya 1997). In 2002 all of the 19,778 records were migrated to a Windows platform, with a redesigned interface and the addition of a search engine; then finally, in November 2006, the entire database was transferred to a new, Web-based platform hosted by Northwestern University Library. In Stewart's words, the AMMS

is, purposely, a low-tech, simple program designed to be easily accessible by users who may not have either sophisticated machines or detailed knowledge of (or concern with) refined transliteration systems. The principle at work here is that once enough data have been entered about specific manuscripts, it should be possible to establish comparisons across the database and resulting identifications or likely identifications with like words, thanks to a powerful search engine (Stewart 2008: 323).

Because of this, it could represent the "beginning for a universal, online resource for Sahelian Arabic-script manuscript identification" (Stewart 2008: 321). In fact, Stewart and Bruce Hall later used the resources of the database to identify a "core curriculum" for Islamic West Africa. Working on the assumption that "the extant copies of manuscripts that appear in the largest numbers across representative libraries from the Atlantic to northern Nigeria are a good indication of the most widely studied subjects and texts across the Sahel", they assess "the distribution and number of copies held in the libraries documented in AMMS, and/or its citation among foundational works by a chronological and geographical cross-section of four West African literati that have been chosen to represent a chronological and geographical cross-section of Sahelian scholarship" (Hall and Stewart 2010: 115).

REFORMATTING REVAMPED

An April 1992 report prepared by a Joint Task Force on Text and Image on behalf of the Council on Library and Information Resources (CLIR) stated that

"The most promising strategy for saving the intellectual and artistic content of endangered volumes" – states an April 1992 report prepared by a Joint Task Force on Text and Image on behalf of the Council on Library and Information Resources (CLIR) – "is to transform or convert it to a different medium – by copying it to film or digital electronic form" (Council 1992).

Almost as a complement to these recommendations, less than three years later the Commission on Preservation and Access and the Research Libraries Group (RLG) created a Task Force on Archiving Digital Information with the purpose of investigating ways to ensure "continued access indefinitely into the future of records stored in digital electronic form" (Commission 1996: iii). The final report, released in May 1996, contained sections on the "fragility of cultural memory in a digital age", the "challenges of archiving digital information", the "integrity of digital information" and the "limits of digital technology", and stressed migration as a desirable strategy "to preserve the integrity of digital objects and to retain the ability for clients to retrieve, display, and otherwise use them in the face of constantly changing technology" (Commission 1996: iii).

At the time (i.e., early to mid-1990s) microfilm was still the standard strategy for preservation reformatting of manuscript and print material; but in the next decade things started to changed rapidly and at an ever increasing

pace. So much so that in the early 2000s a number of national and international cultural heritage organizations either publicly endorsed digitization as a preservation strategy, or started issuing technical standards and guidelines for the digital conversion of library materials. One of the first and most explicit endorsements came from the Association of Research Libraries (ARL), which in 2004 released an official statement accompanied by a number of appendices comparing different reformatting technologies (microform, print and digital facsimile), exploring the benefits of digitization as a preservation reformatting option, and listing standards and best practices in digital reformatting (ARL 2004).

By the time ARL issued this endorsement, UNESCO had released a set of digitization guidelines based on the work of a group of experts on behalf of the International Federation of Library Associations (IFLA) and the International Council on Archives (ICA) (cf. IFLA 2002), as well as a *Charter on the Preservation of the Digital Heritage* focusing on selection, protection, access and – most significantly perhaps – continuity.[10]

The above quotation from the 1992 CLIR report should serve as an epigraph to most if not all "preservation and access" projects concerned with the manuscript heritage of West Africa, especially those inspired by ambitious and multiple goals, such as the Timbuktu Manuscripts Project. Following a series of planning meetings that took place in 1999 and 2000 at Northwestern University, Timbuktu, and the Universities of Bergen and Oslo, the Timbuktu Manuscripts Project was officially launched on October 15, 2000 at the Ahmed Baba Institute.[11] It consisted of four integrated components: Research and Higher Education; Physical Conservation; Electronic Document Management and Access; and Tourism, Outreach and Dissemination. The overall objective of the Electronic Document Management (EDM) component was to "develop a comprehensive electronic document management system for the IHERI-AB collection in Timbuktu which would qualify IHERI-AB as a service provider for private collectors" (i.e., local owners of manuscript collections), and its primary goal to preserve "images of texts which are important to scholarship through the use of electronic technology for image capture, storage, retrieval, and networked access".[12] A pilot phase, called AREMALT (Archivage Electronique

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[10] "Continuity of the digital heritage is fundamental. To preserve digital heritage, measures will need to be taken throughout the digital information life cycle, from creation to access. Long-term preservation of digital heritage begins with the design of reliable systems and procedures which will produce authentic and stable digital objects" (*Charter* 2003: 2).

[11] Officially Institut des Hautes Études et de Recherches Islamiques Ahmed Baba (IHERI-AB), formerly CEDRAB.

[12] The information about the Timbuktu Manuscripts Project is from a detailed outline of the AREMALT component and two progress reports, dated May 16, 2002 (and covering the period Oct. 15, 2000 - May 15, 2002) and January 1st, 2003. Like many other documents related to the Timbuktu Manuscripts Project, these three reports were available on the Web site of the

des Manuscrits de Tombouctou), started in October 2000 with funding from the Norwegian Agency for Development Cooperation (NORAD) and the Ford Foundation, and continued for a period of five years with additional funding from the Government of Luxembourg. Its plan of activities included: (1) photographing and scanning each page of the approximately eighteen thousand manuscripts held at the Ahmed Baba Institute, for an estimated total of ca. 700,000 pages, before and after restoration (the pre-restoration images being intended to document the conservation process, and the post-restoration images to serve various scholarly purposes); (2) a relational database consisting of digital images of manuscripts (pre- and post-restoration) and linked electronic records from the catalogues of the same Institute and other repositories in the Timbuktu region; and, eventually, (3) a Web site providing access to the before-mentioned catalogues and to full-text articles, transcriptions and translations of individual manuscripts, as well as allowing users to order CDs with digital images of manuscripts, or download them directly from the Web. Storage and backup of digital files was to be implemented through a system of multiple (mirrored) hard disk drives kept in "special fire and water resistant cabinets at the Ahmed Baba Institute (with an extra copy in Bamako)".

A May 16, 2002 progress report listed the visit of a representative of UNESCO's Memory of the World Programme; the involvement of a former staff member of the BnF Digitization Lab to plan and organize a two-week training, in Lyon, of two Malian technicians from the Ahmed Baba Institute and the Centre National de Recherche Scientifique and Technologique (CNRST) in Bamako; and the recruiting and training of project assistants to catalogue and digitize one thousand manuscripts. The same report explained that the development of a database had been postponed temporarily due to the lack of sufficient funds to hire consultants and the unavailability of good trilinqual (Arabic, French and English) software compatible with Macintosh and Windows operating systems. While describing the Ahmed Baba Institute as being "very well equipped to carry out basic digitization and electronic archiving, electronic cataloguing and consultation of manuscripts and rudimentary desktop publishing", the report further expressed the need "for additional hardware and software to assure a more effective electronic archival system including more flexible capturing options (e.g. digital cameras), storage management options (e.g. a juke box for CD management), appropriate software for developing databases (e.g. Filemaker Pro), and an HTML editor (e.g. Dreamweaver)".

The next report, dated January 1ˢᵗ, 2003, described the project as funded by NORAD and executed by the Centre for Development and the Environment (SUM), University of Oslo, in cooperation with the Ahmed Baba Institute, the

University of Oslo's Centre for Development and the Environment (SUM) until circa 2012, but have been since taken down.

CNRST, UNESCO (through funding from the Government of Luxembourg) and the Institute for the Study of Islamic Thought in Africa (ISITA) at Northwestern University.[13] It identified three phases of implementation over a ten-year period (a Planning and Pilot Phase, 1999-2002; a Development Phase, 2003-2007; and a Capacity Embedding phase, 2008-2010), and listed the members of each of the three main working groups, the largest being the Research and Education group, led by Hunwick and O'Fahey. The EDM group – consisting of representatives of CNRST, the Ahmed Baba Institute, UNESCO, the universities of Oslo (Albrecht Hofheinz) and Bergen (Knut Vikør), and the École nationale supérieure des sciences de l'information et des bibliothèques (ENSSIB) in Lyon – was responsible for "manuscript digitisation, transfer and storage of images, database development, implementation of a LAN and its link to Internet through a Web site, training of Timbuktu staff in computing, desktop publishing, and database management essential to the project operations".

Further updates on the project activities are nested in the Centre for Development and the Environment's annual reports for the years 2005, 2006 and 2007, where the project is said to be "scheduled to terminate in 2008". They consist of a couple of paragraphs, repeated almost identically from one report to the next, and mention radio and television broadcasts and other media coverage, study tours and training sessions (mostly in France), photographic exhibitions, a conference,[14] a richly illustrated book (Hunwick and Boye 2008), a project Web site (hosted by the University of Oslo) and "other activities" including a "catalogue database" allegedly being developed in cooperation with the Institut de recherche et d'histoire des textes (IRHT-CNRS) in Paris (SUM 2005, 2006, 2007). No further mention, however, is made to the integrated relational database or the actual digitization of manuscripts (whether in pre- or post-restoration stage), and to my knowledge no other official document exists which describes in some detail whatever has been accomplished in either area, and what is the current state of the affairs (especially in regard to digital preservation, if applicable). In the meantime, the project Web site mentioned in the annual reports has been replaced by a brief description of the "Timbuktu Manuscripts Project for the Preservation and Promotion of African Literary Heritage", with Albrecht Hofheinz listed as the only participant.[15]

Considering the extent to which this and other projects were driven by scholars and conservators, it does not surprise that their most tangible results consisted largely of short-term preservation and research activities and promotional events. To find more successful and sustainable examples of the "most promising strategy for saving the intellectual and artistic content of

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[13] Founded in 2000 by John Hunwick, who had joined Northwestern in 1981, and R. Séan O'Fahey of the University of Bergen, with funding from the Ford Foundation.

[14] "Chemins du Savoir: Journées d'Etudes sur les Manuscrits de Tombouctou", held on June 14-19, 2005 at the National Library in Rabat, Morocco.

[15] Professor Hofheinz, contacted for this article, has not replied to my email.

endangered volumes", one should look for projects that are far more limited in scope and areas of actions. One such project is the Library of Congress's digital collection of Islamic manuscripts from Mali, a Global Gateway Web site launched in December 2005 and linked to the online exhibition *Ancient Manuscripts from the Desert Libraries of Timbuktu*. The physical exhibition, originally planned in conjunction with the Smithsonian Folklife Festival,[16] led to a cooperative project with the Mamma Haidara Commemorative Library, which eventually resulted in the microfilming, scanning and online presentation of approximately thirty manuscripts from this library and the one of Shaykh Zayni Baye of Boujbeha, both in Timbuktu. Based on a limited number of items from two repositories and one location, the collection is hardly representative of the Arabic manuscript heritage of Mali and West Africa. Nevertheless the site features simple search (by keyword) and browsing (by title or subject); basic descriptive metadata; and single-page view (although without scrolling or zooming, or the option to preview, view or download individual items, as thumbnails or PDF documents). In other words, it is a resource shaped – and limited – by its origin as an online exhibition, and therefore intended for the general public rather than for researchers and scholars.

By the end of the decade, the same thirty-one manuscripts were added to the World Digital Library (WDL), an initiative sponsored by the Library of Congress and UNESCO to make "available on the Internet, free of charge and in multilingual format, significant primary materials from countries and cultures around the world". Launched in April 2009, the WDL Web site provides a richer description, display and view options than Islamic Manuscripts from Mali, and it allows faceted searches by Place, Time, Topic, Subject, Type of Item (manuscripts, books, maps), Language and Institution. The subject list is slightly shorter (forty-three vs. fifty-one entries) and a comparison with the Global Gateway site reveals a number of obvious overlaps (Arabic language, Astrology, Astronomy, Asceticism, Diseases, Grammar, Health, Islamic law, Poetry, Rhetoric, Science, Seasons, Slavery, Social matters, Songhay Empire, Tijānīyah), but also many interesting differences. Instead of more historical topics (Allexandri, Early years of Islam, Muslims and non Muslims), geographic and ethnic names (Bornu, Kano, Mali, Nigeria, Fulani, Hausa) and broad philosophical categories (Belief, Ethics, Faith, Prayer), the WDL list shows a more "current" selection of subjects and issues (Charity, Children, Conflict management, Construction, Contracts, Government officials, Muslim children - Conduct of life, Muslim women - Social conditions, Nonviolence, Pacifism, Politics and government, Women).

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[16] The actual manuscripts were displayed at the Thomas Jefferson Building from June 24 through September 3, 2003. See http://www.hf.uio.no/ikos/english/research/projects/timbuktu/ (December 5, 2013).

At the time of writing this article, only two initiatives provide access to a large amount of digitized Arabic manuscripts from West Africa. One is Aluka, an "international, collaborative initiative building a digital library of scholarly resources from and about Africa" (Guthrie and Nygren 2007). This library (access to which is restricted to affiliates of participating institutions) was launched in 2007 and contains materials contributed by member institutions and organized in two content areas, "African Cultural Heritage Sites and Landscapes" and "Struggles for Freedom in Southern Africa". Timbuktu is one of the two Malian landscapes featured in the former area (the other is Djenné), which contains hundreds of materials in four media types: documents (digitized manuscripts and printed books), images, 3D models and geospatial representations. The Timbuktu manuscripts component, consisting of over three hundred items from the Mamma Haidara and Imam Essayouti libraries, is the outcome of a formal partnership Aluka entered into with the Malian non-governmental organization Sauvegarde et la Valorisation des Manuscrits pour la Défense de la Culture Islamique (SAVAMA-DCI), Northwestern University's Advanced Media Production Studio (NUAMPS), and the Tombouctou Manuscripts Project at the University of Cape Town. The manuscripts were scanned over eighteen months in Timbuktu (where NUAMPS image specialists set up a "complete high-resolution digital photography studio" and trained local staff), and made available online in 2008. The digital library offers viewing and downloading options that are as advanced as those of the World Digital Library; although metadata are less functional and user-friendly than this other resource, and not as thorough or detailed as Stewart's Arabic Manuscript Management System (which provides author's full name, common name and *nisba*, dimensions, and basic information about the conditions of the manuscript, its provenance and any translations or publications).

The other initiative is the already mentioned Gallica, which provides access to hundreds of digitized manuscripts from the "Ahmadou/Archinard-Ségou" collection through its own portal as well as through the European digital library, Europeana. Exactly how many manuscripts are available it is impossible to say, since neither portal offers the option to view the entire collection, but only to retrieve indivdual items by searching for their catalogue number (e.g., "arabe 5147").

DUST, DESERT TO DIGITAL

Whether in Timbuktu or in Bamako, the "ever present dust" presents a constant threat, not only to manuscripts but also to protective materials and reformatting equipment. Elsewhere, when it does not present a serious problem, dust is still regarded as a symbol of deterioration and neglect. Books that are not read or consulted are said to collect dust – their complex, multidimensional nature, as physical objects and intellectual content, reduced to plain and simple surface.

These days the trope is more likely used in regard to electronic data and information that is generated, processed and stored away, without ever reaching the stage of public access and fruition. This is often the case with ambitious, multi-phase projects that include the creation of an electronic bibliographic database or a digital library (or both) for the purpose of long-term access to content which is otherwise difficult to reach. For a number of reasons (lack of adequate planning, drying-up of funds, technical and infrastructural problems, etc.), their accomplishments are always inevitably partial and do not extend to more "technologically demanding" phases such as database design or digitization (typically seen as "advanced", because of the particular know-how involved, and therefore "supplementary" or even "optional"); or if they do venture into either of these phases, they tend to act without proper planning and adequate resources, almost as an afterthought and occasionally with a certain cavalier attitude.

Digital dust is not difficult to create, although it may be costly to maintain. As many half-baked or aborted projects show, the creation of digital files by scanning volumes of text or images is a relatively simple process – even in a harsh Sub-Saharan environment – requiring but a couple of pieces of equipment and technicians trained to operate them. What is far more complicated, time-consuming and expensive is the development and support of a technical and administrative infrastructure to ensure the successful implementation of the project and its sustainability over time. In a document released in 2009 by the U.S. Federal Agencies Digitization Guidelines Initiative (FADGI), digitization is defined as

> a complete process that broadly includes: selection, assessment, prioritization, project management and tracking, preparation of originals for digitization, metadata collection and creation, digitizing, quality management, data collection and management, submission of digital resources to delivery systems and into a repository environment, and assessment and evaluation of the digitization effort (Federal 2009: 4).

The point is made even more explicitly in a recent set of guidelines prepared by IFLA's Rare Books and Manuscripts Section, which states that

> The creation of a digital collection is much more than scanning or creating digital surrogates. In fact, scanning is the easy part. The entire process requires advanced planning, a great many activities, and collaboration across many library units (IFLA 2013: 3).

Both documents identify and describe, with different levels of detail, the processes and activities involved in a digitization project. The FADGI outline breaks them down in four main phases – planning, pre-digitization, digitization and post-digitization – and provides detailed descriptions for each of them, ending with a brief yet eloquent section on IT infrastructure needs to store, manage and provide access to digital files and corresponding metadata (Federal 2009: 14-22). More limited in scope and purpose, the IFLA guidelines cover the

same ground in a terser way, with eight chapters devoted to project design; materials selection (and related issues such as copyright); digital conversion, including preliminary activities and "post capture image processing and system ingest"; metadata (bibliographic or descriptive, structural, technical and administrative); display (presentation formats and persistent access solutions); dissemination and promotion; evaluation; and long-term digital preservation. For instance, the section on "Display" reminds us that

> Users are looking for open and free access, easy discovery through common search engines, unproblematic interaction and display using standard web browsers and plugins, viewing options (including two-page display and zooming capabilities), tagging functionality (especially for later retrieval), individualized annotation capabilities, printing capabilities, and the ability to download, reuse, and combine (IFLA 2013: 13).

Users and user experience are central to a project's evaluation. This may be quantitative, considering

> the number of books/objects digitized, the number of visits to portal pages, the number of times a digital object is viewed and/or downloaded, the number of times it is cited or linked to, etc. […] More important and difficult, however, is qualitative analysis, which often requires feedback from users. Consider the following questions:
>
> • How faithful is the surrogate to the original? Is the image an effective substitute for the original, or does the researcher need to see the original at least once to accomplish his objectives?
> • Is the product readable and usable?
> • How well does the technology fulfill the research needs?
> • How is the resource being used, and by whom?
> • How is the resource being reused or repurposed?
> • What is the impact on the use of the physical collection? (IFLA 2013: 14)

Long-term digital preservation "can be accomplished in-house, out-sourced to vendors or service organizations, or accomplished using a distributed, consortium model". However,

> At minimum, a library should maintain their digital collections in high resolution on regularly backed-up network servers and have processes and systems in place to monitor the integrity of the digital files over time. Storing multiple copies in geographically dispersed locations is also an accepted preservation strategy. A process should be in place for regularly evaluating the need to migrate the collection or emulate software functionality (IFLA 2013: 15).

This few examples will give a basic idea of the variety and the complexity of the issues involved – especially in the later, post-digitization, phases of a project – and, consequently, of the careful and foresightful long-range planning that is necessary for a project to be successful and sustainable. Unfortunately, most initiatives focused on the preservation and access of West African Arabic manuscripts have shown only a vague and limited awareness of these issues,

and hardly any ability to address them in a serious and satisfactory manner. If detailed reports were available for most, if not all, projects (which is not the case), we would be able to distinguish between those whose initial plans to develop a database or a digital collection never materialized, and those for which these plans were drastically downsized or cut short (usually for the same reasons, involving poor planning and shortsightedness), and their partial results consequently shelved to collect digital dust. (However, in the age of the Internet we can assess the degree to which the digital component of a project was accomplished by verifying its presence online; which is basically what sets initiatives such as AMMS, OMAR or Aluka apart from others, more ambitious perhaps but, because of this, more difficult to realize in all their various components).[17] In reality, such a distinction is largely irrelevant since, whether the digital component of a project was dropped or only partially accomplished, the causes tend to have a common origin. This is the fundamentally ambiguous scope of large-scale, diversified projects inspired by a holistic approach linking cultural heritage (manuscripts as well as visual, decorative and performing arts) to the community, and viewing the preservation and promotion of the former as a way to improve the social and economic conditions of the latter (the catalyst being usually tourism). With different combinations, variants and overlaps, multicomponent projects usually present a sequential order which progresses from context (the preservation environment) to container (the physical object) to content to community. The latter is commonly seen as the physical location in which context, container and content exist, although it could include, more plurally and pluralistically, the various communities of users and beneficiaries, both near and far, who are drawn to the content and its container, and may be favoured or otherwise by the context in which these are preserved. In practical terms, these multiple components typically involve the creation of a suitable storage and preservation environment, either by upgrading existing structures or by building new and more efficient facilities; the implementation of adequate conservation and preservation measures (collection care, restoration, protective packaging, monitoring and maintaining environmental control); the inventorying and cataloguing of content items (more often using relatively low-tech solutions, such as common word-processing or spreadsheet applications, rather than specialized software); the reformatting of selected manuscripts for preservation purposes (with or without an online publication plan); the training of local staff, usually in conservation techniques and descriptive cataloguing; and a variety of dissemination activities including publications, conferences and seminars, but only rarely and briefly considering the creation of a digital library. For example,

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[17] The fact that throughout the 2000s many initiatives were still considering digital storage media such as CD-ROMs and DVDs as the only delivery format confirms their lack of foresight, since disks of all kinds have since been reduced to obsolescence by devices such as the iPod, smartphones, tablet and laptop computers.

the Research and Higher Education component of the Timbuktu Manuscripts Project envisioned training,[18] descriptive cataloguing, editing and translation of texts, the publication of a journal, the exploration of Arabic manuscript collections and libraries in and around Timbuktu, and "other dissemination activities" such as the revival of the Timbuktu copying industry, the production of hard copies and on-line versions of manuscript catalogues, the publications of translations and research articles.

Inevitably these "holistic projects", with each of their multiple components calling for specific sets of resources, competencies and skills, tend to follow a fragmentary pattern of realization, according to which some components are fully accomplished, others partially so, and yet others postponed or dropped entirely. Since most projects are conceived and headed by scholars and conservators, the phases that are more likely to be realised are those dealing with conservation, description and dissemination through journal articles and professional meetings. If properly implemented, these activities may improve the preservation conditions of manuscripts, and enhance user awareness of their existence and meaning; but they will hardly expand access to their content beyond the limited number of local users, or the even fewer scholars who can afford a field trip to, say, Shinqīṭī, Walāta or Timbuktu. (An option that may be temporarily out of the question for security reasons, as it has been in northern Mali for the past couple of years).

A far more effective user-centric way to expand access to manuscripts (and help preserve their content) would be to turn the current model around and start with digitization first. This would involve three main phases: pre-digitization (selection, preservation review and preparation); digitization (image capture and processing, file naming, directory structure, file formats for archiving and for presentation; metadata creation and collection; etc.); and post-digitization (transfer of digital objects to delivery systems for online access, submission of digital objects and related metadata to long-term digital repository, preservation review of originals to assess any damages incurred during digitization). The main results and benefits of these activities would be the creation of high quality archival images (and their safe storage, possibly in multiple locations), for the purpose of providing long-term access to their content in a variety of way, including online digital libraries and facsimile editions (electronic as well as printed).

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[18] More specifically, the training of "both Malian and international researchers in (a) the identification, description and cataloguing of manuscripts, (b) the editing and translation of manuscripts, and (c) presentation and publication of research studies in the fields of History, Literature, Islamic Law, Sufism, etc."

BREAKING THE CYCLE OF DISAPPEARANCES AND REAPPEARANCES

The projects described above perform, in different ways and to various degrees, one or more of three basic interconnected functions. They use preservation reformatting techniques (microfilming or digital scanning) to "retain content, enhance access, and protect the original from excessive wear" (Arthur 2004: n.p.); they provide electronic access to bibliographic databases of manuscripts from several collections; and/or they make bibliographic databases and digital surrogates of the items they describe available online through a variety of discovery features and tools. Earlier initiatives, such as those undertaken at the Universities of Ghana and Ibadan in the 1960s, the NEH- and DFG-funded Malian and Mauritanian projects of the late 1970s and 1980s, and even the Timbuktu Manuscripts Project launched in 2000, focused primarily on reformatting and bibliographic description, with AMMS and OMAR bringing their results to a successful electronic and online fruition. More recent projects, such as the Library of *Congress's Islamic Manuscripts from Mali* and *Ancient Manuscripts from the Desert Libraries of Timbuktu*, the World Digital Library, Gallica and Aluka, instead build on the capabilities of the Web to expand and enhance access, thus making this important cultural heritage more widely known and (potentially, at least) better understood and appreciated that it could possibly be if access were limited to the physical items, whether in Boutilimit, Timbuktu or Paris.

As a whole, these initiatives illustrate the remarkable path of discovery that brought West African manuscript culture from the colonial era of despoliation and denial to the age of digital discovery, content delivery and linked data. One hundred years separate Massignon's account of the Shaykh Sīdiyya library from the online debut of AMMS (the database which started as a project to microfilm and catalogue the same collection), and the concurrent launch of Gallica, Aluka and the World Digital Library, which together provide access to high-quality, digital surrogates of hundred of manuscripts from Timbuktu. Yet if much has been done to document, describe and preserve thousands of manuscripts[19] scattered over a region the size of Europe or continental United States, recent events in Mali and northern Nigeria (and their consequences for these countries' cultural heritage, as well as for scholarly communities worldwide) should serve as a reminder that much more remains to be done, and much of it needs to be done sooner rather than later. It should also provide an opportunity to reflect on what could have been done, or done more thoroughly and effectively, but instead was not for reasons such as those mentioned above. With almost three hundred thousand manuscripts lying in a limbo in Bamako, it is important, indeed essential, that any future projects, regardless of their objects and scope, build on what has been done already,

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[19] Which, however, represent but a fraction of the total amount estimated to survive in West Africa.

consider what could have been done better (and understand why it wasn't), and combine the lessons of the past with a clear and realistic vision for the future. For instance, much more could have been achieved in terms of long-term content retention and access, had the option of digitization been pursued independently of other project components (or, in some cases, had it been considered at all). A plan to produce pre- and post-restoration images of almost one million pages (as the Timbuktu Manuscripts Project was hoping to achieve) is simply unrealistic if not misguided, and obviously doomed to fail in most circumstances, let alone in Sub-Saharan Africa.[20] What is urgently needed now, before any other care and conservation projects are implemented – or at least in a concurrent and coordinated manner – is a bold and ambitious mass digitization initiative to prevent any further loss (or disappearance) of content, as well as to ensure its long-term preservation for the purposes of perpetual access, duplication and migration. If properly and fully implemented, such a project will create the capacity to build digital libraries centered on specific collections, repositories or locations (including, eventually, entire regions or countries), while at the same time providing conservators and cataloguers with surrogates that can be used for the purpose of identification, inventorying, description and basic analysis. However, to be truly useful to current and future researchers and scholars (that is, to eliminate their need to consult physical manuscripts and to offer instead enhanced discovery and analytical tools), these libraries will need to combine the functionality of data-based – and data-driven – resources such as AMMS and OMAR with the web-based applications and tools of which Aluka, Gallica and the World Digital Library provide a good example. If a successful integration of data sets, discovery tools and display options has yet to be achieved in regard to online resources featuring Arabic manuscripts from West Africa (and is barely showing appreciable results in other, "older" manuscripts areas), it is largely due to the different nature and origins of the various components involved, as well as to the communities of practice who are mainly responsible for their conception, realization, evaluation and fruition.

Both AMMS and OMAR started as microfilming projects in the late 1970s and developed into online databases thanks to a collaboration between humanists and computer scientists (i.e., academic scholars and programmers), with the former providing content, vision and leadership, and the latter technical expertise and support. This model may have worked at the time of their implementation (1980s-1990s), but it is largely outdated today because of the significant changes occurred in the information industry over the past two decades. These changes include, but are not limited to, such phenomena and

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[20] In fact, the 2013 IFLA-RBMS *Guidelines* distinguish between creating digital collections for access and preservation, focusing on the former since "[p]reservation imaging might call for different processes and standards" (IFLA 2013: 3).

trends as: the growth of the Internet (in terms of users, resources and their geographic provenance) and the increased impact of Information Technology on the knowledge economy; the advent of Human-Computer Interaction (HCI) and User-Centered Design (UCD); developments in Web browsing, Web design and Web usability; the advent of Web 2.0 technologies such as user-generated content (UGC), blogs, wikis, podcasts, social networking, crowdsourcing, online collaboration, etc.; the growing impact of usage statistics and Web analytics; significant changes in the way information is accessed, consumed, generated and disseminated over the Web; the quantitative and qualitative growth of digital content, and its impact on teaching and research; the lure of Digital Humanities as an academic field concerned with organizing, structuring and analyzing data using new computational and representational methods such as text-encoding, digital scholarship, geospatial analysis, network analysis et cetera.

At first glance, Digital Humanities (or Humanities Computing) seems to evoke the old humanist-computer scientist partnership,[21] but the particular conditions, characteristics and complexities of online access and digital consumption call for a wider spectrum of professional skills and competencies. I would like to suggest that this wider spectrum is largely – although not entirely – represented by librarians, especially "next generation librarians". In today's knowledge economy, librarians or "information professionals" operate in a highly collaborative, rapidly evolving, technology-driven environment defined by multiple interdependent practices, competences and skills. Because of their complex, composite and essentially comparatistic professional makeup, they differ significantly from the scholar, the conservator or the technologist (especially the IT specialist with programming and analytical skills), whose work remains largely solitary even when teaching, collaboration or teamwork are involved.

Pussadee Nonthacumjane, in a paper delivered at the 2011 World Library and Information Congress (Nonthacumjane 2011: 6-12), identifies three sets of skills and competencies that "new generation" information professionals should possess. These are: Personal Skills (analytical, creative, technical, flexible, reflective, able to deal with a range of users, detective-like, adaptable, responsive to others' needs, enthusiastic and self-motivated); Generic Skills (information literacy, communication, critical thinking, teamwork, ethics and social responsibility, problem solving and leadership); and Discipline-Specific Knowledge (metadata, database development and database management system, user needs, digital archiving and preservation, collection development and content management systems). And Roy Tennant (one of the authors cited

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[21] In fact, Hall and Stewart's use of the AMMS database to identify a "core curriculum" for Islamic West Africa is a Digital Humanities project, although limited in its methodology and purpose.

by Nonthacumjane) further links the ability to acquire new professional skills (such as imaging technologies, Optical Character Recognition, markup languages, cataloguing and metadata, indexing and database technology, user interface design, programming, Web technology and project management) to specific personality traits which one should seek in a digital librarian, including flexibility, skepticism, "skill at enabling and fostering change", an "abiding public service perspective" (i.e., to be able to understand user needs, since "[m]any of those currently building digital libraries do not have a public service background, and it often shows in complicated and obtuse interfaces") (Tennant 1998: 102). To these we should probably add the ability to interact, coordinate, liaison between multiple parties, playing various roles and representing different stakeholders and constituencies of use, both inside and outside the unit or the organization.

These key professional skills, competencies and traits represent the meeting ground and missing link between content-specific (i.e., what is being digitized and whatever editorial or curatorial apparatus is added to it) and technology-specific expertise (whatever it takes to create a digital infrastructure that is sustainable and suitable to the particular content that is being digitized). And it is only through a full recognition and involvement of this meeting ground that appropriate and effective initiatives – such as full-fledged, comprehensive and multifunctional digital libraries – can be implemented to ensure the survival of West African Arabic manuscript heritage through permanent and extended access to its content. Which, at this point in time, seems to be the most efficient if not the only way to bypass the cycle of disappearance and reappearance that affect these manuscripts as physical objects in unfeasible conditions.

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