



# Unlocking Sound and Image Heritage

Selected Readings from the International 2015 SOIMA Conference

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# Foreword

It gives us immense pleasure to present the proceedings of the international conference “SOIMA 2015: Unlocking Sound and Image Heritage”. This publication is the result of a longstanding and extremely fruitful collaboration between the International Centre for the Preservation and Restoration of Cultural Property (ICCRROM) and the Royal Institute for Cultural Heritage (KIK-IRPA).

ICCRROM and KIK-IRPA have a common institutional mandate of promoting cultural heritage research and conservation. An important concern is the safeguarding of endangered sound and image heritage. Although global statistics are difficult to find, the Coordinating Council of Audiovisual Archives Associations has estimated “that within the next 10 to 20 years, a significant amount of audiovisual heritage will inevitably and irreparably fade away”. Moreover, knowledge on sound and image heritage preservation and access is fragmented, trapped in separate areas of expertise, thereby adding another challenge to content collectors and users.

ICCRROM’s Sound and Image Collections Conservation (SOIMA) programme has been actively engaged in developing a response to the global challenge of sustaining sound and image collections since its creation in 2006. Through numerous international partnerships, the programme has succeeded in fostering cross-disciplinary collaboration and knowledge exchange.

KIK-IRPA has a massive photo collection which is being digitized to promote greater access. The institute has built partnerships across private and public sectors to ensure the long-term preservation of and access to its image collections. Through collaborations with SOIMA, KIK-IRPA has trained its staff and has joined ICCROM in building capacity in the area of sound and image heritage.

Recognizing the need for greater collaboration and exchange of knowledge and information between collectors and users, ICCROM and KIK-IRPA organized an international conference which took place in Brussels, 3–4 September 2015. Sixteen public and private institutions joined us in this endeavour, for which we are extremely grateful.

The papers in this publication are based on discussions held during the conference. They shed light on the diversity in the types of collecting institutions, conservation strategies and creative uses of sound and image heritage. By making this an open-access publication, ICCROM and KIK-IRPA hope to reach institutions and professionals who share similar challenges of preservation and access, for a problem shared is a problem solved.

Stefano De Caro  
Director-General, ICCROM

Hilde De Clercq  
Director-General, KIK-IRPA

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We owe a multitude of thanks to our partner organizations: Academy of Flanders (KVAB), AVPreserve, Baltic Audiovisual Archival Council (BAAC), FARO, Fédération Internationale des Archives de Télévision / International Federation of Television Archives (FIAT/IFTA), Flemish Commission for UNESCO, Flemish Institute for Archiving (VIAA), ICCROM-ATHAR (Architectural and Archaeological Tangible Heritage in the Arab Region), MEMNON Archiving Services, Museo delle Culture, Netherlands Institute for Sound and Vision, PACKED vzw (Flemish Centre of Expertise in Digital Heritage), Royal Institute for Cultural Heritage (KIK-IRPA), visit.brussels, Vrije Universiteit Brussel and Wikimedia Belgium.

ICCROM and KIK-IRPA extend a special thank you to the Netherlands Institute for Sound and Vision and the PrestoCentre for ensuring that this presentation reaches a wide array of readers and is openly accessible.





# Introduction

*Aparna Tandon and Danielle Abbazia*

The start of the twenty-first century was revolutionary for the creators and collectors of recorded sounds and images. With the beginning of this new, increasingly digital era, anyone with a digital camera had a photo archive in the palm of his or her hand. Anyone with an MP3 player had a personal digitized music collection. Library users were increasingly interested in accessing information in digital formats. Libraries, archives and museums were faced with the realization that their collections no longer contained solely analogue materials such as books, paintings, prints, photos, audio- or videotapes, and film stock. It was time for institutions to make a move towards the future and incorporate 'digital heritage' into their collections, a significant part of which included sound and image (both still and moving) records.

As digital heritage grew at an unprecedented speed, questions about the new relationships between users and digital material started to emerge: Where was this new heritage to be stored? Who owns it? What is its life span? What is its current value, and how would it change over time?

Yet at the heart of this debate was the growing realization that most of the twentieth-century sound and image heritage was at risk of being lost due to technological obsolescence – essentially like “putting your memories in a lock box and throwing away the key” (Ulanoff, 2010).

Voicing the concerns of collecting cultural institutions, an appeal was launched to “draw attention to the perilous situations” of audiovisual archives and to “demonstrate the solidarity of archivists and users all around the globe” (UNESCO, 2005).

## **Taking action and building capacity**

Recognizing the threats posed to audiovisual heritage, the International Centre for the Preservation and Restoration of Cultural Property (ICCRP) initiated a survey involving museums, archives and libraries, and the results were startling. Cultural institutions faced the task of transitioning their collections from analogue to digital formats, but often they did not have the capacity to make these transitions and ensure long-term preservation of, and access to, sound and image records. Steps had to be taken to uncover effective storage methods and extend the useful life of materials by ensuring that suitable playback equipment was available and that formats continued to be readable.

ICCRP's Sound and Image Collections Conservation (SOIMA) programme was envisaged as an innovative solution to build capacity for preserving sound and image heritage among cultural institutions. Forsaking a media-specific approach to training, SOIMA offered training on the preservation and use of mixed sound and image collections containing varied media types, e.g. film, photo, audio and video. The primary objective of the programme was to bring about a fundamental change by equipping professionals with the know-how to actively manage risks to their collections and migrate information from carrier to carrier in order to adapt to ongoing changes in technology.

The host of the first SOIMA course was Brazil's Arquivo Nacional (the National Archives). It exemplified the challenges faced by cultural institutions that had over time acquired mixed sound and image collections but had inadequate policies and programmes to deal with those collections' specific needs. Using the dynamic institutional context of Arquivo Nacional as a central case study, the first SOIMA course trained 19 professionals from 17 countries and as many institutions. The course topics gave them skills and knowledge to introduce context-specific strategies in their institutions. Since 2007, six other international courses in Asia, Africa, Europe and Latin America have been organized within the framework of the SOIMA course.

Each three-to-four week SOIMA course includes interactive and hands-on learning activities on topics such as extending the useful life of analogue formats, managing documentation backlogs, planning for digitization and granting user-driven access. SOIMA training has adopted a problem-solving approach to learning which allows participants to develop context-specific solutions. Course activities draw on participants' as well as lecturers' varying experiences in different cultural and institutional contexts; this helps foster cross-disciplinary cooperation that continues long after the training is over. The course curriculum, however, is dynamic and reflects the current shift towards open and connected collections that anticipate users' needs and promote creative use.

## **The SOIMA network**

Post-training, an informal network of 120 SOIMA participants spanning 56 countries and 109 institutions is opening doors for new initiatives. In order to build capacity, the network

has developed a new generation of trainers, workshops and formal programmes. For example, in Brazil and Chile, university courses have been introduced by former SOIMA participants while others have taken on the challenge of hosting international SOIMA courses.

SOIMA participants have been equally successful in developing creative solutions for preservation and access in different parts of the world, which have enriched the existing knowledge pool.

Judith Opoku-Boateng is an archivist at the Institute of African Studies at the University of Ghana and a former participant of a SOIMA course. In her paper presented at the 2015 SOIMA conference, she explains her innovative method of treating archives as one would care for human babies. Her “baby nursing model” has been adopted within her archive, and Judith has had a great influence over her institute’s workflow and techniques.

Samuel Franco Arce attended SOIMA training, and his Casa K’ojom in Guatemala has made great strides in the recording, dissemination and preservation of intangible Mayan heritage. Arce’s struggles, described in his paper, to guarantee a secure future for his archive are relatable for other members of the SOIMA community. Discussion on this topic in an international setting opens new pathways for sustaining sound and image heritage.

### The SOIMA conference

Given the shifts that have taken place in values, approaches and technologies since the inception of the SOIMA programme, ICCROM, in collaboration with the Royal Institute for Cultural Heritage (KIK-IRPA), decided to organize an international conference in Brussels in 2015.

The objectives of the SOIMA conference were to review the training in relation to the challenges of sustaining sound and image collections in the twenty-first century. Hilke Arijs, a former SOIMA participant working for KIK-IRPA, collaborated with the ICCROM team to bring in partners from the Netherlands Institute for Sound and Vision, the Flemish Interface Centre for Cultural Heritage (FARO), AVPreserve, the Baltic Audiovisual Archival Council, the Museo delle Culture in Milan, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Vrije Universiteit Brussel, PACKED vzw (the Flemish Centre of Expertise in Digital Heritage), Wikimedia Belgium, Memnon Archiving Services, the Flemish Institute for Archiving (VIAA), the Academy of Flanders (KVAB) and the Fédération Internationale des Archives de Télévision / International Federation of Television Archives (FIAT/IFTA).

Capitalizing on SOIMA’s global insights, the conference was envisioned as an opportunity for cross-disciplinary discussion and collaboration beyond professional and institutional boundaries.

### This publication

This publication brings together selected readings and captures the essence of the SOIMA 2015 conference. Sound and image collections comprise more than physical carriers; they are the memories, the expressions of cultures.

S. Mshai Mwangola, a performance scholar, presents a remarkable paper that tells the story of dirge singers in East Africa whose performances give meaningful insight into their community’s relationship with life and death. Mwangola seeks to highlight the important role of the archivist in capturing, storing and preserving the singers’ masterpieces and rituals for future generations.

David Monacchi uses digital sound recordings to document endangered ecosystems in regions all over the world, demonstrating the benefits of sound and image collections to the fields of science and environmental studies.

Saskia Willaert has digitized collections of musical instruments in Africa and has published online an otherwise inaccessible segment of musical heritage.

Chris Lacinak provides an in-depth look at the cost of inaction in dealing with backlogs of collections. His innovative approach frames how to overcome the challenge of digitization backlogs in effective and efficient ways. At the other end of the spectrum, Johan Oomen describes cutting-edge management systems and tools for providing access to digital sounds and images that have been introduced in the Netherlands Institute for Sound and Vision.

That sound and image collections can be the memory-keepers, the holders of community stories, the recorders of fleeting traditions or of an endangered natural phenomenon was the key takeaway of the conference. At the end of the conference, participants gathered to reflect on strategies for conserving sound and image collections and came up with a Ten Year Vision for the future of sound and image heritage (Fig. 1). Their insightful discussions led to a collective realization that in order to sustain these collections over time, we need to move from closed to open networks, establish cross-disciplinary partnerships and build platforms that enable creative use as well as provide long-term storage solutions.



FIGURE 1. Ten Year Vision for the future of sound and image heritage, adopted at the 2015 SOIMA conference, Brussels.

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# Section One

Memory, Intangible Heritage and  
Creative Expressions





# 1. Bury my bones but keep my words

## The legacy of the dirge singer

*S. Mshai Mwangola*

**The author's experiences preparing and presenting at the 2013 (Nairobi, Kenya) and 2015 (Brussels, Belgium) SOIMA conferences form the basis for this reflection on the work of custodians safeguarding the sound and image heritage of the past. Drawing inspiration from the artistic reflections of acclaimed master poet Kofi Awonoor and accomplished writer Yvonne Owuor on death and life viewed through the prism of the dirge singer, the paper explores what it means to be a facilitator bridging the past and the future through the present. Using performance as a catalyst, it identifies three opportunities open to professional archivists seeking to secure the legacy of the past for generations to come: to create within collections conditions for availability, accessibility and adoptability.**

### Dedication

When the final night falls on us as it fell upon our parents, we shall retire to our modest home earth-sure, secure that we have done our duty by our people; we met the challenge of history and were not afraid.

–Kofi Awonoor, "To feed the people", 2014

### Prologue

We gathered for the opening of the 2013 SOIMA course in Nairobi, Kenya, on 23 September 2013. The auditorium we were using had been scheduled, just 24 hours earlier, to host the closing-day activities for the Storymoja Festival.<sup>1</sup> Had things gone as planned, I would have been on stage that day moderating a panel that was to include, among others, the acclaimed Ghanaian poet Kofi Awonoor. Instead, that programme of events had been cancelled, the festival devastated by the news that he was among the scores of victims who had been brutally murdered in an act of terrorism that would become known as the Westgate Mall attack.<sup>2</sup>

Overnight, as the news filtered in, the organizers of the SOIMA course consulted on what to do, given that it was too late to cancel or even to postpone it. The scheduled launch event was pared to the basics. My first instinct was to pull out of delivering my scheduled opening keynote lecture. Kofi Awonoor was not only an acclaimed poet but one I held in personal esteem. I had so been looking forward to our festival panel. Coincidentally, another scheduled encounter, 15 years earlier, had failed to take place when I lost my father while attending an academic programme in Ghana at which Awonoor was scheduled to deliver a lecture. Flying home for my father's funeral, I missed that first opportunity to meet him. Once again, Death had stepped in unexpectedly to rob me of the opportunity to sit, metaphorically speaking, at the feet of this master teacher and singer of the sorrow song.

Death is an inextricable thread, then, weaving through my memories of SOIMA 2013. My presentation that year transformed into a tribute to Kofi Awonoor, becoming an opportunity to share some of the dirges, otherwise known

- <sup>1</sup> The Storymoja Festival, a project of Storymoja Publishers, is an annual literary celebration of critical thinking marking ten years of existence in 2017. With the exception of 2016, when it was held in Ghana in honour of Kofi Awonoor, it is held in Nairobi.
- <sup>2</sup> Sixty-six other people lost their lives in this terrorist attack on a mall in Nairobi, for which the militant group al-Shabaab later claimed responsibility. About 175 others were injured by the gunmen.

as 'sorrow songs', that he gave the world as his legacy. And since I cannot think about SOIMA without remembering that occasion, the SOIMA space has turned for me into a reflection on the engagement we who are still living have with those who have preceded us in death, as well as with each other and those who will come after us. Those tragic circumstances became my springboard into thinking through rituals of mourning and their place in the lives of those left behind. I have taken special interest in the role played by those, particularly artists, who step up to become the facilitators of these rituals. May this reflection, in the tradition of the great master teacher of sorrow songs who inspires it, be an inspiration to those entrusted as custodians of the promise of hope contained in the sound and image legacy of our past.

### Songs of sorrow

I am a performance scholar or, as we say in East Africa, an oraturist. As a performance scholar, I am invested in the search for meaning. Performance, for me, is about engaging with the process and products of knowing. I study the world by performing it. I call myself an oraturist as a way of acknowledging the amazing transformation begun in the Kenyan academy in those first heady decades of independence that I and my contemporaries benefitted from, as members of the first generation to be born Kenyan citizens.<sup>3</sup> My academic and artistic career has been influenced by the bold exploration of orature that was infused into our education, taking its inspiration from the processes and products of indigenous systems of education suppressed and denigrated in the colonial academy. Of particular interest here is the seminal reflection by Pio Zirimu and Austin Bukonya (1986), arguing that oracy is as desirable a competency as literacy for use in the postcolonial-era academy. This is the foundation for my definition of orature as anaesthetic intellectual tradition characterized by the transcending of boundaries in the making of meaning. As an oraturist, I use creative performance, particularly that which is either embodied or translated through objects (including paper or screens), to make meaning of the world and of those in the world.

I work through story – defined as the creative, crafted re-presentation of lived experience – to engage intellectually with questions that interest me. Storytelling for me is much more than entertainment or the mere narration of a

sequence of events. As a storyteller, I craft and perform narratives in order to explore the strange as well as the familiar, in search of a better understanding of the world that is home to humanity.

In seeking to embrace the legacy of Awonoor, I have invested in the study of sorrow songs. Using performance as my way of knowing has meant that I invest in the process of performance as much as I do in the products that emerge out of it. My exploration has most recently been facilitated through the process of researching, rehearsing, re-presenting and reflecting on a particular story, Yvonne Adhiambo Owuor's magical tale "Dressing the Dirge" (2006). I have sought to take my understanding of dirges and use it to stage the story as a performance, translating the generally individual experience of reading this text into a communal exploration of the unique space inhabited by those who dare to carry the burden of mediating the liminal world between life and death.

This is a story of so much more than the lyrics of the dirges or the performances that deliver them to the world. Dirges manifest through distinct words, melody and movement, but they acquire meaning in the combination of all of these and more. Meaning is wrought in the lives that are being mourned, and it is manifested in the weight of the relationships revealed in the presence of death. It is negotiated in the response of the community to the masterfully crafted call melodically sounded by the one entrusted with the role of 'chief mourner / dirge singer', tested by the strength of the seams previously joined in shared rites of communion that the no-longer-living once participated in. Each dirge performance is as unique to the occasion of its staging as the fingerprint of the one it celebrates – coaxed forth by the mastery of the dirge singer, whose responsibility it is to preside over the communal acts of mourning that transfigure into a ritual as essential to the dead, to ease their passage into the afterlife, as it is to the living, to gently deposit them into the new existence-without-the-departed.

Central to this story – and to my exploration of it – is the role played by the cultural facilitators leading communities through the essential rituals that ease the agony of the separation that is death. The very first time I read "Dressing the Dirge" I knew I would perform it. While the language and the plot first drew me in, it was the complicated interplay between the fascinating antagonists at its heart that captivated me. Bitter rivals, the two both hold the twin office of chief mourner / dirge singer, each working diligently in her own unique way to lead the delicate rituals of communal mourning essential to this society. Their shared calling and their mutual disgust bind their souls together as intimately as the most loving of friendships. The process of performing this

<sup>3</sup> Ngũgĩ wa Thiong'o (1986) uses the experiences of those leading the struggle to transform the Kenyan academy and cultural space as symbolized by the University of Nairobi and the Kenya National Theatre respectively as a basis for theorizing what it means to decolonize the mind. I reflect on the impact of this transformation on the Uhuru generation in a chapter titled "Decolonising the mind", after his book (Mwangola, 2010).



story, of finding ways of uncovering the layers of meaning in the contrast as well as the unfolding drama between the two, would, I knew, lead me into a deeper understanding of the complexities of the role and responsibilities of those chosen to care for communities processing their way through sorrow. I knew I would have to go beyond merely memorizing the text; I would need to draw on examples of dirge performances from real life in order to unlock the essence of the characters through the story. But I had a problem.

This is not my world. I do not actually know any professional dirge singers. Dirge singing, essential for generations of my ancestors, is not an integral part of my lived experience or, to the best of my knowledge, to the experience of any of my ancestors that I personally have known. Those times that I have been in a community of bereavement where dirge singing is part of the mourning, it has been with the detachment of a bystander that I have borne witness to the performance. Yet to perform this story, I knew I would somehow have to access not just song lyrics or music or choreography; I would have to be able to engage with the very world of the dirge singer.

But how?

### Lost?

In Micere Githae Mugo's iconic poem "Where are those songs" (1985), a woman asks:

Where are those songs my mother and yours always  
sang fitting rhythms to the whole vast span of life?

Beginning from an acknowledgement of this absence – the death, if you like – of songs in her memory, the poem's persona goes on to identify different genres of songs once familiar to her ancestors – lullabies, play songs, work songs, journey songs, wedding songs, war songs – that she has long since forgotten, journeying through a mental anthology of the auditory archive of life until she comes to this moment of realization:

I have forgotten my mother's song my children will  
never know.

I identify fully. Although like most Kenyans of my generation, if pressed, I can sing at least a couple of 'traditional' dirges, they are not literally 'my mother's song'. The dirges in my memory were taught to me in school, in literature and music classes, or in rehearsal for competitive cultural festivals. They come in languages whose words I comprehend only through translation.

I never heard my mother sing a dirge.

### ... And Found

So it is that I have had to turn to recorded archives and museums storing sound and memory to make possible my exploration of the world of the dirge. In listening and watching various clips of recorded material, I began to grasp the essence of the two dirge singers and to find the inspiration that translates into the sounds and imagery I use in my performance of this story. I have, therefore, deep investment in the work that is accomplished through the SOIMA courses and in the community of professionals that ICCROM is nurturing.

I recognize, with appreciation, the labour of love that goes into rescuing and making accessible and readily available this intangible heritage. I know that much of it is currently stored in forms rapidly becoming obsolete, or even inaccessible. I personally remember, in decades gone by, recording oral material for my school fieldwork assignments on cassette tapes. I am not even sure where they are anymore; if they survive they are probably in a suitcase or cardboard box somewhere they have been left – hopefully undisturbed – for decades. I dread to think of their condition. Even if I were I to find them, I would need to transfer the material from the reams of tape into a format more readily accessible for use today. I know I am not alone in this. If we were somehow able to rescue the entirety of the archive collected by Kenyan students over the 40 or so odd years that fieldwork research has been an integral part of the Kenyan academy, that would certainly be a treasure trove of material, and the world would be immensely enriched to have access to it. But how much would we be able to actually use today? How many of us have the appropriate technology readily available to access this material? What conditions would this material have been stored in? Would those cassettes or videotapes still be viewable or audible? Knowing that there are those who are putting in the investment to make this kind of precious cultural heritage available and accessible to as many as possible is indeed worth celebration.

### Mapping the way

For me, this work has three priorities. First, there is the issue of what I call *availability*. It is essential that as much as possible of any cultural material that has been recorded is made available to humanity. This means that someone has to do the work of locating and cataloguing whatever can be rescued for posterity's sake. Ideally, the goal should be not just to have archives but to appreciate their worth as precious traces of a performance that happened somewhere, sometime; incomplete perhaps as a definitive record of a moment in the past, but valuable puzzle pieces that help re-create that moment, and the meaning it contained, in our present. I therefore think it critical that there be every attempt to fully restore that which exists in recording to as

near the condition as it was at the moment of recording as possible. It has been eye-opening to observe at the SOIMA events I have attended the variety of techniques and technology currently available or in development, facilitating the range of work that is necessary to make this possible. I suspect there will always be, hovering tantalizingly just out-of-reach, another degree of perfection when it comes to the arts and sciences of restoration. Those hours of patient and painstaking labour finessing the technology used in archiving is deeply appreciated.

Second, I recognize that this is not work that can be done by a handful of individuals or institutions. I imagine that a virtual army of trained professionals spread out as broadly as possible, in as many countries and cultural spaces as it is feasible, is needed to do this work. The range of needs is vast, dependent on factors as varied as atmospheric realities to the availability of dedicated and appropriate spaces for storage. It would be a pity if the human and technological resources for sound and image archiving were to be concentrated in only a handful of places in the world or in relatively miniscule pockets of privileged insiders. In this regard, I am conscious of global imbalances in terms of technology and expertise that privilege certain institutions and regions of the world. I also know that, for a variety of excellent reasons, institutions and individuals must make choices with regard to the priorities they invest in. This makes it imperative that we grow and diversify as much as possible the range of archives available in all parts of the world. It is therefore with gratitude that I commend ICCROM for its investment in redressing these imbalances through the SOIMA programme. This is what I would refer to as the second item on my wish list, the issue of *accessibility*.

Finally, I recognize that the work is so vast that it must be shared. The challenge is not only to make the technology and technical skills available and accessible to the small band of professionals who must lead the work but also to find ways of making those resources affordable and usable for amateurs. There is, of course, that which can only be done by professional sound and image archivists working in and for dedicated archives using equipment that realistically can only be entrusted to those with the skills to use it. But there is so much more to save, well beyond what is humanly feasible for the professionals alone to accomplish. This makes it necessary, wherever possible, to commission and enable willing amateurs to work alongside the professionals in doing what they can to lighten the load. To adopt, so to speak, a community to work with; or better still, to be adopted by a community cognizant of the importance of maintaining and amplifying their archives a community that is just as invested in the work as the professional archivist.

Part of the work then, must be to find or create the investment and then to make available the skills and technology to attract as many as possible to this work, creating the conditions for *adoptability*, whether it be of, or by, the community. In other words, while excellence must always be the goal, there should also be a measure of adaptability attracting and enabling those who do not have the professional skills, equipment and institutional space to do their part in creating, sustaining and growing and benefiting from humanity's shared heritage. Yes, there is work to do, not only in the labs but also out in the public sphere. In this sense, the work of the professional archivist is reminiscent of that of the professional dirge singer. As chief mourner, the singer facilitates communal participation, leading the bereaved in performing rites of passage that cannot be effected by any single individual, no matter how talented or invested in the process. The professional archivist should lead the recovery and preservation of the sound and image heritage from the past, inspiring by example communal appreciation, investment and participation in the preservation of sounds and images. Even if it would be possible for professionals to do the work all by themselves, I still believe it is critical that this becomes a communal responsibility. After all, the memory-keeper is a facilitator of community, like the dirge singer and the storyteller. This work – this responsibility, this gift – is critical to the survival of any community that understands the inextricability of the past, present and future. This work of adoption, of nurture, is long-term. It is the work of a lifetime and can only be done through the commitment to empower and be empowered by the gift that is community.

### **A legacy for the future**

This work that we do is not just for this generation. It is our responsibility to fulfil it as part of the shared chain linking humanity from the past to the future. Reflecting on Awonoor's work, I am reminded of the time-bridging *adinkra* symbol Sankofa, represented by a mystical bird. Both retrospective in that it faces backwards and prospective in that it flies into the future, it could be adopted as the insignia for both dirge singer and memory custodian. Surely it cannot be mere coincidence that Awonoor's parting gift to the world is the anthology of his collected works entitled *The promise of hope*, which he himself only saw as a finished publication for the first time during that fateful trip to Nairobi.

Therefore, understanding my role as a connector between the past and present, I appreciate that I, too, must pay attention to the preservation and transmission of the work that I do for those who will come after me. Preparing to deliver my keynote address in 2015 to the SOIMA congress in Belgium, I found myself facing another dilemma. With no doubt in my mind that I would perform excerpts from "Dressing the Dirge",

I was conflicted about not being able to take with me to Brussels George Achieng' Odero, the master *orutu* player whose skilful playing not only brings to life the contrast between the two central characters of the story but whose presence and virtuosity also reminds us that the *orutu* is as at home in the twenty-first century as it was in the twentieth.<sup>4</sup> I feature the *orutu* in my performance not only because, for those for whom it is familiar, it points subtly to the social context of the story but also because it really is the perfect accompaniment to the story. It elegantly amplifies throughout the performance that which would be more noticeable in written text, where one has the luxury of being able to flip back to check a detail of repetition or of nuance. Unwilling to do without it, I chose to record Odero's performance in Nairobi for projection during my staging of the story, days later, in Brussels. This provided me with the gift of an unsought master class, which cannot be elaborated on here. Simply said, I became cognizant of the additional challenges of attempting to capture and store the nuances of live performance and the consequences of working with a recording as opposed to sharing a performance in real time with another artist well able to respond to the uniqueness that characterizes each iteration of even the most minutely choreographed and well-rehearsed live performance. These difficulties aside, I am truly excited about the possibilities this has opened up to me for the future.

As I dream on, I challenge professional sound and image archivists working to create the conditions for *availability*, *accessibility* and *adoptability* to apply these to the ever-continuing challenge of expanding the frontiers beyond what we imagine today to be possible. Only then can we be confident of bequeathing to the generations to come the very best archives our soul, minds and skills can create.

## Epilogue

My journey into the past, into the sorrow songs and into an understanding of the gift of the archivist, comes full circle with the words of the Master Dirge Singer. We are bound together, artist and archivist, caught up in the challenge of bridging the gap between the past and the present, so that

<sup>4</sup> Odero is a singer and composer who plays a variety of instruments in addition to the *orutu*, a popular one-stringed instrument of the Luo people of East Africa. He is also the band leader and lead singer of Kenge Kenge Orutu System Band and the Music Director for TICAH (Trust for Indigenous Culture and Health).

we may be true custodians of the legacy we hold in trust for the future. May the work that we do not be in vain, so that we will have the confidence to declare with Kofi Awoonor (2014, pp. 14–15):

When the final night falls on us as it fell upon our parents, we shall retire to our modest home earth-secure, secure that we have done our duty by our people; we met the challenge of history and were not afraid.

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## 2. Challenges at the Europeana Space project

### Dance and the intersections between copyright and intangible cultural heritage

*Charlotte Waelde and Sarah Whatley*

**Digital technologies enable us to visualize dance in new ways and to capture recordings of dance which may be preserved and handed down to future generations. In this way, dance starts to become part of our intangible cultural heritage. But capturing dance also raises questions of authorship and ownership of copyright in both the dance and the recording of the dance. Challenges arising at the intersections between the legal frameworks of intangible cultural heritage and copyright have surfaced in an EU-funded project, Europeana Space. This contribution describes the E-Space project and the place of dance within it, and it introduces work being done at the Centre for Dance Research at Coventry University on dance and examines the intersections of copyright law and the international legal frameworks applicable to safeguarding intangible cultural heritage.**

Dance has significant social importance and leaves traces in many different ways. But because it is an embodied, ephemeral practice, it does not easily produce hard copies for preservation and circulation. Digital technologies have offered opportunities to visualize dance content in new ways and to develop new creative expressions and cultural artefacts. These changes have also led to questions about the place of dance within our cultural heritage milieu, and about the interplay between the intangible nature of the dance which, when captured by digital technologies, comes under the mantle of copyright protection. Europeana Space (E-Space), an EU-funded project, has been addressing just some of these issues through working with our digital cultural heritage with a view to creating new opportunities for employment and economic growth within the creative industries sector.

#### **E-Space and dance**

E-Space received funding from the European Union's Information and Communication Technologies Policy Support Programme (ICT-PSP) as part of the Competitiveness and Innovation Framework.<sup>1</sup> The E-Space project is working with our digital cultural heritage with a view to creating new opportunities for employment and economic growth within the creative industries. The E-Space consortium has 29 partners from 13 European countries. The consortium includes representatives of creative industry and technology-based small and medium-sized enterprises (SMEs), cultural bodies, memory institutions, broadcasters, national cultural agencies and centres of excellence in multidisciplinary research. The project's partner organizations have skills in areas relevant to the project's objectives: the building of technology platforms, intellectual property rights management, content provision, management of major digital cultural collections and of digitization programmes,

<sup>1</sup> Grant agreement number 621037.

online publishing, games development and the use and reuse of cultural objects for commercial exploitation purposes.<sup>2</sup>

E-Space is one of a family of projects designed to support the work of Europeana, an online portal to digital cultural content held within cultural institutions throughout the EU. The Europeana mission is as follows: “We transform the world with culture! We want to build on Europe’s rich heritage and make it easier for people to use, whether for work, for learning or just for fun” (Europeana, 2017). The EU has funded numerous projects designed to support the work of Europeana. These include Europeana Food and Drink, Europeana Labs, Europeana Creative and Europeana Fashion.<sup>3</sup> E-Space is different from these other projects because it focuses on how the reuse of digital cultural heritage can contribute to the economy – in other words, for E-Space the focus is on commercializing our digital cultural heritage.

The cultural industries being piloted in E-Space are dance, television, open and hybrid publishing, games, museums and photography. Teams of experts within the E-Space pilot projects have developed tools and applications using digitized cultural heritage artefacts which have been made available during project-specific hackathons. The three best ideas to emerge from each hackathon have been supported through a business-modelling workshop. The project thought to have the most potential overall enters a phase of incubation and is supported with expert business advice. As the intangible art form within the group, dance poses its own copyright and cultural heritage challenges.

The aim of the E-Space dance pilot is to create a general framework for working with dance content. In so doing it has produced two innovative models of content reuse, one for research purposes and one for leisure. Two applications were developed based on these models: DancePro and DanceSpaces.

The DancePro prototype 2.0 was developed by the Universidade NOVA de Lisboa (FCSH-UNL) by programmer João Gouveia under the direction of Carla Fernandes. DancePro focuses on the needs of researchers and dance experts (e.g. dance artists and choreographers) who require a set of powerful tools for accessing dance content and creating extensive metadata (Fig. 1). The tool enables recording and annotation of videos in real-time, and annotating of previously recorded videos. It allows several types and modes of annotation and is designed to support

the creative and compositional processes of professional choreographers and dancers. It also has an analytic and scholarly use in any domain where the performance of the human body is at stake.

IN2, an Edinburgh-based media management and software publishing company,<sup>4</sup> under the direction of Alexandru Stan, led development of the DanceSpaces prototype.

DanceSpaces focuses on the needs of the general public, dance enthusiasts and pre-professionals (e.g. dance learners and educators, those who participate in dance as a social and/or recreational activity, dance audiences/viewers and tourists) who want to share and explore content about a particular aspect of dance (Fig. 2). It allows a user to become a curator and create dance collections or narratives. Users can upload their own content via an intuitive web interface, or they can reuse content already available on DanceSpaces.

Digital dance content used for the pilot included that drawn from the regional, national and private archival collections of partners and from Europeana. It embraced contemporary dance, classical ballet and other theatrical dance forms, as well as social and popular dance; folk, national and indigenous dance forms; and more ancient dance forms, including those inscribed on historical artefacts (drawings, objects, paintings, texts and other kinds of inscriptions), notations and other forms of dance scores, books and other textual objects, publicity and marketing materials (posters, programmes), audiovisual recordings, photographs and digital visualizations using motion capture and other tracking devices.

### Copyright and the dance pilot

Copyright has had to be considered for each of the E-Space pilot projects, including dance. As discussed below, copyright subsists in literary, dramatic, musical and artistic works and in their recordings – and this includes dance. As mentioned, the prime goal of E-Space is to commercialize tools and/or content, and any ultimate investor in a dance project or digital tool would want to know who the owner of the copyright is in the dance and its recording. Careful thought therefore had to be given not only to existing copyright in content and tools used in the pilots and during the hackathons but also to new copyright arising (1) in content and tools developed by the pilots (2) during the hackathons and (3) during the incubation process – and how these copyrights were to be owned and managed.

Copyright law has been around for more than 300 years since it was first put on statutory footing in today’s United Kingdom of Great Britain and Northern Ireland in 1709 in

<sup>2</sup> Full details can be found at [www.europeana-space.eu/partners/](http://www.europeana-space.eu/partners/).

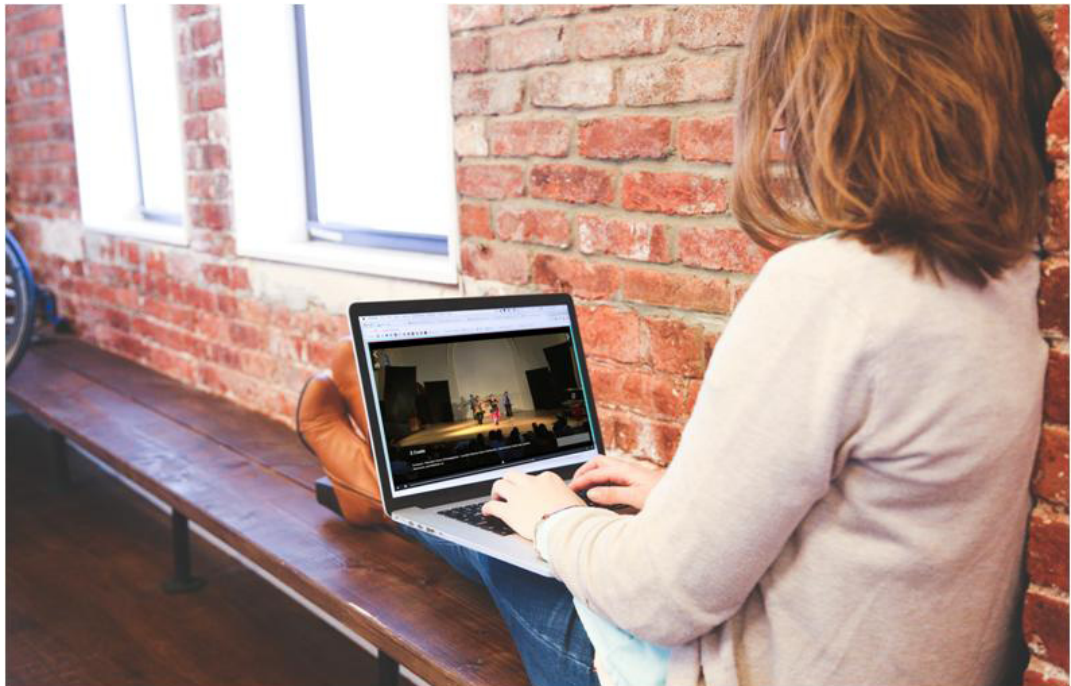
<sup>3</sup> For a full list, see <http://pro.europeana.eu/structure/project-list>.

<sup>4</sup> See <https://in-two.com/>.





**FIGURE 1.** Screen shot of DancePro tool. Image courtesy of KoZin Photography



**FIGURE 2.** A user engaging with the DanceSpaces tool. Image courtesy of Alexandru Stan

the Statute of Anne.<sup>5</sup> The impetus for this statute came from the development of the printing press: suddenly it was possible to publish books and put copies into circulation, but it was difficult for either the author or the publisher to exert any form of control over circulation of these copies. The statute therefore granted the author the sole right and liberty of printing books – a right that could be assigned to

the publisher – for a period of 14 years from first publication. If the author was alive at the end of that period, it was renewed for another 14 years. From then on, copyright was considered to be a creature of statute, the parameters of which are set by the legislature. Over the ensuing years copyright law was extended in response to new developments and technologies, including art and drama, sound recordings, films and photographs, and the term of protection was extended (in Europe) for authorial works to 70 years after the death of the author. Although

<sup>5</sup> The text of the statute is available online at <http://archive.org/stream/thestatuteofanne33333gut/33333.txt>.

copyright is territorial, which means that the law extends to the territory in which it is enacted,<sup>6</sup> a series of international conventions and agreements,<sup>7</sup> to which the majority of countries in the world have signed on, means that copyright is recognized and can be enforced in many territories around the world.

Because dance and other creative works such as books, software and photographs are both non-excludable and non-rivalrous, which means that individuals cannot be effectively excluded from use and that the use by one individual does not reduce availability to others, a mechanism is needed to enable the owner to exert control over copies of the works. And this is what copyright does: it gives to the owner of the copyright in the work a number of exclusive rights: to control copying, issue copies to the public, rent or lend the work, perform, show or play the work in public, communicate the work to the public and adapt the work (CDPA, 1988, ss 16–21).<sup>8</sup> The owner maintains these exclusive rights, so she can license or assign them to others who can, in turn, exercise them.

The law of copyright does not, however, give complete power over the work. The rights of the owner are curtailed through a series of limitations and exceptions built into the law, mainly for public policy reasons. These rights are said to balance the interests of the user with those of the owner of the copyright and generally allow the user to use parts of a work protected by copyright without payment or permission. While these are similar in most countries, there are differences. In the United Kingdom these exceptions include fair dealing for the purposes of non-commercial research and private study; criticism, review, quotation and news reporting; and caricature, parody or pastiche (CDPA, 1988, ss 29, 30, 30A). There are also measures in the British legislation that allow works to be used for those with disabilities (ss 31A–F), for the purposes of education (ss 32–36A), by libraries and archives (ss 37–40A) and for the purposes of public administration (ss 40B–44A). Each of these limitations is bounded by criteria that need to be followed if copyright is not to be infringed. In addition it should be remembered that copyright protects the expression of ideas but not ideas themselves. This can be a challenging distinction to grasp in some cases as the boundary between ideas and expression is opaque in law,

but it is an example of where the law balances those who have interests in the copyright framework.

It is also important to remember that in the United Kingdom the author is the first owner of copyright unless she is an employee and acting in the course of her employment. If this is the case, then the employer will be the first owner (CDPA, 1988, ss 9–11). In the United Kingdom the owner is free to license or assign her copyright to a third party. This often happens in the music business, where the musician, singer and songwriter will assign copyright to a record company. All of the copyright ownership is then consolidated in the hands of one entity. But the author does retain moral rights in the work (where applicable). The main moral rights in the United Kingdom are the right to be identified as the author of the work (s 77), and the right to object to derogatory treatment of a work (s 80). These rights last for as long as copyright subsists in the work (s 86). As with the exceptions and limitations to the copyright monopoly, these moral rights are limited in different ways, but their existence means that interests in a work protected by copyright can be split, as between the owner and the author.

Dance sits squarely within this copyright framework. In the United Kingdom the CDPA provides that dramatic work includes works of dance (CDPA, 1988, s 3) and that the author is the person who creates that work (s 9[1]). While United Kingdom case law on identification of a dramatic work is sparse, it seems that a dramatic work cannot be purely static and should have movement, story or action (*Creation Records v News Group*, 1997) and should be capable of being performed (*Norowzian v Arks Limited*, 2000). Although there is no requirement of fixation in the international framework for copyright to subsist,<sup>9</sup> the law in the United Kingdom does require that the work be fixed in some material form.<sup>10</sup> In the United Kingdom, copyright only arises on fixation. What form fixation takes is left open and needs only to be “in writing or otherwise” (CDPA, 1988, s 3[2]). For dance, one of the notation systems such as Labanotation or Benesh might be deployed; both have relatively modern origins, having been invented in the mid-twentieth century. More contemporary examples of dance fixation, and those relevant to the E-Space dance pilot, might include film, video and motion capture, each of which would have its own separate copyright – so there would be two copyrights in a recording of dance: one in the dance and one in the recording of the dance.

<sup>6</sup> The British law, the Copyright Designs and Patents Act 1988 (CDPA), as amended extends to England, Wales, Scotland and Northern Ireland.

<sup>7</sup> For example, the Berne Convention for the Protection of Literary and Artistic Works (1886) or the Agreement on Trade Related Aspects of Intellectual Property Rights (1994).

<sup>8</sup> For secondary infringement, see ss 22–26.

<sup>9</sup> Article 2.2 of the Berne Convention leaves fixation to members of the Union.

<sup>10</sup> This is so the extent of the monopoly claimed may be known to others. See *Tate v Fulbrook*, 1908, at 832.



Within the dance community there is a belief that the author of the dance, and therefore the owner of the copyright in it, is the choreographer. This perspective has been challenged over recent years, most particularly where the dancer is closely involved in developing the originality of the dance, and in so doing stamps her personal touch on the dance. In these circumstances the dancer would be the author of the dance, either together with the choreographer or in her own right.

Given the complexity of copyrights surrounding dance, these considerations were an important part of the planning for the E-Space dance pilot project. It was decided to make the tools DanceSpaces and DancePro available at the pilot hackathon, but for demonstration use only and not to be built upon by the hackathon attendees. Therefore it was not critical that the owner of the copyright in the tools was identified – which may have been a challenge given that one was based on a pre-existing tool that used proprietary software and new copyright would have arisen as it was developed by the project team.

The digital dance content used during the hackathon was sourced from different repositories and came with a range of different licences for use. Some was in the public domain, meaning that the author of the dance and of the recording had died more than 70 years prior, and so the digital representation could be freely used without restriction; for other content, bespoke licences were negotiated to allow for use of the digital dance artefact during the course of the hackathon but not outwith the hackathon. Care had to be taken to ensure that the hackathon attendees knew of the licences attached to the content and understood that it was their responsibility to use the content within the licence terms.

Copyright also arose as participants developed new content during the course of the hackathon. The E-Space legal team had suggested two strategies for managing this copyright: one where it would be held in trust to be used for future hackathon events, and one where it would remain with the individual attendees but participants would enter into an agreement not to reuse ideas from other hackathon participants (a confidentiality agreement). In the event it was decided that too much emphasis on copyright could dampen the innovation the hackathon was designed to encourage. So for the dance hackathon, nothing was said about copyright, meaning that copyright arising in digital dance content generated during the hackathon would be owned by the author (or an employee acting in the course of her employment).

## Dance and intangible cultural heritage

While the E-Space dance pilot did manage to source some images of dance from cultural heritage repositories, overall

there is a dearth of representations of dance in our memory institutions. One of the challenges has been around the ephemeral nature of dance along with the enduring view in the community that the dance should not be captured and ossified. Many dancers and choreographers are of the view that the dance is fixed or “set” in the “memories and bodies of the dancers” where the bodies are considered material objects (Traylor, 1981, p. 237). Any form of record would be an anathema: the dance is meant to be ephemeral, only to exist at the time of performance – fixation would ossify the work (Théberge, 2004, p. 140). In legal terminology, a dance is intangible. Such an approach means that a dance can draw an audience at the moment of performance, but not beyond. It is also likely part of a wider phenomenon, particularly in British heritage circles, in which intangible cultural heritage (ICH) has not been considered a part of our cultural heritage on its own terms. Where it is present it has tended to be as an adjunct to tangible objects (Smith and Waterton, 2009).<sup>11</sup> That view, however, is shifting, most particularly with the development of the international legal framework, notably in the form of the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (ICH). This convention, which places obligations on states that sign up to it to safeguard ICH, was the culmination of a protracted period of negotiations within UNESCO and beyond that sought to have ICH as a recognized part of our cultural heritage ecosystem.

Cultural heritage does not end at monuments and collections of objects [tangible cultural heritage]. It also includes traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts [intangible cultural heritage] (UNESCO, 2003b).

The ICHC defines ‘intangible cultural heritage’ as the practices, representations, expressions, knowledge and skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage (UNESCO, 2003a, Article 2.1).

<sup>11</sup> Smith and Waterton (2009, p.297) quote an extract from a 2005 interview with a representative from English Heritage as follows: “INTERVIEWEE: The UK has not said that it will ratify [the 2003 Convention] and I think it will be quite a long time before it does. INTERVIEWER: What are the reasons for that? INTERVIEWEE: It is just difficult to see how you could apply a convention of that sort in the UK context... it is not relevant... it just does not fit with the UK approach... I think it would be very difficult to bring in a convention that says we are actually going to list this sort of stuff and protect it. What are the obvious examples you come up with? Morris Dancing? As intangible heritage and so on? The UK has no intangible heritage.”

Article 2.1 of the ICHC goes on to state that this ICH is transmitted from generation to generation; is constantly re-created by communities and groups in response to their environment, their interaction with nature and their history; and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

Since its inception the ICHC has underpinned a growing body of knowledge and gathered examples of intangible practices from around the world. Many of these have been captured and documented in the formal lists of intangible cultural practices maintained by UNESCO,<sup>12</sup> which include such examples as ‘coaxing ritual for camels’ and ‘Tinian marble craftsmanship’. While what is included needs to meet UNESCO criteria, nomination is in the hands of each state: ‘Tibetan opera’ is, for example, on the list (Labadi and Long, 2010). In the majority of entries on the list the focus is on what might be called *traditional* forms of ICH: traditional cultural expressions, traditional knowledge and traditional practices.

The place of dance within the contemporary ICH ecosystem is starting to be recognized within the dance community. In a blog post for *The Guardian*, Judith Mackrell (2015) reported on discussions at a panel convened by Rambert, the dance company, to explore issues around if and how contemporary dance should become a part of our cultural heritage. Some choreographers and dancers remain adamantly opposed to the capture and preservation of dance, maintaining that dance is ‘of the present moment’; its ‘slippery’ nature resists commodification; and a slavish approach to reproducing the past could lead to a sacrifice of effectiveness of the work and of its integrity. For some on the panel the mere mention of the word ‘heritage’ conjured up images of ‘crumbling castles’. For others, safeguarding our dance heritage was as important as safeguarding classics from music, art and literature, although they recognized that there are significant practical and theoretical challenges.

The E-Space dance pilot has also challenged this focus on the traditional. It has shown that traditional forms of ICH – in the form of the digital representations of dance – are being adapted and remixed to be relevant for a changing society and to suit new generations, resulting in new contemporary forms of ICH in the form of new content to emerge from the pilot and the hackathons. This is part of a wider phenomenon which seeks to recognize the importance and relevance of contemporary forms of ICH. As has been argued by Richard Kurin (2004, p. 69), a leading heritage commentator, ICH could

include “rap music, Australian cricket, modern dance, post-modernist architectural knowledge, and karaoke bars”.

### Some conclusions

The dance pilot within the E-Space project used content resources found within our cultural heritage repositories for which participants needed to deal with copyright, and it created new works and new forms of cultural heritage which, in turn, have their own copyright. This situation raises a range of socio-legal and political questions for dance (and other forms of ICH) around the interface between copyright and cultural heritage.

What makes it possible for dance to become part of ICH is its capture in some fixed form. But as the intangible dance becomes tangible and fixed in the records of our memory institutions, copyright questions are immediately raised: who has authored and who owns the dance and the recording of the dance, and who has the power to exercise the exclusive rights granted by copyright law?

At this juncture we return to the definition of ICH. ICH is “the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith” (UNESCO, 2003a). As has been described by one commentator, ICH “is an enactment of meanings embedded in collective memory” (Arizpe, 2007, p. 362). The legal framework seeking to safeguard ICH thus seeks to protect the intangible as essentially un-owned, but to be passed down by the communities, groups and sometimes individuals who practice the ICH. By contrast, the copyright framework ascribes property rights in the intangible to authors and owners, who can then exercise them within the marketplace.

This collision of legal frameworks is being recognized and increasingly explored in academia. It is one that the dance pilot within the E-Space project sought to negotiate as it used existing digital representations of dance from our cultural heritage and created new digital cultural (heritage) artefacts. It is a collision that raises great passion in heritage practice and critical heritage studies as the proponents of ICH seek to resist its ownership and commodification of ICH through copyright. It is one, however, that cannot be ignored if ICH in all of its manifestations is to be properly safeguarded into the future. To this end, the Centre for Dance Research (C-DaRE) at Coventry University is working on a number of new research projects that build on the experience gained in the E-Space project and elsewhere, and which seek to bring together law academics, heritage practitioners and critical heritage studies scholars to expose the challenges at the interface between ICH and copyright, and to negotiate new interdisciplinary understandings of the intersections between these areas of law.

<sup>12</sup> See [www.unesco.org/culture/ich/en/lists](http://www.unesco.org/culture/ich/en/lists).

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# 3. Someone's treasure – a legacy for all?

## The future of La Antigua Guatemala's Casa K'ojom *Samuel Franco Arce*

**The Casa K'ojom in La Antigua Guatemala, Guatemala, houses a unique collection of physical objects and audiovisual materials devoted to Mayan cultural heritage, both tangible and intangible. What began as a private collection has evolved into a museum where thousands of visitors have learned about Mayan culture and music. This paper highlights the development and care of the collections from the perspective of the Casa K'ojom's founder and current director, Samuel Franco Arce. It reviews the steps he is taking to preserve the collection's analogue and digital material for the future, all the while not neglecting important non-digital artefacts. It also proposes future solutions to issues within an archive that has to address constantly changing technologies, user needs, audiovisual formats and intellectual property rights laws.**

Private collections can become an obsessive passion that drives the collector to explore the deepest waters of the ocean in the search to enrich the value of a particular object or its associated subject. Throughout history, private collections of all kinds, including audiovisual (AV) collections, have provided us with information and entertainment about the places, objects and ways of thinking and living of a particular community, most often thanks to the passion and effort of one person.

This is a story about a personal collection of photographs and audio and video recordings that grew out of a desire to explore, discover and contribute to the research, documentation, preservation and dissemination of the living Mayan intangible cultural heritage. This archive, collected over 30 years of fieldwork research, is full of significant political, social, religious and technological changes and events that have affected the Mayan ways of living and traditional practices. Its audiovisual materials document Mayan music, dance, spiritual rites, weaving techniques and domestic life. There is no similar audiovisual archive available, either public or private.

### **The Casa K'ojom: a documentation centre and museum**

In order to share some content of the AV archives with students, researchers and tourists, and to generate funds to continue conducting field trips to document and record activities in the various Mayan communities, Casa K'ojom (K'ojom means 'music' in the Mayan language) was opened in 1987, as a documentation centre and museum. It is located in La Antigua Guatemala, a UNESCO World Heritage Site since 1979.

Casa K'ojom was originally based in an auditorium, where visitors enjoyed an AV presentation on Mayan culture through a high-fidelity sound system and multi-slide projectors. Another area permanently displayed traditional musical instruments, dance costumes and masks, ritual artefacts, domestic costumes and objects, naïf paintings and photographs. The experiment of presenting AV content as the main act, combined with an exhibit of related ethnographic objects, made the Casa K'ojom a popular destination for national and foreign visitors.

Casa K'ojom is currently recognized by the Guatemalan Ministry of Culture as an ethnographic museum and documentation centre. It is an active member of the Guatemalan Association of Museums and the National Committee of the International Council of Museums (ICOM). Income is generated primarily through admissions and the gift shop. Occasional funding comes from other activities such as videography and audiovisual editing services, events,

live performances, coordination of research field trips to Mayan communities for groups of students or academics, publications, conferences, workshops, lectures, travelling exhibits and collaboration projects with national and international museums and cultural institutions.

### **Cross-cultural links within the archive**

Through the Casa K'ojom, I have been researching and documenting cultural links between the Asian, African and Mayan cultures. After 2004, the research and fieldwork area expanded to some Asian and African countries. With the aid of grants and personal resources, I have participated in workshops, training courses, field trips and collaboration projects with colleagues from similar museums in different countries in Asia and Africa.

Since its start, the Casa K'ojom has focused on music. One of our first projects was to research and document the link between xylophones from Asia, Africa and America. The marimba, which means 'sounds of wood' in Bantu African language, is a xylophone usually associated with the southeast of Mexico, Central America and Colombia.

There have been a few attempts to try to establish whether the marimba existed in pre-Hispanic times in the Meso-American cultural area, in addition to the *tun*, *tunkul* or *teponastli* (a slit log drum made from the same hardwoods utilized for the wooden bars of the marimba keyboard, used after 900 CE), yet no archaeological evidence has been found related to xylophones. Spaniards' chronicles first mention the use of the musical instrument by indigenous people in 1680, during a public event. Since this time coincides with the period of slave trading from Africa to the Caribbean islands and South America, the marimba is probably a concept brought by African slaves and their descendants. Yet the material for its construction, such as hardwoods and gourds, already existed in the Central American region. Casa K'ojom has a wide collection of audio and video recordings of diatonic and chromatic marimbas from Guatemala, and through field trips we have also managed to record some similar xylophones in Mexico, Malawi, the Philippines, Mozambique and Indonesia.

### **Advancing technologies and conserving digital materials**

Looking to future times, the constantly advancing mobile technology found on smartphones, watches, tablets, cameras and other gadgets captures media that can be immediately shared through social media networks and stored in the cloud. This current lifestyle is making each of us an individual AV collector, but we may also need to become the conservators of our personal collections if we wish to safeguard them, especially in these times of faster changing

fragile technology of operating systems, processors, applications, storage, interfaces, resolutions and formats.

For those involved in raising preservation awareness or conducting crowdsourcing activities for private AV content, there is a large community of AV private collectors who need to design and exchange effective models for preservation, access and business in order to be able to share their treasures with the world. The next step for an already acquired AV collection is the challenge of finding an institutional partner, such as an international archive or university, interested in or associated with this kind of heritage. Together, the collector and the institutional partner must develop an agreement to share, properly curate, catalogue and safeguard the collection according to the current international standards. The collection should then be prepared to be shared with and accessed online, or by other related means, by associated networks and the general public around the world.

### **Conserving non-digital materials**

The Casa K'ojom collection of pre- and post-Hispanic musical instruments, masks, costumes, textiles, domestic and ritual artefacts also needs attention in terms of conservation. Most musical instruments and masks are made from different kinds of woods – some soft, some hard. The tropical climate of the region is, unfortunately, great for hosting termites. Some objects have been exposed in the exhibits for almost 30 years, and the collection is currently in need of urgent preventive conservation treatment. Although most of the collection is intact, some objects are showing warning signs regarding their conservation state. The museum is developing an action plan but needs a partner to adopt the collections – which include musical instruments, masks, costumes, paintings, photos and audio and video content with metadata – for conservation and publishing purposes. They could also be developed as content for multimedia exhibits, either in museums or online.

Throughout my 61 years of life, at home, in school and during my professional career as a sound engineer, I have been privileged to live in an era of technological change. I have witnessed the conquest of the moon and space, the development of video, advancements in the digital world, satellite dishes, personal computers, cable television, the Internet, smartphones, tablets and more. I have seen the progress from the analogue days of quarter-inch magnetic tape and film to the multi format variety of videotapes to digital audio- and videotapes to solid-state memory cards, from linear to non-linear audio and video editing systems to a wide menu of codecs found in today's video cameras and software. These constantly evolving technologies have been used to capture images and sounds that form my AV collection.

As a result, the digitizing of this archive is a very complex and challenging task for a small institution like Casa K'ojom.

### **Current issues at the Casa K'ojom**

The storage conditions of the AV collection have been less than ideal throughout all these years. La Antigua Guatemala is a very humid place; relative humidity can get up to 90 percent during the rainy season, and temperatures are around 20 °C on average. Analogue tapes and photos have been stored in a semi-treated space, partially controlled with an electric dehumidifier and fans in the rainy season, to try to keep the relative humidity to at least at 60 percent.

Another major issue may be the lack of available playback machines for the various formats held in the museum. Many of the needed machines are gone. Often there are no spares, and no engineers or manuals to fix them.

The digital assets also represent a new, challenging situation that is complex, expensive and time-consuming. Technologies are developing much faster today, and most platforms have a very short life span. The process of migrating assets is a task to think about if you do not want to have unpleasant surprises in the future. Solutions such as outsourcing storage management of digital assets in the cloud is an option, but may be costly.

### **Intellectual property rights and copyright laws**

Other issues may arise when dealing with user access to collections. Personally, when I first explored the possibility of sharing my collection with other institutions like universities, I encountered the legal framework associated with intellectual property rights and copyright laws related to the content of the archive.

Since most of my field recordings were made during public festivals, rituals, dances and situations involving many performers and people, there are many occasions where there is no chance to obtain a release form signed by everyone. These are public activities that involve a whole community. But not having a signed release to use, reproduce or distribute the content may result in problems unless there is legislation or a legal agreement that specifies such cases, especially for non-profit or educational purposes. There is no way to go back in time to get release forms signed from people who may have already gone somewhere else, or who may have already died. However, whenever the working conditions and environment allow it, a release form should always be signed to ensure that future uses are ethical and accepted.

### **Future plans for the Casa K'ojom collection**

The content of the Casa K'ojom could be utilized by university students studying ethnomusicology, ethnography, anthropology, archaeology and world history. Over a million Mayan emigrants live in the United States and other countries, and these communities would appreciate access to this content. Some in the Mayan community left their land and families at a very early age; others were born abroad. In addition to those living abroad, the Mayan communities in Guatemala and Mexico (about 10 million) could access this archive full of memories of their ancestors, roots and cultural identity.

The AV collection can be organized and published online to be shared with people all over the world. Texts, photos, audios and videos could be classified by ethnic groups, or according to geographic environment, vernacular architecture, agriculture, language, traditional costumes, markets, festivals and rituals.

There are some concerns in transitioning from a personal collection to an institutional organization, but this is where the individual collector can be invaluable. For instance, as the person who documented the AV collection of the Casa K'ojom, I can offer guidance and support during the curatorial process and can provide information on technical and descriptive metadata. Even though basic descriptive information may be written on labels of analogue tape boxes and digital assets have basic descriptive metadata embedded, additional information provided by the producer will always be useful and appreciated by the publisher and by end users.

### **Using the archive for educational purposes**

Thirty years after beginning this personal adventure, which we may call 'someone's treasure', I would like to share this legacy, as long as proper administration and technologies allow it. My future vision for the best use and conservation of this collection is its adoption by an institution, such as a university with interest either in ethnomusicology, musicology, anthropology or ethnology, or Mayan and world cultures. Ideally, an agreement could be reached between the collection and the university in which students can get school credits by performing different activities in the field and in their classrooms. Students can undertake tasks such as digitizing, editing, ingesting metadata into a well-established open archival information system (OAIS), uploading files to the web and creating back-up copies. In addition, these students would have access to more than 100 musical instruments in the Casa K'ojom collection to be used for research purposes, including playing and recording them.



At present, I can be fully engaged in the curatorial process. I can also hold lectures on intangible cultural heritage and AV assets, use and risk preparedness, and intellectual property rights. Practice training sessions on field recording could also be a useful experience for students interested in the AV field.

Not only do I wish to pass the collection of AV assets to a new generation, but I want to pass along my own knowledge of the AV field. I have worked with sound technology for more than 40 years: beginning with my first lessons about sound recording at the Polytechnic of North London, followed by my job as a label manager of A&M, EMI and Capitol Records for the Central American area, where I was introduced to the real world of musicians, recording studios, disc jockeys and radio and television producers, newspaper reporters, discotheques, live performances, photographers and filmmakers. I did additional work for National Geographic and BBC Panorama, and worked with other television networks, museums, NGOs and corporate businesses. Since 1987 I have been the director and archivist at Casa K'ojom, where I have shared the archive's collection with thousands of visitors.

Since 2009 I have been involved with the SOIMA programme, first as a student and later as a member of the teaching team in various SOIMA courses around the world. It has been a unique opportunity to meet colleagues facing the same challenges in safeguarding their AV collections. Through the SOIMA courses, we can learn about others' solutions, and we have the opportunity to learn from experts on the teaching team. Through the SOIMA network, we can collaborate to develop different solutions for the future conservation and use of our AV collections. My participation in the SOIMA courses has reinforced, updated and broadened my

knowledge and has helped me catch up to technological changes in a very practical, effective and entertaining way.

## Conclusion

The Casa K'ojom archive has been meticulously built over the past decades. The collection is very valuable for the Mayan community, but it also has broad significance as an archive and collection of artefacts which preserve the memories and heritage of a cultural group. My work at the archive has been extensive, and I believe it is important to share my experience with new generations. For the good of the archive, I encourage a dually beneficial collaboration with a university program or another institution that can utilize our collection while also using it to teach techniques and practices critical to the audiovisual field such as digitization, metadata description and safeguarding of digital files.

**Samuel Franco Arce** has been working in the field of audio preservation for more than 25 years. After training at the Polytechnic of North London, he worked in the music recording industry in Guatemala as a producer and studio engineer. From 1985 to 1997, he worked in the Americas, the Caribbean and Europe as a freelance field sound recordist for crews from the National Geographic Society, BBC, RAI, ABC, NBC, PBS and Columbia Pictures. In 1987 he founded Casa K'ojom, a research centre and museum. He has documented Mayan traditional music, dance, rituals and intangible cultural heritage through photographs, audio and video recordings and has produced several documentaries and publications related to the Casa K'ojom and other museums nationally and worldwide. Since 2003, he has also been documenting traditional music in Asia and Africa as part of his research on African, Asian and Mesoamerican xylophones.



# 4. Documenting ICH in sound and image

## A participatory approach to safeguarding intangible heritage

*Jorijn Neyrinck and Ellen Janssens*

**Documentation of intangible cultural heritage (ICH) poses a series of new questions and challenges within the heritage practice. How do we document a heritage that is alive, through the heads, hands and practices of people? Heritage that is neither tangible nor fixed but intangible and dynamic. Heritage that lives within a community, which by its active practice also acts to transmit and realize a future for this living heritage. Such living heritage processes require different, explicitly participatory and dynamic approaches for documentation – for which audiovisual forms of recording seem appropriate. This article unravels the conceptual confusion between different ‘intangible’ heritage practices and then looks at examples of practice in Flanders and in existing related research methods such as visual anthropology and oral history.**

### **First step: unravel the many intangibles**

Based on our recent observations, there is a need to untangle the many intangible heritages appearing in the contemporary heritage field. Obviously it makes no sense to mingle and confuse the intangible cultural heritage (ICH) of

cultural practices and skills, as defined by the 2003 UNESCO Convention for the Safeguarding of Intangible Cultural Heritage,<sup>1</sup> with other types of ‘intangibles’. Some other types of ‘intangible heritage’ discernible are:

- the intangible heritage values we attribute to material heritage (think for example of the ‘spirit of place’);
- the intangibles we know in ‘the lived/experienced’ expressions of history and heritage, like memories or oral history; and
- intangible heritage in the sense of the sound and image content present in collections.

All of these ‘intangibles’ are rather recent concepts, methods and insights of often participatory and experience-oriented heritage working processes. However, because the ‘intangible’ approaches also have distinct implications for the work to be done, it is key to clarify which approach is applied, as well as to pronounce whether or not one aims to adopt the specific approach of ICH as defined in the 2003 convention’s framework. How different the heritage work will be, and how this also affects documentation of this ICH as living cultural processes in sound and image, are questions further developed below.

### **Participatory and community-driven audiovisual documentation**

ICH being a young heritage discipline, heritage professionals, researchers and tradition bearers are all challenged to look for methods and approaches suited for its documentation. The living culture of ICH could benefit very much from the

<sup>1</sup> Article 2.1 of the convention defines ICH as: “the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity” (UNESCO, 2003).

possibilities that audiovisual documentation in moving image and sound has to offer. Indeed, documenting in sound and image seems one of the most appropriate ways to capture the moving and dynamic human practices ICH consists in.

The cultural heritage field still stands at the very beginning of exploring ICH. Moreover, not only do we need to develop the experience of moving media, but we also need a shift in the habits and premises we have been applying in the heritage practices. In this, much is to be learned on the one hand from the participatory 'spirit of the convention' and, on the other hand, from neighbouring scientific research disciplines and methods already applying audiovisual strategies.

The UNESCO convention advances a clear vision concerning the priority and the central role of the heritage communities in any decisive safeguarding activity:

Within the framework of its safeguarding activities of the intangible cultural heritage, each State Party shall endeavour to ensure the widest possible participation of communities, groups and, where appropriate, individuals that create, maintain and transmit such heritage, and to involve them actively in its management (UNESCO, 2003, Article 15: Participation of communities, groups and individuals).

In other words, when measures are taken to ensure the viability of ICH, like the identification, documentation, research, preservation, promotion and transmission thereof, the bearers of the ICH should at least be consulted and preferably be involved, or even at the helm. The convention's operational directives (2012) elaborate further on the subject with more detailed and explicit formulations:

Research institutes, centres of expertise, museums, archives, libraries, documentation centres and similar entities play an important role in collecting, documenting, archiving and conserving data on intangible cultural heritage, as well as in providing information and raising awareness about its importance. In order to enhance their awareness-raising functions about intangible cultural heritage, these entities are encouraged to...

- (a) involve practitioners and bearers of intangible cultural heritage when organizing exhibitions, lectures, seminars, debates and training on their heritage;
- (b) introduce and develop participatory approaches to presenting intangible cultural heritage as living heritage in constant evolution;
- (c) focus on the continuous recreation and transmission of knowledge and skills necessary for

- safeguarding intangible cultural heritage, rather than on the objects that are associated to it;
- (d) employ, when appropriate, information and communication technologies to communicate the meaning and value of intangible cultural heritage;
- (e) involve practitioners and bearers in their management, putting in place participatory systems for local development (UNESCO, 2012, IV.1.3, p.109).

It may be clear that working in the context of the UNESCO convention is not comparable to taking care of objects as heritage. It involves sustaining a living cultural process, practised and re-created day by day by human beings who are the holders of the ICH in the first and last instance.

Consequently, the active participation of communities in the audiovisual documentation of their ICH will have an effect on the documentation process. For instance what would be visualized and how if an external heritage professional or researcher documents ICH in cooperation with the community, and would it differ from the approach of a community member who learns the skills to document this ICH, supported by a heritage professional? Not only do the themes and visualization of the subject matter, but also the aim of the documentation will have an impact on the process and methodology. Is the documentation meant as a portrayal of the element of ICH itself at a given time? Or will the documentation happen with the aim of transmitting the practical knowledge, skills and techniques for a procession, craft technique or dance? Those questions and answers determine the subject of the images, shots and overall approach of registration and visualization.

For example, when documenting a procession with the aim of transmission, one might not only document the result of the procession itself, as a festive event, but also record specific moments and actions in the preparation phase, such as behind-the-scenes preparations or rituals. Similarly, audiovisual documentation of a craft process following the interaction of master and pupil could demonstrate some unexpected aspects 'of making', having an impact on the focus, timing and sequence of the filmmaking.

### Status quo: participatory projects in Flanders

Over the years several heritage workers in Flanders have experimented with the documentation of ICH. At a 2014 conference focused on participatory documentation in ICH,<sup>2</sup>

<sup>2</sup> The conference, titled In Sound and Image: The Participatory Documentation of ICH, was held 16 September 2014 and was a cooperation between the NGO tapis plein, the cultural heritage cell of Mechelen and [www.immaterieelerfgoed.be](http://www.immaterieelerfgoed.be). See [www.immaterieelerfgoed.be/Detail/thema/17](http://www.immaterieelerfgoed.be/Detail/thema/17).

we mapped executed initiatives. We found out that the projects differ depending on the approach used: on the one hand we see projects where the documentation is done by the community involved, with or without support from a professional heritage worker; on the other hand we see projects where documentation is done by an external person, not a member of the ICH community.

Within the first category, different methods were tested, from participatory photography and participatory video to interviews in sound and image. Within a project on guild traditions, for example, Landelijk Expertise centrum voor Cultuur van Alledag (LECA)<sup>3</sup> applied the method of participatory photography. Four amateur photographers, also guild members, were asked to capture their guild life in images: how do they experience their heritage? First the guild members determined in consensus which topics and parts of their tradition they wanted to visualize through the images. Eventually they made a selection from the old and new images collected (Fig. 1). The images deemed most representative were included in a publication (Top, 2013).

Another example relates to the documentation of agricultural cultivation methods. In order to pass on the knowledge and traditional cultivating methods for growing chicory, the project “Vlaams-Brabants grondwitloof. EU!”<sup>4</sup> sought to document the knowledge of the older generation of growers by interviewing 15 of them (Fig. 2). Two people with knowledge of the cultivation process conducted the interviews, using a questionnaire. The collected information was compiled and further discussed with the interviewees in a group. The project culminated in a script and information sessions for new cultivators and an interactive quiz on chicory for the broader public.

In other projects, instead of the community itself documenting, the documentation was performed by an external person, such as a heritage worker, researcher or artist. Depending on the objectives, again the method will differ, from more artistic-oriented projects to documentaries and observation with the aim of transmitting ICH. To encourage the transmission of shadow play, for example, Het Firmament, a performing arts heritage centre,<sup>5</sup> helped organize a master class led by an expert in the techniques of silhouette theatre (Fig. 3). Participants collaborated with the



**FIGURE 1.** Guard of honour at the wedding of a guildsman of the St. George Guild of St. Lenaarts, 2011. © Hoge Gilde raad der Kempen

3 Centre of Expertise on Everyday Culture, Flanders; see [www.lecavzw.be](http://www.lecavzw.be).

4 See [www.proeftuinherent.be](http://www.proeftuinherent.be); [www.immaterieelerfgoed.be/Detail/hoe/279](http://www.immaterieelerfgoed.be/Detail/hoe/279).

5 See [www.hetfirmament.be](http://www.hetfirmament.be). The shadow play training was held in cooperation with GEN 2020 and t,arsenaal.





FIGURE 2. Traditional cultivating methods for growing chicory. © Nationale Proeftuin voor Witloof



FIGURE 3. Shadow play. © Kristin Rogge

expert to co-create a new show using those techniques. This learning and creative process was fully documented by Het Firmament using film and in-depth interviews with the instructor and participants. The footage was also used by the participants during the production process to analyse and improve their personal skills and techniques.

Based on this mapping we could state that although some projects in Flanders explored and experimented with documenting ICH in sound and image, a shared knowledge and reflection and more elaborate praxis on this subject appeared to be still in its infancy in 2014. The methodologies, however, clearly provide room for further exploration, reflection, experimentation and expertise sharing for a thorough participatory documentation of ICH with the aim of safeguarding and transmitting it.

### The heritage worker as cultural broker

In regard to the heritage communities and the safeguarding of ICH, as well as its documentation, heritage workers in Flanders have taken up the roles of *brokers*, *mediators* and *translators* of the values within the 2003 convention. Cultural brokerage is in many cases a key factor throughout processes of safeguarding ICH involving many different actors. The heritage worker raises awareness on ICH and related challenges and can support and coach heritage communities in their safeguarding practice, based on the communities' needs, if they so desire (Casteleyn, Janssens and Neyrinck, 2014). At the same time, the brokering heritage professionals or organizations strive to develop and test new safeguarding methodologies in general, and for the audiovisual documentation of ICH in particular. As awareness of the need for further exploration of methodologies for the participative documentation of ICH grows, people and organizations in Flanders are engaging in new experiments for developing methodological and practical experience.

Concerning the audiovisual documentation of performing arts, for example, Het Firmament organized a participative conference: #Documenting Performing Arts. Participants explored different cases and methods to document processes of creation and performance. Afterwards panellists commented on the day, and the public entered the debate. During the conference it became obvious that the first step in the process of documenting performing arts was to determine the goal (or goals) of the documentation (e.g. promotion, research, efficiency improvement, re-enactment, transmission, art education) in combination with the particular phase in the art process (e.g. creation, performance, impact on the audience, transmission). The role of the heritage worker in this process is to coach the community in determining exactly its goal and phase and to raise awareness of the importance of

this step in the documentation process in order to determine the proper approach.<sup>6</sup>

Another example is a project of the travellers community that is being set up. The project is an interesting example of how professional heritage workers strive to combine the support of heritage communities in their safeguarding process with experiments on methodologies and gaining expertise they can afterwards share with other communities and heritage workers.

First, the project applies participatory video in addition to more regularly used methods such as interviews. Participatory video aims to strengthen the capacities of people to tell their own stories which they can then use to mobilize the community for a particular purpose. In this project the travellers community will participate actively in the mapping and documentation of their heritage through this method of participative video. They have governance over the decisions to be taken in the process of the production of the film: they will determine the subject(s) for the film, based on what they themselves deem important, and they will execute the filmmaking as much as possible. The heritage workers will (only) have a supporting role in this process.

Second, the project aims to develop expertise in the heritage sector on the possibilities and use of participatory (audiovisual) methods in the documentation of living heritage. Through technical workshops and working with the community, methodological experience will be developed as much as experience in how to support communities in this process– the dos and don'ts. This experience in turn will be shared through the development of manuals for heritage workers (how to support the communities) and for communities (how to document).<sup>7</sup>

### Conclusion

In the current heritage practice, ICH documentation shows resemblances and connections to the discipline of visual anthropology,<sup>8</sup> as well as to the methods of oral history.<sup>9</sup>

<sup>6</sup> Insights formulated during the participative conference #Documenting Performing Arts: How to Capture Creation and Performance, Brussels, 10 September 2015; see Het Firmament (2015).

<sup>7</sup> The project is a cooperation between the travellers community in Flanders, Minderhedenforum and many partner organizations in the cultural heritage field in Flanders and Brussels.

<sup>8</sup> Visual anthropology is a discipline that examines how reality can be imagined by visual media such as photography, film or video. The captured images, according to visual anthropology, do not only give information on the culture of those who are represented but also about the culture of the person who makes the images. Thus what is represented gives us no objective reality, but rather a reality told by a person with his/her own preferences, background and opinions. Two specific methods are particularly relevant to ICH documentation: observational cinema and photo-elicitation.

<sup>9</sup> Oral history is a historical research method in which the historian attempts to (re)construct or examine the past by interviewing witnesses. The method suggests a fixed range of activities and steps, including the determination of the research question; localization of



Given the nature of documenting ICH, it may not be surprising how those neighbouring scientific disciplines and methodologies offer inspiration to heritage practices. ICH being a young but widely developing heritage discipline all over the world, much remains to be learned from exchanging diverse and international experiences of participatory documenting ICH in sound and image, as well as from further methodology research and development. This is a challenge to take forward in cross-disciplinary cooperation!

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the witnesses and selection; preparation and conducting of the interviews; processing of the interviews and disclosure of the interviews and collected material in a historical argument. Although this method starts from a historical perspective, and is oriented towards examining the past, parts of the process and methodology can be inspirational or used for ICH documentation. This requires, of course, that the research and questionnaire focus on the dynamics of the ICH and the current practice.

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# 5. Digitizing collections of musical instruments in Africa

## The PRIMA Project

*Saskia Willaert*

**In 2013–2014 the Musical Instruments Museum (mim) in Brussels worked with Musée de la Musique (MMO) in Ouagadougou, Burkina Faso, and the Musée Panafricain de la Musique (MPM) in Brazzaville, the Republic of the Congo, to build digital inventories of their musical instrument collections. The purpose of this digitization campaign has been to provide a more complete view of musical world heritage by incorporating not only African instruments but also the African terminology that describes these instruments, into international research databases. The cooperative digitization work has helped bring attention to valuable but not easily accessible collections. Both the musical patrimony held in African museums and the metadata they provide are proving to be valuable sources for understanding musical world heritage.**

In November 2013 and July 2014 digital inventories were made in situ of the collections of respectively the Musée de la Musique (MMO) in Ouagadougou, Burkina Faso, and the Musée Panafricain de la Musique (MPM) in Brazzaville, the Republic of the Congo. The inventories were published online in February 2015, thus providing an opportunity for users worldwide to discover a segment of musical heritage otherwise

not easily accessible.<sup>1</sup> The publication was the outcome of a close collaboration between both the African museums and the Brussels Musical Instruments Museum (mim), focusing on the continuous exchange of information and know-how in the fields of (ethno)musicology, restoration and conservation, musical heritage, linguistics and digital collections management.

### The network

The campaigns took place in the frame of a network between both the African museums and the mim, formalized in 2012 in the PRIMA project (Projet de Réseau International des Instruments de Musique Africains), funded by the Science Policy Department of the Belgian government.<sup>2</sup> The objective of the network project is to contribute to the valorization and conservation of African musical cultural heritage, to the awareness of its importance on both local and global levels, and possibly to the quality of ethnomusicological metadata in western collections. Digitizing collections in Africa enables access to music patrimony assembled and kept by African museum collaborators, storage of rich metadata those collaborators have provided and creation of a shared platform of information.

The MMO, inaugurated in 1999 as an offspring of the Ouagadougou Musée National, is a dynamic museum focusing on dissemination of Burkinabe patrimony through exhibitions and workshops for children (Fig. 1).<sup>3</sup> Efforts are being made to considerably improve the conditions of conservation. The museum houses 232 musical instruments, which have been gathered since the early 1960s, in order to offer a survey of

<sup>1</sup> For the online publication of the Brazzaville and Ouagadougou collections, see [www.carmenis.be/eMuseumPlus?service=WebAss&url=Partner/Partner.html&contentType=text/html](http://www.carmenis.be/eMuseumPlus?service=WebAss&url=Partner/Partner.html&contentType=text/html) and [www.mimo-international.com](http://www.mimo-international.com).

<sup>2</sup> See [www.belspo.be/belspo/organisation/Call/ESF\\_Res\\_2015\\_en.stm](http://www.belspo.be/belspo/organisation/Call/ESF_Res_2015_en.stm). The International Networking of the Federal Scientific Institutions programme aims at offering a framework for structured cooperation with research institutions in the non-profit sector in the BRICS countries, Vietnam and the countries of Africa. The African representatives of the PRIMA project are Jean-Paul Koudougou, mentioned above; Dr Honoré Mobonda, director of the MPM, scientific director of FESPAM; Jacqueline Babindamana, museum assistant of the MPM.

<sup>3</sup> See <http://ouaga-ca-bouge.net/Musee-de-la-Musique-la-musique;www.burkinafaso-cotedazur.org/musee-musique>. In April 2016 two of the Ouagadougou collaborators, Raso Ouilli and Abel Badolo, were sent to the mim in Brussels for a month's observation training in the Education Department.



**FIGURE 1.** Musée de la Musique, Ouagadougou, Burkina Faso, November 2013. © mim

musical culture in Burkina Faso. As of 2017, 26 out of the 60 populations of Burkina Faso are represented. Instruments are collected mainly during missions in the country, during which data on builders, musicians, terminology, localization, population and function are carefully assembled.<sup>4</sup> A central register lists the objects with their metadata.

The MPM in Brazzaville has a collection of 188 instruments from all over Africa (Fig. 2). In 1976 the initiative was taken by several African ministers of culture to organize a biennial African music festival (FESPAM), hosted by the Republic of the Congo. One of the objectives of the festival was to create a museum in charge of the conservation and promotion of African musical instruments. It was said that “the constitutive elements of African musical patrimony were threatened with disappearance and deterioration” and that “action was needed” (Kouloufoua, 2012, p. 23). Shortly after the founding of the museum in 2000, national missions took place, aimed at collecting items from the 73 different ethnic groups. At the biennial FESPAM, delegates of participating African countries continue to donate instruments that are representative of their culture. A card-index system contains information on makers, users (musicians), sellers, terminology, function, dates and places. However, due to a difficult organizational situation and unfavourable conservation circumstances, this unique and valuable heritage is under threat.

The mim in Brussels, founded in 1877, holds a rich collection of musical instruments from all over the world. African instruments were among the first pieces to enter the museum. In past years it acquired important know-how on digitizing data on musical instruments. All its 9,848 objects have been published with their metadata in the online catalogue of the Royal Museums of Art and History (RMAH), of which the mim is part. The mim is also a member of the

<sup>4</sup> Unfortunately most of the original inventory cards have disappeared. It is assumed they were accidentally burned during a clean-up.

consortium of the international digitization project of MIMO (Musical Instrument Museums Online), funded by the European Commission, which gives access to the musical instrument collections of museums in Europe, Asia and Africa.<sup>5</sup> The PRIMA project closely collaborates with the MIMO project, following the international guidelines set out by MIMO on the level of classification, object names and criteria for photographic digitization and publishing its results on the MIMO portal.

## African instruments and musical world heritage

The main rationale of the digitization campaigns in Africa is to provide a more complete view on musical world heritage. African lutes, fiddles, lyres, harps, flutes, xylophones, lamellophones and drums offer fascinating insights in the making, history and acoustics of musical instruments. There is a spectacular range and diversity of African musical instruments, including instruments quite unique in appearance and conception, such as the bow lute and the lamellophone, which have no real equivalent outside Africa. The mim collection alone counts 220 different types of African instruments. Recent research has disclosed that no less than 35 categories of fiddles exist in sub-Saharan musical praxis, African bowed instruments hardly ever having played a substantial role in ethnomusicological studies (Hulshof, 2013).

Africa has long been the site of various forms of cultural contact with Asia and Europe, resulting in the assimilation and adaptation of ‘foreign’ instruments, such as the one-string fiddle and possibly the xylophone, and in the material presence of many western musical instruments in modern Africa (Agawu, 2003, p. 5). But African instruments also influenced the development of other instruments. A famous example is the West African spike lute, taken along by black slaves when they were shipped to the New World from the seventeenth century onwards. It was the predecessor of the banjo, musical icon of deep southern American heritage (see Jägfors, 2004; Pestcoe and Adams, forthcoming; Willaert, forthcoming). A century before, another West African spike lute developed into the *hajhuj* of the Gnawa, the Moroccan brotherhood whose members are descendants of black slaves transported from West Africa during the Arab trans-Saharan slave trade (Goodman-Singh, 2002). Among other well-known examples are the Brazilian *berimbau* musical bow, agogo bells, and marimba xylophone, inherited directly from the Africans.

African instruments played an important, albeit thankless, role in nineteenth-century organology dominated by

<sup>5</sup> See [www.mimo-international.com](http://www.mimo-international.com).



**FIGURE 2.** Musée Panafricain de la Musique, Brazzaville, Republic of the Congo, July 2014. Exhibition room during inventory work. © mim

evolutionist thinking. African instruments were thought to mirror the embryonic state of many European instruments, to be surviving fossils of a remote past. For example, the African arched harp was said to help to demonstrate the gradual progress of a rudimentary musical bow to a highly perfected and sophisticated western harp; it bore witness to what harps looked like at the very beginning of civilization (Engel, 1874, p. 5). Victor-Charles Mahillon (1841–1924), the first curator of the Musée Instrumental of Brussels, suggested that

as it is impossible to discover species representing the origins of European manufacture of musical instruments, [one has] to procure instruments of populations where civilization has remained at a standstill. In Africa one can find the origin of all our instruments in an entirely primitive state.<sup>6</sup>

It should be noted that as late as 1954 Percival Kirby's article on 'primitive music' in the *Grove's dictionary* abounded with examples from Africa; there one could encounter 'the musical practices of prehistoric man' (Kirby, 1954, cited in Agawu, 2003, p. 26).

However, renowned pioneers in nineteenth-century organology such as Mahillon, appreciated the acoustical particularities of specific African instruments more than their 'historical' value. Discussing a Congolese harp-zither he acquired in 1888, Mahillon discerned "an intuition for acoustic laws" in African instrument makers, "who have augmented the sonority of the instrument by fixing a hollow calabash just beneath the bridge in the middle of the stick".<sup>7</sup> He discovered that the Congolese flute inv. 1835 of his collection, made of the top of an elephant tusk, "is an

application of an acoustical principle which is neglected nowadays, notwithstanding its extreme importance": a conical tube, closed at the small end, acoustically behaves like an open cylindrical tube.<sup>8</sup> He was impressed by the sonority of the balafon, with its calabashes under each lamella and its vibrating spider cocoons covering the small opening in each calabash, leading, he said, to a very charming effect and to be recommended to any European builder of xylophones (Mahillon 1880, vol. II, pp. 60–61; Mahillon 1882, p. 285). Mahillon did not consider African instruments objects to be exposed purely because of some aesthetic, exotic value – as for instance did happen with the famous Mangbetu harps in many western museums. In Mahillon's opinion, African instruments were vital to a scientific, representative and authoritative collection of musical instruments because of their intrinsic organological value.

Early in the twentieth century several museums were founded in Central, East and South Africa. They all originated on the instigation of western colonizers, and were meant for western visitors.<sup>9</sup> It must be noted that most objects of worth were taken away to be put on display in western museums. The idea of keeping African patrimony for African people seems to have not occurred. Still today, even in the eyes of some Africans, museum visits remain a foreign affair. It is telling that Jean-Paul Koudougou, former curator of the MMO and current director of the Musée National in Ouagadougou, relates how an African museum visitor still may receive the comment from his compatriots: "that one, he thinks he is white".<sup>10</sup> However, since political independence, patrimony has become an important vehicle

<sup>6</sup> Mahillon, 1878, p. ii: "Dans l'impossibilité de retrouver les spécimens de l'enfance de la facture européenne, [on doit] se procurer les instruments des peuples où la civilisation est restée stationnaire. Là, en effet, se retrouve l'origine de tous nos instruments: en Afrique, à l'état tout à fait primitif". See also Willaert (2012, pp. 69–70).

<sup>7</sup> Mahillon (1895, p. 309): "voici une très curieuse harpe des Pahouins... extrêmement ingénieuse dans sa fabrication rudimentaire... Et, chose curieuse, qui dénoterait chez ces indigènes une certaine intuition des lois de l'acoustique, on a augmenté la sonorité de l'instrument en le fixant, par son milieu, au-dessus d'unealebasse creuse qui forme boîte de résonance". See also his description of the instrument in Mahillon (1893, vol. II, inv. 872).

<sup>8</sup> Mahillon (1893, vol. III, inv. 1835): "Ce qui ajoute à l'intérêt de l'instrument, c'est qu'il nous offre l'application d'un principe dont la science acoustique s'est peu occupé jusqu'à aujourd'hui malgré son extrême importance: un tuyau conique fermé au sommet du cône et agissant, par suite, lorsqu'il est mis en vibration à sa partie large ouverte, absolument comme un tuyau ouvert de même longueur".

<sup>9</sup> E.g. the Uganda Museum originated in 1908 from collections assembled by the British District Commissioners; the National Museum of Kenya in Nairobi was started by the East Africa and Uganda Natural History Society in London in 1909. For a short overview of the early African museums and their founders, see [www.britannica.com/topic/history-398827#ref608916](http://www.britannica.com/topic/history-398827#ref608916).

<sup>10</sup> Information from Jean-Paul Koudougou, during the first workshop of the PRIMA project in Brussels, June 2013.

for the Africans to anchor their cultural, intellectual and social identities. Neither the pan-African collection in Brazzaville nor the collection in Ouagadougou holds instruments imported from western countries. While African museums as such are in concept western-inspired institutions, their emergence being the result of the encounter with Europe, they focus on African traditional patrimony. The inventories do not include European violins, trumpets, clarinets, oboes, saxophones and pianos. True, limited resources may account for the absence of European harpsichords and organs, but even the western guitar, ever present in modern African music, does not feature in the collections of Ouagadougou and Brazzaville.

Many collections in Africa, however, remain hidden from the rest of the world. The means for widespread valorization and dissemination policies are not always available. Musical heritage in several African countries falls prey to neglect. Most local governments do consider musical heritage an attractive advertisement of African identity, but they do not always feel the need to support heritage projects financially. Consequently, the main sources of access to African patrimony are still to be found in western collections. Being selected by western collectors, however, the representative value of these collections may be questioned; objects have often been chosen for their aesthetic value and/or their exotic 'otherness'. Moreover, information on ethnomusicological objects in western museums is often incomplete and biased. According to Kofi Agawu, a renowned Ghanaian musicologist, "even material objects like musical instruments, which seem to have an objective, measurable existence, and which can therefore be described more or less accurately, betray ways of naming that the [western] researcher brings to his or her work. To describe a drum as a 'membranophone' is to use a term that Africans do not normally use" (Agawu, 2003, p. 44). Detailed information on local names, builders, musicians, places and dates is most often lacking in western displays. This leaves many of the African objects in an isolated situation, closed up in their old colonial status of static, 'primitive', dusty, nameless and alienating objects. To provide correct and full data on local names, places, dates, makers and populations is crucial for a respectful approach to ethnographic objects.

### The campaigns

The first PRIMA digitization campaign took place in the MMO from 10 to 21 November 2013, the second one in the MPM from 31 July to 13 August 2014. While the first campaign was efficiently organized by the local partners (Fig. 3–4), the second faced organizational difficulties. In the absence of a working room within the building of the MPM, a photo studio was established outside, daily set up and broken down (see below).

All restoration and encoding tasks took place in the open air, with temperatures up to 30 °C and biting insects all around (Fig. 5–6). Notwithstanding the unusual working conditions, the collection was successfully digitized.

Both collections were encoded with metadata stemming from the existing manuscript inventories. The collection management system (CMS) of the mim (Museum Plus, from Zetcom) has been used as a metadata model. About 40 record fields have been encoded for each object, including data on inventory numbers, object names, production (author, culture, date, place), acquisition (actor, date, place, way of acquisition, price), use (musician, culture, place, date), local function, classification, dimensions, materials used, inscriptions, current localization, state of conservation of the object and inventory sources. All the African records are integrated in the mim CMS, as 'external collections' of partners. It is a dynamic inventory, regularly updated with new information provided by the African partners, and the data of the online catalogue, carmentis.be, are renewed frequently.

### Documentary Photography

The photographs taken were aimed at objectively documenting the physical appearance (construction and materials) of the instruments in the two collections.<sup>11</sup> It was not the purpose to make artistic, sensual or 'in situ' contextualized images. As we did not know the conditions under which we would be photographing, we prepared for all eventualities. We took two cameras (a Nikon D300 and a D200); three lenses (a wide-angle zoom Nikon 17–35 mm, a medium-range zoom Nikon 24–120 mm and a fixed-angle Nikon 105 mm macro); black, neutral grey and white rolls of background paper and stands for hanging the paper; two Broncolor studio flash lights (miniplus C200) and their adjustable stands with soft box and spot light attachments; stands with a cross bar (and nylon fishing line of various diameters) for instruments that required suspension; and various clamps. In addition, we brought the usual material to be found in a photo bag: electronic light meter, grey scale and colour scale charts, and various filters, including a polarising filter to limit the reflections of shiny instruments, as well as numerous memory cards. Taking two cameras was important, not only to have one as a backup, but also to avoid having to change lenses in possible dusty conditions, which would risk dirtying the digital sensor chip.

Under the conditions in Brazzaville photographing outside provided the best possibilities of light and offered space for a good working distance from the subject. However, there were inconveniences, including changing light, wind and

<sup>11</sup> I would like to thank Simon Egan, photographer of the Brazzaville campaign, for providing me with the information for this section.





**FIGURE 3.** Conservation and restoration work at the Musée de la Musique, Ouagadougou, November 2013. © mim



**FIGURE 4.** Photo studio at the Musée de la Musique, Ouagadougou, November 2012. © mim

sand flies. The natural daylight was supplemented by our studio flash lights.

We used the MIMO digitization standard as our guide to photographing.<sup>12</sup> Instruments, after superficial cleaning, were presented to the photographer in groups determined by type and size. This minimized the need to modify the lighting. We took a minimum of two views per instrument (usually many more). Although we had different colour backgrounds, we only used white, which was an extra-large roll (3.2 m), essential for the long pygmy drums. Instruments that are obviously 'grounded', such as certain types of drums, were placed on the paper. Those that are held, such as side-blown horns, were suspended in a position as close to the playing position as possible. Photos were transferred from the memory cards to a computer (and to an external hard drive) after each shoot (that is, before lunch and each evening). The images were checked to make sure they were in focus and that each instrument

was sufficiently documented. After returning to Belgium, we 'lightly' treated the images in Lightroom 2.7 and Photoshop CS5. Treatment mostly comprised removing fishing lines and stains to the background papers.

## The results

The results of both the campaigns in Brazzaville and Ouagadougou are manifold:

- There is worldwide access to the complete collections of the MMO and the MPM. New navigation possibilities in the RMAH online catalogue enable easy consultation. The new African data are also harvested by the international MIMO network, where they are published in eight languages (see fn1).
- A total of 129 new African keywords have been added to the thesaurus of the RMAH online catalogue and to the MIMO thesaurus. Most of the newly added object names do not appear in authoritative reference works such as *The Grove dictionary of musical instruments* (Libin, 2014).
- The actors' list of both databases will be augmented with nearly 100 new names of African makers, collectors, musicians, donors and sellers.
- Insight has grown into the priorities of African museum professionals, including the provision of correct and extensive information on African cultural artefacts in western museums.
- Worldwide publication of the objects of the concerned collections with photos and detailed metadata will lead to better protection against theft and loss.
- The success of conservation (preservation, storage display) practices can be evaluated as the condition of each instrument is documented at a particular point in time.

<sup>12</sup> See [www.mimo-international.com/documents/MIMO\\_Digitisation\\_Standard\\_v3.pdf](http://www.mimo-international.com/documents/MIMO_Digitisation_Standard_v3.pdf).



**FIGURE 5.** Conservation and restoration work at the Musée Panafricain de la Musique, Brazzaville, August 2014. © mim

- The enlarged public character of the collections has put their need for adequate local management and safeguard on the local agenda. Especially in Brazzaville, the publication of the collection and the ample press attention for the campaign has confronted the management with the necessity of a healthy physical environment for their collections.
- Since all objects were taken out of the depots, the teams of both museums have used the opportunity to clean up and reorganize their storage rooms (Fig. 7).
- Digital archives have been formed. Should the collections physically disappear, source material will remain available.
- The project was well received. The digitization campaigns in Ouagadougou and Brazzaville attracted substantial attention in the local press (Compaore, 2015; Haro, 2015; *La Semaine*, 2014). When their collections went online, the African project partners reacted with enthusiasm, pride and emotion.

### Challenges for further research and valorization

The inventories and their new vocabularies open paths for further valorization and research. The challenge exists in embedding instruments in a semantically, socially and (ethno)music-historically correct context, uniting as many metadata from different resources as possible, and in bringing these datasets together from local to global data structures without loss of meaning.

A better insight into the terminology, and more specifically the etymological characteristics of African instruments, will help to disclose the functions of the instruments within the community and the relationships between them. Correct local object name data improve the valorization of the collections. According to Agawu, placing our western terms and semantic data “in a wider pool of descriptive terms... might enhance its usefulness [and comprehension] and lessen its alienating effect” (Agawu, 2003, p. 44). Local names may include morphological and acoustical information and express perceptions of music and musical instruments, which previously remain hidden for researchers not familiar with the concerned languages. What is now called a ‘local’ name for an instrument is seldom merely the ‘translation’ in the local language. Examples abound. *Gangongo* is the Moosé word for ‘drum’; it does not refer to some exotic kind of Burkinabe drum used in a specific ‘ethnological’ context.<sup>13</sup> Throughout West Africa the many terms employed to denote fiddles in local languages may most commonly be translated as ‘to rub’, referring to the way sound is generated (DjeDje, 2008, p. 28). The Gulmantché term *kowodigo silga* means ‘fiddle of the magpie’, referring to the specific timbre of this fiddle from the Gulmantché in Burkina Faso.<sup>14</sup>

<sup>13</sup> Information obtained from Jean-Paul Koudougou and museum agent Emmanuel Bayala during the Ouagadougou campaign.

<sup>14</sup> Information obtained from Jean-Paul Koudougou during the Ouagadougou campaign.





FIGURE 6. Photo studio at the Musée Panafricain de la Musique, Brazzaville, August 2014. © mim

The *mvoumvouri* is a horn of the Kongo–Bembe people in Congo–Brazzaville, *mvouri* meaning ‘antelope’, of whose horn the instrument is made.<sup>15</sup> The *muyemba* lamellophone of the Chokwe people in the Democratic Republic of the Congo and Angola has two rows of plucked tongues, which also function as the hairstyle of the figure engraved on the wooden board; the traditional hairstyle of Chokwe women is called *uyemba* (Fig. 8) (Ganseman, 2008, p. 17).

We need to find ways to present the logics and similarities in terminology of musical instruments rather than confirming presupposed differences due to foreign-sounding labels. Making these connections will help musical

patrimony held in African museums, and the metadata they provide, to become wealthy sources for further research, and it will help broaden musical world heritage. Sharing information between African and western researchers, museum agents, musicians and instrument builders, and publishing it, is essential.

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**FIGURE 7.** Before, during and after the reorganization of the depot. Musée Panafricain de la Musique, Brazzaville, August 2014. © mim

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**FIGURE 8.** The muyemba lamellophone of the Chokwe people. © coll. F. and F. Boulanger-Bouhière, Brussels; photo: Simon Egan

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# Section Two

## Sustaining Sound and Image Heritage



# 6. The cost of inaction

## Making the case for digitization at Anon University

*Chris Lacinak*

**Anon University is a hypothetical university representing a conglomeration of organizations with holdings of legacy physical audiovisual media. It exemplifies a universal conundrum that poses a serious threat to the future value derived from content stored on physical audiovisual legacy media. This paper proposes a new model and application for quantifying the financial and intellectual implications of decisions regarding digitization of physical audiovisual media holdings. Cost of inaction (COI) calculates the return on savings of previous investment in collections while recognizing that the window of possible return is limited because audiovisual media degrade or become obsolete. While the subject of this example is a university, the issue is not specific to academic institutions. It manifests in organizations of all types and sizes, including government institutions, corporations, non-profits, museums, media companies and more. Some of the arguments and positioning may differ based on organization size and type, but the core concepts and calculations are the same.**

### Setting the stage

Staff at the Archives and Special Collections within Anon University (ASCAU) estimate that they hold about 100 000 rare or unique audio and video items which would be deemed preservation-worthy but that have not yet been digitized. Their video holdings consist of media such as VHS, U-matic, one-inch open reel, Mini DV, Betacam SP and Digital Betacam, among other formats. Their audio holdings include instantaneous disc, quarter-inch open reel, audiocassette, DAT and more. Less than 3 percent of their total audiovisual (AV) holdings have been digitized to date. ASCAU's non-digitized holdings are effectively inaccessible in any meaningful way because they are largely undescribed and unplayable in their current state. The backlog of unprocessed materials represents approximately 50 percent of the total holdings. For these materials there is minimal collection-level description, and most do not contain inventories. For the 50 percent of processed AV collections there is no item-level description. Adding to the backlog, acquisitions far outpace the rate of preservation, and the budget for acquisitions is larger than the budget for preservation.

As this type of scenario commonly plays out, there are few requests for access to materials because there is little information published about audiovisual content in the holdings. When requests do come in, each one becomes an immediate preservation project that jumps the prioritization queue, because in almost every case ASCAU is unable to fulfil a request without digitizing materials. There is no ability to play back most of the materials, and it is against policy to play back original recordings for access even in cases where the equipment and expertise available.

The backlogs and limited description leave the employees of ASCAU to depend on varying levels of descriptive annotations (with varying levels of dependability) scribbled on boxes and labels to discern whether or not a particular item is likely to be the subject of the patron's request to deem it worthy of using a portion of the small on-demand digitization budget reserved for such purposes. Once this decision is made it could take weeks to receive the access copy. It is not until this point, when the content is actually accessible, that the

A version of this text was previously published as Lacinak (2014).

patron is able to establish whether or not it is indeed related to what she or he was searching for.

While it is easy to bemoan the expectations of a culture that demands instant access and expects everything to be online, it is also the case that the scenario described here would not be deemed as effective or meaningful access by most people. Additionally, access requests are the number-one driver of digitization, but the lack of discoverability in the collections means there are far fewer requests for access to materials than expected.

When such requests for access are received, the materials generally must be outsourced to a digitization vendor unless the formats meet the capabilities of the library's services. In house, there is a small digitization facility for audiocassettes and VHS tapes within the library's preservation department, but there is no permanent staff for digitization, and finding the expertise and funding to do training with graduate students on a regular basis is challenging as well as being a high cost due to inefficiency from frequent turnover and retraining.

There is no programmatic ongoing digitization effort. Most digitization has been funded through grants, although these tend to focus on access-centred projects such as online exhibitions where only a small portion of the budgets goes to digitization.

## A shift

In 2013, worries about media longevity appearing in listserv messages, blog posts and conference presentations began to catch the eye of stakeholders in ASCAU's Archives and Preservation Departments. The post that first drew attention was from Richard Wright on the Association of Moving Image Archivists (AMIA) listserv, where he stated: "For video the problem is even sharper: complete disappearance of an (affordable) ability to transfer" (Wright 2013c).

The thought of this possibility caused great alarm, and they searched for additional information to support his claim. On the PrestoCentre website, they found additional statements from Wright on the topic: "75% of the analogue video held in Europe in 2006 will be lost by 2023 when video digitisation will simply have 'ceased to be'" (Wright 2013a). "So that's it: going, going, gone for analogue by 2023" (Wright, 2013b). This spurred further research whereby they discovered the following:

- The International Association of Sound and Audiovisual Archives (IASA) Task Force to Establish Selection Criteria from 2003 reported, "in the mid- to long-term there is a

major risk that carrier degradation combined with playback obsolescence will defeat the efforts of archivists" (IASA 2003). A decade had already passed. Where were they on the timeline now?

- The US National Recording Preservation Board 2006 report "Capturing Analog Sound for Digital Preservation" stated, "it is alarming to realize that nearly all recorded sound is in peril of disappearing or becoming inaccessible within a few generations" (NRPB, 2006, p. v).
- A study from the same organization, published in late 2012, reported that:

many analog audio recordings must be digitized within the next 15 to 20 years—before sound carrier degradation and the challenges of acquiring and maintaining playback equipment make the success of these efforts too expensive or unattainable.

They also noted that while this was published in late 2012, it was years in the making, going back to 2009, leaving them wondering whether 15–20 years was more like 10–15 years now (NRPB, 2012, p. 7).

Prompted by their growing concern they looked to organizations such as IASA, the Association for Recorded Sound Collections (ARSC), and AMIA to confer with colleagues. Among experts they found consensus around the prediction that between the present and some time between 2023 and 2028 analogue materials would become inaccessible.

With their newfound knowledge they formed a working group within the university, pulling together stakeholders including archivists, preservation experts, researchers, faculty and information technology staff to focus on the issues surrounding preservation of and access to the AV holdings.

Invigorated, they prepared a bold statement for the upper administration laying out the information about the estimated size of their holdings and the timeline in which they had to act. They also took the opportunity to express the troubled state of access to their AV holdings, proposing it as a warning of what could become permanent if action was not taken. Their main points emphasized:

- the great cultural significance of the collections, highlighting particularly valuable content and examples of how it has been used in important work;
- the valuable public relations and reputation building stemming from acquisitions and holdings;
- the potential damage to ASCAU's good reputation by falling short on its obligation to preserve and make accessible its recordings;



- the potential damage suffered to the staff's good reputation if the significant highlighted materials were permanently lost while in their care;
- the potential perception of irresponsibility implied in acquisitions that outpace and demand greater budgets than preservation and access;
- the potential failure to fulfil ASCAU's mission to provide access for faculty, students, researchers and the public; and
- a call to action to identify, prioritize and digitize priority materials before 2028.

The upper administration took the statement to heart and charged the working group with quantifying the problem. The administration provided the group with a modest budget to conduct a survey of holdings and to report on the findings, along with an estimated budget and timeline for getting this work done.

Feeling the wind at their back, the working group members got to work, and over the course of the next several months conducted a survey of holdings which they used to generate a plan for digitization. Based on their findings they estimated that approximately 65 percent of the undigitized holdings would ultimately be deemed worthy of digitization and preservation, totalling approximately 63 050 items, 60 percent audio and 40 percent video.

Exploring the economics of digitization they discovered that the cost of outsourcing preservation reformatting had decreased approximately 70 percent on average in the past five years. In other words, what would have cost USD 150 in 2009 cost USD 45 in 2013. This provided an impetus to outsource a majority of the work, although they also identified certain materials that they would want to digitize in house. Concerned about keeping the budget as low as possible in order to increase the likelihood of funding, they decided to focus on doing the minimum necessary to ensure the materials were not lost. Items could be catalogued and made accessible in all kinds of ways after 2028, but only if they were digitized prior to that. In order to maintain the option to do anything with the content after 2028 they needed to digitize it. After 2028 there was no option available – the content would be permanently lost. With this in mind they decided to capture a minimal amount of metadata, focusing on information that they would not be able to capture later, as well as any metadata required to be able to responsibly manage the collection of files generated through digitization. They also recognized that they needed to have a reasonably robust centralized digital storage environment. The risk of storing all of the digitized files on unreliable and/or non-centralized storage would be too great.

After a great deal of analysis and planning, their total budget estimate to digitize and store everything by 2028 was USD 9 305 311. This sizable number worried the working group, but they found confidence in their strong arguments, solid planning and well-reasoned budgeting. It was also not an unprecedented number for other types of projects considered a university-wide priority, particularly given that the budget was allocated over 15 years. They would also argue that the university's continued acquisition of materials over the coming years would be well served by this same infrastructure.

In addition to delivering the report, the working group gave a presentation on its proposed plan to upper administration. Despite what were eye-popping numbers at first glance, the group's members entered the meeting with a good deal of hope based on their previous success in garnering support and great enthusiasm about the importance of the project.

During the presentation the upper administration was outwardly stunned by the dollar amount. Questions were asked about whether or not all of the 'priority' materials were truly preservation-worthy, and whether the working group could get the digitization done more cheaply with student labour. The conversation turned to thoughts of monetization and revenue streams, as administrators wondered aloud about everything from licensing content as a way to generate revenue to having vendors digitize the content for free in exchange for offering the vendor exclusive licensing.

Diplomatically, working group members reminded the administration of the complex issues of rights and donor agreements and the challenges that these presented in regard to licensing content. They also raised concerns in a nuanced way about the innate contrast between their mission of providing access and placing the keys to the content solely in the hands of a commercial interest. The administration then turned to thoughts of Anon University being a service provider to other institutions as a way to generate revenue, asking the working group about the feasibility of this. Working group members replied that it was a possibility but that it would take more staff and an increase in annual capacity in order to get their own work done in addition to doing work for others. The budget would have to go up significantly to accommodate these increases, and they admitted that they felt unsure about it as a strategy for recouping any costs beyond those of acting as a service provider.

Frustrated at the seeming lack of good options, the administration brought the meeting to a close, conveying that the bottom line was that it would be irresponsible of

them to expend those funds without a plan for return on investment (ROI). It was a non-starter without identifying ROI. They asked the working group to come up with thoughts on ways to generate revenue and at minimum recoup their investment in the digitization project.

### An impasse

The impasse represented in this scenario is one that has presented itself for decades. Archivists and caretakers of collections have been frustrated by what is perceived as short-sighted thinking, and executives and administrators have been frustrated by a perceived inability to face the economic realities. This disconnect has persisted over time with each 'side' digging its heels in further.

As a community, archivists and caretakers have fallen back on arguments centred on potential loss of knowledge and culture, as well as damage to reputation and failure to fulfil institutional missions. While executives and administrators care a great deal about these arguments, at the end of the day they are staring at a budget for which they are responsible, a budget that does not care for non-quantifiable arguments. In rare cases when compelling arguments based on reputation, mission and the currency of knowledge and culture have fallen on the right ears at the right time, they have translated into currency that will fund initiatives. In most cases these arguments alone are not effective in capturing the understanding and wallets of funders.

There is a critical component that is often overlooked in these exchanges and the thinking that surrounds them. This is the *cost of inaction*, or COI. Let us examine what this looks like in the case of Anon University.

### A new perspective

At the next working group meeting a realization materialized. The Archives and Special Collections at Anon University were established in 1963, 50 years prior to 2013. The discussions with the administration had treated this effort as if the investments in their holdings would begin with digitization. They had failed to recognize the investment made in these collections going back to 1963.

The Archives and Special Collections were founded with the deposit and acquisition of a large collection, containing approximately 20 000 audiovisual items. Between 1963 and 2013, ASCAU had acquired 80 000 additional audiovisual items. Since 1963 the university had invested in staff, real estate, construction, utilities, specialized temperature and humidity controls, management, administration, moves, rehousing, equipment, supplies, consulting, acquisitions and more to support these collections.

The working group decided to estimate the past investment that the university had placed in its physical audiovisual materials. They explored various methods of deriving this number. One method involved allocating a percentage of the operational and capital budgets between 1963 and 2013 to the audiovisual holdings. Another would estimate an average cost per item per year for each year since ASCAU was established. A final option would estimate audiovisual-specific expenses, such as specific staff or projects. The first method proved to be the most reasonable and they arrived at a number of approximately USD 11 million that Anon University had expended on the AV holdings to date since 1963. In addition to the current holdings, the university was acquiring an average of 1 600 items per year. At this rate of growth, if the university paid an average of USD 2 per item per year (factoring in staffing, facilities, collection management, etc. over that time) the total investment on legacy physical audiovisual items between 1963 and 2028 would be approximately USD 14.5 million.

Based on the consensus that reformatting will be largely impractical or impossible after 15 years, if the university took no action to digitize and provide a basic digital preservation storage environment for these items they would effectively throw that 65-year investment of USD 14.5 million out the window, having received little to no benefit given that the holdings were largely inaccessible during that time. The cost of inaction in this case would result in the loss of 124 000 items in their care *in addition to* USD 14.5 million. This significant portion of the funding expended in the Archives and Special Collections would be deemed fruitless, a wasted cost.

The working group's prior calculations on project cost came to approximately USD 148 per selected item to digitize and provide a basic digital preservation environment through 2028. Expending these funds would effectively result in the saving of this past investment, yielding a return. The USD 14.5 million invested between 1963 and 2028 in the physical audiovisual holdings is allocated over 78 650 items (65 percent of the 124 000 items in holdings by 2028, minus the 3 000 items digitized as of 2013). This means that the average investment would be approximately USD 184 per item. For each item they spent USD 148 on to digitize and store over the next 15 years, they would recoup USD 184 of past investment, yielding a return of approximately 24 percent through 2028 – a difference of 124 percent compared with losing the USD 184 invested in that item.

Armed with this information members of the working group created detailed financial models based on this concept and took them to the administration. They also reiterated the

concerns around reputation and mission. While the budgets of the administration had not changed and they wanted to dive into details of the financial analysis, they ultimately agreed in concept that the fiscally responsible thing to do was to avoid throwing decades of investment out the window. However the administration wanted options and asked the working group to come up with three scenarios representing digitization of 100 percent, 50 percent and 25 percent of the current estimated 63 050 items, starting in 2015, and to report on the implications of each. The administration asked the group not to consider the growth of the archive and to assume investment would be limited to 63 050 items through 2028.

The working group performed the requested analysis, providing scenarios for digitizing the current preservation-worthy items, and offered the following summary:

	100% Digitized	50% Digitized	25% Digitized
<b>Budget</b>	\$10,244,585	\$5,427,536	\$2,713,990
<b>Content Lost</b>	0	31,525	47,286
<b>Investment Lost</b>	\$0	\$6,319,610	\$9,479,196
<b>Investment Saved</b>	\$12,639,300	\$6,319,690	\$3,160,104

The information was provided to the administration along with supporting arguments regarding the intellectual and reputation implications of each scenario.

Armed with a more robust argument, the administration was inspired to reach out to the president and the board to seek funding for an initiative to digitize their priority holdings.

Although the goal for funding was the original USD 9 305 311, the funding commitment they received was for USD 650 000 per year for five years starting in 2015, with consideration for a funding commitment past the initial five years in 2018.

## The cost of inaction calculator

Although this is a hypothetical story, it is clear that incorporating the COI model and analyses into the decision-making process around digitization of legacy physical audiovisual media helps organizations understand the implications and make well-informed choices. Providing objective financial metrics and quantifying the loss of media and content can make the case for taking more immediate action while also helping to avoid a paralysing all-or-nothing mindset by enabling insights into the choices available.

To date there has been no way for organizations to quantify the financial and intellectual cost of inaction in order to supplement traditional arguments and bridge the gaps between caretakers or archivists and executives or administrators.

AVPreserve has recently released the Cost of Inaction Calculator, a free and open web application that enables organizations to analyse and report on the implications of various scenarios representing different levels of action.<sup>1</sup>

The calculator prompts users to enter the following parameters (Fig. 1):

- last year of magnetic media,
- number of objects in collection,
- collection’s audio/video percentage,
- investment to date for media,
- annual cost per media item moving forward,
- digitization cost per item,
- year you will start digitizing items,
- annual digitization budget,
- storage service (dictates annual storage cost)
- annual decrease in cost of storage and
- annual increase in cost of digitization.

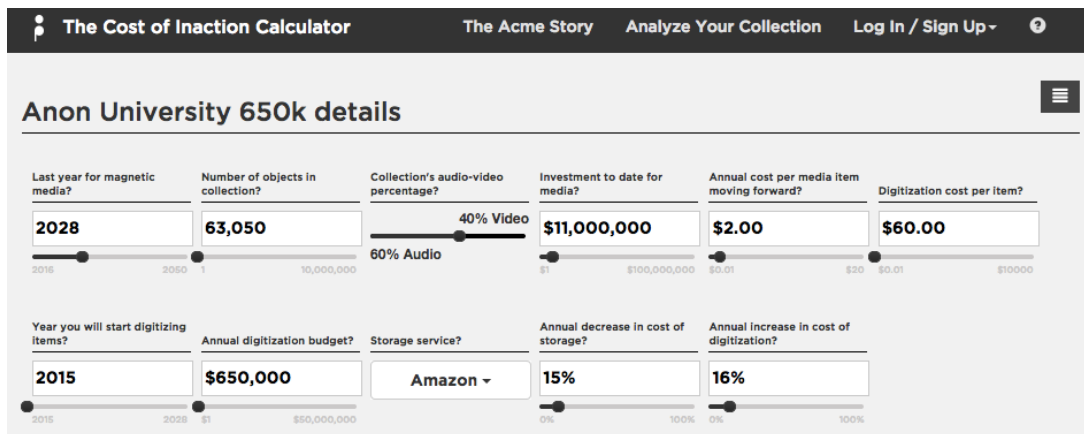


FIGURE 1. Collection parameters for entry.

<sup>1</sup> See <https://coi.avpreserve.com>.

The help menu offers information on how to interpret and adjust these parameters, as well as on the assumptions behind them.

There are two sections where reporting is provided, both in charts as well as tabular data. The first is called the *collection analysis report* and provides results based on the collection details entered by the user as follows:

- year,
- media,
- content saved,
- excess items digitized,
- investment made,
- content lost,
- investment lost,

- investment saved,
- digitization expense,
- storage expense,
- digitization + storage expense,
- investment saved per USD 1 of expense and
- quality of selection.

The data reported show the cumulative progression of implications over time (Fig. 2–3).

The second section is called the *start implications report* (Fig. 4–5) and it answers four primary questions:

1. If I start digitizing in year *x*, how much will I need to spend per year to digitize all items that have not been permanently lost already?

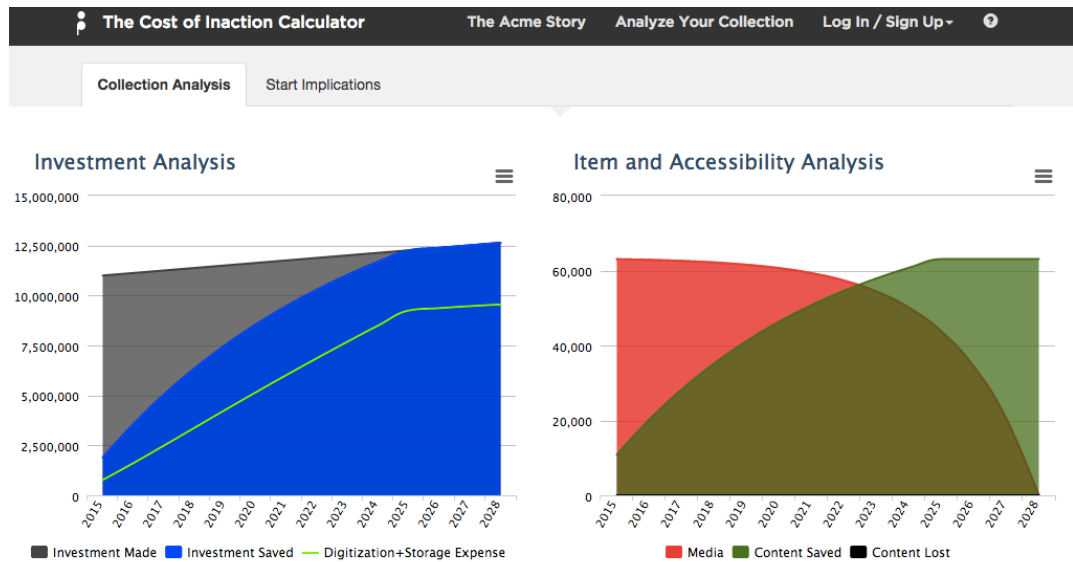


FIGURE 2. Collection analysis charts.

Year	Media	Content Saved	Excess Items Digitized	Investment Made	Content Lost	Investment Lost	Investment Saved	Digitization Expense	Storage Expense	Digitization + Storage Expense	Investment Saved per \$1 of expense	Quality of Selection
2015	63,050	10,833	10,643	\$11,000,000	0	\$9,109,966	\$1,890,034	\$650,000	\$121,326	\$771,326	\$2.45	100.00%
2016	62,859	20,172	9,058	\$11,126,100	0	\$7,566,381	\$3,559,719	\$1,300,000	\$313,356	\$1,613,356	\$2.21	99.70%
2017	62,578	28,223	7,635	\$11,252,200	0	\$6,215,329	\$5,036,871	\$1,950,000	\$541,725	\$2,491,725	\$2.02	99.25%
2018	62,162	35,164	6,327	\$11,378,300	0	\$5,032,474	\$6,345,826	\$2,600,000	\$783,574	\$3,383,574	\$1.88	98.59%
2019	61,548	41,147	5,077	\$11,504,400	0	\$3,996,532	\$7,507,868	\$3,250,000	\$1,024,124	\$4,274,124	\$1.76	97.62%
2020	60,642	46,305	3,820	\$11,630,500	0	\$3,088,890	\$8,541,610	\$3,900,000	\$1,254,222	\$5,154,222	\$1.66	96.18%
2021	59,304	50,751	2,471	\$11,756,600	0	\$2,293,272	\$9,463,328	\$4,550,000	\$1,468,586	\$6,018,586	\$1.57	94.06%
2022	57,328	54,584	916	\$11,882,700	0	\$1,595,456	\$10,287,244	\$5,200,000	\$1,664,558	\$6,864,558	\$1.50	90.93%
2023	54,411	57,889	0	\$12,008,800	0	\$983,007	\$11,025,793	\$5,850,000	\$1,841,218	\$7,691,218	\$1.43	86.30%
2024	50,103	60,738	0	\$12,134,900	0	\$445,063	\$11,689,837	\$6,500,000	\$1,998,768	\$8,498,768	\$1.38	79.46%
2025	43,742	63,050	0	\$12,261,000	0	\$0	\$12,261,000	\$7,112,071	\$2,137,785	\$9,249,856	\$1.33	69.38%
2026	34,349	63,050	0	\$12,387,100	0	\$0	\$12,387,100	\$7,112,071	\$2,255,949	\$9,368,020	\$1.32	54.48%
2027	20,479	63,050	0	\$12,513,200	0	\$0	\$12,513,200	\$7,112,071	\$2,356,388	\$9,468,459	\$1.32	32.48%
2028	0	63,050	0	\$12,639,300	0	\$0	\$12,639,300	\$7,112,071	\$2,441,761	\$9,553,832	\$1.32	0.00%

FIGURE 3. Collection analysis tabular data.

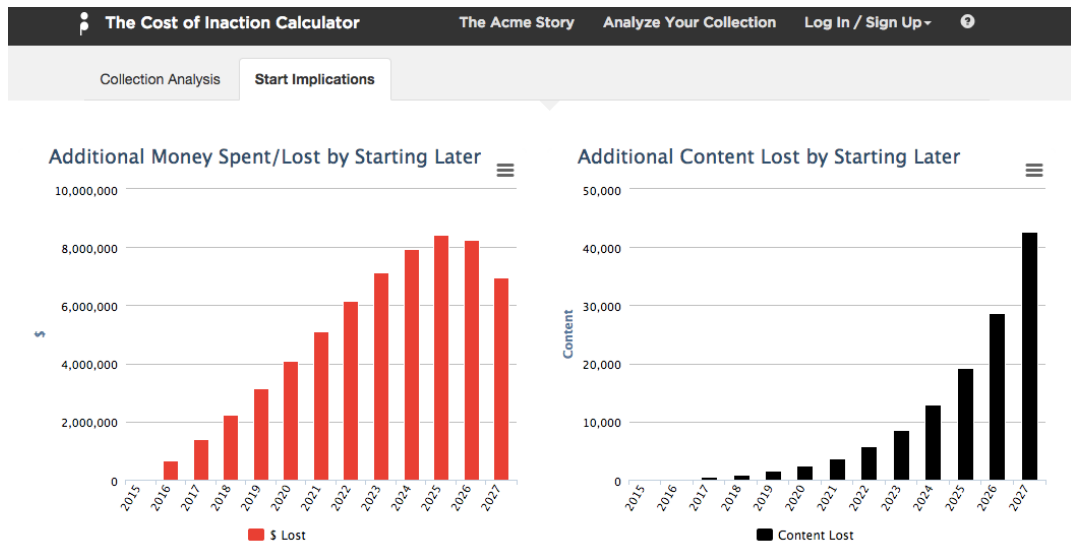


FIGURE 4. Start implications charts.

Year Digitization Started	Annual Digitization Budget Required	Storage Cost by 2028	Total Spent by 2028	Investment Lost by 2028	Spent + Lost by 2028	Spent + Lost Difference	Content Lost	% More Spent + Lost	% More Content Lost
2015	\$610,447	\$945,872	\$8,881,683	\$0	\$8,881,683	\$0	0	0.00%	0.00%
2016	\$725,705	\$792,516	\$9,500,976	\$38,216	\$9,539,192	\$657,509	191	7.40%	0.30%
2017	\$866,123	\$661,429	\$10,188,782	\$94,644	\$10,283,426	\$1,401,743	472	15.78%	0.75%
2018	\$1,038,381	\$549,170	\$10,932,980	\$177,966	\$11,110,946	\$2,229,263	888	25.10%	1.41%
2019	\$1,251,318	\$452,799	\$11,714,661	\$300,999	\$12,015,660	\$3,133,977	1,502	35.29%	2.38%
2020	\$1,516,735	\$369,807	\$12,503,687	\$482,667	\$12,986,354	\$4,104,671	2,408	46.22%	3.82%
2021	\$1,850,543	\$298,056	\$13,251,857	\$750,916	\$14,002,773	\$5,121,090	3,746	57.66%	5.94%
2022	\$2,274,373	\$235,743	\$13,881,981	\$1,147,009	\$15,028,990	\$6,147,307	5,722	69.21%	9.08%
2023	\$2,817,889	\$181,367	\$14,270,812	\$1,731,875	\$16,002,687	\$7,121,004	8,639	80.18%	13.70%
2024	\$3,522,090	\$133,736	\$14,222,096	\$2,595,482	\$16,817,578	\$7,935,895	12,947	89.35%	20.53%
2025	\$4,444,045	\$91,984	\$13,424,119	\$3,870,673	\$17,294,792	\$8,413,109	19,308	94.72%	30.62%
2026	\$5,663,739	\$55,635	\$11,383,113	\$5,753,605	\$17,136,718	\$8,255,035	28,701	92.94%	45.52%
2027	\$7,293,947	\$24,726	\$7,318,673	\$8,533,920	\$15,852,593	\$6,970,910	42,571	78.49%	67.52%

FIGURE 5. Start implications tabular data.

2. If I start digitizing in year *x*, how much more money will I spend than if I start digitizing in year *y*?
3. If I start digitizing in year *x*, how much more investment will I lose than if I start digitizing in year *y*?
4. If I start digitizing in year *x*, how many more items will I lose than if I start digitizing in year *y*?

- spent + lost difference,
- content lost,
- percent more spent + lost and
- percent more content lost.

This report provides results based on a subset of the pertinent collection details provided by the user as follows:

- year digitization started,
- annual digitization budget required,
- total spent by 2028,
- investment lost,
- spent + lost by 2028,

The COI Calculator allows saving of multiple scenarios in order to perform comparative analysis and to come to a better understanding of the implications of different decisions. It also allows exporting of the charts and tabular data as well as sharing links to scenarios.<sup>2</sup>

<sup>2</sup> For an Anon University scenario, see <https://coi.avpreserve.com/viewcollection/MTMzM0Y1MzQwMzk0> (100% scenario); <https://coi.avpreserve.com/viewcollection/MTMxM0Y1MzQwMzk0> (50% scenario); <https://coi.avpreserve.com/viewcollection/MTMyM0Y1MzQwMzk0> (25% scenario); <https://coi.avpreserve.com/viewcollection/MTMwM0Y1MzQwMzk0> (USD 650 000 scenario).



## Bridging the gap

The cost of inaction has been a missing link in the discussion and analysis surrounding the funding of audiovisual digitization and preservation efforts. Recognizing and being able to articulate this concept helps bridge a gap between caretakers and administrators and offers an effective financial metric that is a meaningful addition to traditional arguments based on cultural and intellectual significance. Adding COI to ROI provides a 360-degree perspective, looking both at past investment and the return on savings of that investment with future expense, while recognizing that the window of possible return is limited based on the obsolescence and degradation of audiovisual media. There is a cost of inaction, and every organization should come to an understanding of that cost in the formation of a digitization and preservation strategy in order to help make well-informed decisions. While the scenario painted in this article focuses on a university, this rationale is just as true for all organizations holding collections of physical legacy audiovisual media.

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- Chris Lacinak** founded AVPreserve in 2006 with a focus on empowering organizations to maximize the usability of their data for distribution, education, research, monetization, marketing and business intelligence, in the immediate present and over the long term. His recent work focuses on strategic and business planning as well as research and development of standards and technologies for the creation and management of digital media. Chris served as Adjunct Professor at New York University's Moving Image, Archiving and Preservation (MIAP) programme for six years, where he developed and taught five courses including Digital Preservation and Video Preservation.

# 7. Changing gears

## Fast-lane design for accelerated innovation in memory organizations

*Johan Oomen, Maarten Brinkerink, Bouke Huurnink and Roeland Ordelman*

**Audiovisual archives are embracing the opportunities offered by digitization for managing their work processes and offering new services to a wide array of user groups. Organization strategy, working processes and software development need to be able to support a culture where innovation can flourish. Some institutions are beginning to adopt the concept of ‘two-speed IT’. The core strategy aims to accommodate two informational technology tracks simultaneously: foundational but ‘slow’ and innovative but flexible and ‘fast’. This paper outlines the rationale behind the two-speed IT strategy. It highlights a specific implementation at the Netherlands Institute for Sound and Vision, a large audiovisual archive and museum where two-speed IT is enabling the institute to reach its business objectives.**

Museums benefit from fostering a ‘culture of innovation’ as a way to effectively manage ever-changing expectations of user groups and, at the same time, make the most of new opportunities offered by technology (Simon, 2011). The fundamental challenge is how to achieve the public missions (i.e. supporting a myriad of users in utilizing heritage collections so that they can actively learn, experience and create). As Douglas

Rushkoff (2014, p. 70) notes, “It’s not about how digital technology changes us, but how we change ourselves and one another now that we live so digitally”. For this, it is essential for museums to have access to technical infrastructure that not only allows for digital assets management but also helps them to pursue contemporary objectives (Johnson *et al.*, 2015). For instance, museums can use new channels for content distribution (e.g. YouTube, Instagram) to engage with new user groups or employ technologies (e.g. linked open data, natural language processing) to enrich and optimize work processes or to encourage creative ways to access collections (Gorgels, 2013).

In this paper, we propose the fostering of innovation for heritage organizations through deploying ‘two-speed IT’ (Bossert, Harryson and Roberts, 2015) and the accompanying organizational structure to realize it.

### **Fostering a ‘culture of innovation’**

Archives differ from organization to organization. Some organizations are established by law as separate entities (legal deposits); others are part of larger organizations like museums, libraries, universities or broadcasters. In many cases, audiovisual collections are maintained by public bodies and in effect serve public missions, but not exclusively. Commercial footage libraries and other commercial entities (e.g. search engines and video platforms) are also looking after growing bodies of audiovisual heritage, albeit with primary motivations other than providing access to support knowledge sharing or creative processes. Another area of growing importance is private archives, notably created by the billions of people carrying smartphones that allow for high-quality multimedia recording. Personal archiving is starting to be addressed (Redwine, 2015), but it is an area that demands much more research. Established archives are investigating to what extent they can help ensure long-term access to these collections. Many commercial players are active in this domain, from social networks to cloud storage providers. Given this context, it is key for ‘traditional’ archives to educate their constituents about the value they bring to society not only through securing the sharing of knowledge,

a prerequisite for democracies to function, but also, and perhaps more down to earth, through educating and entertaining communities and individuals and through facilitating the exchange of ideas among various stakeholders.

Over the past years, we have participated in many online and offline discussions in the audiovisual archives domain. Below are some of the main subjects that will affect these archives' future position, given the context in which they operate.

Foremost, audiovisual archives are in a challenging position, operating as custodians of (mostly) in-copyright works while also managing the public's expectations in providing online access. Copyright rules need to be modified to allow memory organizations to provide access to their collections. A balance needs to be found between giving creators remuneration for using their works and allowing the guardians of their works to provide public access for various user groups. As a fundamental rule, content added to the public domain should stay in the public domain (Communia, 2011). Also, memory organizations should consider adopting an 'open by default' access policy in order to lead by example. Also, archives could consider liaising with rights owners to study the possibilities for providing access to commercially unviable (i.e. out-of-commerce) content under few constrictions (European Commission, 2012). Modernization of copyright regulations should look into collective licensing and other ways to decrease the burden for obtaining copyright permissions. With respect to newly created material, creators should be encouraged to use Creative Commons licenses to foster a culture of innovation and creativity. For works commissioned by public institutions, the use of open licenses could be made compulsory (European Commission, 2015).

Impact needs to be measurable and measured wherever and whenever possible, not only to ensure that archives remain accountable for how resources are spent but also to build solid business cases that will enable future investments, be they in services or supporting infrastructures. Following the balanced value impact (BVI) model, we can distinguish between *internal*, *innovation*, *economic* and *social* impact (Tanner, 2012). Impact metrics also need to take into account new types of use. Already, material from archives is shared using open licences (e.g. on platforms such as Wikipedia) (Brinkerink, 2015). Use on these third-party platforms needs to be monitored if possible; alternatively, qualitative evidence needs to be gathered. Audio and video fingerprinting can be used to track content usage over various platforms.

As a result of digitization, archives and their users are sharing the same information space. To fully realize their potential, archives need to ensure that their collections are available where users reside. A practical implication of this truism is that institutionally maintained access points such as searchable archive catalogues should not be the only way to access collections. On the web, content likes to travel, and archives must embrace this fact, at the least by making their catalogues findable for online search engines and shareable on social media platforms. More fundamentally, they should provide developers with application program interface (API) access to the catalogue and content and adopt machine-readable copyright labels to facilitate access (Chan and Cope, 2015). In this way, third parties can 'build upon' online collections (e.g. publishers that integrate resources in learning environments). Following this 'liberalization' of content, a new paradigm emerges that allows archives to focus their efforts on 'super serving' niche communities such as filmmakers, media scholars and amateur historians.

Archives benefit from fostering a 'culture of innovation' as a way to effectively manage ever-changing expectations of user groups and, at the same time, to make the most of new opportunities offered by technology (McKeown, 2012). For this, it is essential for archives to have access to technical infrastructure that allows not only the management of digital assets but also the pursuit of contemporary objectives in line with user expectations. For instance: using new channels for content distribution such as YouTube and Instagram to engage with new user groups, using technologies such as linked open data and natural language processing to augment and optimize work processes or allowing for creative ways to access collections. A 'culture of innovation' will also open possibilities to increase the level of cooperation with academia in areas ranging from digital humanities to computer science.

## Two-speed IT in the heritage domain

Bossert, Harryson and Roberts (2015) outline how organizations need to have capabilities in four distinct areas in order for them to remain successful as their operations and services are increasingly digitized. In order to deliver services on a timely basis, software development of "testing, failing, learning, adapting, and iterating rapidly" needs to be in place. However, applying an 'experimental' development approach in an operational context that includes critical back-end (legacy) systems is hardly possible, nor is it appropriate. As a way to cope with this fundamental incompatibility, organizations can choose to adopt a digital product management model, coined 'two-speed IT'. This accommodates two tracks, or 'speeds', simultaneously: a 'slow' foundational speed and a 'fast' innovative speed. Below, we consider how the concept may be used in the heritage domain.

Managing digital assets and embracing innovation are characterized by very different dimensions in the heritage domain. In terms of standards used, partnerships, managing investments over time, accountability, staff expertise and more, the issues and demands are different than at other organizations.

For the 'slow' speed, standardized and off-the shelf solutions are used to secure 24/7 service. The solutions are updated following service-level agreements with suppliers. In the heritage domain, good examples are systems for managing storage, cataloguing, play-out and ordering. Given the impact, the frequency of updating applications in the 'slow' ecosystem is measured in months or years rather than weeks.

The 'fast' speed features mostly tailor-made solutions that cater to very specific user requirements and are used to experiment with new technologies. Opposed to systems that are 'core' (for instance the storage systems), applications developed in the 'fast' speed do not have very stringent requirements regarding stability and minimum 'uptime' (i.e. they are in some cases maintained by developers themselves). For instance: experimental visualizations of data sets, automatic metadata extraction services and online magazines linked to current exhibits. This is the 'speed' most closely connected to creating highly personalized experiences (Rodney, 2016).

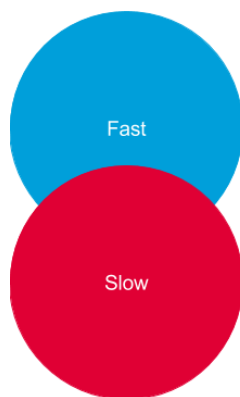
Both ecosystems have their specific infrastructures, applications, development and staging environments, as well as suppliers. They overlap partly, for instance when ecosystems make use of similar underlying streams of data (Fig. 1). In practice, the 'conversion' from slow to fast is a process driven by business requirements. What is key is to optimize systems and processes.

Our illustrative use case is the Netherlands Institute for Sound and Vision. Sound and Vision is a leading audiovisual archive with a growing digitized collection of 1.9 million objects (ranging from film, television and radio broadcasts to music recordings and web videos) and a museum that attracts approximately 250 000 visitors annually. Born-digital assets are ingested in a state-of-the-art digital repository accessible both online and in the museum. A source of inspiration is the API-driven technology 'stack' of the Cooper Hewitt museum in New York, enabling innovative ways to unlock the collection database in use, both online and on site (Chan and Cope, 2015). The stack of the Cooper Hewitt connects two proprietary servers: the collection database (TMS) and the database that knows about the visitors. These servers are positioned in the 'slow' speed ecosystem. An API allows the creation of a range of software applications, including the website and the interactives in the exhibits. As Meyer (2015) notes, "the [Cooper Hewitt] museum made a piece of infrastructure for the public. But the museum will benefit in the long term, because the infrastructure will permit them to plan for the near future".

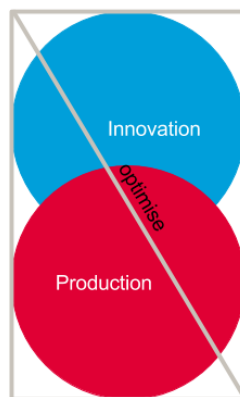
### Two-speed IT in practice

Sound and Vision has ensured the successful transition to the digital domain after completing a seven-year, EUR 90 million programme to digitize its analogue assets. Today, it has one of the largest collections of digital heritage assets in the world, totalling over 15 petabytes. Recently, a multiannual innovation agenda was adopted, consisting of five research themes: (1) develop automatic metadata extraction and big data analysis, (2) explore new access paradigms, (3) understand users, (4) ensure digital durability and (5) study the impact of media. An integral part of the transition to the digital domain, a new mission statement, a new strategic plan (covering 2016 to 2020) and a new organizational structure were defined and implemented.

### 2 Speeds



### Activities



### Processes from innovation to production



FIGURE 1. Two-speed IT ecosystems.

A guiding principle was the conviction that the success of memory organizations lies in their ability to make the above-mentioned notions of ‘smart’, ‘connected’ and ‘open’ integral parts of their strategies (Oomen and Aroyo, 2011; Ridge, 2014). Sound and Vision adopted two-speed IT as one of the key design principles.

Before implementing two-speed IT, software development had been mainly executed by third-party software developers. Also, there were few formalized connections between research and development (R&D) and the rest of the organization, making it hardly possible to implement results from R&D in daily operations.

Hence, two-speed IT needed to be grounded also in the organizational structure. Today, three departments are jointly responsible for delivering successful IT solutions: R&D, Development, and Production and Maintenance (Fig. 2).

The departments have the following responsibilities:

1. R&D: implementing the research agenda through participation in research projects. Software development by scientific programmers.
2. Development: translating business requirements into functional requirements; evaluating output of R&D projects; creating services and applications that foster and adopt innovation. Development following SCRUM.
3. Production and Maintenance: ensuring the uptime of applications; installing new versions and patches from third-party suppliers according to set service-level agreements.

Small and medium enterprises (SMEs) also play a key role; they are partners in R&D programmes and are involved in the successive stages. It needs to be noted here that even though software is created in the ‘fast’ speed, resulting

solutions can be put in production and maintained by SMEs under the terms for a service-level agreement.

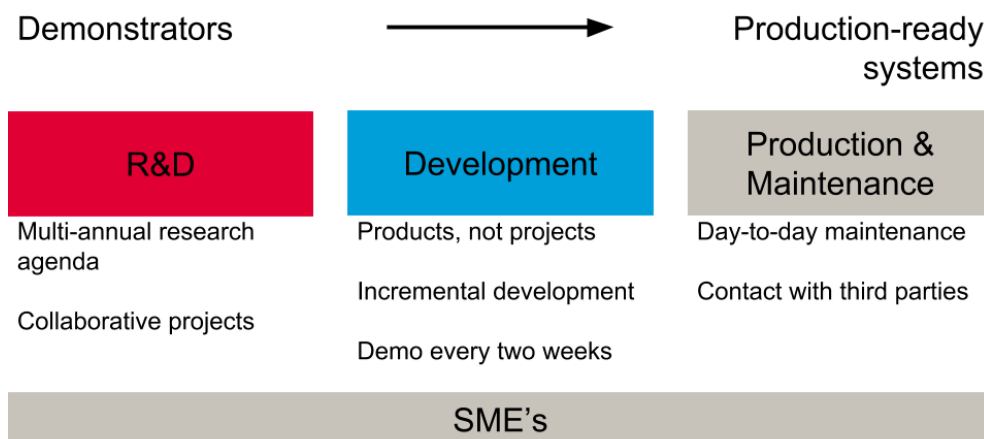
Note that the three departments are not responsible for the business requirements and product ownership of the services developed. The business units, Archive (responsible for the collection management and access) and Museum (operating the Sound and Vision museum and online presentation), are responsible for this.

Handling of the flow and resources between the teams will be addressed by adopting the concept of (living) labs that allow Sound and Vision to experiment and explore innovative concepts in a near-production environment, in close-to-real-life scenarios with realistic data sets. As we require the labs to be based upon production system infrastructure and protocols, the uptake of successful concepts in the production environment can be much smoother. Obviously this requires close tuning and synchronization between the three departments involved.

### First adoptions: speaker labelling and entity extraction

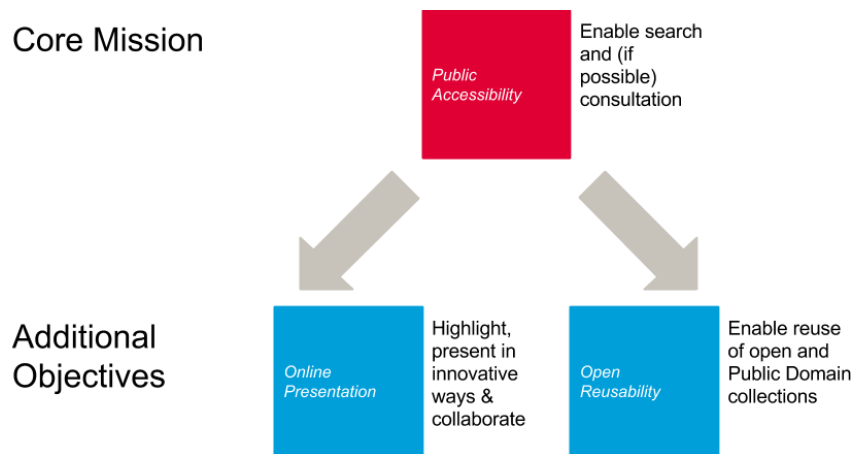
At Sound and Vision, an off-the-shelf asset management system (Digital Audiovisual Archive Netherlands, DAAN) from supplier Vizrt forms the foundation of the ‘slow’ ecosystem (Vizrt, 2015). The asset management is the ‘core’ of the archive and includes services to search, view, select, license and order digital media assets. Next to DAAN is a more agile ‘fast’ ecosystem of tailor-made solutions for distinct functionalities, notably open source search and automatic metadata extraction. This is the layer where output of research can be implemented in production workflows.

Following the two-speed IT, Sound and Vision successfully deployed automatic speaker labelling (a result from a research project with Radboud University) in 2014, speeding



**FIGURE 2.** Departments working on two-speed IT at the Netherlands Institute for Sound and Vision.





**FIGURE 3.** Schematic overview of the three forms of online availability.

up the annotation process and offering a new access point to the collections. In 2015, technology to extract names of people, places, events and organizations from subtitle files was introduced. This was originally developed in collaboration with the University of Amsterdam. In both cases, spin-off companies from universities are playing an important role in the process, as they were involved in developing the initial demonstrators with academics and currently are working under a service-level agreement with the Production and Maintenance department.

## Conclusions

Heritage institutions can consider adopting 'two-speed IT' to enable innovation in parallel to maintaining a stable core digital infrastructure. The Netherlands Institute for Sound and Vision has adapted the two-speed approach to enable it to innovate with new technology while maintaining a stable, standardized basis for IT infrastructure. This has had an impact on the strategy and organizational structure of the institute. Following the implementation of this approach, cutting-edge speaker identification and automatic entity-extraction techniques were successfully implemented in production systems in 2014 and 2015. This year, an ambitious programme on online access has been initiated through an innovation agenda.

Over the past two years, we have learned a lot regarding two-speed IT and have found it to be a well-suited strategy for ensuring that the outcomes of research and innovation projects can find their way to production systems. With the experience gained over the past years, we look forward to implementing the new access strategy and further developing the two-speed IT model within our own organization. We hope other museums and memory organizations think about creating and maintaining the technical prerequisites to flourish in an online networked environment.

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**Roeland Ordelman** specializes in audiovisual access technology and cross-media concepts with a background

in research, audiovisual archiving and ICT industry. He received his PhD in 2003 on the use of speech recognition technology to improve access to audiovisual archives. At the Netherlands Institute for Sound and Vision he coordinates internal, national and EU projects around innovative, often technology-driven approaches aiming for improved access to audiovisual collections.

## 8. What to do with audiovisual carriers after their digitization? Proposal for a five-step decision-making framework

*Brecht Declercq and Loes Nijsmans*

**Both traditional and more recent audiovisual carriers degrade. Even CD-ROMs have typically only a ten-year expected life span. In addition, playback equipment for both analogue and digital carriers will ultimately grow scarcer and more expensive to repair or replace. Archives and museums are inevitably faced with the decision of whether to preserve audiovisual carriers after their content has been digitized. This paper offers a draft decision-making framework developed by the Flemish Institute of Archiving (VIAA). Assuming that an institution already has a digital collection management system in place, the proposed framework addresses the concepts of favourability, possibility, value, preservation conditions and the risk for other carriers through a series of questions. The paper also addresses the disposal of carriers, should an organization decide that disposal is in the best interests of its collections.**

have to invest in the preservation of audiovisual carriers? Will there even be players available? Some machines and parts are already scarce. In other words: now is the time to digitize analogue audiovisual carriers. But what happens then?

The above is of course a very provocative statement, but as ever more audiovisual collections get digitized, the question arises, what to do with the original carriers after the migration to file-based formats has been completed. Classic audiovisual archiving theory, in this case IASA-TC03, says we should keep them “whenever possible” (IASA Technical Committee, 2005). But what if storage is an issue? Will we keep them – and if so, for how long – or can we discard them? But how, and under which circumstances? Undoubtedly there is no simple answer, so we may have to formulate some nuanced advice, with many arguments to base a decision upon. We will have to investigate and provide good practices, develop solid guidelines and even create instruments that can really serve in practice, such as a decision framework.

The current large-scale digitization projects organized by the Flemish Institute for Archiving (VIAA) are an occasion to contemplate the issue of preserving or disposing of audiovisual carriers after their digitization. These projects involve almost a hundred Flemish broadcasters, libraries, archives and museums that manage audiovisual heritage collections. Several of them have already raised the question about what to do with the carriers after digitization. VIAA, together with PACKED vzw (the Flemish Centre of Expertise in Digital Heritage) and FARO (the Flemish Interface Centre for Cultural Heritage), wants to help its content partners by providing them with a solid framework on this issue. Without pretending to be a standard, VIAA's content partners can use this framework to formulate a well-advised decision on whether to keep or dispose of audiovisual carriers after digitization.

If experts predict that most magnetic tapes will no longer be readable after 2030, how much do archives and museums still

Although other concerns than the ones outlined here might arise, our aim in sharing our guidelines is to inspire others



to answer difficult questions about discarding carriers and to evolve practices. To come to our own reasons, we have organized several discussions, not only with our content partners but also online and at two international conferences on audiovisual archiving: SOIMA in Brussels (3–4 September 2015) and the Fédération Internationale des Archives de Télévision / International Federation of Television Archives (FIAT/IFTA) World Conference in Vienna (7–10 October 2015). We also studied some recent publications, in particular Memoriav (2016), Pellizzari (2015) and Mäusli, Herold and Looser (2014), as well as a presentation by Arnoud Goos (2015). We also took a look at guidelines from the museum world, i.e. the Dutch guidelines for the discarding of museum objects (LAMO; see Bergevoet, Kok and de Wit, 2006).<sup>1</sup>

This first draft of the decision framework as developed within VIAA is one that could be followed by our content partners. It is based on a series of questions and represents evolving perspectives and considerations about determining value for audiovisual carriers. May the arguments mentioned in this article encourage heritage institutions to take an open-minded approach to this delicate issue. May the arguments not mentioned serve as an encouragement to elaborate further on it.

### Preamble to a decision framework

Prior even to the question if one would like to discard (one way or another), there should be a solid *digital collection management* system for sustainable preservation of the digital copy. This means that the collection manager should be certain that the collection or the item is decently digitized by performing thorough quality control. Also, trustworthy storage and preservation measures to ensure access to the resulting digital files in the long term should be put in place.

Although ‘certain’ and ‘trustworthy’ are somewhat relative concepts here, as we never know what the future will bring, we would like to believe that VIAA does a good job in guaranteeing these conditions and that the content partners count on VIAA to qualitatively digitize and sustainably store their digital files. How a sustainable digital copy is made and how it should be managed and preserved are not within the scope of this article. Many publications that address these

issues can be accessed, for example, through knowledge banks such as PrestoCentre.<sup>2</sup>

### A five-step decision-making framework

Assuming reliable digital collection management practices are in place, VIAA considered it its task to guide the content partners through the decision process of discarding carriers after digitization, in case – and this is important – there is a need to do this. VIAA defined a five-step decision framework. Each step contains key questions that can help the content partner to make a well-considered decision.

#### Step 1: Is disposal favourable?

Disposing or discarding a (range of) carrier(s) is only favourable if it can enhance the collection and the functioning of the institution, and if there is sufficient capacity to carry out the disposal project properly. In order to provide good care of collections, well-trained and sufficient staff members are indispensable. Unfortunately, with funding in the cultural heritage sector under a constant threat, this cannot always be guaranteed.

Heritage-managing institutions should carefully consider the need and the available capacity for the disposal of carriers. They should ask themselves the following questions:

- *Will the disposal effectively improve the collection?*  
The disposal of (a range of) carriers will make more storage room available for other carriers; thus the remaining collection can be stored more properly and in a better organized fashion. It will also give staff more time to spend on more urgent collection matters. The funds that were used for the preservation of the discarded carriers can be relocated to invest in new collection items or better conservation conditions for the remaining collection items. In case of disposal by sale, funds will be gathered that can be used to improve the collection or storage conditions for the remaining collection parts.
- *Is there capacity to carry out a discarding project?*  
Discarding carriers should be understood and handled as a project. To carry out a project, one needs funds, staff and time. The project should be well prepared and executed: sorting out the carriers that qualify as to-be-discarded, decently documenting each step in the process, carefully running through the decision framework, consulting a team of experts (preferably internal as well as external), exploring and preparing a manner of discarding and so on. Related to this, another important question is: does the management support the project?

<sup>1</sup> We want to thank the members of the Flemish and European (audiovisual) heritage community who have participated in these discussions: Jürgen Vanhoutte (FARO), Rony Vissers (PACKED), Willem Vanneste (Antwerp City Archives), Gaby Wijers (LIMA), Dr Theo Mäusli (SRG-SSR, Università della Svizzera Italiana), Yves Niederhäuser (Memoriav), Arnoud Goos (Netherlands Institute for Sound and Vision), Pio Pellizzari and Stefano Cavaglieri (Fonoteca Nazionale Svizzera) and all the participants in the discussion panels at VIAA itself and at the 2015 SOIMA conference in Brussels.

<sup>2</sup> See [www.prestocentre.org/resources](http://www.prestocentre.org/resources).

If the answer to the questions above is no, the discarding process should stop here. If the answer is yes, and enough capacity is guaranteed, the discarding process can continue to the next step.

### Step 2: Is disposal possible?

In some cases, museums and archives do not own (the rights to) their collections but are merely keepers. As a consequence, they may not have the right to dispose of the collection items. Also, issues of copyright might be applicable, and not only when it concerns works of art. In the case of artworks the (heirs of the) artist should always be contacted when disposal is considered, because the intentions of the artist should be taken into account.

Heritage-managing institutions should carefully consider the rights and ethics that could forbid them to dispose of collection items – or obstruct them from doing so. It may be necessary to consult a legal expert. The questions below only touch the surface of the rights issue when it comes to discarding carriers. But institutions can start by asking themselves the following questions:

- *Are there property rights applicable to the item or collection? Were specific agreements made with the item's donor? Are they written down in a contract, and what do they say about discarding the item? Is the preserving institution even the owner of the item?*

Donors sometimes offer an interesting item to a museum or archive but specifically demand that the object will be displayed and will never leave the collection. If this is the case, the heritage-managing institution has two options: to stop the discarding process immediately or to contact the donor or his/her relatives to see if they want to change the conditions of the contract or if they want to take the item back. An item can also be deposited. In this case the preserving institution is not the owner and has no right to perform a disposal. If the item is a long-term loan that belongs to a private collection or another institution, arrangements can be made to send it back to the original owner.

- *Are there copyrights applicable on the item or collection, and did the maker of the carrier write down his/her demands concerning the item as an art object?*

It may be the case that an artist intended to use a specific type of carrier for the artwork. If so, one cannot choose to make a digital copy and get rid of the carrier because the carrier is an intrinsic part of the artwork. The same applies here: the creator or his/her heirs should be contacted to discuss the actions taken to preserve or discard the carrier. It is advisable to contact the legal department of the institution or a legal expert to sort this out.

If the answer to any of the above questions is yes, institutions should consider the mentioned options or stop the discarding process here. If none of these rights are applicable, they can continue to the next step.

### Step 3: Is the carrier 'valuable'?

When dealing with audiovisual materials, it is in most cases the content that predominates the value of the physical carrier. Once the content is digitized and sustainably preserved, one could in those cases argue that the carrier is of minor importance. However, collection managers should ask themselves what exactly has been digitized. In most cases it is only the content and not the carrier, the related technology, the history or something as trivial as the scent (see the anecdote described by Seely Brown and Duguid, 2000, pp. 173–174) that was digitized. All of these other elements may be essential to fully understand the meaning of the item, and not only when talking about a work of art.

This brings up the question of the appraisal of the carrier as a physical item in itself: there are hundreds of analogue audio and video formats, some more fragile or rare than others. Is it an archive or museum's job to preserve these formats for the future? Or could it be enough to preserve one *specimen* of the physical carrier if one wants to understand the technological context of production, preservation, dispersion and demonstration of audiovisual carriers within a hundred years? And if we opt for the latter, can arrangements be made between (regional) archives and museums: who preserves what?

Cultural heritage institutions should carefully consider if the carrier they want to discard is valuable to their collection or unique in any way, and ask themselves the following questions:

- *Does the content or carrier have a significant value within the collection? Which place does the audiovisual collection or the carrier take within the entire collection: main or supporting collection?*

It is advisable to define the mission of the institution, if this is not already the case. The mission should determine what the institution represents, and thus what it collects – in other words, the identity of the institution. Depending on the mission, it can determine if the audiovisual collection is a main or a supporting collection. Generally, the supporting collection will be of minor value for an institution. For example, for a museum of contemporary art an audiovisual object can be of main importance (as an art object), while for a handicraft museum the audiovisual collection is more likely to serve a supporting purpose. The appraisal of any collection item is also linked to the collection management planning or profile of an archive or museum.

The word 'value' is not easily definable; the value of a carrier can be economical, cultural, historical, etc. Collection managers should check the collection management planning or profile to determine what sort of value an item holds within their collection.

- *Does the carrier have an important link with the content (or vice versa)?*

It could be that the creator of the content had a specific reason to make use of a certain carrier type. For example, an artist may have intended to use film, and not video, to create a specific effect in which the viewer also hears the rattling sound of the projector as part of the 'total experience'. The rattling of the projector is an intrinsic part of the artwork. If this is the case, one cannot make a digital copy and discard the original film because one would lose a part of the artwork. Collection managers should at least try to take into account the intentions of the creator.

- *Is the carrier format unique or rare when it comes to the technical characteristics?*

Also the carrier itself can have a certain value. Not only very old carrier types but also more recent but rarely used carriers can be interesting to illustrate audiovisual and technological history. The technical characteristics related to the carrier, as well as to the recording and playback process, can be interesting for future generations.

If the answer to at least one of the above questions is yes, one should reconsider the disposal and stop the process here. If not, the process can continue to the next step.

#### **Step 4: Are preservation conditions suitable?**

Audiovisual carriers demand special preservation conditions that archives and museums cannot always guarantee. A relatively cold and dry environment, free of dust and air pollution, is desired. The carriers will degrade quicker if these conditions are not fulfilled.

Not only very old and fragile audiovisual carriers (like wax cylinders) but also more recent carriers (like the CD) are subject to deterioration. What is certain is the fact that the carriers will only degrade more over the years and in the end it will even become impossible to play them due to this degradation. However, when exactly it will become impossible to play them is not clear in advance. This can only be determined by regular checks. Still, there is a good chance that old tapes can still be played, e.g. for re-digitization, if the right equipment and expertise is available. In this case one has to keep in mind that the costs might increase as the condition becomes even worse.

Heritage managing institutions should carefully consider if there is a real preservation issue for the carriers. They should ask themselves the following questions:

- *Are the storage conditions unsuitable for this carrier type?*

As mentioned, audiovisual carriers should be stored in relatively dry and cold conditions: an average of 20–30 percent relative humidity and 12–17 °C, even colder for film (we refer to other sources for more detailed information on climate specifications). However, this is a climate which might be not well tolerated by other archival or museum objects. A separate storage room for audiovisual carriers is desirable, but that is a huge investment for sometimes only a relatively small collection. Many institutions cannot guarantee these conditions, but carriers will degrade more quickly if these conditions are not met. Even if the carrier is still playable, will it still be in a few years if it remains in the same conditions?

- *Is there a pressing lack of space, or is there an actual problem that causes the removal of carriers from the storage?*

Very few archives or museums have storage room to spare. Luckily, in many archives or museums the further increase of analogue or carrier-based audiovisual collections will slow down and ultimately even end due to the change from analogue to digital or from carrier-based to file-based production. But since many heritage organizations do not store their audiovisual collection in separate, specialized storage rooms, the possibility exists that the space where audiovisual carriers are stored is required for other collections. The overall collection often grows faster than the available storage space in archives and museums.

If the answer to one of the above questions is yes, one can continue to the next step. If not, the process can stop here.

#### **Step 5: Is the carrier at risk?**

If carriers have been stored in unfit conditions for a long time, severe deterioration problems can occur. However, for some newer formats such as CDs, age alone can cause the carrier to become unreadable. For older formats, playback equipment can become scarce, and this is essential if the content predominates the carrier: if there is no more playback equipment available, keeping the carriers is useless.<sup>3</sup>

Institutions should carefully consider the state of the carrier and/or the available playback equipment. They should ask themselves the following questions:

<sup>3</sup> One might hope for the emulation of extinct playback equipment, but history has proven this to be very rare and usually very expensive.

- *Is the carrier heavily contaminated with mould, vinegar syndrome or other degradation? Can this carrier affect or harm other carriers?*

Audiovisual carriers can get contaminated with mould due to humid storage conditions. Film can get affected by the vinegar syndrome. Both types of deterioration can rapidly affect other carriers stored in the same place.

Conservation or restoration actions, as well as isolating the affected items, can be very costly, so collection managers should always consider if the carrier and content is worth the investment.

- *Is the carrier obsolete, or is the content unreadable?*

An interesting example is the CD-R, which is a relatively recent format and still in use. In general, CD-Rs are expected to have an average life expectancy of ten years. As well as degradation of the dye, failure of a CD-R can be due to the reflective surface. While silver is more widely used, it is more prone to oxidation. Gold-based CD-Rs do not suffer from this problem, but they are more expensive and no longer widely available (IASA Technical Committee, 2014). VIAA just ended a CD-R digitization project in which 18 percent of the carriers proved unreadable, even by trying several kinds of data extraction.

- *Is the playback equipment (or spare parts for the equipment, or the expertise for repair) for this type of carrier rare or non-existent?*

Although cultural heritage institutions often do not own playback equipment for analogue carriers, there are often still players available that can be loaned, hired or bought. It is however important to note that even though for many playback technologies devices can still be found on the market, players as well as repair parts and the expertise to install them will become harder to find in the near future, which means that costs for (re)digitization will rise. Institutions that do not have the players at hand cannot consult the content, which makes it difficult to (re)use them in exhibitions, for researchers, etc. Providing a digital copy may solve this issue at least partly, thereby making the analogue carrier dispensable.

If the answer to at least one of the above questions is yes, one can decide to discard the carrier and move on to making a decision about the means of discarding. This is the end of the decision process.

### The disposal itself

Once an institution has run through all the decision-making steps and has concluded that it will discard a (range of) carrier(s), it can start with the actual disposal. There are different kinds of disposal or deaccessioning. In any case, thorough research should be done, different

options should be considered and an interdisciplinary team of (internal and external) experts should be consulted.

- *Donation, transfer or exchange between cultural institutions*

This can be considered a good practice when, for example, a museum is looking for an audiovisual object for its technical characteristics, rather than for its content, and an archive has this specific item but it is no longer playable. If the archive is ready to dispose of the carrier, then a transfer to the museum (and the terms) can be negotiated.

- *Sale between cultural institutions*

This is not a good practice and is not recommended.

- *Sale to the public*

This is a difficult matter and can only be motivated when the profits are used to enhance the collection, either by improved preservation measures or by acquisitions. It is very important to communicate about this carefully and properly, in order not to harm the reputation of the institution, especially when it concerns the public good.

- *Degradation*

It can also be an option to 'degrade' a carrier from museum object to working or didactic collection. This option has several advantages:

- No cost for destruction.
- No negotiations with external parties needed.
- The object stays within the walls of the institution ('invisible' discarding).
- No more preservation costs.

However, not every institution has educational activities where audiovisual carriers can be used without specific relation to the content.

- *Elimination or destruction*

In the case of audiovisual carriers, this is the most preferred option. Magnetic carriers are considered chemical waste and should not just be thrown in the bin. They should be processed by specialized waste-processing companies. They usually provide containers and charge by the kilogram.

### Conclusion

In this article we have discussed a decision-making framework that institutions managing audiovisual carriers could follow while deciding about discarding their carriers after digitization. Doing so, we have dealt with difficult questions that often have been circumnavigated cautiously in the past. We have tried to take a realistic approach, in the sense that we acknowledge that funding of cultural heritage



institutions is not guaranteed and that the degradation of physical objects and the disappearing of playback technologies is a given. The fact that we try to deal with these issues does not mean that we do not agree with the principle that the physical audiovisual carriers should be preserved. We have tried to formulate a solution for cases in which this principle has to be left behind.

From our work it is clear that this decision process is never quick or easy. 'Look before you leap' may sound like a cliché in this case, but it is the best advice we can give. To facilitate this consideration, we propose a five-step decision tree, based on particularly heavy but necessary concepts: favourability, possibility, value, preservation conditions and the risk for other carriers.

Several factors can make this five-step approach more effective. The first is to take a positive approach: disposal of collection items should always benefit the collection, the institution and even the local, regional, national or even global heritage. One should always start a disposal process with the goal of enhancing and improving the collection. Second, an interdisciplinary approach is always recommended. Disposal is not just a question of collection management. It is a legal issue, an ethical issue and even an environmental one. Third, the importance of documentation should not be neglected. If circumstances force us to leave a key principle of preservation – to actually keep the carriers – we should at least document these circumstances, as well as the decision process and the way we executed our actions of disposal, for our successors to understand. Somewhat related is the importance of communication. Discarding heritage is not something any stakeholder of a memory institution would expect them to do, but that does not make it less inevitable at some point. In order to keep its legitimacy, the institution must communicate the process in a transparent and open manner, before, during and after the disposal itself.

VIAA will pay sufficient attention to these returning aspects while advising its content partners. We will check and recheck our framework with experts in the field, and we will test our admittedly theoretical framework in practice. It is up to our content partners to decide whether they accept our reasoning and whether they find it usable in practice. As this discussion reflects historical and therefore evolving thinking about heritage *par excellence*, we hope that the discussion will continue to live, because we believe that what we keep is also defined by what we decide not to.

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# 9. I value, you value, we value... but what's *the* value?

## Value assessment as a tool to manage sound and image collections

*Hilke Arijs*

**Today, audiovisual collections account for a large portion of the world's memory. They are part of museums, serve as research documents for various types of scientific institutions, register history and provide us with a tangible witness of our most precious memories. Even though sound and image collections are generally accepted as being part of our cultural heritage, determining how to open such collections to a large audience is far from simple. Although value and significance assessments are increasingly used as collection management tools, they are labour intensive and organizationally demanding activities for collection managers and institutions. Nevertheless, such assessments are vital to ensure proper collection management today and in the future. Likewise, they provide us with an excellent tool for communicating about audiovisual collections, prioritizing in case of digitization and rendering their management comprehensible. This paper outlines a three-step methodology designed to facilitate assessing value in audiovisual collections.**

Not only are sound and image records of great scientific value for various kinds of research, but their social significance is just as important. These collections present us with an unsurpassed tool to tell stories and strengthen human relations. However, archives, museums, libraries and other institutions around the world are struggling to conserve these collections in both analogue and digital formats. Despite the development of multiple tools, methodologies such as risk assessment and value analysis, international guidelines, ISO standards and so forth, their efficient management remains a complex task for collection managers and archivists.

One of the main reasons for this is the sheer size of most collections. Collections of more than 1 million physical items are not rare, but that number is easily surpassed by digital collections. Another element is the complex nature of most audiovisual objects; photographic objects can be unique (such as daguerreotypes or Polaroids) or reproducible. Both photography and film use a positive/negative technology – leading immediately to two different carriers of the same content. Video can be easily reproduced, and in the digital era it is even possible to create sound and image content that is indistinguishable from the 'original'. And in a virtual world are there still any originals or not?

These and other aspects render the management of audiovisual collections immensely complex. Consider the process for digitizing photographic images: Do we digitize the negative carrier or the positive? Or do we wait until another institution digitizes the same or a similar image and not invest in digitization at all?

Managing a collection is a constant decision-making process. We decide which objects to put on display, which ones to prioritize for digitization and which to deaccession. Currently, value and significance assessments have become part of the toolbox of the collection manager. They are an essential step in, for instance, risk assessments. "Value has always been the reason underlying heritage conservation" (Mason, 2002, p. 7).

If we consider an object to have value we select it for preservation and safeguard it in a museum for future generations. Exhibitions exploit the value of collections, conservation treatments safeguard their value and research enhances their value (Versloot, 2013, p. 9). When assessing risks it is the value (and the potential loss of value) in a specific context that plays a definite role in the outcome of such analysis. For instance, for a biological research institute, a beetle of which only 50 percent is preserved is still usable, which is not the case for a natural history museum whose main aim is to put the beetle (as a whole) on display. Identifying the value of an object is thus essential in the identification and mitigation of the risks to which the collection is vulnerable (Ashley-Smith, 1999, pp. 175–182; Meul, 2008).

We use our expertise to analyse the risks to our collections and to safeguard those collections for future generations. Although this rationale is quite often an organic process, to justify collection management plans it is nonetheless important to push the analysis and identify clearly the type of values on which we base our decisions. As such it is necessary to investigate this notion of ‘value’ further. Nonetheless, it is critical to identify not only the value and significance of a collection but also to whom it matters. No matter the method, such assessments are fraught with difficulties (Mason, 2002, pp. 5–6). For instance, besides artistic and economic factors, audiovisual collections are assigned other, less quantifiable values. Most of the currently used methodologies in the museum field rely on so-called statements of significance which are in most cases labour intensive. Moreover, the relative value and importance of our collections are subjected to many shifts that are both time and context dependent (Eastop, Bülow and Brokerhof, 2012; Racine *et al.*, 2009). Many collections have undergone a change in use since their creation. At the same time our view on heritage and what falls within its scope has changed.

For example, many photographic collections had their creation within the framework of the building of reference collections of research documents. Over the years, these collections have proven to be more than just research documents and carriers of information. Especially in the case of historically assembled collections, research sources comprise a large variety of photographic processes and technologies. Moreover, the physical manifestation of those processes and technologies offers new reference points that provide us with a better understanding of the image content. Likewise, many of these documents are proof of the origins of the collection. They often contain annotations on the back of the print, for instance, which adds value to the image content, as well as to the photograph as an artefact itself. A photograph collected by Aby Warburg, one of the founders

of modern art history, for example, is thus of greater significance than the same image outside this context (Löffler, 2014). As such, the value of many of these research collections lies in what is called their ‘ensemble value’ and the context-specific physical manifestation of the photographs.

When awareness of such values arises, a collection often undergoes a change in status. Such change has a huge impact on the way this heritage is both accessed and preserved. Nevertheless, many of these collections still have an active use as research collections, and preserving them as objects with intrinsic value is a difficult task. The only way forward is thus to find a feasible compromise between the collection in terms of its historical and research value and the collection in terms of its active use as a documentation source.

Furthermore, assessing the value of a collection is a complex discussion, and experts often have difficulty reaching a consensus. In most cases there are many justifications as to why something has value, but these are formulated from different viewpoints, and there is no common basis or method for comparing the various assertions (Arijs, 2014).

There is thus a need for a consistent methodology which can be used in different contexts. This should respect institutional traditions and take into account the unique and specific elements that define audiovisual collections. Likewise there is an overall need for more specific definitions of the value criteria – for example, how historical value can be assessed for photographs.

### **Defining value concepts for image collections (photography)**

Well-known concepts such as historical, social or cultural values make up the pillars of our proposed methodology. Next to these main criteria, ‘comparative criteria’ – such as uniqueness, ensemble quality and state of conservation – are used (Reed, 2012; Russell and Winkworth, 2009; Versloot, 2013). As photographic collections are common in archival collections as well, we also employ concepts that are widely used in this field. Here the notion ‘intrinsic value’ is often used to describe the external formal features of items. Intrinsic value is ascribed to “permanently valuable records that have qualities and characteristics that make the records in their original physical form the only archivally acceptable form for preservation” (National Archives and Records Administration, 1982; see also Menne-Haritz and Brubach, 1996).

In the same way that archives make a distinction between intrinsic and informational value, a similar differentiation can



be made between the image content and the photographic object itself. A photograph can have an important historic value as far as the image is concerned, but when we consider the photographic support as an independent entity, the historic importance might be valued less. Likewise an ‘uninteresting’ image might have a historically significant type of support. Some repositories will tend to focus on the image content while others will give equal importance to both the material and image-related components of a photograph (Arijs, 2014, p. viii). For some photographic collections much of the value is represented by the physical artefacts; for others, for instance documentary collections, it might be the other way around. As such, a proper analysis of the value of a photographic object should allow for this sort of detailed differentiation.

Three main groups of assessment criteria and evaluative elements provide us with the base for our approach:

- *Characteristics/potential.* These are criteria used in determining the value of a specific photograph or subcollection at collection level. Most are closely related to the nature of the photographic object and allow judgements to be made in terms of the technical quality and state of conservation of the collection. Several of the proposed evaluative elements can also be used independently by collection caretakers to prioritize certain items when planning conservation and digitization campaigns.
- *Use values.* Subdivided into six categories, this set of criteria is used to analyse the research value of both the image and the photographic object, the legal elements linked to the photograph, the photograph’s informational value, the frequency of use, the current institutional use and the stakeholders on which the collection could have an impact.
- *Heritage values.* The main criteria here are historical, socio-cultural, ecological, aesthetic and more specific

photo-historical values. The first four types are consistent with the value criteria already used in the museum-and-heritage-sites field, although they are further defined to allow in-depth analysis according to the nature of the photographic collection.

The first group of components relating to the physical object are quite straightforward and can be assessed by the collection manager. They are to an extent fixed, save where the collection is subject to various kinds of risk or changes, as in the case of the collection being moved or items being added. Semi-fixed are those values we associate with use. They are subject to changes at the institutional level, changes in use and changes in access. A collection becoming more accessible can thus translate into the discovery of new values that add to both the initial use values and to such intangible values as the historical and socio-cultural. In this respect, consequently, large-scale stakeholder consultation is required, subject to the degree of accessibility, but even more so to the level of awareness about the collection, which in turn is also related to the collection’s topical significance (Fig. 1).

**We value!**

Being a complex discussion that often leads to heavy debating, it is important to begin from the same position. This allows participants to have an equal starting ground in terms of information, etc. Also it is essential that the purpose and context of the assessment is clearly stated and understood. To defuse possible misunderstandings between experts the methodology proposes a preparation step where the context of the collection and the repository’s expectations towards the collection are described. For this we ask three fundamental questions:

- *Who?* What is the mission mandate of the repository, and how does this relate to the collection?

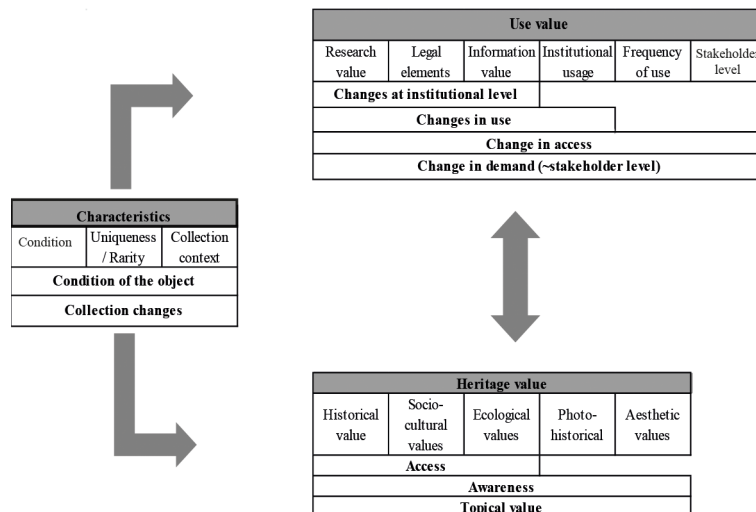
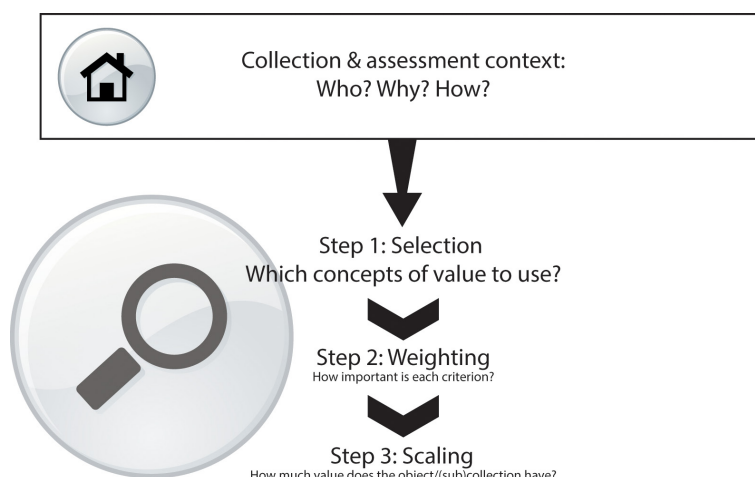


FIGURE 1. Interrelation of the different value components.



**FIGURE 2.** Schematic overview of the methodology.

- *Why?* In what way is the collection important for the repository? What is the role of the collection? Is it primarily an archival collection? Is it still actively used? Is there an active use foreseen in the future within the institution's mandate?
- *How?* Has the repository the (legal) means to preserve the collection? Should the repository conserve the collection?

- Step 1: selecting the criteria. Which concepts of value to use?
- Step 2: weighting the criteria. How important is each criterion?
- Step 3: scaling each object/(sub)collection. How much value does the object/(sub)collection have?

When defining the context of the assessment and the collection, the available information plays an important role in the outcome of the analysis. As such it is important that mission statements, policies, mandates, an overview of the collection and its contents, its use and similar documents are accessible. Quite often the mission mandate of the institution does not fully overlap with the personal feelings of the experts assessing the collection. In that case there is a risk that the assessment will not correspond with the institutional mission of the repository. Likewise it is crucial to establish who will assess the collection and to state why these experts were chosen.

### Selecting, weighting, scaling

Having taken care of the essential preparation – describing the collection and assessment context (who, why and how) – there follow three steps for assessing value (Fig. 2):

The first step in the methodology is to define the different value criteria in accordance with the information compiled in the preparatory phase. As well as selecting which components to use, participants are also asked to rank these according to their importance for the repository.

For instance a photography museum might find the aesthetical component to be equally important to the research value, but this might differ for a library. The principle of the proposed method is that all the components together represent 100 percent of the potential value of the collection. When assigning a weight to each of the criteria, the user defines how much of the total value is represented by each criterion. To allow for complete transparency, participants should offer some examples. This way statements such as 'not important' and 'very important' are less abstract.

**TABLE 1.** Definition of the different rankings of the assessment criteria

<b>Not important</b>	This criterion is not mentioned or supported in the mission mandate of the repository and does not have an impact on any of the activities of the institute.
<b>Slightly important</b>	This criterion has a moderate impact on some of the activities of the institute.
<b>Moderately important</b>	This criterion is in some way (but not formally) supported by the mission mandate of the repository and has an impact on some of the activities of the institute.
<b>Important</b>	This criterion is supported by the mission mandate of the repository and has an impact on the mission of the institute.
<b>Very important</b>	This criterion is central to the mission mandate of the repository and has an impact on the daily operation of the institute.

**TABLE 2.** Overview of the scales per component

<b>Very high value</b>	Twice as valuable as 'high value' and 100 times more than 'low value'.
<b>High value</b>	Five times more valuable than 'moderate value' and 50 times more than 'low value'.
<b>Moderate value</b>	Ten times more valuable than 'low value'.
<b>Low value</b>	Ten times less valuable than 'moderate value' and 100 times less valuable than 'very high value'.
<b>No value</b>	

Evaluation scales should be defined for each component.

A proper description is vital in order to establish what 'high' and 'low' value exactly mean.

Once the framework for the assessment has been created, collections or items can be assessed. Participants analyse to what extent the collection matches the criteria defined in step 1.

### What's *the* value?

If used on a large scale, this methodological approach can enhance our understanding about *why* a certain object is more important than another, and help us to map some of the shifts in value to which image collections are subject. The framework also permits collections to be seen independent of their different contexts, allowing their common values to be identified. In this way, different institutional contexts open up to each other, enhancing the significance and value of the various collections. After all, identifying the value of image collections is the key to their preservation.

### Conclusion

Although value assessment is widely recognized as an essential tool in the management of cultural heritage, for most sound and image collections this can be an overwhelming task for their caretakers. Nonetheless, if we want to preserve our audiovisual heritage, defining and analysing its value is key to its preservation. The proposed three-step methodology allows institutions to communicate clearly about the complexity of their collections by (1) clearly identifying the scope and starting position of the analysis, (2) selecting specific predefined criteria that represent the priorities of the repository and (3) evaluating each object and/or subcollection according to the framework determined in the previous step.

One of the main advantages is that this approach visualizes how we think about our collections and allows us to objectively explain why we prioritize one item or aspect over another. Likewise it offers a means to allow future generations insight into the decisions we make today. Furthermore, this methodology provides different institutions with a common language. In this way, discussing value becomes a way of actively *adding* value to collections.

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# 10. Philology in the preservation of audio documents

## Customized versus ready-made approaches

*Federica Bressan*

Sound recordings have proven to be irreplaceable primary sources for disciplines like linguistics, musicology, ethnomusicology and sociology. Their fragile physical nature has activated a number of counter-actions aimed at prolonging the life expectancy of their content. Methodological issues have been raised in the past three decades, considering the relationship between the physical object and its (digitized) intangible content, which is not only complex but develops over time. This article reflects on the role of the emerging discipline known as ‘digital philology’ in the long-term preservation of audio documents, pointing out how some concepts (such as *authenticity, reliability and accuracy*) may require a ‘customized’ (as opposed to a ‘ready-made’) approach in the preservation workflow – mainly depending on the type of the archive: unique copies, field recordings, electronic music, oral history, to name some representative cases.

The set-up of the laboratory for sound preservation at the Centro di Sonologia Computazionale (CSC) of the University of Padova, Italy, represents one customized approach in which conscious methodological decisions support philologically informed digitization efforts. The methods affect the results, and ultimately the consequences are not merely technological but cultural.

How inscriptions are photographed and text corpora are transcribed and encoded, as well as how a sound recording is re-mediated,<sup>1</sup> are “crucial for the way in which these research objects will be studied in the future” (Van Peursen, 2010, p. 11). In other words, the digital representation of data (the bit stream) and the organization and presentation of data (the cultural interfaces [Manovich, 2001]) are not neutral with respect to the final perception that users have of the ‘real’ or ‘original’ object, which may often not be available for comparison. In addition, the relationship between the digital objects and the real objects they allegedly represent “is not only very complex, it also develops over time” (Van Peursen, 2010, p. 10). In order to ensure that the electronic sources – which scholars and the general public are getting more and more accustomed to referring to for their research and personal interests – meet the requirements of authoritativeness, accuracy and reliability, it is necessary to define what makes a digital document authoritative, accurate and reliable. This definition implies an understanding of what the document means in its cultural context, and it is therefore not limited to technical questions that only computer scientists and engineers should be in charge of. ‘Digital philology’ is the multidisciplinary discipline that addresses these problems. While philology (“without

<sup>1</sup> ‘Re-mediation’ is the process of transferring acoustic information from one medium to another.

adjectives”, as Leonardi [2007, p. 65] puts it) has a long tradition, the reflections about digital philology are very recent, and so is the academic production around it. There is much work to be done in order to provide new methodological and operative tools to scholars whose aim is to author electronic editions based on digital sources. The shift introduced by the electronic medium regarding how texts are coded and accessed goes beyond their presentation, affecting the perception of the content.

The existing scientific literature about digital philology is mainly limited to bibliographic sources (with very few exceptions, such as Zattra, 2006, 2007). In this article, the term ‘text’ is sometimes extended to include audio recordings. In fact, one of the aims of philology is to reconstruct an original text based on variant copies of manuscripts: making a parallel in the audio domain, any recording of the same event can be considered a variant copy of the ‘original’ event, thus being the equivalent of a manuscript for textual criticism.

Unlike the fields of text encoding, analysis and philology, where a longer tradition provides a comprehensive research literature, long-term preservation of audio documents is relatively new and lacks a background of knowledge and experience. Audio documents have gained the status of documentary sources only recently, and it is not uncommon to find that texts are still considered ‘first-class’ sources while sound recordings are considered ‘second-class’ sources for scholarly studies. Unless certain criteria ensure that digital audio (and other multimedia) can be considered authoritative, accurate and reliable sources, this trend may be hard to get rid of in the future.

Besides the ongoing multiplication of digitized documents, the number of born-digital documents is also increasing, making the definition of procedures for storage and cataloguing even more urgent because a ‘physical original’ is never available for comparison.

This article presents some reflections on the problem of digital philology applied to audio documents in long-term preservation.

## Preparation of sources

*Even an image capture and editing, which may at first sight be a rather straightforward and ‘objective’ procedure... require[s] intellectual, critical choices, interpretation, and manipulation.*

Dahlström (2010)

In order to plan and to perform trans-coding, it is necessary to have a model of the object or document. Computer science and philology may collide over how to define that model, because “humanities generally show terminological ambiguity

due to the heterogeneous and elusive object of study”, while computer science deals by definition with the “processing of data (encoded information) expressed in non-ambiguous languages” (Gigliozzi, 2003, p. 48). Creating a model of the object to be digitized means analysing it and selecting what relevant features will represent it. It is important to keep in mind that the creation of the model is not required exclusively for the sake of the computer: it should rather be seen as an “important space for analysis and for the formalization of the knowledge about the subject of the study” (p. 53).

The definition of the model is a ‘crucial’ part of the preliminary activities (see Van Peursen, 2010, p. 11): any further analysis will manipulate the electronic representations of the original physical objects. Gigliozzi (2003) suggests that a model already underlies any written text (a code for graphic symbols, syntax, narrativity, language, etc.) and that it can be useful to reflect on what features make it effectively represent the message (information) intended by the author. Starting the transition to the audio domain, the notion of ‘text’ is among the first to be defined. Is a recording of an acoustic event or electronic composition an expression or witness of the archetypical sound? And is there such a thing as an archetypical sound? Every audio document may be considered a ‘master’ recording in the sense that it bears witness to the acoustic event in a unique way, due to the manipulation and conditions that the document has been subject to through the years, including the aging of the carrier (see Bressan and Canazza, 2013; IASA Technical Committee, 2004). Without attempting to say that an archetypical sound exists, each recording may be seen as the philological equivalent of the written ‘text’.

Considering that the equivalent of textual criticism is performed by musicologists, linguists and most often experts other than computer scientists, the preservation task finishes when the equivalent of the diplomatic editions are ready. The process of preservation goes from the diagnosis of the physical document to the preparation of the digitized document for access (resources and services). The internal organization of the elements constituting the document may be modified during the cataloguing, in function of the contents: the type of object that is produced directly from the digitization is referred to as a ‘preservation copy’ (IASA Technical Committee, 2004) and is by definition the equivalent of the diplomatic edition (see Bressan *et al.*, 2013b). According to the definition of diplomatic edition, the eventual mistakes or imperfections of the physical document are maintained in the digital copy because they provide information about the author’s creative process (e.g. erased words), about the history of transmission of the document, and about the aging of the document (from dog-eared pages to patches of mould). The implication is that no restoration is

allowed in the audio of the preservation copy (such as noise removal or speech enhancement). The details of the model always have to be documented and publicly accessible. Anyone who accesses the digital resources has the right to access this information. Resources that “do not declare their objective and their limits, nor the procedures employed, nor the quality of the data to which the procedures have been applied, are low-profile products” (Gigliozzi, 2003, p. 120) According to the same source, a low-profile product is one that “uses the potential of computer technology without reflection” (p. 121).

A valid critical edition must be based on diplomatic editions (Gigliozzi, 2003, p. 122) that meet the requirements of authoritativeness, accuracy and reliability. These three qualities represent

a primary concern in long-term preservation... [With physical documents,] trustworthiness was all wrapped up in the concept of authenticity so that an authentic document was also reliable and accurate. This is no longer true (Duranti, 2012).

Authenticity needs to be redefined for electronic documents because they cannot “be preserved as... unchanged resources: we have only the ability to reproduce them” (CASPAR Consortium, 2008), and (un)intentional modifications introduced at some point of the file manipulation may be very difficult to remove. “Authenticity cannot be recognized as given, once and for ever, within a digital environment”; it can only be “approached asymptotically” (Factor *et al.*, 2009).

According to InterPARES 3, authenticity refers to

the trustworthiness of a record that is what it purports to be, untampered with and uncorrupted: it must be based on its identity and integrity, and on the reliability of the records system in which it resides.

Reliability is the trustworthiness of a record as a statement of fact: it must be based on the competence of its author, its completeness, and the controls on its creation. Accuracy is the correctness and precision of a record’s content: it must be based on the above, and on the controls on content recording and transmission (Duranti, 2012).

### Textual criticism and digital authenticity

What could be the digital equivalent of text comparison in the audio field? Traditionally, musicologists are trained in the

study of musical scores. Only a few who specialized in the twentieth-century repertoire consider audio recordings a relevant documentary source for their studies – although the score (when existing) has always a powerful gravitational attraction. How can recordings on different tapes be effectively compared? Is it easier to do so with digital files? What are the sound parameters that are relevant and meaningful to a musicologist? Are there any? Answering these questions is the only way to enable the development of truly innovative methods and tools to assist or automate aspects of the musicologist’s work.

One of the means to compare texts has always been to present them in parallel columns. For example, Origen’s third-century *Hexapla* presented six versions of the Old Testament in parallel alignment (Fig. 1a). By analogy, we can imagine a possible technique for comparing a single audio feature extracted from three different audio files of the same recording (Fig. 1b).<sup>3</sup> How much training would musicologists require to become familiar with the common ways of displaying audio signals on a computer, ranging from spectrograms to the example in Fig. 1b, and taking advantage of them to advance knowledge about music? Very likely, it would make sense to compare not two audio files but rather two complex objects, such as two preservation copies (including the metadata and the accompanying files, such as pictures of the cover, etc.).

“In postulating a typology of Electronic Philology, we must take into account the data, the procedures, and the results”, writes Marcos Marín (2001, p. 16). Any computational analysis of texts is, by definition, quantitative (e.g. word count); therefore the lowest extent in which the computer can serve the philologist is by providing her with a great amount of data and by extracting other data from them. Any list of words, sorted in any order, can be a good example. Features such as the file duration or the signal’s average amplitude could be the audio equivalent.

These first, basic, useful results constitute a set from which secondary results can be obtained. In particular, secondary results can be selected from primary ones by using complex information retrieval systems and rich query languages that have been developed to exploit huge textual resources. An example is the list of selected words obtained from a whole list of words. Selecting all files with a maximum peak over -3 dB could be the audio equivalent. Finally, tertiary results are obtained from the selected (secondary), following an exact pattern. Human interpretation is crucial. Examples for texts include using a concordance or an index to build a

<sup>2</sup> On the International Research on Permanent Authentic Records in Electronic Systems (InterPARES) 3 Project, see [www.interpares.org/ip3/ip3\\_index.cfm](http://www.interpares.org/ip3/ip3_index.cfm).

<sup>3</sup> The example was generated with Matlab MIR toolbox.

Hebrew.	Hebrew Transliterated.	Aquila.	Symmachus.	LXX.	Theodotion.	Variante.
קַרְנֵי יַגְדֵּי	λαμανασσα	τῶ νικοποιῶ	ἐπινίκιος	εἰς τὸ τέλος	τῶ νικοποιῶ	εἰς τὸ τέλος
בְּתֵי קֹרְנֵי	βηη κορα	τῶν υἱῶν κορέ	τῶν υἱῶν κορέ	ὑπὲρ τῶν υἱῶν κορέ (τοῖς υἱοῖς)	τοῖς υἱοῖς κορέ	
וְיָשָׁר	אל· αλαμωθ	ἐπὶ νεανιοτήτων	ὑπὲρ τῶν αἰωνίων	ὑπὲρ τῶν κρυφίων	ὑπὲρ τῶν κρυφίων	ψαλμός
וְיָשָׁר	σιρ	ἔσμα	ψῆθ·	ψαλμός	ψῆθ	
וְיָשָׁר	ελαεμ λαου	<δ θεος ἡμῶν>	ὁ θεος ἡμῶν	ὁ θεος ἡμῶν	ὁ θεος ἡμῶν	
וְיָשָׁר	μασσα· ουος	ἐλπίς και κράτος	πεποιθήσεις και ἰσχὺς	καταφυγή και δύναμις	καταφυγή και δύναμις	
וְיָשָׁר	εθρ	βοήθεια	βοήθεια	βοήθς	βοήθς	
וְיָשָׁר	βαραωθ	ἐν θλίψεσιν	ἐν θλίψεσιν	ἐν θλίψεσι	ἐν θλίψεσιν	
וְיָשָׁר	νεμασ· μωθ	ἐνθεός τσφάρα	ἐνθεός τσφάρα	ταῖς ἐνθεούσαις ἡμῶν (ἐνθεούσεται ἡμῶν)	ἐνθεός τσφάρα (ταῖς ἐνθεούσαις ἡμῶν)	
וְיָשָׁר	אל· χεν	ἐπὶ τούτῃ	διὰ τοῦτο	διὰ τοῦτο	διὰ τοῦτο	
וְיָשָׁר	למ· נירא	οὐ φοβηθήσάμεθα	οὐ φοβηθήσάμεθα	οὐ φοβηθήσάμεθα	οὐ φοβηθήσάμεθα	
וְיָשָׁר	βααμיר	ἐν τῷ ἀνταλλάσσει· θαι	ἐν τῷ συγχέισθαι	ἐν τῷ ταράσσεισθαι	ἐν τῷ ταράσεισθαι	
וְיָשָׁר	[a]λαρσ	γῆν	γῆν	τῆν γῆν	τῆν γῆν	
וְיָשָׁר	ου βαμωτ	και ἐν τῷ σφάλλεισθαι	και κλίνασθαι	και μετατίθεσθαι	και σαλεύεισθαι (μετατίθεσθαι)	
וְיָשָׁר	αριμ	ἔρη	ἔρη	ἔρη	ἔρη	
וְיָשָׁר	βλεβ	ἐν καρδίς	ἐν καρδίς	ἐν καρδίς	ἐν καρδίς	
וְיָשָׁר	ιαμιμ	θαλασσῶν	θαλασσῶν	θαλασσῶν	θαλασσῶν	

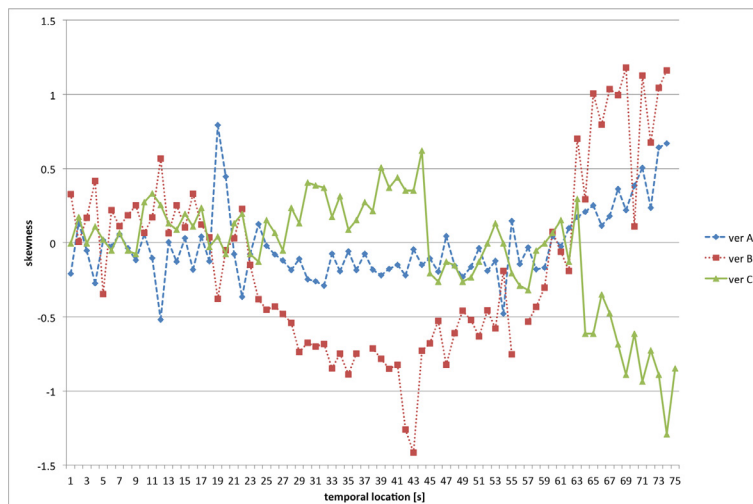


FIGURE 1a–b. Traditional presentation of the text in parallel columns (top) and possible presentation of multiple audio ‘texts’ (bottom) for comparison.

dictionary or the results of the collatio (the assemblage or collation of source texts) to prepare a critical edition (Marcos Marín, 2001, p. 16).

**Towards a philologically informed methodology for preservation**

Sound recordings have proven to be irreplaceable primary sources for disciplines like linguistics, musicology, ethnomusicology and sociology. The Centro di Sonologia Computazionale (CSC) in Padova has been active in the field of audio preservation and restoration for nearly two decades, building on a strong scientific background in sound synthesis and electronic music since the 1970s. The CSC houses a laboratory with the equipment required to create digital preservation copies (see Bressan and Canazza, 2013; IASA Technical Committee, 2004) that meet the requirements of accuracy, reliability and authenticity presented above. A protocol for re-mediation (Fig. 2) and a controlled environment are the key to quality control along the

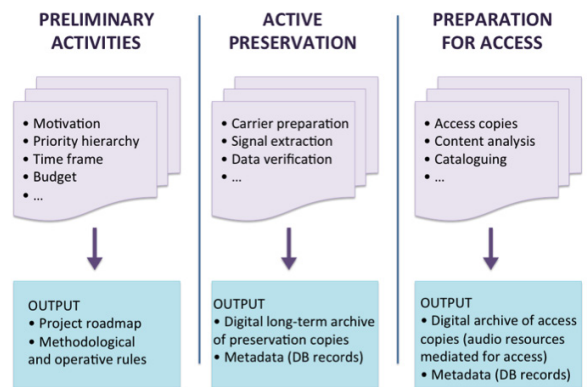


FIGURE 2. The scheme summarizes the main steps involved in the process of preservation of audio documents according to the methodology adopted at the CSC.

workflow (for more details on the protocol, see Bressan et al., 2013a). This goal is also achieved thanks to open-source software developed at the CSC (Bressan and Canazza, 2013), as well as with the multidisciplinary approach that

distinguishes the centre's methodology for audio preservation (involving information engineering, music and musicology, and chemistry). As Van Peursen (2010, p. 11) observes: "The creation of digital objects has to meet the standards of the various disciplines involved, and... is a crucial part of humanities research. It is more than just preparation for research".

The CSC laboratory features two working stations equipped with Apple desktop machines. The main station is dedicated to the analogue-to-digital (A/D) transfers and uses an A/D-D/A converter (Prism ADA-8XR) that supports 96 kHz/24-bit audio quality. Audio and video are acquired on separate machines (Fig. 3), and the entire re-mediation system is connected for safety to uninterruptible power supplies (UPS). A professional STUDER A810 with stereo heads is used to read most quarter-inch tapes. Digitized audio is exported in a non-compressed open format and stored in three different locations, after being analysed, and after the metadata have been automatically ingested into the database by a software especially developed at the CSC (Bressan and Canazza, 2013). The same software completes the preservation copy by processing the remaining data (checksums, images, video, etc.). The cataloguing staff receives automatic mail notifications whenever new material is available in the shared repository.

The laboratory also features a photographic set-up for the production of contextual information (front/back views as well as close-ups of all relevant details). The set-up was designed for short and frequent photo sessions, maximizing the quality of the picture with the minimum effort (1) to adjust the positioning of the camera and its parameters for each session; and (2) to transfer the new files to the desktop work station without dismantling the set-up or changing its configuration. The functionality of the set-up was based on the requirements reported by the Istituto Centrale per il Catalogo e la Documentazione (ICCD) and by the Italian Ministry of Culture in Galasso and Giffi (1998).

A precision incubator (Memmert INP 400) is used for the physical recovery of magnetic tapes. Thermal treatment, performed with the incubator, consists in applying consistent heat to the tapes over a specified period of time; it is aimed at reverting the effects of soft binder syndrome-sticky shed syndrome (SBS-SSS) (see Hess, 2008). Among the symptoms of this condition are sticking, squealing and abnormal shedding of the magnetic coating. It should be noted that not all tapes are suitable for thermal treatment (Bressan *et al.*, 2015). In order to find alternative recovery methods, chemical analyses and experiments are currently being performed by the CSC in collaboration with the Chemical Sector of the Department of Industrial Engineering at the University of Padova (Bressan *et al.*, 2015).

## Conclusions

The intention of these reflections on the role of digital philology in the long-term preservation of audio documents is to encourage more discussions around the topic. Much research conducted in the field of computer science is preparatory to other scientific fields, such as (ethno-) musicology, linguistics and anthropology, mainly with methods and tools (e.g. information retrieval, signal processing, data compression). In the field of musical cultural heritage and digital libraries, computer science is instrumental in performing the re-mediation of audio documents and in managing digital data produced during re-mediation. Philology can contribute to the creation of audio digital libraries with some of its traditional concepts (e.g. authorship) and activities (e.g. textual criticism). 'Digital' philology has its own methods and meanings in the context of historical audio documents and archives, and its own considerations at the theoretical level. Unless these questions are addressed by the experts, the tendency to consider sound recordings 'second-class' documentary sources will continue. Applying the concepts of digital philology to electronic documents is vital to the creation of reliable digital libraries for text, audio, images, etc. In the audio field, the concept of text needs to be transferred to the preservation copy (not only the audio data but also contextual information and exhaustive metadata), and innovative methods and tools for text



**FIGURE 3.** Test for video shooting. On the left, a correct setting of the camera: each frame is clear and the text is readable. On the right, a wrong setting of the camera. The aim is to detect physical defects of the tape (due to aging or joints) that may correspond to a specific noise in the audio signal. Audio is directly recorded from a secondary output of the STUDER A810.



comparison need to be developed. Any analysis or study based on a preservation audio archive that does not ensure its accuracy, authoritativeness and reliability may lead to questionable results, critical scorn and even conclusions that may be potentially harmful for subsequent studies.

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# 11. Protecting heritage during a crisis

## A case example from Syria

### *Salpy Ohanis*

**Heritage creates people's memory as well as their existence. The *Knooz Syria* archive represents the history of the press and printing in Syria from the mid-nineteenth century up to the 1970s. When its founders began collecting materials, they did not predict the crisis that wracked Syria beginning in 2011. Forced to flee Damascus, they left behind tens of thousands of newspapers, books and documents representing more than 200 years of extended history. With the help of the Prince Claus Fund in the Netherlands, they were able to move an important part of the collection to a safe place. Work continues to move the remaining parts and to archive it electronically. This essay examines the creation of that archive, the threats it faces and the possibilities for its future.**

In developing countries, safeguarding heritage is often not seen as a priority. People have many other outstanding problems and concerns that prevent them from thinking of this 'luxury'. But in fact, heritage is quite important, for it creates people's memory and documents their existence. An interest in Syrian heritage pushed those of us at *Knooz Syria* to start obtaining a mixed collection of heritage items such as newspapers, magazines and personal items in an effort to preserve the history and memory of the Syrian people.

*Knooz Syria* is a press website established in 2005.<sup>1</sup> Our intent in establishing an archive as part of *Knooz Syria* was

to obtain, preserve and safeguard Syrian heritage so that it can be available to the public. While the current political climate of Syria has endangered our collection, we remain hopeful that with the help of partnerships with cultural organizations and funds (such as the Prince Claus Fund for Culture and Development), we can safeguard our archive and digitize our collections in an effort to preserve them.

Given that we work in the press field, our concentration at first was on newspapers and magazines published and circulated in Syria from the earliest days of the Syrian press through today. The idea of *Knooz Syria* came from our deep knowledge of the Syrian press. We observed that there is no other documentation of the heritage and history of the Syrian press, which started approximately in the mid-nineteenth century. We started collecting information with the aim of documenting this history and explaining it to the Syrian public.

#### **A history of the Syrian press**

For four centuries Syria was a part of the Ottoman Empire. Printing was introduced to our region (Geographic Syria) in the mid-eighteenth century, which is relatively late, and during this period the local newspapers appeared. When we say 'local' we refer to those printed in Arabic; however, there were others that covered local news of the region issued in Ottoman language (Turkish in Arabic letters).

After the First World War, Syria entered a stateless phase; then, for the first time after 400 years, an Arabic government was formed, which after less than two months became a monarchy. A few years later Syria came under a French mandate. France divided Syria into three countries (Damascus, Aleppo and Alawites) and two provinces: Druze Mountain and Iskandaron (Hatay).

However, popular pressure led the country to be reunited under what was known as the Syrian Union, which turned into the Syrian State and later the Syrian Republic. After gaining independence from France in 1946, Syria entered a new era of military coups, followed by a union with Egypt in 1958 (called the United Arab Republic). This union was later dissolved, and the Ba'ath Party came to power. Many coups took place before the country's leadership finally settled in 1971.

<sup>1</sup> See [www.syria-news.com](http://www.syria-news.com).

The Syrian press never witnessed any stable situation during these decades. Few newspapers managed to exist continuously for many years. Most of them were closed temporarily and others suspended entirely.

### Collecting Syrian heritage

The Syrian press archive at *Knooz Syria* is not focused on complete collections but rather on documenting issued newspapers, journalists and writers, and their work. Notably, some newspapers related to well-known writers started and were closed within a year but were historically more important than other newspapers with a longer printing period. Significance here is based on rarity, the story behind the newspaper and the name of its owner.

It is essential to study journalism as a science and to study its methods and progress compared to the development of the press in the region and the world. Comparisons can be made in terms of freedom of speech, international work standards, style and method. One goal of our preservation project is to identify the daily events that took place in the area and in Syria during this period to shed light on important and not well-known happenings. It is not possible to find a newspaper in Syria that was issued in the early years of the twentieth century and lasted until 1970; none exists. However, the press movement remained active as some newspapers and magazines closed and others opened.

While collecting the archive material we focused on newspapers and magazines that cover the period between the mid-nineteenth century (the establishment of the Syrian press) and the 1970s (the beginnings of the current regime). This collection does not necessarily cover every day of this period, but we worked hard to cover most of the days with various sources. Our end goal was to reveal Syrian heritage through the local press and to document the lives and works of well-known writers. The press archive we collected includes more than 90 percent of the magazine and newspaper titles that were published and distributed in Syria over more than 100 years. The quantity of these newspapers and magazines exceeds 200 titles, which includes some titles of which we assume we are the sole possessors.

The collected archive contains all kinds of original examples and editions of the Syrian press since its beginning, and its rarity comes from being the only journalist archive in the whole region combined in one place. There is no museum or exhibition or any other organization in Syria that owns such an extensive press heritage. Even the Al Assad Public Library possesses only a small sample of books and editions.

We see this collection as valuable for the Syrian community. Additionally, it enhances the position of *Knooz Syria* as a

media outlet and increases its credibility by helping to improve the position of the electronic press in Syria. The collecting of this large amount of press material gives the collection depth and, in our point of view, makes it an extension of the national press. The most important goal of this activity is protecting Syrian heritage and safeguarding it for future generations. It is, from our point of view, a rich, important and effective heritage, not only for Syria but for the entire Middle East.

Through the process of collecting newspapers and magazines, we came across other valuable categories related to Syrian heritage and could not resist collecting them as well. These collections need further classifications and verifying, such as a collection of original stamps and financial samples issued between the mid-nineteenth century and today, and original samples of paper and coin currency exchanged in Syria during this period.

A big part of the archive is a collection of photographs and postcards for every region in Syria. To the best of our knowledge, this is one of the rarest collections of photographs covering Syrian landscape. Another collection includes foreign travel books that feature paintings of Syrian regions produced before photography was widespread.

These collections cover diverse aspects of the modern history of Syria and the region. Through them, we can know more about everyday life in Syria and can enrich our understanding of the region's cultural heritage.

### Acquiring materials

We have collected different materials with the intent of explaining the evolution of stages of human and cultural life in the region to the public. To assemble all of this information and create a useful collection, we spent quite a lot of time and expense in order to identify and acquire items in many Syrian cities. We obtained this collection through two methods.

The first method was dealing with antique merchants in many regions. Usually these merchants buy the whole belongings of a family's house, where the owner is recently deceased and the children want to share the inheritance. We agreed with them to buy all the newspapers, documents and old books.

The second method was putting advertisements in newspapers about our willingness to buy these materials. We hired some employees to follow up on this matter, and we were offered some personal belongings from people who wanted to sell them. We bought these personal items and added them to our archive after evaluating them.

This acquisition of materials lasted from 2007 to 2011. We made hundreds of purchasing agreements, funding them through profits from advertising revenue on the *Knooz Syria* site. Those same funds also went towards classifying and archiving these materials. The initial plan was first to digitize the archive in order to preserve, study and explain it, then to present it to the public in different formats.

### **The Syrian crisis: a major danger for the archives**

The situation in Syria was calm and stable when we started assembling the archive, and we did not take into account that the crisis might break out. When the crisis in Syria began, an economic crisis started as well. As a result, most advertising on *Knooz Syria* stopped, and due to the lack of financial resources, we could not continue implementing our plan.

And with the development of the crisis and the growth of the conflict, Damascus, the place where we keep our archive, was exposed to shelling and bombing and security was in a state of disarray. We worried that this rich archive we had collected would be lost. Suddenly and unexpectedly, in 2011, we found ourselves, as an independent press institution, exposed to danger. We were promptly obliged to move to Turkey, hundreds of kilometres away, leaving behind tens of thousands of newspapers, books and documents. We were in chaos, our country was in a state of war, and our archive was in danger.

We were in a race against time. Although the archive has not been damaged, it is exposed to two major potential dangers. The first is the danger of burning caused by an explosion or shelling. The reality of the conflict in Damascus – as in Homs, Aleppo, Deir Ezzor and other places – means there are explosions, mortar shelling and aerial bombardment. This means it is very likely that the archive could be hit or burned. It is kept in a small normal building in the downtown area and is unprotected. If the building burned it would mean the loss of the whole archive.

The second danger is the risk of the archive being stolen or ruined with the entrance of the army or the armed militia of the opposition. Their occupation of many houses makes the probability of them arriving where the archive is kept quite likely, considering the development of the conflict in Damascus. If this occupation were to happen, the archive will definitely be damaged or stolen.

We were lucky when one of our friends introduced us to the Prince Claus Fund for Culture and Development. We communicated with staff there and discussed together the possibility of protecting the archive in Damascus. The plan

we agreed upon was to distribute the archive in many warehouses so as to reduce the risk to the entire collection. We tried to choose warehouses in relatively safe areas, even though all areas are subject to random shelling. We transported the most important part of the archive to Turkey to protect it and to later prepare it for digitization.

It took us more than two years to accomplish this transport operation to Turkey, and to move the quantity we agreed on, due to the escalation of actions in Syria as well as the closure of most borders and a lot of other obstacles and difficulties. We thank the Prince Claus Fund because through its support, an important part of our archive is safe and the other part is distributed to a few warehouses. We hope to be able to transport it outside of Syria as soon as possible.

### **Future plans**

The first step in rescuing the archive, through our partnership with the Prince Claus Fund, has been accomplished. This institution has greatly aided in safeguarding part of the heritage of our country – a heritage that was threatened in a state of war that has no clear end. Our second step is preserving it by transforming the archive part by part into its electronic version, for this is the only way to keep it safe for generations from weather and fire damage and from becoming another casualty of the war.

The archive, both in Syria and Turkey, is still not organized. What we have done during these years is a preliminary archiving and a simple description of the items. As our goal is introducing our archive to the public, we created special pages and accounts on social media networks. We introduced a small part of our archive on Flickr and Instagram to give a glimpse of our heritage to our curious audience,<sup>2</sup> and the work on them continues. We have also presented dozens of articles on Facebook and Twitter.<sup>3</sup> There has been a steady increase in the number of people following our pages about Syria's legacy. In addition, we present many articles in a special section of *Knooz Syria*. Readers have reacted greatly to it, and it has tens of thousands of reads. Now what we want is a detailed description and inventory for each item in this huge archive, classified by a trained archivist. Since the idea is to arrange the paper archive for easy access and preservation, it is important to convert that paper archive to an organized digital archive.

### **Conclusion**

Although the situation in Syria hindered our progress, these difficult conditions gave us the motivation and the will to complete the project, thanks to the help of organizations

<sup>2</sup> See [www.flickr.com/photos/knooz\\_syria/sets/](http://www.flickr.com/photos/knooz_syria/sets/) and [http://instagram.com/knooz\\_syria](http://instagram.com/knooz_syria).

<sup>3</sup> See [www.facebook.com/Knooz.syrianews](http://www.facebook.com/Knooz.syrianews) and [www.twitter.com/souriahistory](http://www.twitter.com/souriahistory).



such as the Prince Claus Fund. With the help of the fund, we will be able to establish a good infrastructure and sufficient experience for the future to fully archive and digitize this collection to preserve this threatened heritage. We will be able to document a part of our heritage to introduce to Syrians, to future generations and to the world. Our goal is to have our whole archive digitized and also to have the first electronic journalism archive in the Arab region and to pave the road for using it to its full potential.

Our hope is to find suitable partnerships to help us succeed in transforming this archive to an electronic one that would

protect an important part of Syria's heritage from loss so that it remains as an 'everlasting' document. We hope a digital archive will allow the future generations to know details related to Syrian life during an important era of their history, one that could be lost without the needed care and attention.

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# Section Three

## Creative Use and Access



# 12. The sonic heritage of ecosystems

## Towards a formulation

*David Monacchi*

**This paper discusses the importance of the ‘paleo-soundscapes’ of remote natural habitats as unique footprints of the systemic behaviour of healthy ecosystems and proposes considering them as intangible heritage to be urgently recorded and preserved. The interdisciplinary project Fragments of Extinction has worked towards preserving that ecological heritage through multidimensional sound recording fieldwork in primary equatorial rainforests since 2002. The soundscapes of these unique, untouched and undisturbed places – increasingly threatened by human pressure and climate change – represent an object of patrimonialization that can offer insights to a range of fields. The project seeks to merge science (ecoacoustics), technology (3D sound recording and reproduction) and art (environmental sound art) to contribute to the preservation of examples of the ordered and fragile equilibrium of biodiversity, and to encourage ecological awareness among audiences.**

For 15 years, I have been working on a long-term multidisciplinary project about the Sixth Mass

Extinction.<sup>1</sup> The project, Fragments of Extinction, has involved recording fieldwork in the Amazon, Africa and Borneo. This fieldwork has enabled me to document, archive and disseminate (through dedicated immersive installation art, such as the immersive ecoacoustic concert performed for the opening of the 2015 SOIMA conference in Brussels) the sonic aspects of primary rainforest biodiversity (Fig. 1–2).<sup>2</sup> Fragments of Extinction relates to the empirical work and theoretical concepts of sound and visual heritage in three important ways:

1. It considers soundscapes, in particular those in equatorial rain forests, to be a unique repository of ecological processes of primary ecosystems and – consequently – worthy to be safeguarded as intangible heritage and a target of patrimonialization.
2. It utilizes advanced recording technology to allow access to primary soundscapes and warrants, respectively, the archiving, the analysis and the sensorial (aesthetic and cognitive) experience of the sound of most distant, untouched and – yet – vanishing habitats of the planet.
3. It insists that art, as cultural interpretation, can virtually interplay with nature, engaging in dialogues with scientific exploration even as it communicates and disseminates broad public initiatives on issues of conservation and supporting ecological awareness overall.

### Soundscape as intangible heritage

Soundscape – the combination of sounds that arise from an environment – represents an underestimated imprint of the dynamics of natural ecosystems (Shafer, 1977). While there exists a growing discourse within ecology on the

<sup>1</sup> According to the Millennium Ecosystem Assessment (2005), the current global extinction rate is between 100 and 1 000 times higher than it would naturally be. As a result of the direct human pressure on ecosystems (mostly deforestation and overexploitation) and the effects of human impacts on the biosphere (triggering invasive species and pollution), an exponentially growing number of the planet’s recently estimated 8.7 million living species are going extinct. In 1993, Harvard biologist E.O. Wilson predicted that the extinction rate would reach 30 000 species per year, and most current studies have judged Wilson’s estimate to be correct. That equals three species going extinct every hour. Current estimates do not factor in the effects of climate change. Of all known species, one in four mammals, one in eight birds and 41 percent of amphibians now appear on the International Union for Conservation of Nature’s Red List of threatened species.

<sup>2</sup> For a project overview and sound excerpts of ecosystems, see [www.fragmentsofextinction.org](http://www.fragmentsofextinction.org).





**FIGURE 1.** Preparation for 3D recording, Yasuni, Ecuador. Photo by Alex d'Emilia



**FIGURE 2.** Opening ecoacoustic concert by David Monacchi at the SOIMA 2015 conference in Brussels. Photo by Alex d'Emilia

consequences of the Sixth Mass Extinction (Kolbert, 2014; Leakey and Lewin, 1996; Wilson, 2010), less attention has been dedicated to the loss of the acoustic aspects of biodiversity, which is vital for the ecological equilibrium of many species sharing the same habitat. Although the sound of natural phenomena has been the object of investigation by fields such as acoustic ecology (within the humanities), bioacoustics (within the life sciences) and ecomusicology (within music and anthropology), the acoustic consequences of ecosystems degradation (such as ecoacoustic depletion) have been long neglected. It is only recently that scholars have invoked a perspective which could take into account soundscape and soundscape analysis as markers of the ecological processes of habitats and, as such, reliable evidences of habitats' degradation. One iteration of this perspective can be found in the newly established

field of ecoacoustics (Farina and Gage, 2017; Sueur and Farina, 2015).<sup>3</sup>

In 2002, I first travelled the Brazilian Amazon to collect recordings of soundscapes in primary forest areas: these seminal data constituted the initial archive of the Fragments of Extinction project. The Amazon recordings immediately revealed the systemic order and equilibrium of the sonic behaviour of species vocalizing in an ecosystem, which at the time were only theoretically conceptualized by the acoustic niche hypothesis (ANH; see Krause, 1993). According to this hypothesis, species vocalizing in a healthy habitat tend to produce their calls along principles of niche segregation,

<sup>3</sup> The first ecoacoustics conference, held in Paris in June 2015, led to the foundation of the International Society of Ecoacoustics; see <https://sites.google.com/site/ecoacousticssociety/about>.



**FIGURE 3.** A 24-hour recording session, Yasuni, Ecuador. Photo by Alex d'Emilia

both in *frequency* and *time*. This means that (1) many species avoid sound competition with other species by using narrow and separate frequency bandwidths, and (2) certain species take advantage of moments in time, where a crowded frequency range is empty of other organisms' sound to avoid overlaps. From the point of view of the acoustic adaptation hypothesis (AAH; see Morton, 1975), the rich diversity of vocalizing animals showed that an organizing criterion regulated systemic sonic behaviour in the adaptation of animals' calls to the acoustic environment and its morphology. By relying on these principles, interspecific and intraspecific vocalizations would be arranged very efficiently in the collective aural space, as happens for other ecological phenomena. In equatorial areas, where daily cycles are most stationary (due to the equal duration of day and night throughout the whole year), species are evolutionarily tuned to this circadian uniformity, which results in more regular and predictable acoustic niches.

Additional collections of circadian recordings (in the Dzanga-Sangha Reserve, in central Africa, 2008; Ulu Temburong National Park, on Borneo, 2012; and Yasuni in the Amazon, 2016) – done with increasingly more sophisticated technology (Monacchi, 2016) – have verified these impressions. The recordings confirmed the value of soundscape processes as evidence of (and a vehicle for) a functional and aesthetically relevant organization of biodiversity within one habitat (Fig. 3).<sup>4</sup>

On my 2016 trip to Yasuni, Ecuador, it was apparent how dramatic seasonal changes or disturbing anthropogenic sounds disrupt niche organization.<sup>5</sup> This occurs when sounds such as distant noises from oil-drilling platforms mask some

bandwidths and make them inaccessible to species, which vocalize in those frequencies.

Human impingements on formerly untouched and undisturbed places are inevitably corrupting soundscapes of primary habitats. Unfortunately, changes to the imprints of a primordial ecological order and complexity have already taken place. There is an urgent need to preserve what is left of these soundscapes; otherwise, there will be no chance for future generations to access this heritage.

### 3D technology as tool for soundscape preservation

The Fragments of Extinction recording fieldwork uses high-definition recording for the discovery and preservation of not simply singular and discrete species but of the intrinsic systematics and aesthetics of an entire ecosystem. Given the loss and ongoing degradation of intact soundscapes in most of the primary (equatorial) areas, cutting-edge 3D recording technologies can play a critical role in archiving 'traces' of the primordial acoustic organization and converting this intangible natural heritage into a 'tangible' memory of the systemic behaviour and beauty of the disappearing *sonic intelligence* of nature.

Fragments of Extinction recordings used 'space-inclusive' and 'space-preservative' standards and experimental microphone techniques (Monacchi, 2011). By storing the entire spherical information of a sound field, these methodologies allow the preservation of the spatial information of the acoustic environment and maintain the complexity of its organization (through 3D direction, acoustic perspective, dimension of the sound sources) to make it available in public venues using every possible format of multichannel reproduction. Research technologies developed for high-definition indoor approaches, such as first-order ambisonics (FOA) and high-order ambisonics (HOA), have been thus refined and modified to work in challenging climatic conditions (high humidity, rain, wind and animal hazards) and brought to remote environments (Africa and Borneo) for the first time. For an idea of the complexity of these field recordings, the month-long session in the Amazon in 2016 collected 1.45 TB of soundscape recordings in simultaneous binaural, 4-channel and 32-channel formats.

The vivid 24-hour 3D-sound portraits of diverse tropical rainforests that have come out of this project have provided data for scientific exploration and heritage material to be shared with audiences (Fig. 4). The space-preservative recording strategies have proved appropriate also for conducting detailed *ex-post* analyses of biodiversity. As research data, the recordings have been submitted to highly sophisticated electroacoustic analyses on both a micro and

<sup>4</sup> As an example of functionality, data processing of samples of circadian recordings in Borneo has indicated further organizing criteria operating in mutual avoidance (e.g. between crickets and cicadas), increase in amplitude of certain species (e.g. cicadas), increased repetition rate (barbets) and jamming avoidance (intra- and interspecific).

<sup>5</sup> For a detailed report of the Ecuador fieldwork, see [www.montura.it/en/talking\\_about/news/fragments-of-extinction.php](http://www.montura.it/en/talking_about/news/fragments-of-extinction.php).



**FIGURE 4.** Collecting the autonomous system in the morning after a circadian recording, Dzanga-Sangha Reserve, Central African Republic.

macro level. On the micro level, they have been used to identify basic components, or ‘acoustic codes’, of a complex primary soundscape (Pieretti, Farina and Morri, 2011). At the macro level, they have been employed to explore the overall behaviour of an old growth forest ecosystem and the acoustic niches’ segregation dynamics.

Ambisonics 3D technology introduces the process of patrimonialization of the soundscape insofar as it allows the preservation and transmission of *knowledge* about the evolutionary mechanisms of species’ long-term cross-adaptation. Technology, then, is a powerful means to solicit people’s awareness about the aesthetics and the ‘intelligence’ of soundscapes and their analogy to a primordial musical composition. In fact, documenting soundscapes as compositions proved to be relevant for both ecological thinking and artistic engagement.

### Where art explains nature

The vision inspiring *Fragments of Extinction* and the overall conception of a soundscape heritage of primary ecosystems is one in which art and nature merge yet also mirror each other, in order to mutually enhance their aesthetics and their potential to attract people’s senses and sensitivities.

As an artist I am captivated by the perfect coordination that the natural ensembles in forest soundscapes exhibit. The challenge comes in determining how to maintain and disseminate these ensembles in as pristine or unaltered a manner as possible while still interplaying with them as

artful pieces. How do I present them without letting art interfere with or mask the primordial aesthetic features that I aimed to document and reveal?

The compositional approach I developed as a response to this challenge, termed as ‘eco-acoustic composition’ (Monacchi, 2008), proved a good vehicle both for conveying the beauty of sound environments’ complexity and balance and for complementing it with musical performance to make the outcome accessible to the public. Music, as a form of cultural intervention, integrates the natural configuration of the soundscape, filling temporal or frequency niches that are left empty by existing species, and interacting with them as another, exotic, still resonant and reactive, communication call.

An important role in this work has always been played by visual rendition of soundscapes, mainly conducted by spectrograms (Fig. 5–6).<sup>6</sup> Besides functioning as essential tools in bioacoustics and ecoacoustics for investigating the spectral microcosm of sound and framing the organization of soundscape, real-time spectrogram analyses also serve

<sup>6</sup> A spectrogram is a Cartesian diagram displaying the spectral acoustic energy through time. Time is in the horizontal axis, frequency in the vertical axis, and intensity is depicted through colour intensity. In ecoacoustics the spectrogram reveals very clearly the diverse imprints of species’ calls which are usually displayed along separate and immediately identifiable frequency lines, bandwidths or complex morphologies. From a systemic perspective it is shown how species avoid mutual overlap and manage to inhabit different frequency layers or temporal sections of the soundscape. This is usually more evident the older and more untouched the ecosystem is.



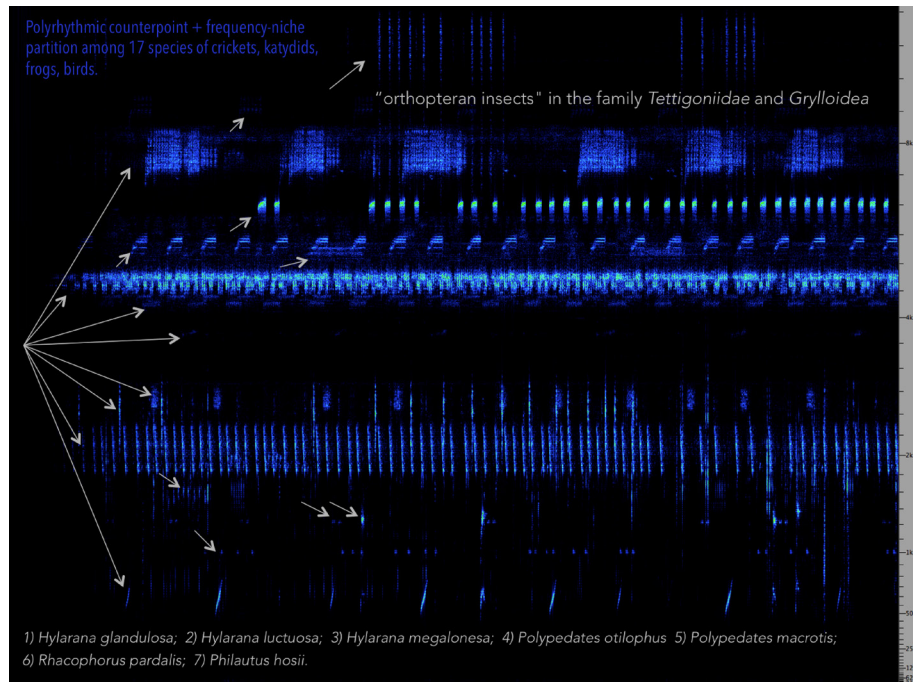


FIGURE 5. Spectrogram of a riverbank forest habitat's recording in Brunei, with species recognition.

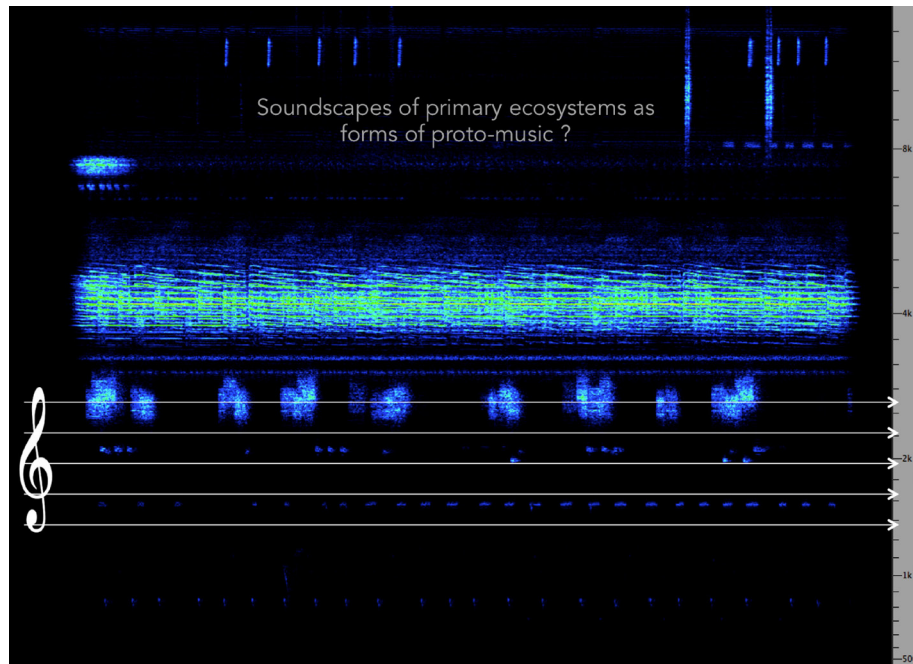
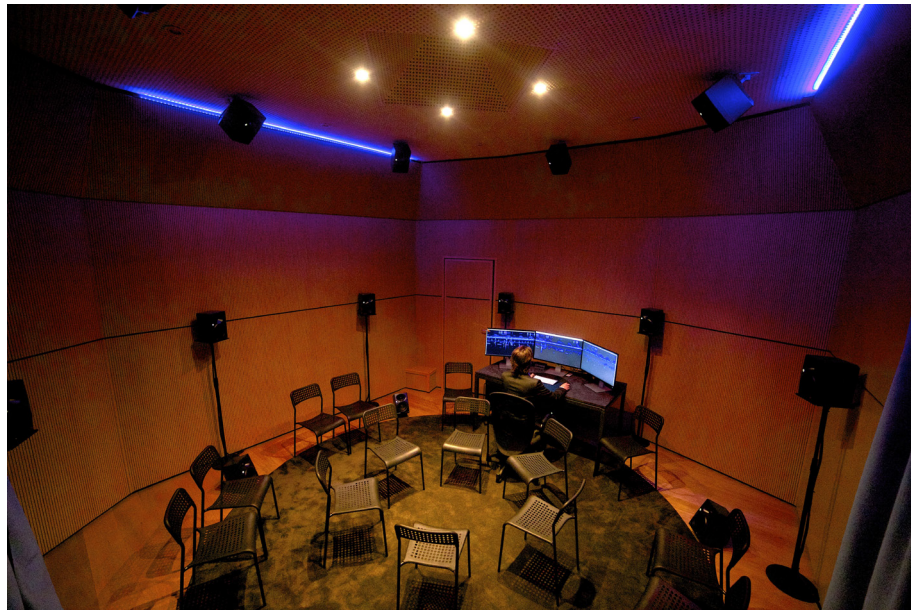


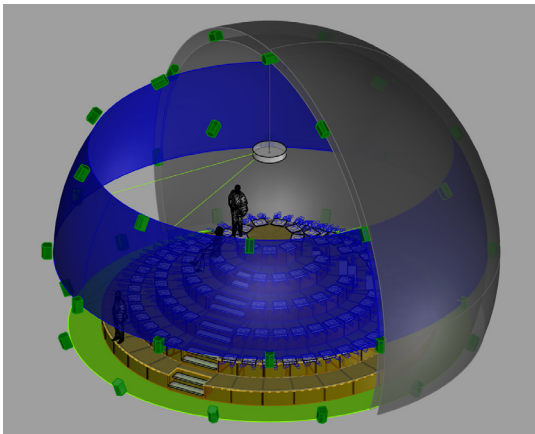
FIGURE 6. Niche partition in frequency among insects in Dipterocarp forest habitat, Brunei.

as powerful and intuitive instruments for audiences' understanding and aesthetical experience. They display at a glance the ordered balance and the elegant interspecific efficiency in the shared acoustic space. The complex species ensembles (insects, amphibians, birds, mammals) vocalizing in the same habitat form the score of an eco-symphony which tends to be immediately perceived and understood through these visuals.

A dedicated space was needed to divulge and perform in powerful ways the memory and potential of the sonic heritage of ancient habitats. The Eco-acoustic Theatre (patented in 2013) has been engineered to reproduce 3D audio and visually render a 360° real-time spectrogram of the soundscape as it unfolds. From an electroacoustic point of view, the 21 or more loudspeakers (equally spaced on rings and all equidistant from the centre) can render a



**FIGURE 7.** The full-periphonic 21-loudspeaker space at the Conservatorio ‘G.Rossini’ of Pesaro, used for analysis and post-production of 3D soundscapes for the Eco-acoustic Theatre. Photo by Alex d’Emilia



**FIGURE 8.** A rendering from the patent (2013) for the Eco-acoustic Theatre. 3D rendering by Pippo Marino

high-definition 3D sound field in the middle of the theatre, enabling a nearly perfect soundscape virtualization (Fig. 7–8).<sup>7</sup> The space-preservative ambisonics recordings can be in this way rendered in spherical periphery for large audiences, retaining all sound features important for a correct perception of the density of sound environments (e.g. distance of sound sources, dimension and overall sound perspective).

The Eco-acoustic Theatre is an example of how technology can merge with art in enhancing sensory experience and

<sup>7</sup> The number of loudspeakers depends on various factors, including (a) the dimension of the theatre (which has been engineered to be scalable from 5- to 20-metre diameter); (b) the shape of terraces (convex or concave); (c) the decoding order (i.e. the mathematical process which defines the ambisonics) of the 3D sound field desired.

cognizance of the laws that have shaped these paleo-acoustic environments.

Inside the venue, sounds and images (solely real-time spectrographic analyses) are linked in an innovative combination. The visual analyses (projected and moving on a screen) augment the perception of the soundscapes, showcasing to the audience the habitat’s structure and its niches’ configurations. An electroacoustic performer can insert ephemeral sensor-driven sound elements. These offer a powerful metaphor of the way human creative expression can interplay within a composite live ecosystem while still respecting its structure and finding an unobtrusive co-existence with it.

### Conclusions: ‘saving for knowing’

Today, with the silent force of climate change, potentially all primary undisturbed ecosystems (either protected or not) are facing damage to their species composition. Consequently, the original acoustic system within which species vocalizations used to collocate is also endangered.

Urgent 3D recordings of vanishing primary environments can save the sonic memory of these habitats from oblivion. Also, the opportunity to archive these primordial sounds allows both researchers and artists to deepen systematic principles on which they rely, and to learn more about the aesthetic and functional organization of which nature is capable, if unimpeded by human intervention. Taking this into account, soundscapes of pristine ecosystems should be taken as targets of patrimonialization in their own right. The patrimonialization process of



primary soundscapes would need to accomplish actions on two different levels:

1. *Conservation*. For its intrinsic focus on loss of systemic behaviour rather than on loss of distinct species, soundscape can be taken as a distinct marker to document damages of ecosystems. This entails investment in construction of a digital archive of paleo-soundscapes to be stored for future generations. This archive can be made available for analysis and scientific dissemination. Further, an action of (repeated, longitudinal) archiving of soundscape could also provide a repository of proxies that may document an ecosystem's damage and loss, adding criteria for the description of programmes such as the IUCN Red List of Ecosystems.
2. *Communication*. Initiatives to make 3D soundscapes available to contemporary audiences (in venues such as museums, cultural institutions and public sites) are a powerful means to disseminate knowledge about these ecosystems. As a matter of fact, with regard to increasing public ecological awareness, visuals (including scientific illustrations, photographs, documentaries and movies about species loss, environmental pollution, etc.) have played an almost exclusive role and been used since 1960 as 'evidence' to solicit people's 'environmental awakening'. However, rather than being a peripheral vehicle for sensorial experience, soundscapes can serve as a powerful and novel tool in communicating about ecological and conservation issues. Sound-based art projects offer an immersive experience of the environment and let people connect with natural phenomena aesthetically, sensorially and intuitively.

Science-based art projects can play an important role in finding new strategies for environmental education, attracting the broad public and stakeholders on issues of conservation and sustainability and eventually influencing global conservation policies. Contemporary art-mediated dissemination of soundscapes can, thus, serve to connect people to the direct experience of natural phenomena, building a crucial bridge between nature and culture and raising awareness about the value of protecting biodiversity today increasingly endangered by human pressure and climate change.

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# 13. All you need is love?

## The preservation of photographic collections here, there, and everywhere

*Debra Hess Norris*

**Preservation of photographic materials, both physical and digital, presents numerous challenges, and photographic collections are at risk worldwide. In response to this danger, regional partners have worked with international organizations to forge global training initiatives and platforms centred on experiential learning and designed with curricula tailored to specific climates, geographies, needs and outcomes. This paper highlights three forward-thinking efforts. The Middle East Photograph Preservation Initiative (MEPPI) has provided training to collections in 16 countries. *Préservation du Patrimoine Photographique Africain* (3PA) has connected and empowered talented African archivists, artists and collections care professionals. Training efforts by APOYO have sought to build a regional network to preserve collections in Latin America. By using problem-based learning, advocacy and community engagement, these programmes offer new paths for collaboration in an effort to protect a critical piece of our world heritage.**

Photography connects the world. The preservation of these rich and endangered resources – from early dry plate negatives to albumen, silver gelatin and digital prints – inspire, connect and inform communities large and small, local and global. Photographs catalyse cultural exchange and strengthen identity. They are treasured across religious, ethnic and socio-economic divides. So, too, are the rich audiovisual materials that engage our minds. These materials unite humanity in powerful ways. Their preservation is essential, and with audiovisual materials especially, ICCROM's SOIMA programme is a leading advocate for collections care investment, education and training, and global partnerships (Oomen, 2015). While this paper focuses more precisely on issues associated with the global preservation of photographic holdings in archives, libraries and museums, the challenges cited and lessons learned resonate across other media.<sup>1</sup>

Whether housed in the Americas, Africa or Asia, many photographic collections are at risk. Few systematic inventories exist; the number of collections is incalculable and growing exponentially, and many remain unknown and unexplored.<sup>2</sup> Located in climatic conditions ranging from desert to rainforest, photographic materials are threatened by exposure to unsuitable environmental conditions, poor management practices, improper housing and handling,

<sup>1</sup> Many of these topics have been raised in past talks and publications, often co-authored. I thank my colleagues worldwide for their partnership in photographic preservation initiatives of all kinds and their deep commitment to this field. They have contributed to and/or inspired many of the thoughts incorporated in this essay. More detailed information may be found in other publications, including Jürgens *et al.* (2012) and Kennedy and Lavédrine (2014).

<sup>2</sup> In the United States of America, the Heritage Health Index (HHI) has proven to be a fundamental tool for assessing the condition of cultural heritage. Conceived and implemented by Heritage Preservation in partnership with the Institute of Museum and Library Services, it was the first comprehensive survey of the condition and preservation needs of all collections held in the public trust. In 2005, the HHI concluded that immediate attention was crucial to prevent the catastrophic loss of 190 million artefacts held by archives, historical societies, libraries, museums and scientific organizations across the country. The nation's collections required swift protective action due to a stunning absence of institutional emergency planning, a pressing need for improved collections storage and a serious shortfall in annual budgetary allocations for preservation. Since then, collecting institutions across the United States have worked diligently with their governing boards, local and state decision-makers, community funders and the public to address these urgent preservation challenges. In January 2014, Heritage Preservation launched Heritage Health Index II to assess progress made by cultural institutions over the past decade, ascertain their current needs and measure success. The results of this work are forthcoming.

natural and man-made emergencies and inherent instability. Traditional contemporary photographic materials – for example, silver gelatin printing-out papers, silver dye bleach, dye diffusion transfer and dye imbibition processes – also face obsolescence as digital processes replace analogue materials at an alarming rate. Studies indicate that by 2025, analogue carriers will need to be digitized. Acetate and nitrate films housed in poor environments face similar challenges. These inherently unstable media should be digitized and preserved in cool or cold storage environments to the extent possible.<sup>3</sup>

Research and work by legions of dedicated conservators, collections care professionals, scientists, curators, scholars, archivists and librarians worldwide – many deeply committed to SOIMA – have advanced our field significantly, resulting in a greater understanding of photographic materials' degradation, characterization, technical art history and preventive conservation; new and important scholarly publications; and expanded global engagement.<sup>4</sup>

This knowledge must be shared with photograph preservation stakeholders broadly. Effective education and advocacy are essential. From webinars to short-term or hybrid workshops with distance-mentoring components, graduate-level and certificate study, targeted internship training and student exchange, we must work together to develop new global training initiatives and platforms centred on experiential learning and designed with curricula tailored to specific regions, needs and outcomes. Continuing education for practicing conservators is equally vital. ICCROM, the International Committee on Museums (ICOM), the International Institute for Conservation of Historic and Artistic Works (IIC), the American Institute for Conservation of Historic and Artistic Works (AIC) and others must develop and deliver preservation workshops and train teachers of photograph conservation to share their knowledge and skills effectively. Both theoretical and skills-based training is

needed; developing effective partnerships and leadership abilities is imperative.<sup>5</sup>

Collaboration is key to our success – and lessons learned from recent educational initiatives must be shared broadly, including the Middle East Photograph Preservation Initiative (MEPPI) and *Préservation du Patrimoine Photographique Africain* (3PA). These programmes offer interesting training models, centred on problem-based learning, advocacy and community engagement.

While these projects concentrate on the preservation of photographic materials – analogue and digital – lessons learned are relevant for dealing with other media collections. Impact assessment, project evaluation and sustainability remain challenging, yet we have seen substantive results.

### Middle East Photograph Preservation Initiative (MEPPI)

The broader Middle East and North Africa region is home to many significant historical photograph collections, yet their preservation is threatened by the dearth of formally trained local photograph conservators and photograph preservation professionals. Following a successful 2009 pilot, MEPPI was launched in 2011 to address this need. It is led by the Arab Image Foundation in Lebanon and, in the United States, the Getty Conservation Institute (GCI), University of Delaware and Metropolitan Museum of Art. This strategic initiative seeks to improve the awareness and preservation of the region's rich photographic heritage by identifying significant photograph collections, providing basic preservation training and building a strong network of conservation. Today, this work is funded by the Andrew W. Mellon Foundation and GCI.<sup>6</sup> Since its inception, MEPPI has provided training for more than 60 institutions and collections in 16 countries, helping to preserve more than 15 million photographs. Participants have included individuals representing national archives and libraries, ministries, universities, museums and private collections.

The three year-long courses, taught in 2011–2014 in Beirut/Rabat, Abu Dhabi/Istanbul and Amman/Beirut, began with a workshop covering topics ranging from identification of photographic processes, principles of image formation and structure, and storage and housing, to digitization best

- 3 The Image Permanence Institute in Rochester, New York, USA, has introduced an exceptional web-based collection management tool developed for archivists, curators, collections managers and other professionals involved in the care and preservation of photographic film collections. See [www.imagepermanenceinstitute.org/resources/newsletter-archive/v29/filmcare-launched](http://www.imagepermanenceinstitute.org/resources/newsletter-archive/v29/filmcare-launched). Like IPI, AVPreserve in New York City has created a multitude of innovative preservation assessment tools for audiovisual collections. The Cost of Inaction Calculator, presented at the 2015 SOIMA conference is most impressive in its scope and usability (see Chris Lacinak's contribution to this volume).
- 4 An important new research laboratory opened in 2015 at the Institute for the Preservation of Cultural Heritage at Yale University. Led by Paul Messier, the Image Media Lab focuses on the preservation and characterization of photographic materials. This research laboratory joins many others worldwide, notably the GCI, Image Permanence Institute, Canadian Conservation Institute and Centre de Recherche sur la Conservation des Collections in Paris.

- 5 Many books on leadership strategy are helpful. An extensive bibliography was developed for an April 2016 workshop hosted by Winterthur Museum and the University of Delaware, *Learning to Lead: Training for Heritage Preservation Professionals*, led by Sarah Staniforth and Robert Norris. This should be posted at [www.artcons.udel.edu](http://www.artcons.udel.edu) in the not-too-distant future. Likewise, there are many excellent books and websites addressing philanthropy. In photograph conservation, Gonzalez (2012) is superb.
- 6 There are multiple publications on MEPPI. See [www.meppi.me/](http://www.meppi.me/) for a more comprehensive overview. Mokaiesh *et al.* (2014) provides another summary.

practices, advocacy and emergency preparedness and response. The workshop was followed by a distance-mentoring period with practical assignments through which participants were encouraged to apply the skills learned at their institutions before reconvening for a follow-up meeting to strengthen teachings and share accomplishments and challenges. Although originally intended to be a discussion-driven meeting, similar to a seminar, a portion of the follow-up meeting has served as a second workshop to provide additional information and teach skills required for competent practice. The mentoring and follow-up segments have been essential in consolidating learning and maintaining motivation and engagement in participants.

MEPPI alumni have reported significant improvements in storage and housing conditions, as well as in documentation and digitization of collections, often despite facing financial and administrative challenges within their institutions. By bringing together collection custodians from diverse countries and institutional backgrounds, MEPPI has also helped to strengthen professional networks both within and across organizations. Recent preservation accomplishments include:

- Assessment and relocation of many of the historically prominent archives across Tunisia for improved protection and digitization for access. Similar work is ongoing in Bahrain and in Iraq at the National Library in Baghdad.
- Development of a University of Cairo advanced course in photograph conservation for undergraduate and graduate students. One Egyptian participant has since earned a master's degree in museum studies and collections management from George Washington University.
- Relocation of collections within the American University of Beirut to a room with superior environmental conditions, thus providing for the long-term preservation of the images. New initiatives in paper and photograph preservation training are now under way.
- Stabilization treatment and scanning of nearly 100 nineteenth- and twentieth-century photographic albums that document the history of irrigation in Egypt. The value of this work was shared using Facebook. Facebook and other social media have become important platforms for advocacy, which is a primary focus of the training.
- Establishment of an archive – A Cultural Memory and Exchange – for the city of Ramallah in Palestine that promotes the digitization of historic documents and photographs and the preservation of contemporary municipal and other vital records.
- Preservation of the Jordanian and Lebanese News Agency photographic archives. The National Library and Archives of Iraq and the Wafa News Agency in Palestine have salvaged collections and are developing acquisition

strategies as well as new collection repositories, following massive losses sustained during armed conflicts.

- Creation of a vibrant independent art and darkroom space in Istanbul dedicated to the history and technology of photography. Preservation of Turkish archival print and negative collections, including images documenting Istanbul households that profile the last period of Ottoman Muslim families living in Istanbul.
- Technical workshops held in Yemen to promote fundamentals of photograph preservation for regional collections faced with significant security and environmental challenges, including storage where external temperatures reach 50° C.
- Improvement of conditions for several important collections. In the Islamic Republic of Iran, early, oversized and rare print collections have been removed from poor-quality plastic bags and rehoused using conservation folders and polyester film interleaving. In the Golestan Palace, a World Heritage Site in Tehran, a significant collection of glass plate negatives was rehoused. And in Amman, Jordan, the Royal Photographic Collection has been rehoused and moved to a dedicated and improved storage room within the palace, and photographs at the Jordan Archaeological Museum have been catalogued and sleeved in good-quality paper enclosures.
- Photograph exhibitions and significant improvement in the storage environment for the National Press, Image and Media Institute in Algeria.

Among the most significant successes of MEPPI is the empowerment of those trained, giving them the skills and confidence to further their professional growth and become local experts in the field. Since 2011, MEPPI's research activities, led by the Arab Image Foundation, have resulted in mapping and documenting some 300 significant institutional and private regional photographic collections. These collections represent the broad spectrum of photographic formats, dating from the nineteenth century until today. An online directory has been launched to make this information available to researchers.<sup>7</sup>

Significant progress has been made since MEPPI was initiated, yet it remains crucial to continue building upon its foundational efforts in order to achieve a lasting impact that can create a body of expertise and spread awareness of the significance and value of photography as a historic and contemporary record. A critical factor in the sustainability of MEPPI's training efforts is the development of a vibrant network of leading institutions and professionals. The creation and nurturing of this network – consisting of MEPPI

<sup>7</sup> See <http://meppi.me/>.

alumni and other interested colleagues – have been largely the responsibility of the Arab Image Foundation.

Through course evaluations, observations during the mentoring and follow-up phase and participant feedback, MEPPi instructors identified several areas where alumni could benefit from additional training and experience: digitization, the environment of photograph collections, condition assessments, storage and exhibition practices, selecting and creating enclosures and other related collections care topics. The third and final phase of MEPPi (funded by the Mellon Foundation and GCI) has therefore involved the delivery of in-depth workshops on digitization and preventive conservation for participants who successfully completed the earlier training and distance mentoring and whose collections are significant regionally. This work will be completed in 2017. Security concerns have complicated the training schedule and required that at least one course be moved from Beirut to another location.

A final symposium, on the photographic legacy of the Middle East, is planned for Abu Dhabi in 2017, in partnership with New York University Abu Dhabi. Whereas the workshops target collections caretakers, the symposium is an opportunity to bring together a larger group of professionals, including cultural heritage directors and decision-makers. Broader institutional involvement is critical to the ultimate success of MEPPi's participants. The MEPPi symposium therefore intends to highlight both the need for and potential of engaging a broad group of professional colleagues in the promotion and safeguarding of the photographic heritage of the Middle East. MEPPi's eventual longer-term impact is directly aligned with our capacity to influence those individuals who allocate resources and create the conditions for the better preservation and management of photograph collections.

### **Préservation du Patrimoine Photographique Africain (3PA)**

Historically significant African photographic collections face serious environmental and economic risks. The absence of formally trained photograph conservators in this region makes the need for informed preservation professionals essential to care for the wealth of photographic heritage dating from the early nineteenth century to the present. In Africa, many important photograph collections are held privately or housed in regional museums and libraries where controlled environments are rare, electricity never guaranteed and damage caused by flash floods, silverfish, termites and mould can be extensive. The threat to these collections is substantial and often unacknowledged outside of the continent.

In response to these challenges, the École du Patrimoine Africain (EPA) in Benin partnered with the Department of Art Conservation at the University of Delaware, the Centre de Recherche sur la Conservation des Collections in Paris, the Department of Photograph Conservation at the Metropolitan Museum of Art, and Resolution Photo to identify important photographic repositories at risk and to develop, organize and administer a four-day Photograph Preservation Workshop, which was held in 2014.<sup>8</sup>

The workshop included 22 established curators, photographers, collections care professionals and directors of contemporary art centres, museums and regional archives deeply committed to the preservation of African heritage *in Africa*. Well over 50 percent of the participants were artists or photographers who care for influential archives, including those representing the collections of Roger DaSilva of Senegal, Paul Kodjo of Côte d'Ivoire, Bâ and Bamba of Mali, and J.D. 'Okhai Ojeikere of Nigeria, all photographers of historical and cultural significance.

Touching on everything from identification of negative and print processes and creative storage solutions to advocacy and grant-writing, the workshop sparked probing questions and compelling contributions from all quarters. Our teaching was hands-on where possible and translated simultaneously to ease communication. Expert speakers also addressed issues related to public programming, community outreach, advocacy, intellectual property and digitization. Brainstorming sessions focused on the use of traditional clay and earthen architecture to provide passive cooling and ventilation and opportunities to collectively promote the value of privately held collections across the continent.

Our African colleagues spoke eloquently and with passion about the preservation of these rich photographic resources. While great strides have been made in the preservation of photography in Africa thanks to many organizations, from UNESCO to ICCROM, ICOM and the Getty Foundation, the broadening of networks and further dissemination of information as a result of this workshop are further steps in connecting and empowering talented African archivists, artists, collections care professionals, directors and educators capable of advancing preservation practice, public programming and advocacy. We aim to ensure this work

<sup>8</sup> See [www.resolutionphoto.org/](http://www.resolutionphoto.org/) for a detailed accounting of this workshop and the amazing work of Resolution Photo. Also see Kennedy, Lavédrine and Ogou (2015). Information on the School of African Heritage in Benin can be found at <http://epa-prema.net/index.php/en/>. The author would like to thank all funders for this project – contributions large and small from foundations, corporations, partner institutions and individuals made this work possible. Very special thanks is due to the late Henrike Grohs, director of the Goethe Institute d'Abidjan, for her steadfast and inspiring support of this initiative and so many others centred on the preservation of cultural memory in Africa and beyond.



continues through additional programming, online mentoring and an investment of new preservation funding for collections at risk. Since our 2014 workshop, Paul Kodjo's photographic negative archive has been rehoused in good-quality enclosures, and a crowdsource fundraising platform has been launched to secure support for the protection of photographic archives in Benin.<sup>9</sup> Our fundraising continues as we look to partner more fully with ICCROM and UNESCO and other potential collaborators, ideally offering additional workshops with distance-mentoring components across Africa. The 3PA remains firmly committed to photograph preservation regionally and intends to lead additional educational programmes.

### Latin America and the Caribbean and APOYO

Like the Middle East and Africa, the conservation and preservation of photography in Latin America and the Caribbean is under-resourced and underserved. Collections and risk assessments, carefully developed educational workshops from basic to advanced, community partnerships and translations of key preservation texts into Spanish and Portuguese are needed to preserve the photographic treasures from this region of the world. In response to these challenges, the Department of Art Conservation at the University of Delaware worked in collaboration with leaders in the Association for Heritage Preservation of the Americas Inc. (APOYO) to develop, organize and administer a four-day photograph preservation, fundraising, and advocacy workshop in August–September 2016.<sup>10</sup>

### Advocacy and fundraising

MEPPI, 3PA and APOYO are only a few of many regional and global preservation efforts led by passionate individuals committed to photography and its preservation. As we work to strengthen photograph collections preservation via educational initiatives worldwide, effective and energetic advocacy is essential. We must use traditional and social media combined with engaging lectures, exhibitions and behind-the-scenes tours to promote an understanding of the meaning and value of photographic materials to current and future generations. We must connect with the public and individual donors by sharing our challenges and posing smart and strategic solutions.

In doing so, we should work with global foundations and local corporations to build financial support – connecting closely to their mission, vision and marketing strategies. While foundations often support pressing societal causes, often centring on health, education, poverty, climate change

and sustainable economies, corporations are more typically focused on promoting *their* identity via effective marketing. Corporate philanthropy can and must be creatively connected to the preservation of our at-risk photographic heritage. Investments by regional airlines or mobile phone industries, for example, can preserve our history, while Fortune 100 companies may wish to promote cultural understanding via improved preservation. Such messages resonate with the public and build welcome attention to corporate partners. We all benefit.

Indeed, our work in the preservation of photograph *and* audiovisual collections has the capacity to connect communities, build visual literacy and economic growth, promote tourism, enhance cultural identity and promote peace and reconciliation. Connecting to these societal needs may broaden avenues of support and create new opportunities for engaged partnership and leadership. While fundraising opportunities and goals may vary considerably among projects and locales, the guiding principles are universal. These include a focus on education and outreach, thoughtful planning with accurate timelines and transparent budgets, risk assessment, regional and community partnership and measurable outcomes.

Photograph preservation initiatives that assess and address documented risks, build knowledge via learning and scholarship, and are collaborative and sustainable are best. Cultural institutions may wish to pursue support for pilot demonstration projects that educate and highlight their high-profile collections – prints, negatives or sound recordings – in greatest need or of the greatest significance. Examples may include the rehousing and digitization of early gelatin glass plate negatives (never digitize without considering the longer-term preservation of the originals), the storage of oversized albumen and silver gelatin photographs in protective sleeves and appropriate cabinetry, or the boxing of difficult-to-handle albums for added protection from handling. This work may be conducted by well-trained and supervised senior volunteers or young scholars in the arts and humanities, creating a rich learning experience and a pipeline for professional growth. Interesting projects that connect collecting institutions – via coordinated exhibitions or popular themes – may help to raise awareness and promote new research and scholarship, ultimately strengthening the reach and practice of photograph conservation.

Working across borders will facilitate new and rewarding professional connections that may capture the attention and support of those committed to global partnership. Engaging decision-makers and cultural leaders with clear preservation

<sup>9</sup> See [www.contemporaryand.com/fr/exhibition/photographie-paul-kodjo-in-conversation/](http://www.contemporaryand.com/fr/exhibition/photographie-paul-kodjo-in-conversation/).

<sup>10</sup> See <http://apoyo-conservation.appspot.com/>.

and outreach strategies is vital. While drafted in 2009, the Salzburg Declaration on the Conservation and Preservation of Cultural Heritage, with its deep commitment to community engagement and increased research, global networking and education, still rings true.<sup>11</sup>

*Love* – combined with passion, hard work, strategic thinking, collaboration, education and advocacy – *is all we need*. Working together we can continue to advance, innovate and strengthen photograph preservation efforts and to ensure that these rich resources are protected and preserved for humankind. In doing so, the prominence and value of photographic conservation will escalate and new financial and other preservation resources will be identified. Engaging others in our work is essential; connecting with SOIMA's ten-year strategy will ensure our success.

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<sup>11</sup> See [www.heritagepreservation.org/PDFS/SalzburgDeclaration.pdf](http://www.heritagepreservation.org/PDFS/SalzburgDeclaration.pdf). This doctrine has been translated into multiple languages and inspires the author daily.

# 14. Open access

## A challenging opportunity for audiovisual archives

*Irfan Zuberi*

**In the broadest sense, archives are an embodiment of cultural artefacts that endure as signifiers of who we are and why. They are both a place of representation of these signifiers and their institutional form, providing tangible evidence of memory as well as defining memory institutionally within prevailing political systems and cultural norms. The principle of offering equal and open access to archival resources remains a cornerstone in various guidelines and codes of ethics for archival practices. However, providing open access is also a thorny problem and one that is challenged by factors such as intellectual property rights. This paper considers the notion of open access in the domain of audiovisual archives and the challenging potential that it offers, looking specifically at the experience of India's National Cultural Audiovisual Archives. Perhaps the moment of open access is well and truly upon audiovisual archives in the twenty-first century, for they face the necessity of reinventing themselves or risking possible irrelevancy and increased marginalization, even as they must continue to balance delicate questions pertaining to ethics of access.**

*An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds.*

Budapest Open Access Initiative (2002)

### Background

The archive can be considered a gathering of artefacts of culture that are meticulously collected, methodically stored and preserved over a long-term period. This act of archiving could either be motivated by the need to preserve something that might otherwise face the threat of oblivion or, at other times, to simultaneously document concurrent happenings that are to be preserved. According to Jacques Derrida, "the dwelling, this place where they (the archives) dwell permanently, marks the institutional passage from the private to the public" (1996, p. 3).

This deep interrelation between private concealment and public visibility constitutes the structure of archives, for private concealment regulates public exposure and vice versa. The continuous transition from the private to the public realm places them in an ambiguous position where it becomes difficult to recognize the exclusive characteristics of private or public fields. The archive is profoundly affected by this transition and loses its definitive nature in the process. In line with the method of deconstruction, Derrida questions strict dichotomies such as public/private and secret/non-secret vis-à-vis the nature of the archive. Within this potent condition, an archivist can exercise her own purposeful intervention, even though the power in this intervention stems from a kind of ambivalence about the nature of the archive.

At the same time, the archive is permeable to investigation and research. Each researcher alters it by charging it with her interpretation. It thereby accumulates layers of interpretations and meanings and expands notionally by continuous research and readings. This perspective enables a view of the archive in evolution, both theoretically and structurally, since it reveals much more than the archive's

structure and contents. One could thus argue that the archive is represented in such a way that it conceals as much as it reveals. The onus for multiple interpretations of the material stored in archives lies as much on the archivist as on the user gaining access to the material.

## Open access

The notion of ‘open access’ is derived from the domain of scholarship; in that context it refers to scholarly literature that is online, free for potential users to access and bereft of licensing restrictions that regulate its use. Open access is made possible by the intersection of a practical concern with a technological opportunity. While the open access movement is given a certain authority from an academic tradition that has existed for a significant period of time, the concept itself received formal definition only a little over 15 years ago during the first meeting of the Open Society Institute. The Budapest Open Access Initiative (2002) characterized open access literature by

its free availability to the public internet, permitting users to read, download, copy, distribute, print, search, or link to full texts of these articles, crawl them for indexing, pass them as data for software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

Elaborations and minor variations appeared in subsequent public statements such as the Bethesda Statement on Open Access Publishing (2003) and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003). However, the Budapest initiative’s definition of open access still applies and “remains one of the best encapsulations of the exceptional intersection of interests giving rise to the open access movement” (Tomlin, 2011, p. 4).

## Open access in audiovisual archives

In the field of academic scholarship, open access archiving first developed in physics while open access journals took off fastest in biomedicine. At the other end of the spectrum, open access has moved the slowest in the humanities. Suber (2005) has carried out a detailed analysis comparing the differing rates of progress of the open access movement in the science, technology and medicine fields as compared to the humanities. There are numerous problems and challenges that are considered to be unique within the humanities and can prove to be roadblocks to furthering open access in the arts.

Within the domain of the arts, audiovisual repositories equally struggle with a range of issues that are unique to them with regard to providing access to their collections, something which further complicates their participation in the open access movement.

What right do archives have over their collections?

What is an appropriate relationship between archives, the collectors who deposit their recordings in it and the performers and communities those collectors have recorded? Changing ethics, changing intellectual property laws and changing opportunities for dissemination have all contributed to uncertainty about how to use the recordings that already exist and how to collect new ones (Seeger and Chaudhuri, 2004, p. 71).

Intellectual property refers to creations of the mind, such as inventions, literary and artistic works, designs and symbols, names and images used in commerce.<sup>1</sup> It is divided into two broad categories:

1. Industrial property, which includes patents for inventions, trademarks, industrial designs and geographical indications.
2. Copyright, which covers literary works, films, music, artistic works and architectural design. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and broadcasters in their radio and television programmes.

It is clear then that the rights which apply to archival audiovisual recordings are covered within the ambit of copyright, which itself has two aspects: one is enshrined by law specifically in terms of the stakeholders and the length of term; the other is of a philosophical nature and entails moral rights. Moral rights include (1) the rights of attribution implying that the right person(s) is attributed as a creator of the work or recording and (2) the right of integrity, which refers to the right not to have one’s creative work subjected to derogatory treatment. Fair use is permitted for copyrighted material, which includes the right to make copies of copyrighted works for individual and educational use under somewhat vague conditions. Not only are the conditions of fair use ambiguous in their scope, but it is not clear whether a range of access options open to audiovisual archives gets covered within this exemption. In addition to certain national differences, most copyright legislation still contains a clear distinction between the fair use of published material, which is usually stored in libraries, and the unpublished holdings of archives. Finally, there are constant

<sup>1</sup> For a detailed exposition, see [www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo\\_pub\\_450.pdf](http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf).

attempts by copyright holders to further restrict use even as the very nature of a public good necessitates widening the ambit of access, a position within which audiovisual archives need to balance these countervailing forces.

In this complex situation, it is understandable that even archivists who adhere to the principle of open access in theory frequently cannot apply it consistently in practice for legal, ethical and pragmatic reasons. At the same time, in spite of inequitable restrictions on archival collections, the demand for a more democratic and transparent society has, in general, led to greater openness. Thus, it would be fair to say that the open access movement has resolved some ethical problems while creating new dilemmas (Danielson, 1989, p. 53).

It is therefore instructive to look at the working of most audiovisual archives in terms of their mandatory responsibilities. Regardless of the accepted indivisibility of their two primary missions, preservation and access, archives have tended to privilege preservation. It would not be an exaggeration to mention that loaded phrases such as ‘copyright infringement’ and ‘losing control of collections’ are mentioned fairly frequently in archival circles, perpetuating feelings of anxiety and caution. Proponents of the open access movement thus opine that institutionally, “archival access is overwhelmingly crippled by an overzealous application of the precautionary principle” (Prelinger, 2007, p. 115).

Perhaps the time has arrived for audiovisual archives to be as proactive about access as they have been about preservation. The key “is to be bold and try things” (Kahle, 2007, p. 30). There is a need to look at things with a fresh perspective and be unafraid to look at the periphery – open access models such as YouTube, Internet Archive and others – for ideas that have the potential to revolutionize access (Prelinger, 2007, p. 117).

## National Cultural Audiovisual Archives in India

A large volume of India’s cultural wealth, created over the last century, in audiovisual form, is stored in governmental and non-governmental institutions or is in the possession of individual collectors. Even though the custodians of these holdings have done their best in terms of preservation, notwithstanding serious limitations, the lack of a national-level initiative was palpably felt in the domain of audiovisual archiving.

Understanding the significance of the situation, the Ministry of Culture, Government of India, proposed setting up a project to systematically archive cultural audiovisual

recordings. Subsequently, the National Cultural Audiovisual Archives (NCAA) was established on 3 April 2014 at Indira Gandhi National Centre for the Arts (IGNCA). During the ongoing pilot phase, the primary objective of the project is to identify and preserve significant audiovisual recordings in institutions across the country through digitization and to make the digitized content accessible online.<sup>2</sup> Evidently then, preservation is looked at through the prism of providing access in an attempt to balance the two mandatory responsibilities of the archive, and digitization is understood to be the medium through which this is made possible.

Even within the strict timelines of its pilot phase (April 2014–March 2018), the NCAA set a target of selecting and digitizing approximately 30 000 hours of unpublished audiovisual recordings culled from 18 partnering institutions. These repositories, both governmental and non-governmental, are spread across the country and collectively hold around 100 000 hours of unpublished audiovisual recordings. Thus, the task of selection involved a diligent exercise of prioritization of certain recordings over others, a task that was left to the partnering institutions themselves, given that they are the custodians of the recordings. Even so, it required considerable legal advice within the rubric of an intellectual property rights advisory to arrive at the final selection of audiovisual recordings that could be considered ready to enter the regime of open access through the NCAA project.

The functioning of the NCAA project involves several stakeholders – the Project Management Unit (PMU) at IGNCA, the partnering institutions spread across the country, a large-scale digitization enterprise, a software development company and an agency responsible for hosting the content online through a trusted digital repository application on the servers of the Government of India, in line with the National Digital Preservation Programme.<sup>3</sup> The project architecture is based on the Open Archival Information System (OAIS) reference model, which involves the interaction of four entities: producers of information, consumers of information, digital object management and the archive itself.<sup>4</sup> At the time of the project’s initiation, detailed standards and workflow documents were formulated by the project’s Technical Sub-Committee to implement the process of digitization and metadata creation within the ambit of the NCAA project. The digitization standards formulated for and followed by the project are in parity with those followed by the International Association of Sound and Audiovisual Archives (IASA) and the metadata schema followed by the project is based on the extended Dublin Core schema.<sup>5</sup>

<sup>2</sup> See <http://ncaa.gov.in/repository>.

<sup>3</sup> See [www.ndpp.in](http://www.ndpp.in).

<sup>4</sup> See [www.iso.org/standard/57284.html](http://www.iso.org/standard/57284.html).

<sup>5</sup> See [www.iasa-web.org/tc04/audio-preservation](http://www.iasa-web.org/tc04/audio-preservation) and <http://dublincore.org/documents/dcmi-terms/>.



As of mid-2017, the NCAA had achieved more than half of its target with the digitization and systematic metadata creation of over 15 000 hours of unpublished audiovisual recordings. Following systematic metadata verification and enrichment, these audiovisual recordings would be made accessible for free streaming on the web portal of the project, along with their accompanying administrative, descriptive and technical cataloguing metadata. This is in line with the memoranda of agreements that have been signed between IGNC and the partnering institutions of the NCAA project. These speak of (1) providing free accessibility to copyright-free and those audiovisual recordings over which the partnering institutions hold rights of ownership, and (2) preparing suggested guidelines for obtaining intellectual property rights and other relevant copyright clearances for all other audiovisual recordings.

It is only around 10 percent of institutions' audiovisual recordings that have been adjudged to be copyright-free given the expiration of the rights' term and their entry into the public domain. For the remaining 90 percent of recordings, it has been a process of systematic consultation with the partnering institutions which have allowed them to be considered ready for open access. Not only has this meant a process of 'letting go' as far as the repositories are concerned, it has also entailed a proactive approach on the part of the NCAA project to adhere to its bold stance in terms of dissemination.

It is the first time that most end users have access to these unpublished recordings through the web portal of NCAA. Not only were they hitherto unpublished; many come from repositories that were barely in a position to provide access on-site. Broadly then, NCAA's work can be said to be in line with the general principles of open access outlined in the Budapest, Bethesda and Berlin statements. Envisaged as a means to inject egalitarianism into the access of authenticated archival audiovisual recordings and driven by concerns entailed with public funding, the NCAA project seems to have taken the first few steps into the challenging terrain of open access.

## Conclusion

The twenty-first-century archive stares at the necessity of reinventing itself without pandering to the fashions of the moment. The archive must accept the existence of diverse archival models and practices that may either be broadly in line with or put legacy practices into sharp relief. It must critically and tactically embrace emerging technologies that can be Janus-faced and will continue to hold disruptive potentials. Without an aggressive approach that privileges access, the archives risk irrelevancy and increased marginalization (Prelinger, 2007, p. 118).

How many digitized audiovisual recordings the NCAA project is able to provide within the mode of open access beyond the ongoing pilot phase of its implementation remains to be seen. However, what matters at this juncture is that it has taken the leap by virtue of the fact that it seemed within reach. Brewster Kahle lays out this conviction in the vein of a manifesto:

I argue for universal access to all knowledge. I argue that it is within our grasp financially. It's within our grasp technologically. It's within our grasp politically. It's a great project to work on. In many ways, we've been working on it for centuries.... I think our generation could bring universal access to all knowledge, and that's something we'd be proud of for centuries (Kahle, 2007, p. 31).

The moment of open access is well and truly upon audiovisual archives in the twenty-first century, given that they face the necessity of reinventing themselves in order to remain relevant. As a member of the community, I feel that audiovisual archivists need to seriously engage with open access while balancing delicate questions pertaining to the ethics of access in a nuanced manner.

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# 15. The Legatum initiative

## Challenges and alternatives to a Brazilian experiment on remote access

*Rubens Ribeiro Gonçalves da Silva, Ricardo Sodré Andrade, Adriana Cox Hollós, Neiva Pavezi, João Ricardo Chagas dos Santos and Research Team*

**This paper summarizes the preliminary findings of the second phase of a research project entitled Digital Challenges and Alternatives for the Safeguarding and Dissemination of Public Audiovisual Archival Heritage (2013–2016). The final phase, lasting three years, is currently in progress and will finish in 2019. The project has collected data on audiovisual archives across Brazil, inquiring about collections scopes, environments, planning and more. One aspect of the project has been developing a beta version of Legatum, an innovative and collaborative digital platform of international scope based on open protocols. Legatum focuses on collections in Romance language institutions and is intended to preserve audiovisual heritage as well as to provide long-term, wider access to users.**

In 2005, the Grupo de Estudos sobre Cultura, Representação e Informação Digitais (CRIDI, Research Group on Digital Culture, Representation, and Information) launched a research project entitled Digital Conversion of Special Documents from Public Collections and the Informational

Consciousness: Technical and Theoretical Aspects in the Field of Information Science.<sup>1</sup> This first phase (2005–2007) allowed us to collect data on photographs, sound and moving image collections from 109 public institutions in the city of Salvador (Bahia, Brazil). Of these public institutions, 35 hold audiovisual documentation.<sup>2</sup>

From 2013 to 2016 we developed the second phase of research (Silva, 2012). It updates the initial data collected in Salvador ten years prior, allowing us to understand the current state of preservation and access. In the second phase of research, many other institutions that hold audiovisual collections joined the initial 35, not only from the city of Salvador but also from 8 other Brazilian states and the federal capital, increasing the total number of institutions involved to 65.<sup>3</sup>

The initial survey collected data to identify institutions' collection themes, media or file formats, base materials of items, queries control, and services and equipment offered to the users. Later survey data gave us insight into institutional contexts such as digitization priorities; technical knowledge, teams and equipment available; existing rules, best practices, policies and disaster plans; technical reports,

Similar versions of this paper have been previously published in Portuguese (Silva *et al.*, 2015a) and Spanish (Silva *et al.*, 2015b).

- 1 See Silva *et al.*, 2007. In that opportunity we had the support from Universidade Federal da Bahia (UFBA), the Fundação de Amparo à Pesquisa do Estado da Bahia (FAPESB) and the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) of the Ministério da Ciência, Tecnologia, Inovações e Comunicações (MCTI). On CRIDI, see [www.cridi.ici.ufba.br](http://www.cridi.ici.ufba.br).
- 2 All the collected data are available in Portuguese at [www.cridi.ici.ufba.br/dados-da-pesquisa-2005-2007/Dados\\_Institucionais\\_2005\\_2007.pdf](http://www.cridi.ici.ufba.br/dados-da-pesquisa-2005-2007/Dados_Institucionais_2005_2007.pdf). See also [www.cridi.ici.ufba.br/dados-da-pesquisa-2005-2007/Dados\\_Individuais\\_2005\\_2007.pdf](http://www.cridi.ici.ufba.br/dados-da-pesquisa-2005-2007/Dados_Individuais_2005_2007.pdf).
- 3 For links to the websites of institutions that have been collaborating with this research, see [www.cridi.ici.ufba.br/institucional/instituicoes-colaboradoras.html](http://www.cridi.ici.ufba.br/institucional/instituicoes-colaboradoras.html). Beyond Bahia, we collected data on institutions in the federal capital (Brasília) and the states of Espírito Santo, Goiás, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul and São Paulo. The project continues with the main financial support from CNPq-MCTI. We are also receiving support from UFBA and FAPESB to provide undergraduate students with Scientific Initiation Scholarships.

financial and human resources from previous digitization experiences and much more. Collection of these data offered a picture of what is being done in the digitization field, how and why it is being done and what we can learn from these practices.

All the institutions and organizations that have been collaborating with the research development benefit from it. Besides obtaining increased visibility through the CRIDI website, they have access to the collected data. Through this collaborative effort, institutions are able to share, compare and correlate data across collections. In addition, institutions can develop common standards for metadata description, long-term access decisions and preservation plans. The main product of our research will be the Legatum repository (see below), which will safeguard audiovisual heritage. The process of digitization is not a stagnant one, for digitized files are in need of continuous upgrading. We are constantly searching for improvements in user access and addressing user needs. We see this work as a way of contributing to public institutions within society that uses technology and enables the recognition of the social memory of history and the society we live in. Our research revolves around a key question: how do we convert audiovisual material from many different traditional (analogue) formats so that digital remote access and preservation of their digital versions are appropriate?

### **Methodological approach**

This research is aimed at enabling a smooth transition from analogue to digital material by providing an environment in which to do so: a platform. In addition to a platform, institutions wishing to digitize need a trained team with knowledge of proper procedures, proper equipment and software, knowledge of user needs and knowledge of institutional policy frameworks. During the digitization process, original analogue materials must be retained. This material holds valuable information that risks being lost in digitization.

When thinking about the issues related to our research problem, investigating cases of conversion from analogue to digital, we believe that nothing should be described as fixed objects but instead as moving ones – in constant transformation, in development. The digital challenges and alternatives for safeguarding and disseminating audiovisual heritage will meet a new way that suppresses and contains, at the same time, the primitive properties (Marconi and Lakatos, 2003, p. 102). What are the changes that arise from the digitization of documents? Going beyond the technical aspects, we have to ask about the historical, social, political, and technical meanings of the research (Frigoto, 1989, p. 83). Analogue materials inherently carry these meanings.

Analogue data can give insight into the social context under which they were created, the original social values associated with them, and the authentic user experience of the original material. These valuable aspects of analogue material risk being lost in digital copies. While digitization is necessary for expanding user reach and safeguarding records for the future, the analogue material holds extremely valuable information that must not be lost.

There is a need to move ahead in order to study the factors that interfere in the decisions about what and how to digitize. The results should not be restricted to a particular situation under study; they must be generalized. It is necessary to offer and to produce new knowledge about a phenomenon (digital conversion and access) or about an area (digital preservation), organizing this new knowledge in relation to what is already known about the area or phenomenon.

For the development of our multidisciplinary research we have been adopting historical, statistical, quantitative, qualitative, infographic and, especially, comparative methods. Along with these methods, we have been using specific techniques of data collecting. In action research, the organization's members themselves, who wish to enact procedural or organizational changes, will be participating in the definition and establishment of the new models they themselves demand, and these new models will eventually transform the procedures of the group as a whole.

Throughout our digitization process there is the need to know the possible contexts of production and reception of the converted products: the documents in their digital version. We need to know the current, desired context of moving image digitization and the current, desired context of a user's demands and needs. However, information about the original material is also necessary for successful digitization. From the original files, we can extract valuable information such as understanding how material was made, what the user experience of the original material was, what the cultural context was and what the associated value was. In order to gain this knowledge, we adopt indirect documentation techniques (for bibliographic searches), direct documentation techniques (through intensive observation, such as technical visits to see collections, contacting institution members, examining facts and phenomena) and extensive observation (printed questionnaires, online forms, tests). By obtaining a solid understanding of the original analogue materials, we gain a clearer understanding of their history, which is necessary when it comes to marketing the materials for future use.

Our perspective does not see the subject as an extension of the object; it sees the subject as action, as social and historical: although determined by economic, political and cultural contexts, the subject is the creator of the social reality and the transformer of these contexts (Gamboa, 1989, p. 103). Based on the conception of materialist dialectic, our fundamental epistemological category is the 'totality': the universal predominance of the whole over the parts, the universal anthropological determination of the sense of history (Fleischer, 1978). Our theoretical-methodological perspective comes from the Marxian theory of consciousness (Marx and Engels, 1986). Understanding information as a process oriented to the expansion of consciousness is a way to keep questioning ourselves on matters of social relations, and on intersubjective relations, replacing the issues of power, history and culture, as suggested by Chauí (1999). By granting wider access to audiovisual records through digitization, we share more information with a larger number of people and thus help democratize society. Audiovisual records help transform and educate societies, and by digitizing these records, we can reach a wider audience and promote the values (whether social, political, cultural, historical) and meaning of these audiovisual materials.

Menezes (1998) asks: What is the nature of the material object as a document? In what lies its documental capacity? How can it be the base (the support) for the information? Or what kind of intrinsic information might the artefacts contain, especially if we are talking about historical content? He analyses the permanent transformation by which even the objects are subjects, in their morphologies, in their functions, in their meanings, isolated, switched or in a cumulative manner. Material objects, he maintains, have a history, a biography. The intention of studying them is not to reset a material scene but to understand the artefacts in terms of social interaction. The biography of objects, as he proposes, introduces a new problem: the biography of the people within the objects (pp. 1, 3, 5, 6).

Referring to the 'sociological category of historical objects' – whose commitments are essentially with the present time, as they are produced or reproduced as a category of object in the present, and it is to the needs of the present that they respond – and to the 'cognitive category of historical document', Menezes (1998, p. 94) offers elements to justify and organize the dialectical thinking that is the theoretical basis of our research.

### Progress and preliminary findings

Following the first SOIMA course, in Rio de Janeiro in 2007, we published an article addressing audiovisual preservation training in Brazil (Hollós and Silva, 2008). We also worked with the Information Science team at the Instituto de Ciência

da Informação da Universidade Federal da Bahia (ICI-UFBA) to develop a curriculum that included audiovisual information which previously did not exist. Since the SOIMA course, we have gathered data from 62 public institutions, organizations and sectors and also from three private organizations. The collected data started being analysed in August 2015.<sup>4</sup>

Besides data collection, one of the project's main goals is to create an online archive to be used to access digital versions of audiovisual items from public collections. Through the Iniciativa Legatum we are working to create an open-repository, multilingual, collaborative platform based on AtoM (Access to Memory) software, called Repositório Legatum – Sonus et Imago (or simply Legatum).<sup>5</sup> It is compatible with international archive standards, recognized by the International Council on Archives.

Legatum will gather and disseminate referred items from countries that have Portuguese, Spanish, Catalan, Galician, Romanian, French or Italian as an official language. The goal is to identify public institutions which hold audiovisual collections and to describe their collections. This would allow us to elaborate a differentiated view of this heritage, emphasizing newly obtained knowledge. Legatum is an empirical experiment, a useful product to the researcher interested in accessing digital audiovisual items and their correlated materials, but it is also an initiative that gives us an opportunity to think about information, culture and representation.

### Actions in development

Initial analysis of the project survey data reveals substantial needs in Brazilian audiovisual archives. In some cases employees are not properly prepared to characterize the collections they work with (Fig. 1). In some institutions they do not even know whether there is a specific format or carrier in the collection, because they do not know if it exists or, worse, they do not know how to identify it. This is because the institutions do not offer the conditions to the employees to attend workshops or specialized courses (Fig. 2). Some institutions do not have even a disaster plan for their collections (Fig. 3). Others keep digital masters only on their computer hard drives (Fig. 4).

The initial reason for limiting Legatum to the previously mentioned seven languages was to make it comprehensive but manageable. We originally thought about an exclusive Lusophone space, but in the end we believed that there would not be problems in extending it to some other

<sup>4</sup> See CRIDI (2015).

<sup>5</sup> See [www.legatum.ufba.br/web/](http://www.legatum.ufba.br/web/) and [www.legatum-si.net](http://www.legatum-si.net).



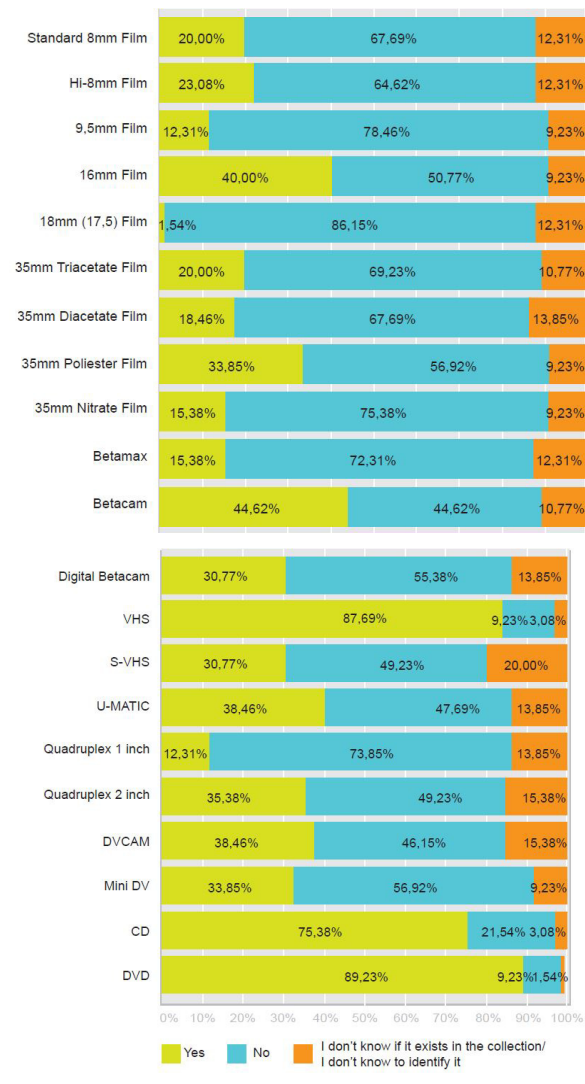


FIGURE 1. Initial results of survey data on formats and carriers in Brazilian audiovisual collections.

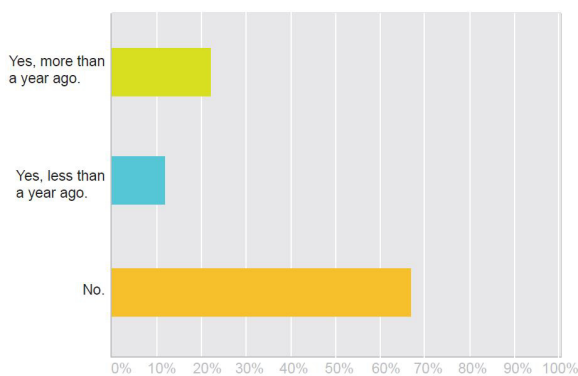


FIGURE 2. Responses to the survey question: Has any employee participated in courses on the treatment of moving image collections?

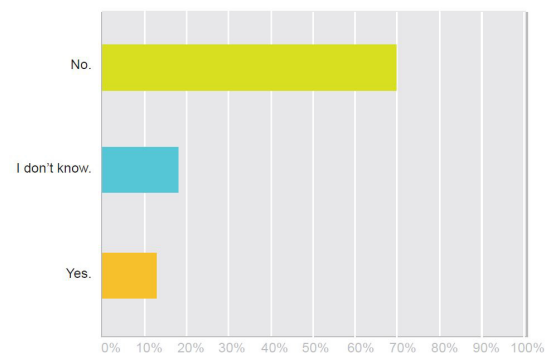
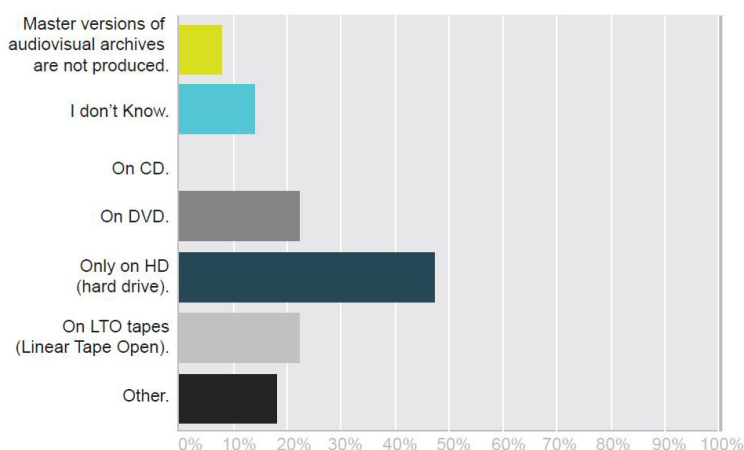


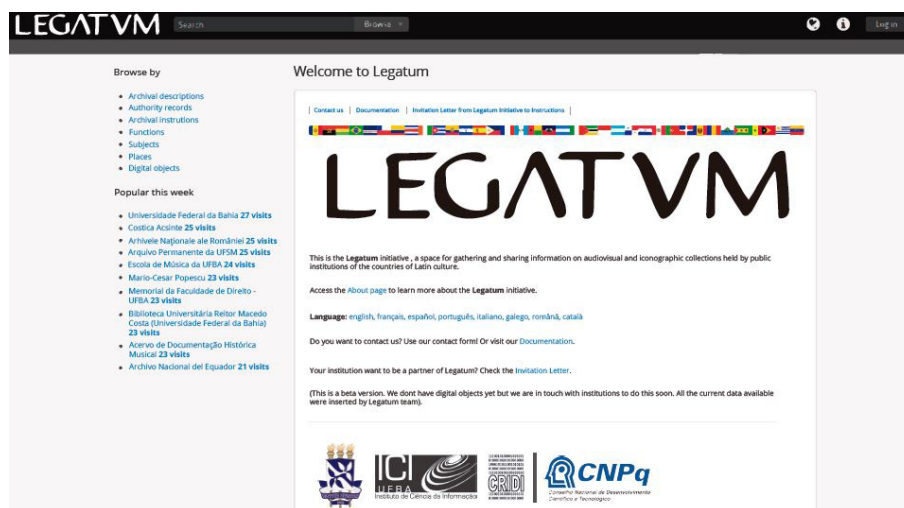
FIGURE 3. Responses to the survey question: Is there any institutional disaster plan for analogue audiovisual documentation?

Romance languages. We find it interesting to demonstrate that there is something in common among countries which have Romance languages, even on different continents, because a language can reveal a lot about a culture. This initial decision may be a rich base on which

to develop future studies – not only those with an archival aspect but also ones that consider other social, economic, historical or linguistic influences. We could use, from the beginning, the English language to insert data, but then we would have just a repository in which entering data would



**FIGURE 4.** Responses to the survey question: How are digital masters (the higher resolution version of each item produced) stored?



**FIGURE 5.** Legatum repository interface. From [www.legatum-si.net](http://www.legatum-si.net)

be constricted to one sole idiom. It could be a good idea, no doubt, to offer universal facilitated access, but there are other repositories that have this goal. The European Union, for instance, has the Europeana, and the United States of America has something similar with the OCLC/WorldCat project. We assume that some small archival institutions, with fewer resources, will insert data more easily into Legatum if they can do it using their native language. The option for the Latin culture comes from the feeling that reaching a larger portion of the universe would be easier than if we had chosen any other country. But if Legatum is only possible using a single language for description, we can do it (Fig. 5).

## Conclusions

Legatum represents a low-cost/low-risk technological solution, although it requires hard work in order to convince the institutions to join in its development efforts. Soon Legatum will incorporate Archivematica, an open-source digital preservation system recommended by National

Archives of Brazil.<sup>6</sup> We will also have the fundamental support of the UFBA Supervision of Information Technology (STI). Another essential partnership is the Brazilian Network of Digital Preservation Services (also known as the Cariniana Network), from the Brazilian Institute of Information in Science and Technology (IBICT).<sup>7</sup>

Since this type of inter-institutional collaboration does not have a long history in Brazil, one of our greatest challenges has been convincing institutions to be a part of this project and adhere to our proposals. Perhaps this is one of the most interesting points for the originality of our research: it is a new model of an inter-institutional relationship, bringing benefits and gathering efforts through a Federal University research group.

<sup>6</sup> See [www.archivematica.org/en/](http://www.archivematica.org/en/).

<sup>7</sup> See <http://cariniana.ibict.br/>.

We remain open to broader collaborations to accomplish something of international reach, without idiomatic restriction, to include all languages, creating another general repository. The Legatum initiative can have more than one repository; it can have a thesaurus and other tools. With inter-institutional collaboration, we believe Legatum will become a testament to how digitization allows for the safeguarding of sound and image collections and enables easier access by a larger number of users.

We established a set of other goals in our research project, such as training technical and academic teams, developing online courses and even creating a professional master degree on safeguarding moving images. If we can dream about it, we will do it, but it takes cooperation and support from entities such as ICCROM to help make those dreams come true.

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## Section Four

Training and Outreach: Current Needs  
and Future Possibilities



# 16. 'This is what you want, this is what you get'

## Matching real training needs to delivery

*Mick Newnham*

**There are limited training options for audiovisual archivists, with most formal courses centred in Europe or the United States of America, but high costs can prevent people working in audiovisual archives from accessing these opportunities. However, there are significant collections of audiovisual heritage spread across the globe, not the least in Southeast Asia and the Pacific region, that are at risk of loss due to a number of factors, including staff competencies. In 1996 audiovisual archivists formed the Southeast Asia–Pacific Audiovisual Archive Association (SEAPAVAA) to advocate on their behalf and to provide networking and other assistance to develop and sustain their respective collections. A key part of SEAPAVAA's work has been to provide training. Over the past 20 years the association has developed and delivered educational programmes on all aspects of audiovisual archiving. Over this time its trainers have developed an analytical approach to prioritizing needs and optimizing delivery methods in a region that has many distinct languages and cultures and where one size does not fit all. This paper looks at how SEAPAVAA went about discovering those needs and developing training priorities around them.**

Audiovisual archive training has traditionally been driven from a syllabus point of view. UNESCO's *Curriculum development for the training of personnel in moving image and recorded sound archives* (Harrison, 1990) proposed a syllabus that built on a basis of formal education in related fields such as librarianship or chemistry. The proposal was an outcome of a recommendation "For the Safeguarding and Preservation of Moving Images" passed at a UNESCO General Conference in 1980 that concluded:

It soon became evident, that although in-house training, summer schools, seminars and symposia can impart knowledge to students and also the know-how and skills needed for certain jobs, they will never be a substitute for professional education based on scientific methods (Harrison, 1990).

The UNESCO document remains a valuable model for formal education. However, the size of the global market for audiovisual archive education is small. Consequently, in the past 25 years very few tertiary-level courses have become available. Additionally some courses that were developed have folded due to low student numbers and the high cost of running such specialized programmes. Therefore short training exercises provide the overwhelming majority of education for audiovisual archivists.

Using the proposed broad syllabus offered by the UNESCO document, the development and delivery of training may not necessarily focus sufficiently on the real need of a particular archive or even a region. To determine the most cost-effective use of limited resources, the Southeast Asia–Pacific Audiovisual Archive Association (SEAPAVAA) has adopted a needs-analysis approach to identifying training needs using surveys of members and a case studies approach to provide the most crucial areas of training and to effectively deliver practical skills that cross the language differences that exist in the region.

### **Regional collaboration**

The concept of a regional association germinated during the Association of Southeast Asian Nations (ASEAN) Audio/Video and Film Retrieval, Restoration and Archiving Conference Workshop held in Manila in 1993. Participants drew up a

framework for a comprehensive programme for film and video archiving, including a recommendation to form an ASEAN confederation of film archivists to promote the development of film and video archiving in the region. SEAPAVAA was inaugurated in 1996 with an expanded scope to include the Pacific as well.

Since 1996 one of SEAPAVAA's key strengths has been training. Training projects from half-day to four-week residential intensive courses have covered topics relating to all aspects of audiovisual collections and archives management. The first major SEAPAVAA training initiative was in 1997, with a month-long intensive course held at the Philippines Information Agency (PIA) in Manila. Students were drawn from countries across the region to gain technical knowledge and skills from international trainers from Australia, Germany and the United States of America. The course was structured in a traditional, formal way, with lectures and directed practical sessions covering the basics of film, video and audio materials as physical objects, handling practices, modes of deterioration, best practice storage, duplication and developing long-term management strategies. Over the four weeks students were constantly engaged, and occasionally challenged, by the sheer amount of information provided. Participants went on to form the nucleus of the 'next wave' of audiovisual archivists, with many eventually taking up senior roles in major audiovisual archives in the region.

### **SEAPAVAA's approach to training development and delivery**

From the earliest days of SEAPAVAA's training efforts it was recognized that the region had many common problems that were not reflected in the practices of western audiovisual archives. The extreme climate was at the core of the problem, closely followed by lack of access to current information and technology. The access challenge was not only an issue of financial resources but also the lack of local suppliers and service providers to support the purchase and maintenance of equipment that suited audiovisual archives' needs. To explore these issues, SEAPAVAA encouraged organizations to share their approaches to these problems. These experiences were fed into the list of topics for later training projects.

Despite including the specific issues of the region, the structure of courses remained based in the traditional methodology with a syllabus designed to cover the topics course designers felt were important or necessary based on accepted international practice. This approach was an 'easy' process because it was based on widely accepted instructional design practices used by audiovisual archives at that time. However, it became clear that while the essential information was being transmitted, the training

was not as effective as was first thought. Responses to formal course evaluations could be overly polite, and therefore not reflective of the instruction; culturally it was not considered good manners to be critical of teachers. Once the cultural issue had been identified, the analysis of the problem was not complex. We were attempting to use a style that was not being translated successfully into the language or general culture of the region. We needed an approach that could overcome at least the language issues.

Slowly our methodology changed to be more responsive to the needs of the members. We shifted from a core set of training topics and curricula to a more tailored approach tackling one issue at a time. The training incorporated related knowledge and skills that would be required to solve that particular issue. In this way each training project became focussed on problem solving rather than downloading information. This shift in thinking eventually led us to the case study method.

Case study is well defined within education circles. Two definitions SEAPAVAA has used are: "complex examples which give an insight into the context of a problem as well as illustrating the main point" (Fry, Ketteridge and Marshall, 1999, p. 408) and "student centred activities based on topics that demonstrate theoretical concepts in an applied setting" (Davis and Wilcock, 2003). Case studies have been used for many years in higher education. The case study models we studied were based on adult learning, or andragogical, principles

An andragogical approach is based upon the principles defined by Malcolm Knowles (1975). Knowles postulated that children and adults differ in the way that they best respond to learning. Adults

- need to know why they need to learn something,
- need to learn experientially,
- approach learning as problem solving and
- learn best when the topic is of immediate value.

SEAPAVAA's approach to developing case studies examined the lessons of higher education and was also strongly influenced by the science arm of the Nuffield project in the United Kingdom of Great Britain and Northern Ireland in the 1960s, which focused on secondary education. The aim of the Nuffield project was described as:

the need to make science intellectually exciting and to ensure that pupils understand the nature of science. There was to be stress on encouraging attitudes of critical inquiry and on developing ability to weigh



evidence, assess probabilities and become familiar with the main principles and methods of science (Meyer, 1970, p. 283).

The Nuffield project was aimed at students aged 11–16, and hence would be more based on pedagogical principles rather than andragogy. However, the basic concept of encouraging investigation and weighing of evidence to enable effective problem solving was still at the core. Many of the students at SEAPAVAA training have only had experience of secondary-level education before commencing their careers, and the training they had undergone had been the traditional ‘chalk and talk’ style. The Nuffield approach was seen as being able to provide students with a more familiar entry to the way we wished to provide training than would be espoused by a purely andragogical approach.

There were also time constraints. To be most effective, self-directed learning requires time to explore the subject, whereas due to financial constraints our training time frames are measured in days. An approach combining elements of pedagogy and andragogy was established as providing a good compromise.

In our work we developed case studies that would be familiar for people working in the region. We used environmental conditions, infrastructure and resource levels that we had observed over the years of working with archives in Southeast Asia and the Pacific. Although the situations used for the case studies may have been familiar, the details were modified so no single event or archive was clearly identifiable. The culture of the region is such that identifying a particular organization or event would in all probability lead to embarrassment of the people involved, even though in general conversation such incidents are discussed.

One case study scenario for a disaster preparedness training workshop involves a fictional national television broadcaster, NCT1. The story follows NCT1 from its establishment in 1978 through the development of its technology and production capacity. These details indicate the station’s capabilities and collection profile. Information is also given on its current infrastructure, as well as its location, topography and climate statistics. The first part of the workshop requires students, in groups, to identify the risks facing the collection and develop a disaster management plan. The second part unleashes a major disaster to test their plans.

Serendipitously, the case study approach in groups also partly solved one of the issues we had faced: providing effective training in what was at best a second language for many archivists in the region. English is the official language of SEAPAVAA and the language most common to trainers and

students of audiovisual archiving across the region, but actual proficiency varies. Our experiences of teaching through interpreters had been patchy. The problem was not so much the ability of translators to translate from English as their ability to understand the technical concepts we were trying to introduce and explain. Over the years we have worked with excellent translators who had a background working with museums or other related fields, and on other occasions the translators had no background in either a cultural or technical field found themselves lost and unable to provide the necessary clarity. Working in groups in their first language, students were able to more thoroughly explore the case study scenarios and work collaboratively to develop solutions to the questions posed. Each member of the group is more able to contribute to the development of the solution regardless of his or her proficiency in English.

The case study approach was first tested in 2008 as part of a three-day workshop at the University of the Philippines in the main campus at Diliman, Quezon City. The workshop was organized by the Society of Filipino Archivists, with students drawn from a variety of backgrounds, including trained archivists, librarians and broadcasters. The workshop was sufficiently detailed and of sufficient duration to give the approach a good trial. Feedback on the case study structure of the workshop was very positive. The ability of this method to test the use of language was not so relevant since English is widely spoken in the Philippines. The encouraging feedback was sufficiently positive to warrant a second trial using the case study method at an ASEAN-sponsored workshop in Singapore. At the ASEAN workshop students were given a case study scenario and challenged to use the information provided over the previous days to develop a strategic plan for the case study collection. The final presentation from each group provided a clear indication that the students were able to apply the information provided and use it to solve complex problems. The final feedback from each workshop was that students had found that the method allowed them to comprehend the information’s relevance. This helped them understand and contextualize the knowledge. Overall, the trials were very positive, and from that point case study became an integral part of SEAPAVAA’s training strategy.

## Needs analysis

At this stage the training was still based on a broad syllabus, albeit developed on our assessment of levels of skills and knowledge we had observed. The next step was to determine the real needs of archives and prioritize the topics offered for training. To obtain this information we developed a skills gap / training-needs-analysis survey tool. While surveys have notoriously poor response rates, this was the only option available to us.



We were aware that archiving organizations are multifaceted and carry out tasks on a huge range of collections objects, and therefore our training needed to cover a wide variety of topics. Additionally there was a different focus applied to a task depending on the level of the person within the organization. The levels we needed to consider were broadly described as technical (desk-level), supervision and senior managerial levels. Additionally there are practical, theoretical and strategic skills within these employment subsets. The final survey was therefore split into four sections:

1. Background information on the nature of the organization seeking information on the legislative basis, staff structure and collections profile.
2. Professional (librarianship) and technical staff, focusing on theory and practical/hands-on skills.
3. Supervisory and middle-level management, with less focus on practical skills and introducing project planning and topics of a more strategic nature.
4. Senior management, directors and CEOs – strongly based on strategic topics and advocacy skills.

Section 1 was broadly based in order to capture a regional profile of collecting organizations. This provided current data on the sort of organizations that were responding in respect to size, mandate and collection profile. This section was intended to be used for normalizing responses, and also as a benchmark to test responses further in the survey for consistency.

Sections 2–4 contained set questions outlining specific topics from a broad syllabus of topics that were either based on the 1990 UNESCO document (Harrison, 1990) or experience gained from anecdotal evidence or previous training exercises. Each of these sections contained 20–30 tick-box questions with the option for free text comments as well.

To simplify the analysis of the responses there was offered a simple choice based on the organization's perceived needs, with three possible responses to each question.

- *Urgent need.* This indicated a key skill required by the organization to operate, and the skills required do not exist.
- *Some need.* The skill or knowledge is required but not crucial to overall operations, or staff already have some skills, and training is required to refine the existing staff skills.
- *No need.* The skill is not required for operations, or staff are already well trained and competent.

A second response for each question sought the depth of training required:

- *Detailed.* Respondents desired an intensive workshop with interactive exercises and/or hands-on practice.

- *Basic.* A component of a broader workshop would suffice. It may involve an interactive exercise, some hands-on practice as well as a lecture or a knowledge resource (e.g. web-based information).

Even using this simplified response method resulted in a large questionnaire, with 11 pages in total.

The survey was distributed to all SEAPAVAA members in 2013 via e-mail with a covering explanatory letter. We also collaborated with the Pacific Area Regional Branch of the International Council on Archives (PARBICA) for the distribution and return of surveys in the Pacific region. PARBICA has a larger membership, and this enabled more returns than SEAPAVAA members alone.

The immediate return rate of 50 percent was very satisfactory. The results were collated and analysed to prioritize the most urgent topics across each of the three employment sectors.

The highest priority topic across all the staff profiles was disaster planning and recovery. This result was not altogether unexpected; it was a frequent topic of conversation at SEAPAVAA conferences. The other sought-after topics were standards for digitization, metadata and project planning.

Accordingly, a two-day disaster planning and recovery workshop was developed. The timetable included a mix of working with case studies, hands-on practical sessions and planning exercises to hone skills. The workshop was held immediately prior to SEAPAVAA's annual conference in Vientiane, Lao People's Democratic Republic, in 2014. The timing and location was intended to reduce costs to members in terms of travel and time away from work. The workshop was fully subscribed with Lao and foreign students, and the feedback was overwhelmingly positive.

To ensure that training remains targeted to the needs of the region, the survey will be repeated at regular intervals.

### Broadening the scope

The survey questionnaire has proven to be a valuable tool in planning. So much so that in 2015 the National Film and Sound Archive of Australia (NFSA), a SEAPAVAA member, used the tool, with slight revisions, to accommodate additional questions on indigenous cultural intellectual property management, as part of the UNESCO-sponsored Pacific Region Preservation Needs Analysis. This project used two survey tools, the training needs survey and a risk analysis survey, with the risk analysis being used to identify specific drivers of preservation needs.

These two surveys dovetailed well to give a greater detail to the syllabus of the training identified for a specific location/organization. The Pacific survey, although covering part of the region surveyed by SEAPAVAA in 2013, was able to target more organizations than just SEAPAVAA and PARBICA members. Perhaps not surprisingly, given both the physical and economic environment, the results of this Pacific survey closely matched those of the broader SEAPAVAA regional survey.

Assessing the benefits of training that has been identified by needs analysis and delivered using a case study approach is more easily determined and reported. There is clear evidence of the need from the survey, and this can be matched to the training syllabus. The completeness and understanding shown in the results of the practical exercises demonstrate quite clearly whether the training goals have been achieved and offer a metric for reporting.

Observation of the training provides another way to evaluate engagement and effectiveness. Students remain focussed for the full duration of the training, especially in the traditionally difficult period after lunch break! At one workshop held in Bangkok not all the working groups had sufficient opportunity to give a full presentation of their results. The following day the delegated presenter for one of the groups sought me out and insisted on running through their presentation and getting my feedback so he could report back to his group. The motivation of the group and pride in their work had demanded this follow-up.

## Conclusions

By accurately determining the real needs for training and using a training method that responds to those needs, training projects can be more accurately formed and have a greater benefit. By matching the training to a specific need the effectiveness of the training project in terms of cost benefit and ongoing impact can be more easily assessed and reported. In a region where one size does not fit all,

SEAPAVAA training programmes are offering the knowledge and training that its member organizations request and require.

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# 17. Adapting university education in a digital and globally networked world

*Mona Jimenez*

**Since 2003, the Moving Image Archiving and Preservation Program (MIAP) at New York University has graduated nearly 90 new moving image preservation professionals. Practices for moving image archiving and preservation have changed dramatically since the programme began. In addition, ‘born-digital’ productions have become the norm. Thus, MIAP has needed to continually adapt to the increasingly broad nature of heritage collections, and to new approaches and practices aimed at maintaining perpetual access to moving image works. In addition, MIAP has encouraged these professionals to understand their work in a global context and to approach international collaborations in a spirit of exchange. Changes in MIAP have been informed by a set of principles present from the beginning of the programme, by an early and continued emphasis on a full spectrum of media types and by projects and initiatives undertaken by faculty, staff, students and alumni.**

The Moving Image Archiving and Preservation Program (MIAP) at New York University was initiated in 2002 under the leadership of Professor Antonia Lant in the Department of Cinema Studies, a part of the Tisch School of the Arts. Cinema and television scholars were acutely aware of the need for perpetual access to moving images that serve as primary research materials and critical teaching resources for their disciplines. These scholars also were responding to national studies commissioned by the Library of Congress that had called for the creation of educational programmes to address audiovisual collections (Melville and Simmons, 1993; Murphy, 1997). The reports noted that archival, library and conservation training programmes did not cover the care and management of these collections, which were severely endangered due to obsolescence, deterioration and neglect.

In 2002, the department hired MIAP’s first administrative coordinator, Alicia Kubes, followed by Professor Howard Besser as director. I joined the team in 2003, and in September 2003, the first class of graduate students began their two-year programme. As of May 2016, MIAP had graduated nearly 90 new moving image professionals who work in libraries, archives, museums, historical societies, corporate archives, television and radio, film/media distribution, audiovisual consulting firms and with the personal archives of creators and collectors. In addition to their contributions within their own organizations and regions, many have become leaders in audiovisual and digital preservation internationally.

MIAP emphasizes the study of history and theory coupled with hands-on practice accomplished through class projects and internships. Three internships are required of each student. Students have made a significant impact on a wide range of audiovisual collections through more than 200 internships and numerous post-graduate fellowships. In addition to the United States of America, students have been placed in internships in Argentina, Brazil, Czechia, Ghana, Greece, Israel, the Republic of Korea, the Philippines and Rwanda.

International students have come to MIAP from Argentina, Canada, Chile, China, Colombia, Italy, the Republic of Korea, the Philippines, Thailand and Uruguay. MIAP faculty and staff have been committed to collaborations globally through leadership in educational efforts such as ICCROM's SOIMA, through working partnerships as part of the Audiovisual Preservation Exchange (APEX) and through preservation projects undertaken and promoted as part of the Orphan Film Symposium, among others.<sup>1</sup> These efforts have been essential to infusing new content in MIAP and Cinema Studies courses that better reflects the conditions, practices and resources of archives, to exposing students to a broader range of preserved works and to encouraging meaningful collegial relationships across borders.

On the digital side, MIAP's adaptations have been many and continuous. When the programme started in 2003, the approaches to audiovisual archiving and preservation were substantially different, and few tools and resources were available to support digitization and digital preservation. Film scanning was in a prototype phase, and common wisdom still called for tape-to-tape preservation for videotape. Digitization cards were expensive and considered inferior and largely unreliable. At the time, there was much forecasting, with both excitement and worry, about the turn to tapeless digital production and the inevitability of file-based workflows for preservation. Impassioned debates were beginning in earnest about the choices of preservation target formats for magnetic media and film.

MIAP faculty and students engaged in these debates in the classroom and through research projects, and the curriculum started to shift to make space for the new skills and knowledge that we were all acquiring. MIAP has been nothing if not flexible; curriculum revisions have been many. Not a year goes by without heartfelt discussions among MIAP faculty and staff about how to be inclusive yet realistic about the addition of new content (and what can be sacrificed) given the fluid nature of the field. The spectrum of collections from seminal nineteenth-century films to ubiquitous twenty-first-century digital forms such as cellphone video and websites has meant that whole new skill areas have had to be added to our curriculum.<sup>2</sup> Recently we added a brand new class to the first semester – Digital Literacy for Moving Image Archiving and Preservation – alongside long-standing core classes such as Introduction to

Moving Image Archiving and Preservation, or Moving Images and Sound: Basic Issues and Training. We felt that a basic introduction to the structure of digital files and how they are created, stored and accessed was foundational to most, if not all, the coursework to come.

In preparation for the SOIMA 2015 conference in Brussels, Aparna Tandon challenged me to articulate how MIAP has adapted to our field's increasing reliance upon digital tools and methods and our role as a member of the global field of moving image preservation. The following is my very personal take on what has driven our changes (albeit more concretely on the digital issues). I have attempted to articulate the 'why' (what core values or focal points in MIAP have enabled the changes) and the 'how' (how have we taken advantage of these conditions and adapted).

### **Born-digital materials and methods**

MIAP was never a programme stressing analogue formats that 'woke up' to digital; rather there was significant attention to digital issues from the very first year. Professor Howard Besser, a Library of Congress Digital Pioneer and MIAP's director from 2003 to 2014, had a vision for MIAP that encompassed all forms of moving images and that anticipated both the need for management of files created through digitization and those 'born' as digital objects. He made it clear to our colleagues in Cinema Studies that we needed not only to address the care of older, more traditional, film and television materials but also to be attentive to new production processes and evolving practices predicated by new digital and networked environments. In addition, Besser and I both had a background in the creation and conservation of experimental media and media art, and we had worked extensively with still and moving images existing as files. Thus from the outset MIAP was promoted as a programme committed to the study of film, video *and* digital media. For example, Besser made sure that the very first outlines for the two-year curriculum included the course Digital Preservation as well as Handling Complex Media, which would address complex works like interactive multimedia, games and websites.

### **A solid grounding in real world collections**

As noted above, MIAP has always balanced theories of preservation and access with hands-on work in real world collections through project-based learning and internships. In addition, we have always attended both to collections held in 'official' archives and to those that are held by creators and collectors, as well as accidental archives. Every collection and/or collector poses intriguing questions that force students to contrast best practices and ideal scenarios with less-than-ideal settings and a variety of

<sup>1</sup> APEX promotes international exchange on preservation practices through shared work on collections; see <https://apexnyu.wordpress.com/>. The Orphan Film Symposium is an international forum for archivists, scholars, curators, preservationists, technical experts, artists and media-makers devoted to making neglected film and media accessible; see [www.nyu.edu/orphanfilm/](http://www.nyu.edu/orphanfilm/).

<sup>2</sup> The MIAP curriculum can be found at [www.nyu.edu/tisch/preservation/curriculum.html](http://www.nyu.edu/tisch/preservation/curriculum.html).

needs, conditions and belief systems. There are fewer situations more instructive, for example, than trying to apply concepts of Open Archival Information Systems (OAIS) to emerging repositories where resources are scarce or non-existent, or beginning an inventory process for media where there is no metadata system in place. Because students take three internships, their experience with a resource-challenged organization can be balanced with an internship in a major institution where a student is exposed to highly developed metadata schemes or preservation processes.

Having students working in a variety of internships and projects with a range of institutions also means that MIAP must stay current; the education of our students must match the new tools and methods being adopted by memory organizations. For example, understanding that web archiving is becoming a standard part of acquisitions for many archives, we added sessions on web archiving to Digital Preservation, giving students hands-on practice with the tool Archive-It. We realized that students are increasingly confronted with born-digital materials while doing collection surveys in the class Collection Management, which was one of the precipitating factors for adding Digital Literacy. We have revamped Metadata for Moving Images numerous times, doubling the contact hours to ensure students have exposure to multi-institutional tools such as PREMIS or Archive Space, while at the same time preparing them to intelligently create simple metadata templates for smaller, community-based organizations.

### Care and preservation of videotape

MIAP is unique in the amount of time and depth of practice that is devoted to video and television materials. In my opinion, the fact that we have been committed to video has strengthened the programme's ability to grow in the digital realm. The care and management of videotapes and video files is threaded throughout the curriculum, but the bulk of the training is provided in Video Preservation I and Video Preservation II. In these dedicated classes, students carry out digitization using in-house systems and also manage preservation projects with outside vendors. The students practice a full cycle of care, starting by opening a box of videotapes for evaluation and ending with a set of preservation master files and access copies stored on a network-attached storage (NAS) device. The cycle includes inspection, description (metadata), analysis of analogue characteristics, creation of a preservation plan, any needed treatments (cleaning, repair), digitization, documentation actions (more metadata), quality control, creation of viewing copies, creation of checksums, 'bagging' of all files into one package, uploading to storage, an additional integrity check and creation of a report.

Thus, by creating substantial space for video in the curriculum, the students get needed practice with a range of digital software and processes: automated tools for video capture, tools for the acquisition of file technical metadata and transcoding software, to name a few. They gain a direct understanding of issues such as file structures, storage planning, file integrity and the troubleshooting of digital errors. Each year, instructors add the latest tools for digitization, transcoding and quality assurance. While digital skills and methods are introduced in Digital Preservation and increasingly incorporated into the Film Preservation course, the video curriculum has been the primary way for students to gain solid skills with the software and systems that are also used with other media.

### Care and preservation of complex media works

The inclusion of complex media works – those going beyond single channels or screens, works containing multiple digital file types and/or presented as installations or in networks – jump-started our involvement with digital issues. To analyse multimedia for preservation and access, we needed to teach about file structure and sustainability even before digitization or digital repositories had become the norm. Using methods that may now be called 'media archaeology', students dissected and analysed complex works that contained audio, video, still images and text, all in digital form. Thus, from the beginning of the programme students learned practical skills with identification and risk assessment for file-based works and were exposed to various software for creation, display, description and storage.

This aspect of the curriculum involved us immediately in teaching about – and trying to give hands-on practice with – preservation strategies just gaining attention, such as refreshing, migration and emulation. Feeling strongly that the students needed to experience older complex media works in their native environment, I created an Old Media Lab with legacy hardware and software. The lab has grown to include not only stations for analysing obsolete multimedia but also for teaching disk imaging and forensics software.

### Creative research at micro and macro levels

In MIAP, research on digital issues has been undertaken both with external partners and individually by faculty, staff or students. Though in MIAP's beginning years there were more questions than solutions for the care and management of digital works, faculty boldly tackled investigations involving real world digital collections and undertook research projects large and small. Besser led MIAP's involvement in Preserving Digital Public Television, a multi-year research project with US public television entities and NYU's emerging Digital



Library that set out to design systems and infrastructure for a shared repository.<sup>3</sup> By contrast, in the 2007 Digital Preservation class I engaged the students in analysing risks for small-scale digital video productions, resulting in practical workflows aimed at creators and archivists new to digital video materials (Ranger *et al.*, 2007).

In coursework or through theses, students have created new knowledge about digital processes. Some faculty have incorporated these concepts or the papers themselves into the curriculum. For example, Jonah Volk's thesis raised awareness of the types of files generated by early digital cameras and the risk of data loss if one reorganized the arrangement of the files and directories (Volk, 2010). Athena Holbrook's thesis included customization of the content management system Collective Access and revealed important information about the advantages and disadvantages of the software for use by small organizations and individual creators (Holbrook, 2014).

### Modelling meaningful collaborations

A commitment to collaboration has enabled MIAP to grow in ways that we could not have anticipated. The participation by Besser and MIAP alumna Kara Van Malssen in SOIMA, for example, has brought us in contact with new partners across the globe, as evidenced in this collection of papers. Through the Audiovisual Preservation Exchange, MIAP brings together professionals and students internationally to learn from each other through shared work on collections. The inaugural APEX project, APEX Ghana, culminated in a collaboration with SOIMA graduate Judith Opoku-Boateng to establish an audio preservation lab at the Institute of African Studies at the University of Ghana (see Opoku-Boateng's contribution in this volume). Hundreds of priceless audio recordings of Ghanaian music and oral traditions have been saved and made accessible through the Making African Academic Resources Accessible (MAARA) initiative.<sup>4</sup> Annually in Collection Management class, students examine the collections assessment report created as part of the MAARA planning process, and they learn about how the plans for digitization and a digital repository became a reality.

In APEX Santiago, held in 2016, participants installed a new digitization lab at the community television station Señal 3 La Victoria.<sup>5</sup> In the process, the team documented how such a lab can be created at a low cost and on a tight timeline. APEX is an example of a programme where MIAP goals for

a solid curriculum in digital methods and an interest in international networking and collaboration meet.

### Learning from new professionals

No programme, especially one as small as MIAP, can stay current on every single change and innovation that is occurring in our field. MIAP has been strengthened through an openness to listening and learning from our graduates (and our students) and their allies. It is exciting and inspiring to see new professionals crossing disciplines, melding practices and using new social networks so fluidly. They are immensely creative in their approaches to problem-solving digital matters. For example, in 2013 our alumni organized the first AMIA/DLF Hack Day, bringing archivists (from the Association of Moving Image Archivists) and programmers (from the Digital Library Federation) together to work on issues facing audiovisual digital preservation.<sup>6</sup> They tackled practical problems – for example, how can we make a software that can move technical metadata about a file extracted from a tool like Media Info into our collection database? A number of our graduates also teach in our programme, and their voice in curriculum planning is crucial. With regard to international networking, former student organizers of APEX projects have helped shape and improve the annual programme, and they generously serve as mentors for those who come after them.

While the above examples focus more on what has catalysed our adaptations to the digital, over the last 13 years there have been many discussions within MIAP about how to be more authentically global in our reach and participation. These discussions have included how to better attract and support international students (affordability continues to be a serious issue); how MIAP might potentially expand and develop educational offerings in other geographic areas; what constitutes ethical and effective international exchange; and how the curriculum can better reflect what we have personally and collectively gained from our international collaborations.

To answer Aparna's original charge, I have concluded that *adapting to an increasingly digital and globally networked world is not primarily about technology*. Teaching moving image archiving and preservation is not only about being up to date; it is not only about having new knowledge that can be simply passed along by an instructor. There is certainly a place for didactics, but a worthwhile education is more about observation, listening, communication and public engagement; it is about creativity, experimentation, learning

<sup>3</sup> See [www.digitalpreservation.gov/partners/pdpt.html](http://www.digitalpreservation.gov/partners/pdpt.html) and [www.thirteen.org/ptv/digitalarchive/](http://www.thirteen.org/ptv/digitalarchive/).

<sup>4</sup> For more on MAARA, see [www.apexghana.org](http://www.apexghana.org).

<sup>5</sup> See <https://apexsantiago.wordpress.com/>.

<sup>6</sup> See [www.amiaconference.net/announcing-the-first-amiadlf-hack-day/](http://www.amiaconference.net/announcing-the-first-amiadlf-hack-day/).

from others and being generous. I have been fortunate to be part of a team at MIAP and within the Department of Cinema Studies that was forward-thinking and inquisitive; strove to be inclusive of all media types, makers and collectors; and valued exchange, whether at the local, national or international level.

## Conclusion

MIAP has adapted its curriculum many times based on a combination of factors. Programme director Howard Besser articulated a broad vision for MIAP and for the future of digital archives; his vision, along with the experience and interests of the team of faculty and staff, set the stage for a foregrounding of digital issues. The programme's original curriculum included digital components, and the inclusion of video and multimedia along with film as important heritage materials helped shape teaching and research on digital issues. Also, MIAP stressed and encouraged principles such as collaboration, practical work in collections and creative research, and it manifested these principles on local and global levels. A range of partners, including MIAP's own alumni, have been essential to how MIAP has evolved and grown.

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- Mona Jimenez** started transferring obsolete videotapes in the late 1980s and has been an advocate and organizer for the preservation of independent media and media art ever since. She is Associate Arts Professor/Associate Director in New York University's Moving Image Archiving and Preservation Program, where she teaches the preservation of video and digital works. She is co-editor with Sherry Miller Hocking and Kathy High of *The emergence of video processing tools: television becoming unglued*, which documents collaborations between artists and technologists to create custom tools for media art. Since 2009 she has been experimenting with participatory models of media/film archiving locally and through Community Archiving Workshops organized by the Independent Media Committee of the Association of Moving Image Archivists. She is the founder of Audiovisual Preservation Exchange (APEX), a project to network audiovisual archivists, educators and students internationally through shared work on collections.

# 18. Applying the ‘baby nursing model’ in under-resourced audiovisual archives in Africa

## The J. H. Kwabena Nketia Archives at the University of Ghana

*Judith Opoku-Boateng*

**It is a well-known fact that there has been extensive documentation of African traditional arts in postcolonial Africa, and this has contributed to the growing accumulation of field recordings in Africa that could form the nucleus for archives in individual African countries. These include private collections as well as recordings at broadcasting and television stations; government ministries such as Tourism, Culture and Information; museums and academic institutions. Sadly, these precious traditions – which have been expensively captured – are often not properly managed in their host institutions. The caretakers of this heritage mostly sit by as collections deteriorate and sometimes are disposed of due to lack of institutional support. Such practices prevail in most African archives. This paper proposes a new mode of consciousness of the value of audiovisual heritage materials by comparing them with human babies. This new archival**

**management principle, ‘the baby nursing model’, has been adopted and practiced at the University of Ghana and has achieved positive results.**

In publications about audiovisual preservation from organizations such as UNESCO, SOIMA, the International Association of Sound and Audiovisual Archives (IASA), the Association of Moving Image Archivists (AMIA) and others, one routinely encounters statements such as:

Audiovisual documents, such as films, radio and television programs, are our common heritage and contain the primary records of the 20th and 21st centuries. They help to maintain the cultural identity of a people.

Or “Sound and Image records account for a large portion of the world’s memory” and are thus “valuable and indispensable both as an intangible heritage and [as] contemporary culture”. Nevertheless, one also reads that “[m]uch of the world’s audiovisual heritage has already been irrevocably lost through neglect, destruction, decay and the lack of resources, skills, and structures, thus impoverishing the memory of mankind” (UNESCO, 2015).

The feeling that these universally shared truisms initially cause an archivist, who is literally surrounded by direly neglected audiovisual heritage collections in his or her region, is pity. Then they lead to the nagging question, what can and should realistically be done for the preservation and the management of these highly endangered sound and image collections in sub-Saharan Africa?

## Audiovisual heritage documentation and management

According to Nketia (2000), the initiative taken by the western world to record, preserve, promote and disseminate knowledge of traditional music and related arts is a remarkable achievement of the twentieth century. Nketia further stresses that this initiative has brought new challenges not only to the public but also to creative musicians, performers, educators and records managers.

National independence in many African countries has been followed by a cultural self-assessment. It is a moment when many African heritage institutions, as well as some institutions of learning, started undertaking research and documentation of their cultural traditions (Asiamah, 1994).

There is a general interest in the music and traditional arts in Africa. The continent possesses an invaluable wealth of sound and image heritage that needs to be kept alive (Asiamah, 1994). Africa – the source of all humanity – is a continent always defined by change and innovation. That said, African audiovisual collections are not only rare; they also lack material resources and technological support and have attracted relatively little academic research (McCracken, 2016).

Proper archiving of audiovisual resources in Africa is key to the continent's development, and many archivists and archival institutions around the globe, and particularly in Africa, face the unnerving task of managing these priceless collections. Audiovisual archives in most African countries, including Ghana, are in a state of neglect. These collections are complex and diverse and differ from other archives in many ways. Their physical attributes pose special problems of handling, storage and preservation (Leary, 1988). The preservation of endangered archives is not solely a technical or even a financial issue; it also has a strong social component, which once again underlines the need for cross-disciplinary thinking.

In this paper, I spell out how an archival management principle that I refer to as the 'baby nursing model' could successfully be applied by archivists and heritage caretakers in such chronically under-resourced institutions. For the purpose of this study, the baby represents the archival material or collection, and the parent represents the collections manager or archivist or, in a broader context, the archival institution. There are two basic principles in this analogy: the social factor and the self-starter principle (McQuerrey, 2016).

## The baby nursing model

It is a universal fact that nursing a baby is both exciting and challenging (Child Development Institute, 2015). It requires time, self-sacrifice, care and resources. There are several basic baby nursing principles that have been developed by experts in the baby or child development field. These offer valuable tips on how to make the baby nursing journey smooth. Four principles are particularly appropriate for caring for archives:

1. Acceptance of responsibility of your baby.
2. Empathy or emotional attachment to your baby (knowing your baby).
3. Caring for your baby.
4. Identifying problems and getting help when necessary.

### Accepting responsibility

Although some babies come by accident, most often it is an agreement between the parents to have the child. Simply put, an acceptance to have a baby is an acceptance of responsibility. Parents set about parenthood with the best of intentions – to bring up the child as well as possible, to make the child happy and also a source of happiness to others. These are real intentions, not just wishes but a determined conscientious commitment (Creffield, 2013). Every good and responsible parent is proud of the baby (Fig. 1).

Once someone decides to have a baby, then it obviously means that he or she has accepted responsibility of taking



**FIGURE 1.** Miss Dorgbadzi bonding with Baby Fosuaa. Photo by Tiwaa Opoku-Boateng



care of the baby. If an archivist accepts the responsibility to manage a heritage collection, then he or she has accepted the responsibility to offer proper care for the collection. Leary (1988) supports this principle, that most national archives and a growing number of smaller archival institutions have accepted the responsibility to systematically acquire and preserve audiovisual records. Archivists managing these precious collections must therefore accept that these records are unique. They must also be mindful of their obligation to preserve and make available their entire holdings, not merely the most precious items, to satisfy their clients and posterity.

### Emotional attachment

Getting to know your baby is part of a fascinating but relatively simple process called bonding. When you bond with your child you essentially ‘fall in love’ with each other. It is an ongoing process of intimacy, understanding and nurturing (Stanford Children’s Health, 2016). Although bonding is a natural process, it sometimes takes effort. Baby nursing is a time for reinforcing bonds that will last a lifetime, providing the child with the inner resources to develop self-esteem and the ability to relate positively with others. It is also a time for parents to discover who this new person really is (Fig. 2).



**FIGURE 2.** Nana Yaw Perbi getting emotionally attached to Baby Perbi. Photo courtesy the Perbi family

The principle of developing an empathic relationship with your collection is equally vital when it comes to managing audiovisual archives. Audiovisual materials have unique physiognomies which can only be discovered when the archivist applies emotional attachment to them. If this empathic relationship is non-existent, positive results cannot be achieved. Heritage practitioners and those tasked with managing archival institutions should fall in love with the collections under their care, which will definitely reflect in their management practices, decisions or policies. As stated above, bonding is a natural process, but it takes effort to make it viable. When an archivist loves her collection, she will take her time to study its history, investigate the chemical composition of each material, explore proper ways to care for it and be an advocate for the collection. Archivists who are unwilling to advocate for their collection are ‘not lovers of their collection’. They need to reorient their mindset about the expectations of their profession.

### Caring

Baby nursing entails proper care. It requires much attention for the little one. Love lies at the core of your relationship with your baby. It needs to flow freely. This free flow of love should be exhibited in the child-caring process. The baby’s health is dependent on the care she receives from the parent (Shelov and Altman, 2009). Parents should properly monitor every movement so that they can meet the baby’s needs. Personal experience has taught me that each child is unique, and it is imperative that parents learn to understand, respect, support and encourage the unique characteristics and abilities of each child. Babies, unlike adults, have mouths but cannot talk to express their feelings. Good parents know when the baby has to eat, bathe, play and more.

Once an archivist accepts the responsibility to manage the collection, the next task is to think about how the materials can be properly managed. Caring for the materials is imperative in the baby nursing model. Just as a parent will obviously provide a clean and hygienic environment for the baby to grow strong, keep healthy and thrive, the archivist also has the responsibility to apply these baby nursing practices to her collection. Audiovisual heritage materials are fragile like human babies, and as such they require optimum care. Leary (1988) asserts that the reward for providing the best affordable care for all items in the archive is the opportunity to work with materials that not only inform in revealing ways but often delight with artistic qualities rarely found in other archival records. Like babies, archival materials have hidden potentials which can only be revealed when massive and generous care is given. Leary outlines some basic principles of managing audiovisual



collections: *appraisal, arrangement and description, preservation and access*. These principles currently exist in most archival institutions in Africa, but the question is, are they properly adhered to? The care factor in audiovisual heritage preservation is critical, but unfortunately, the picture emerging from most archival institutions in Africa is a rather bizarre one (Opoku-Boateng, 2005). Heritage practitioners waste their time and energy complaining about funding, low remuneration and unsupportive superiors, and they sit by as their collections rot. I believe if this energy is channelled into applying basic care to collections and seeking help when necessary, the collections will live and not die and the history of the nation can be told to posterity.

#### Identifying problems and getting help

Although it is an enormous challenge, parenthood can be more rewarding and enjoyable than any other part of life. According to Shelov and Altman (2009), though sometimes problems are bound to arise, and occasionally you may be able to handle them alone, there is no reason to feel guilty or embarrassed about this. However, when the problems exceed your capacity as a parent, external support should be sought. Healthy families (parents) accept the fact and confront difficulties directly. They also respect the danger signals and get help promptly when the need arises (Shelov and Altman, 2009). Emergency response to unfortunate situations should be one of the guiding principles of good parents when it comes to the baby nursing process.

According to Leary (1988), preservation is a particularly important responsibility for audiovisual archivists. These types of records are generally more perishable than the other formats, and their preservation costs per unit are relatively high. Leary further states that effective preventive maintenance requires protecting the materials from the two primary contributors to deterioration – improper storage and use – as well as identifying the signs of deterioration in time to take corrective action. Just as no parent would want to see the baby die from a sickness that could have been prevented, archivists should embrace Leary's concept to prevent further destruction of their materials. Additionally, it is important that besides the problem of identification and taking corrective action to eradicate the threat, archivists should have emergency responses and contingency plans at hand with regard to their collection, which will prevent potential future catastrophes. In situations where the threat identified in the collection is beyond their capacities, external support should be considered.

In recent times there are numerous consulting firms and organizations in the developed countries, particularly Europe

and North America, with focus on audiovisual heritage preservation strategies. Besides, there are training opportunities such as ICCROM's SOIMA, New York University's Audiovisual Preservation Exchanges (APEX), the Federation of International Association of Films (FIAP) School on Wheels and efforts sponsored by Canal France International (CFI), the Southeast Asia-Pacific Audiovisual Archive Association (SEAPAVAA) and others. These programmes, if consulted by archivists in these under-resourced archives in Africa will put the archive on an appreciable level.

Nonetheless, if the archivist does not apply the self-starter principle or social factor principle of managing her collection, it will definitely be difficult to attract such kinds of external support to effectively manage archival collections.

### The journey of the J. H. Kwabena Nketia Archives

The collection I care for is a famous and widely used archive, holding African cultural heritage resources that were collected by the renowned musicologist and authority on African music and aesthetics J. H. Kwabena Nketia at the Institute of African Studies at the University of Ghana, Legon, as early as 1952 (Fig. 3).

This was Nketia's view when he started documenting indigenous cultures from across the country and the African continent:<sup>1</sup>

We at the School of Music and Drama believe that African traditional arts should be recorded, they should be preserved, they should be studied. But we



**FIGURE 3.** Front view of the J. H. Kwabena Nketia Archives at the Institute of African Studies, University of Ghana. Photo by Mrs Selina Okle

<sup>1</sup> This speech was extracted from the quarter-inch open reels which are currently being digitized under the MAARA project. Nketia made the speech in 1965 during the University of Ghana's convocation.

believe also that they should not merely be studied, recorded, preserved, but practiced as living art. We believe also that the art must develop and that the study of African traditions should inspire creative experiments in the African idiom. We believe further that there is room for creating new cultural synthesis out of African traditions, new cultural synthesis out of both African traditions and new techniques and resources from other areas. A happy synthesis, however, can only emerge when the creative and sensitive artist is sufficiently and intelligently exposed to the traditions that he brings together in a new artistic synthesis. And, while emphasizing African traditions as a foundation on which we build, we don't ignore other traditions which might help the student to enlarge his resources or acquire new techniques or broaden his outlook (Paris, 2015).

Over the years research expeditions by other (ethno) musicologists, fellows and visiting researchers of the institute have increased the archive's holdings with thousands of recordings on vastly different media such as quarter-inch open reels, vinyl records, audio cassettes, compact discs, VHS tapes, DVDs, etc. The archive's contents include music from all over Africa and in particular Ghana, priceless recordings of already vanishing traditions as well as large samples of more recent, and therefore usually not systematically collected, popular music. One of the key characteristics that makes the archive unique is that the earliest recordings by J. H. Kwabena Nketia are the largest and most systematic set of recordings from an African ethnomusicologist spanning some 40 years of field research.

Earlier (and probably premature) attempts during the 1990s to digitize the quarter-inch open reels that are the core of the archive's collection in a sort of bottom-down process definitely did not follow the baby nursing model. Therefore the archive ended up with various bewildering legal and technical issues. Already the chosen medium of that time, digital audio tape (DAT) (almost fallen into oblivion by now), proved to be somewhat inappropriate for the specific conditions in Ghana. Other institutions came in a couple of years later and offered their assistance, but those offers were usually coupled with the condition to take a clone of the 'baby' permanently into foster care (i.e. to host copies of the material on their own servers and make them available to their patrons).

Obviously such a condition bears wide and highly uncomfortable implications for archivists who have good reasons to fear that aside from the ethical considerations it

will threaten the further usefulness and existence of their own positions and institutions.

The support of ICCROM's SOIMA training and, following that, New York University's Moving Image and Archiving and Preservation Program (MIAP), through its research initiative Audiovisual Preservation Exchange (APEX) Ghana, and AVPreserve set in exactly where this parent's capacities to care for her baby had reached their limit.

## Applying the 'baby nursing model'

### The MAARA project

Making African Academic Resources Accessible (MAARA) is a collaboration between the University of Ghana's Institute of African Studies (IAS) and the APEX effort at New York University's MIAP. The goals of this initiative are to:

- build capacity for archival quality digitization at the IAS Archive to support the transfer of audio tapes dating back to the early 1950s;
- create broad access and ensure digital preservation of the newly created digital assets through collaboration with the University of Ghana Computing Systems (UGCS); and
- promote Ghana's rich sound heritage by facilitating new uses of these materials for teaching, learning, scholarship and production.

The project took off in July 2014 with the installation of an audio digitization station at the J. H. Kwabena Nketia Archives.<sup>2</sup> The project also represents the final stage in the creation of a model digital repository for audiovisual heritage materials in Ghana. The core design was developed from the ground up as a labour of love by audiovisual caretakers and users from both institutions, as well as librarians, archivists, educators, scholars and students (APEX Ghana, 2014) (Fig. 4–6).

The effort has not only digitized the collections and made them accessible both within the university and worldwide, but it has also given the J. H. Kwabena Nketia Archives the capacities to successfully continue that work. It is worth noting that permanent sustainable projects in an archive are key to the archive's positive development (Asogwa, 2011).

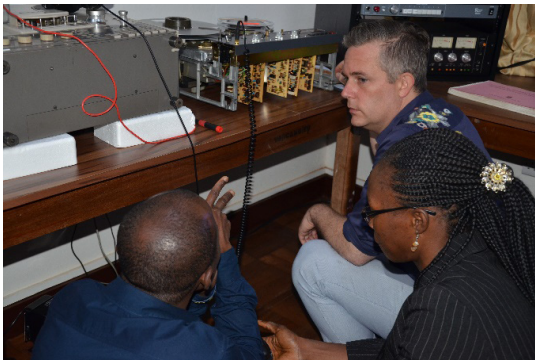
### The new phase of the Nketia Archives

The transformation at the Nketia Archives has been extremely encouraging. There is now a regular allocation in the university's budget for the archives (because it has contributed to the university's ranking and

<sup>2</sup> See [www.apexghana.org](http://www.apexghana.org).



**FIGURE 4.** Ladies of the MAARA project showcasing quarter-inch open reels to announce the project's start. From left: Rhina Amakye, Mona Jimenez, Judith Opoku-Boateng, Fidelia Ametewee, Kara Van Malssen and Selina Okle. Photo by George Gyasi Gyesaw



**FIGURE 5.** Chris Lacinak of AVPreserve training Nketia Archives staff on setting up an audio digitization laboratory. Photo by Selina Okle



**FIGURE 7.** Listening station at the Nketia Archives.



**FIGURE 6.** Kara Van Malssen from AVPreserve helping George Gyasi Gyesaw with database modification as part of the MAARA project. Photo by Selina Okle

recording studio, digitization laboratory and an office space for staff (Fig. 7-9).

In addition, staff enrolment has shot up, there are internship programmes, and archivists from sister and other educational institutions turn up on a regular basis to learn about digitization and basic archival practices. With some pride it is possible to say that the archive has now turned into a model in the subregion.

This achievement is thanks, I believe, to the application of the 'baby nursing model' in the J. H. Kwabena Nketia Archives. The effort taken in accepting responsibilities for the collection, developing an emotional attachment to the materials, caring for them and, importantly, seeking help when it was required led directly to the involvement with SOIMA and APEX Ghana – a collaboration that has had incredible results.

international prestige). Also, the facility has been expanded from a two unit facility to a seven unit facility comprising a listening station, paper repository, audiovisual repository, reference room for listening and viewing, oral literature

## Conclusion

The 'baby nursing model' may serve as a highly useful yardstick for under-resourced archives and archivists in similar situations. It is a principle that should be fully





**FIGURE 9.** Audio digitization lab at the Nketia Archives. Photo by Fidelia Ametewee



**FIGURE 8.** Viewing facility within the Nketia Archives. Photo by George Gyasi Gyesaw

embraced by archivists and archival institutions. In addition, it helps donors and (cross-disciplinary) partners recognize the specific needs, capacities and sensitivities of their counterparts in the so-called developing countries. The journey of the Nketia Archives should be understood not only as an exemplary case study but also as a general contribution to archival studies (self)-recognition as an increasingly global enterprise. It is a discipline that strives for universal aims even as it is continuously confronted with vastly different regional, social and cultural challenges.

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**Judith Opoku-Boateng** has formal qualifications in sociology and archival studies from the University of Ghana. Formerly a Research Assistant at the Institute of African Studies, she is currently an Archivist at the Institute of African Studies, University of Ghana. She has received specialist training in audiovisual archiving from internationally recognized training bodies like SOIMA, APEX, FIAF, CFI-France and the US State Department, as well as local specialized training on digitization and institutional repositories from the University of Ghana. She is a member of the Association of Moving Image Archivists (AMIA), SOIMA, Arts Council of the African Studies Association (ACASA), International Association of Sound and Audiovisual Archivists (IASA) and the US State Department Alumni.

# 19. From analogue collection to multifunctional access

## Digitizing audiovisual heritage in Poland

*Filip Kwiatek*

**Polish audiovisual heritage is a very important part of the cultural legacy of the country. Unfortunately the use of and access to Polish audiovisual archives is still in its initial phases. The Polish Ministry of Culture and National Heritage has made great strides towards solving the problems of access and limitations of use. In 2009 the ministry established the National Audiovisual Institute (NInA), which prompted several digitization projects including collaborations between Polish Public TV, National Archives, museums and private collections. This paper highlights some of the creative uses of Poland's audiovisual heritage and demonstrates how NInA has become an innovator and a leader in the audiovisual field in Poland and Eastern Europe.**

In 2005, Polish Audiovisual Publishers was founded and began to be involved in the publishing and promotion of audiovisual heritage. For four years it produced CD and DVD publications issued in collaboration with groups such as the Polish School of Documentary and the Anthology of Polish Animation, including videos of concerts and performances of outstanding representatives of Polish music and theatre. In 2009 the Minister of Culture and National Heritage transformed the Polish Audiovisual Publishers into the National Audiovisual Institute (NInA), widening the scope of

the organization's activities to archiving, digitization and promoting access to Polish audiovisual heritage. NInA also carries out activities in the field of media and audiovisual education by co-producing film and television programmes and working with the Competence Centre for digitization of audio and video materials. During the Polish presidency of the European Council, the institute organized a series of cultural events (concerts, workshops, conferences, performances), recordings of which are now in the NInA archives.

NInA's digital and analogue archive has modern and professional equipment ready and able to manage a large collection of audiovisual content. We concentrate on creating different channels and ways of giving access to our audiovisual materials. In NInA's new building we have a digital cinema, multimedia library and workshop rooms that give our users many possibilities to work, educate and play using audio and video content. In the institute's short history, it has managed to find creative uses for Poland's audiovisual material. Through collaborations with the public's personal records, outreach and workshops aimed at the youth in the community, and the practice of modern digitization techniques, NInA demonstrates the numerous possibilities and uses of a successful audiovisual archive.

### Challenges and strategies

One major issue for Polish audiovisual archives is the immense dispersion of audiovisual content. Stored at the National Film Archive, the National Library, the National Archives, state-owned film studios, museums and non-governmental organizations, as well as in public media, the quantity of this audiovisual heritage is unknown, but the number of items is certainly in the millions. Digitization activities in the field of audiovisual documentation began in 2007, but they were not centrally coordinated or accompanied by cross-institutional cooperation in the field of digitization, metadata description or recommended methods for long-term storage of digital materials.

In order to solve the problems of use, access and storage of digital archives, in 2010 the Polish Ministry of Culture and National Heritage launched Kultura+. This multiyear



programme supported both public and non-governmental organizations in the digitization of archival, library, museum and audiovisual collections. NInA was entrusted with the role of coordinator of this program. Our tasks were to conduct a formal and essential evaluation of candidates' applications, offer financial support, provide back-up storage for digital audiovisual collections, limit forms of access and promote audiovisual heritage. Kultura+ ended in 2015, but before that it conducted 187 projects worth EUR 30 million, including 35 projects related to audiovisual collections. Thousands of hours of audiovisual content have been digitized and are now accessible online.

Every beneficiary organization was obliged to deliver one copy of digitized audiovisual content and metadata to our repository. Then our archivists imported the files and metadata to our media asset management (MAM) system, and if the copyrights were valid, the content was exported to our online collection or to an offline collection in NInA's new building.<sup>1</sup> The workflow between the Archive and Internet Projects departments is still in a phase of testing and development. The main challenges are whether the MAM system should be operated only by the Archive department or also by other departments (Digitization, Internet Projects) and whether the archive should preserve all footage (including small previews and working materials).

Online presentation is still our most important activity in the area of access to audiovisual content. NInA's strategy is to create audiovisual thematic collections enriched with context materials. So far we have presented collections on famous Polish contemporary composers, on Polish theatre and on the 'Round Table' political and social reforms of 1989. NInA also takes part in European projects on access to audiovisual heritage. We support EU screen and Europeana with our content and have delivered more than 8 000 audiovisual content items to these projects.

The materials can also be used in different ways in our recently opened building that includes a digital cinema with 4K and Dolby Atmos parameters, a multimedia library and workshop rooms. We offer audiences the chance to vote on footage that will be shown at our cinema's weekly screening. They can choose from five different materials: documentary, animation, feature, spectacle and music. Our multimedia library can accept 16 users. They can explore the digital archive, especially those materials that cannot be shown online. We give access to almost 14 000 audiovisual items, and the room also contains press articles and books about film, theatre, television and music (Fig. 1).<sup>2</sup>



**FIGURE 1.** Multimedia library at the National Audiovisual Institute (NInA) in Warsaw. Photo by Marcin Soto

Every year NInA organizes a festival of audiovisual culture called NInA Beta version. This is an opportunity to meet environmental artists, fans, users and researchers from the audiovisual industry. The meeting theme, workshops and conferences are based on audio and video resources of the institute. Attendance at the festival continues to grow and shows the increasing interest in the use of creative and diverse audiovisual content.

Another idea for the creative use of archival content is a footage workshop. Our experts teach people how to manage home collections and how to take care of analogue carriers. Children and adults learn the basic skills of music composing, sound recording and video making. NInA's role in education also supports academic institutions in educating future archivists in audiovisual matters. Since 2015 we have run workshops and study visits for students from different universities.

At NInA we pay particular attention to the education of children and youth. We give them rich workshop offerings in which we try to introduce them to the world of audio, video, music and theatre. Young participants make their first video and sound recordings and archive their work on a variety of analogue and digital media. During cinema screenings we present cartoons, animated films and feature films, especially those of historical and archival value.

Our workshop rooms and conference facilities are also available for people or institutions to use for free for various activities. With an idea for a workshop, conference, meeting or presentation of audiovisual content, one can use NInA's space and infrastructure (Fig. 2).

Since 2015 NInA has been able to digitize audiovisual collections on its own. We launched a professional digitization line for film materials in 8 mm, 16 mm and 35 mm formats, magnetic tapes of all types and digital reconstruction of sound and video (Fig. 3). In this area, we have cooperated with many public institutions that preserve

<sup>1</sup> The online collections are accessible at [www.ninateka.pl](http://www.ninateka.pl).

<sup>2</sup> The database can also be searched online at [www.archiwum.nina.gov.pl](http://www.archiwum.nina.gov.pl).



**FIGURE 2.** NInA's main workshop room. Photo by Bartek Syta



**FIGURE 3.** NInA's sound studio. Photo by Marcin Soto

audiovisual content. We have managed digitization projects for Polish TV, the National Archives, museums and private owners. Digitized objects are preserved in NInA's repository and shown online.

An important digitization project using the social capital and commitment of our users is called Home Archives. The aim of the project is to digitize and make available private and amateur collections. Anyone can bring recordings to NInA, most often VHS, Video 8 and 16 mm film (Fig. 4). In exchange for agreeing to share the content in situ or online, the user receives a free copy of the digitized recordings. NInA's archives received materials from the period 1960–2000 containing family celebrations, vacations, education and everyday life. Some recordings are truly historical and documentary in character. Another social aspect of the project is that we entrust volunteers with the work of description and archiving so that the entire project is based on resources and the work of our users and friends.



**FIGURE 4.** Participant at the Home Archives project. Photo by Marcin Soto

NInA's experience in the field of digitization of audiovisual heritage has helped it become one of the leaders in developing cultural activity in Poland and Eastern Europe. Our mission is to work with audiovisual materials, from their analogue form to multifunctional access. We are proud and happy that we are able to face this challenge.

## Conclusions

Analysis of the number of users and their reviews of the new NInA headquarters shows that both the access to online digital audiovisual materials and the organization of cultural and educational events are being met with great public interest.<sup>3</sup> The road which brought the institute from its origins as a small publishing house to a rapidly developing multimedia cultural institution leads us to believe that our vision for the transfer of audiovisual heritage from analogue to digital and its eventual sharing meets the huge demand of users, and probably will be a determinant for further programme activities.

**Filip Kwiatek** graduated from Cardinal Wyszyński University of Warsaw in political sciences and completed an archival course at the Polish Archivists' Association. He is the archive manager at the National Audiovisual Institute (NInA) in Warsaw, where he is responsible for the MAM system and managing analogue and digital archives. Kwiatek has participated in audiovisual digitization programmes in National Archives of Poland and has presented at domestic and international conferences, events and trainings.

<sup>3</sup> The total number of visitors to NInA's headquarters for 2015 was 2 144.

# 20. Intertwining spheres

## Public archiving of private home video collections

*Renée Winter*

**Public audiovisual archives like the Österreichische Mediathek (Austrian National Audiovisual Archive) have long been concerned with documenting the political as well as the cultural public sphere. National and international efforts have worked to collect and preserve historic film documents from the private sphere. An ongoing Österreichische Mediathek project addresses a source typically viewed as marginal: private video sources from the 1980s and 1990s. The challenges are not only to develop a collection and archiving strategy for a type of content on which there is little to no scientific research but also to master the technical challenges of archiving such materials for the long term. This paper examines the development and the workflow of the project and goes on to consider the historical functions of home videos and their qualities as historical sources.**

The Changing Role of Audio-Visual Archives as Memory Storages in the Public Space is a project being carried out at the Österreichische Mediathek, an institution with considerable experience in archiving and digitizing audio as well as audiovisual (AV) resources. Österreichische Mediathek was founded in 1960 as Österreichische Phonotheek (Austrian Phonotheek) by the Ministry of Education and has been a branch of the Technisches Museum Wien

(Vienna Technical Museum) since 2001. As a video and sound archive and the Austrian archive for sound recordings and videos on cultural and contemporary history, the Österreichische Mediathek is responsible for the preservation of Austrian audiovisual cultural heritage (with the exception of film on photographic carrier material and photography).

The project collects and secures private video recordings, in particular those from the 1980s and 1990s, and makes them accessible. At the same time, it works to develop a collection strategy for video materials that document everyday life in Austria.

The work has been financed by the Wiener Wissenschafts-, Forschungs- und Technologiefonds (Vienna Science and Technology Fund), a non-profit organization established to promote science and research in Vienna. Funding was secured for a project duration of three years (December 2013–November 2016); the costs of long-term archiving however will be borne by the Österreichische Mediathek.

### Project workflow

A workflow had to be specially developed for the long-term archiving of private video sources. This workflow comprises acquisition of videocassettes, rights clearance, acquisition of metadata (based on a questionnaire), reviewing of technical suitability, entry of metadata, digitization, file transfer (and optionally return of cassettes) to the donors, content-related and technical-qualitative evaluation and selection and eventually publication. The acquisition of source material is based on a comprehensive collection and archiving strategy for AV archives and the conception of specific collection guidelines. The collection guidelines are in a constant process of developing and adapting (both in form and content) on the basis of a theoretical and historical examination of the subject of private video practices as well as on the grounds of technical considerations.

### Acquisition: cooperation and partnerships

Based on the collection guidelines, an acquisition strategy was implemented that operates on different levels: social and traditional media, events and activities (e.g. Home Movie Day), regional structures and networking with

different partners. In addition to a wide range of media partners, there are collaborations with existing (amateur film) associations as well as the Austrian Film Museum and local museums. Here especially the *Bezirksmuseen* (district museums) of Vienna are of great importance: every one of the 23 districts of Vienna has its own local history museum. They are often engaged in local activities and have a core audience. Through regular consultation hours at the museums and screenings of home movies and home videos in the museums, public awareness is raised concerning the subjects of preservation of (home) videos, of digitization and of long-term archiving. The extensive public outreach based on these partnerships has led to a collection of more than 2 500 videos after two years.

### Meaning for society and preservation strategies

The public sphere is, if not well documented in AV archives in all areas, sufficiently documented in many aspects. The political and cultural spheres are documented mostly through radio and television recordings. Even marginal areas of this public sphere, focused mostly on Vienna, are archived in the Österreichische Mediathek: there are in-house recordings of cultural and scientific events as well as attempts to incorporate collections which depict the public space (e.g. public transport announcements).

Hardly or not at all documented is the private space. Yet in this instance a gap is opening between existing documents and preserved material: never before have there been so many possibilities for depicting cultural and social manifestations of life. Never before were the production possibilities of these sources so widespread and so easy to implement in terms of technical and financial effort, and with AV media there are now sources that can capture and relay the sensual-emotional aspect of events.

Despite those possibilities key areas of our media past and present remain undocumented. If there is already a yawning gap in the 'official' record of radio and television broadcasting companies, which must not be underestimated, then the one in the private sphere is considerably larger.

The aim of this project is therefore to collect and document private video recordings since the 1980s, preserve them (digital long-term archiving) and make them accessible. Without long-term archiving they only survive for a few years, two or three decades at best. The window for preservation by means of archiving is therefore very small, and preservation enables permanent use by the future public. It is therefore evident that the source collection intended in this project is of particular relevance, especially because so far hardly any methodical or strategic long-term efforts have been made in

this direction. This is also true for digitization and digital long-term archiving: in many scientific projects this area is insufficiently covered and falls short of archival standards.

The introduction of amateur video recording devices has given rise to a major increase in documentary and historical source material. It has become possible for large sections of the population to document their environments and daily routines, their celebrations and vacations in a new and extensive way. Yet this democratization of source has not been met with equivalent preservation strategies.

For current research approaches in the field of historical sciences, sociology and urban studies, an access to these sources that is as easy as possible is a prerequisite for gaining additional insight. For instance, the project preserves documentation of private living spaces in Vienna, acting in some respects as a hinge between private and public spaces. These video recordings by people living in Vienna represent changes in the city's society and reflect social transformations, such as the progression of the social position of women, technological changes and uses of information technology or social movements.

Online video platforms such as YouTube possess their own archive-character with regard to their publishing practices and their access possibilities. However, these platforms are predominantly guided by market economic circumstances, the content-related and technical documentation of single recordings is mostly deficient – and, most importantly, long-term archiving and future access is disconnected from the users. It is impossible to know if a platform applies a reliable strategy of long-term archiving, or if it plans to keep its documents for a long time at all. The preservation of content on these platforms follows solely commercial interests; forecasts regarding permanently secured access cannot be made. This results in a remarkable intrinsic contradiction: On the one hand these platforms contribute to a pluralization of society, enable a wide exchange of information and have by now become instruments of attempts at social upheaval. On the other hand, the underlying systems are not subject to democratic control but are governed by corporate strategies, focused primarily on the present. Subsequently, the long-term documentation of contents of public spaces has to rest not with commercial video sharing but with archives, which have only been able to face these problems rudimentarily until now.

The project conducted at the Österreichische Mediathek combines technical expertise relating to the digitization of different source formats with decades of experience in long-term archiving and broad access to the resources via an extensive online platform.

## Video digitization

In order to find an adequate answer to the challenges of digitization in the context of an extensive historical audiovisual archive with a huge collection of audio as well as video carriers, the Österreichische Mediathek developed DVA-Profession, a comprehensive open-source software solution for video digitization. Every step of the workflow, from digitization to analysis, generating preview images and videos, manual quality control, documentation of all process metadata and file storage, is designed and optimized for long-term archiving.<sup>1</sup>

One major problem the project has to face now is that due to the condition of the videotapes as well as the great diversity of video formats (and the ignorance of most of the donors of technical details concerning their tapes) the digitization process takes longer than planned. We learned that there can be a great difference between digitizing videos kept under optimal conditions in an archive and digitizing private videotapes. Private material often is in significantly worse physical condition. Most videotapes have been stored in private houses. As a consequence, they have been exposed to a wide range of environments. Fluctuations in temperature and humidity and sun exposure can damage videotapes.

Comparing privately held videotapes with those already in the Österreichische Mediathek collections reveals dramatic differences. It is easy to see how professional storage conditions prolong the durability of the videotapes. This comparison shows that the window for preservation by means of archiving is very small – and how important it is to cope with these problems right now to guarantee access to private sources for further research.

## Home videos as historical source

But what do these home videotapes tell us? What can we see when we refer to home video as a historical source? When we try to reconstruct private lives by means of highly constructed narratives? How can we get to the marginalized, the political sides of home videos?

As already mentioned, video technology allowed for a democratization and popularization of audiovisual recording. Media studies has been primarily interested in the activist/subversive or avant-garde side of video: in its inherent possibilities to produce counter-images, to film events and demonstrations and thus to control the audiovisual representations of social movements.

The Österreichische Mediathek holds more than 800 videocassettes from Heinz Granzer. Granzer, a union activist, filmed the founding and development of an important cultural centre in Vienna in the 1980s (which still exists) as well as many demonstrations and events of the political left and the peace movement in Vienna and Austria. After he died, in 2014, his friends and his video group donated his huge collection to the Österreichische Mediathek.

Granzer's videos fulfil a function of video that John Fiske emphasized. He argued against a deterministic view of technical developments and pointed out that “a new technology does not, of itself, determine that it *will* be used or *how* it will” (Fiske, 1996, p. 386). Fiske strongly stressed the possibilities of video for activist purposes:

It is an instrument of both communication and surveillance. It can be used by the power bloc to monitor the comings and goings of the people, but equally its cameras can be turned 180 social degrees, to show the doings of the power bloc to the people (p. 391).

Video benefits from an authenticity of the 'low-tech form':

The credibility of video depends upon the social domain of its use. In the domain of the low (low capital, low technology, low power), video has an authenticity that results from its user's lack of resources to intervene in its technology. When capital, technology, and power are high, however, the ability to intervene, technologically and socially, is enhanced (p. 387).<sup>2</sup>

Although this activist use is undoubtedly very important and such sources should be preserved, I would also like to argue for the political and historical significance of the videos in the 'home mode'. This term was introduced in home video discourse by James Moran (referring to Chalfen, 1987), who noted, “Typically, discourses about amateur video generally uphold the avant-garde as progressive and denigrate the home mode as reactionary” (Moran, 2002, p. xix).

In order to take home videos seriously, to read them adequately as historical documents, it is necessary to take into account modes of reception, modes of meaning production and different functions of home videos.

<sup>1</sup> This product is available under a free software licence (GNU General Public License v3.0) and can be downloaded at [www.dva-profession.mediathek.at](http://www.dva-profession.mediathek.at).

<sup>2</sup> Odin (2014) asserts that this 'authenticity' is responsible for restricting the possibilities of critique of audiovisual representations. See below.



## Communication spaces

Roger Odin (2014) asks what happens to home movies (and home videos) when they move to contexts other than the familial space in which they have been produced. When they move for example to the Internet, to the archive or to television. This question is particularly interesting if we relate to the videos as historical sources, as traces of other people's lives we do not know or of families that are not our own. Odin proposed five communication spaces of home movies, each corresponding to specific reading or reception modes.

The original or oldest space of home movie, which is inextricably linked to a bourgeois and patriarchal family model, is the 'familial memory space'. In this respect the home movie resembles an "album of moving photographs" filmed by the father: he constructs family history and controls its screening and interpretation (Odin, 2014, p.16). In the 'private reception mode' a group (such as a family) reconstructs its history when screening the film together; in the 'intimate mode' each member of the group makes its own reflections about her or his past and the group's history.

This communication space corresponds with discourses of standardization of the home movies. These standards and norms are written down in a great number of handbooks and manuals which tell how and what to film (as well as, more subtly, who films), how to frame, how to tell an entertaining story of Christmas, children's birthdays or vacations.

Hand in hand with new family structures go technological changes: there is a shift to smaller devices and the recording material gets cheaper. More family members are doing the filming, and the films move to other places. They are shared on the Internet, being watched from scattered family members alone at their computers. This new development forms what Odin calls the "ego space of communication". He argues, "In the new familial structure, the photo album of the family and the film of the family are being replaced by a multitude of photographs and films on the family" (2014, p. 20). In addition a new mode of meaning production enters the space: the 'testimonial mode', in which the subject "gives its perspective on what it sees or on what it has seen; in this case, on the life of the family" (p. 20).

At the Österreichische Mediathek we have collected home videos which represent this shift from the familial space to the ego space, such as a group of 26 videocassettes from a small family living in Vienna: mother, father and two children (born in 1989 and 1992). From 1992 to 2003 the father was primarily filming; the mother got a camera for her fortieth birthday in 2004 and filmed from then on until 2009. You can see remarkable differences in the filming. I would not want to essentialize these in terms of gender

differences, but they express changes of perspective, technology and the construction of family narratives – as well as the function of the camera. While at the beginning the camera is used to represent family events, Christmas parties and the growing up of the children in a rather conventional way, focusing on milestone life events and the happy moments of the family, later on the functions of the camera within family life get more diverse. It is not only used as a tool of surveillance and control of the kids and the husband but also, as the family members more frequently move apart (for example, the mother travels with her best friend to Italy), as evidence or as testimonial (of really having been in Rome, for instance).

As Odin notes, in contrast to the familial memory space which prefers the consensual history of the family album, this mode is much more open to conflict and dissent.

## Home videos in public spaces

When home movies move to public archives, they enter both a 'documentary space' and a 'collective memory space'. In the first, the home movie functions as historical document, read in the documentary mode; in the second, it stimulates collective (and often regional) memory, read in the private mode.

The last communication space, the 'space of authenticity', Odin identifies mostly when home movies move to television. Home movies are often used to add authenticity to documentaries, and there also exists a whole genre of home movie shows like *America's Funniest Home Videos* or, in Germany, *Uppps – die Pannenshow*.

In Odin's view it is precisely the notion of authenticity – the authenticity mode – that attempts "to restrict the possibilities of the emergence of a critical inquisitiveness among spectators" (2014, p. 25). In this case, something happens that he calls the "home movie effect"; the home movie becomes an

instrument for the reduction of critical consciousness. In doing that, the home movie returns to one of its primary functions within the familial space: avoiding problems, creating consensus, and perpetuating the position of the institution (p. 26).

## Conclusion

The objective of collecting, preserving and analysing home videos cannot be to salvage or recover real, authentic private lives; rather, the intent is to ask questions about what role the camera and video technology have played in the everyday life of people and which functions are attributed to

the camera as a recording device and to the documents it produces. Thus it would ideally be necessary to archive contextual information and materials: the carriers, labels, personal data about the videographers and persons in the videos, and information about camera use in the family or about the use of other media, photography, film and so forth. If available, other ego-documents such as diaries, letters or oral history interviews can enable analysis of the meaning and importance of the home videos within a group. Since we can view these videos as attempts to construct happy families and happy private lives, research on private video collections is also about identifying conflicts, gaps and disruptions in these narratives. Researchers should ask questions about how these documents were and are watched differently by various members of a group, of a family and of society. Coming back to John Fiske again:

[T]echnology may limit what can or cannot be seen but it does not dictate the way it is watched. Technology may determine what is shown, but society determines what is seen (1996, p. 386).

Audiovisual archives may determine what can be seen and heard by future generations, and they should enable as many different ways of reading and watching archival sources as possible.

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