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Sound and Audiovisual Archives

Internationale Vereinigung der
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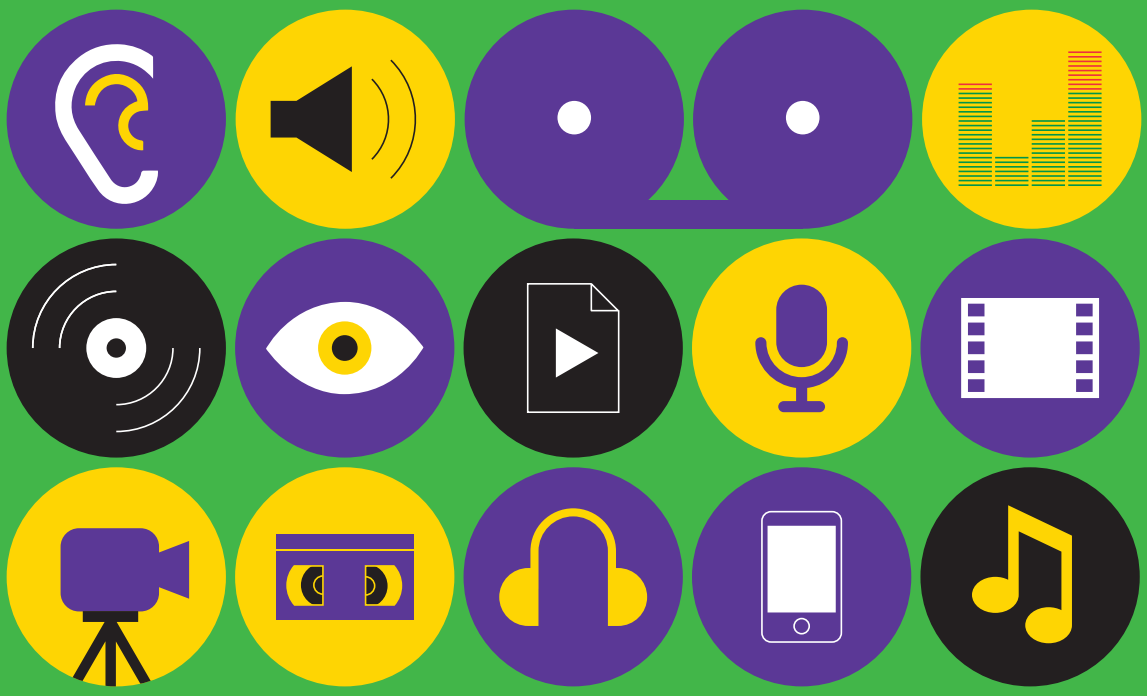

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IASA JOURNAL EDITORIAL BOARD

In order to ensure diverse and clearly-articulated viewpoints in each issue of the journal, the IASA Journal solicits input and guidance from an Editorial Board consisting of the current IASA Editor and President as well as an invited group of IASA member representatives from each continental region throughout the world.

The IASA Journal Editorial Board provides general review and guidance on direction of the IASA Journal, meets once yearly during the IASA annual conference, assesses previous year's journal issues and makes general suggestions for future activities.

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I began serving as editor last October following the joint IASA-FIAT/IFTA conference, in the midst of the current issue's editorial process. I have been an avid reader of the IASA Journal for the past ten years, and I am excited to take on this new role. Despite the absence of in-person meetings during much of the past 16 months, work on the journal has already proved to be both rewarding and sustaining for me. We have unfortunately experienced significant production delays, due both to the editorial transition and to the ongoing Covid pandemic, but I am pleased to present IASA Journal 51, which contains five articles, three tributes to long-time colleagues and IASA members that we lost in 2020, and a letter from the president.

Two articles in this issue are group efforts, and both speak to the importance of collaboration, information-sharing, and the need for continued dialogue on the successes and challenges faced in the course of our individual work, at our institutions, and in our regions. Firstly, "Two Years Later - The Future of Small-Scale Audiovisual Archives in Asia" from Ahmad Faudzi Musib, Thongbang Homsombat, Gisa Jähnichen, Xiao Mei, and Chinthaka Prageeth Meddegoda follows up on discussions held at several IASA conferences and in previous articles (see, for example, "Innovation and Human Failure in Small-Scale Audiovisual Archives" in IASA Journal v.48) on the needs of small-scale audiovisual archives in Asia. Secondly, in a joint contribution, Julia Kim, Eddy Colloton, Dan Finn, Rebecca Fraimow, Shu-Wen Lin, Crystal Sanchez, and Annie Schweikert present a wealth of novel case studies in "Audiovisual Quality Control and Preservation Case Studies from Libraries, Archives, and Museums." While each section provides usual information about the solution to a particular technical challenge, in aggregate the article makes the case that a truly comprehensive understanding of complex workflows that exist at the community, rather than the individual, level.

Samuel Aniegye Ntewusu's contribution examines the Nana Obimpe Papers and Audio-Visual Materials at the Kwabena Nketia Archives, located at the Institute of African Studies in Accra, Ghana. Dr. Ntewusu uses the collection as a vehicle to examine the influences of Ghananian history, geography, and social and cultural practices on both Obimpe's collection and on archival collections in the country. Dr. Rasitka Ajotikar's article "Music Archives and Knowledge Construction in Postcolonial India: The case of the Felix van Lamsweerde Collection," similarly presents a critical social history of the collection of this renowned Dutch musicologist and collector of Indian music. While examining the impact of colonialism, orientalism and nationalism on the archive, Ajotikar additionally provides detailed information on the contents of this significant and diverse collection of Indian music.

Serendipitously, Dr. Ajotikar and author Maristella Feustle both employ musicologist Christopher Small's term "musicking" to refer to the active participation of collectors, listeners, and, by extension, cultural heritage workers in their work of processing, digitizing, and documenting archival collections of musical performances. In Feustle's analysis of the Rhodes S. Baker Collection at the University of North Texas, concentric relationships of participation extend outward from the collection's contents--Duke Ellington concert recordings--to include incidental recorded content, transatlantic social circles of collectors and fans, and the active listening and research conducted by archivists and library staff.

The articles in this issue of the IASA Journal reinforce the importance of the complex social, cultural and historical forces that shape not only our collections and our work, but the way we receive meaning from sound and audiovisual collections, as well as the importance of community dialogue and cooperation.

2020 was a difficult year for us all, and was only made more so by the passing of three of our esteemed colleagues: James McCarthy, George Boston, and Ulf Scharlau. McCarthy and Scharlau both served as IASA president, and Boston played a critical role in building IASA's strong relationship with UNESCO. They will all be greatly missed, and the tributes in this issue speak to their significant contributions to IASA and to the larger field of sound and audiovisual archiving and preservation.

I would like to thank outgoing Editorial Board representative Luisa Fernanda Ordoñez Ortegon for her years of service, time, and support on the board, and to welcome new editorial board member José Augusto Mannis, who will serve as our new South America representative. I look forward to working with all members of the board and welcome your input on this issue.

Many important changes were ushered in by Bert Lyons during his seven years as editor, from instituting a double-blind peer review methodology, adopting a new online journal platform to manage editorial workflows and publishing, and establishing the Editorial Board to provide general review and guidance on the direction of the journal. The current volume represents another milestone for the IASA Journal: it is the first to be issued in online-only format. I am grateful to Bert for his years of leadership, his assistance as I took on my new role, and for the transformative changes made during his tenure as editor.

Preparations for issue number 52 are currently underway, and I am also working on an application for the IASA Journal to be included in the Directory of Open Access Journals (DOAJ). The DOAJ is an online directory that indexes and provides access to high quality, open access, peer-reviewed journals. Inclusion in the directory will not only expand the journal's audience and reach, it will challenge the editorial team and authors to adhere to formal standards and best practices in scholarly publishing.

I strongly encourage readers to submit their research and applied work on sound and audiovisual archiving for consideration to the IASA Journal. In lieu of a formal call for papers with a deadline, manuscripts may be submitted at any time on a rolling/ongoing basis. There is also a 'Profiles' section in the journal, which offers authors a space to present their creative ideas and reflections in a less formal, non peer-reviewed setting. The IASA Journal's adoption of peer review methodology is not a static or one-time process, and active participation from members of the IASA community is essential to its functioning. The critical work of peer review not only ensures high-quality articles, but also encourages dialogue and professional growth for its participants. Please consider volunteering as a peer reviewer by registering at http://journal.iasa-web.org/pubs/user/register, and also see the reviewer guidelines at http://journal.iasa-web.org/pubs/reviewer-guidelines.

Jennifer Vaughn
IASA Editor
Prague, Czech Republic

A LETTER FROM IASA'S PRESIDENT

Tre Berney, Cornell University Library, USA

Welcome to the 51st IASA Journal. The COVID-19 pandemic has presented significant challenges to all of us over the last year. This public health crisis has brought with it loss, isolation, and much uncertainty; yet our mission to care for, provide access to, and ensure the long-term preservation of the world's audiovisual cultural heritage remains. The COVID era has further exacerbated existing inequities and strained resources that support this work in many areas of the world. While the last year has brought great loss and tragedy, we must also acknowledge some silver linings.

The era of virtual conferences represents an opportunity to broaden our communities' reach and impact. Also, in a virtual setting, the carbon footprint of an international conference is much reduced. For organizations like IASA and our sibling organizations in the Co-ordinating Council of Audiovisual Archives Associations (CCAAA), the future will bring new challenges on how best to come together to share knowledge and resources. We must evolve in ways that increase access, lower negative impact on the environment, and retain the human connections that bind us as professionals and as people with common cause.

The 2021 IASA annual conference will be held virtually due to current circumstances, with the hopes that we can return to an in-person conference in 2022. IASA wants our current inability to meet physically to be an opportunity to broaden our links with sound and audiovisual archives around the world. Our virtual conference will be programmed according to three different time zones: the Americas, Europe / Africa, and Australasia. This allows anyone in the world to participate at suitable times, while creating a virtual bridge between nations across all continents. The conference programs in each zone will be coordinated by the following institutions:

- Radio y Televisión Nacional de Colombia (for America)
- Netherlands Institute for Sound and Vision (for Europe and Africa)
- Universiti Putra Malaysia (for Asia and Australasia)

A new Executive Board was elected in 2020 and ratified at the IASA General Assembly. I would like to thank the outgoing Board members for their significant leadership and contributions to our organization, some of whom had served more than one term. The new Board is composed of people with diverse backgrounds, perspectives and experience and I'm honored to work with them. Please read more about them at https://www.iasa-web.org/executive-board.

- Vice-president (Membership): Margarida Ullate i Estanyol, Director of the Sound & Audiovisual Unit, Biblioteca de Catalunya
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- Editor: Jennifer Vaughn, Archive Unit, Radio Free Europe/Radio Liberty
- Web Manager: Richard Ranft, London, England and Riga, Latvia

Over the last year IASA has continued to evolve to meet the needs of our user communities. There are several exciting initiatives and projects that have continued despite the need to socially distance and collaborate virtually. The IASA Training and Education Committee, along with former and current Executive Board members, collaborated with the UNESCO International Center for Documentary Heritage in Cheongju, South Korea to support member institutions' capacity building for preserving audiovisual heritage. The result is a video (https://www.youtube.com/watch?v=fMNp7yq0YvU&t=2s) which is freely available for all to use in support of this mission. The Training and Education Committee also held its inaugural IASA Preservation Training Programme at the Biblioteca de Catalunya in June 2021 with sponsorship from NOA. This new programme aims to develop skills to build a strong AV Archive and Preservation skills base throughout the world.

The creation of two new committees at the joint conference with FIAT/IFTA in 2020 will allow for more effort in the areas of outreach and engagement. The Ambassadors Program (https://www.iasa-web.org/ambassador-committee) was converted into a committee with the goal of empowering local and regional IASA members to make connections to resources and documentation that IASA produces and encourage collaboration. A newly established Diversity, Equity, and Inclusion Committee (https://www.iasa-web.org/diversity-equity-inclusion-committee) will work directly with the Board and fellow committees to promote and foster DEI policies, practices, and programming. The IASA community is grateful for those involved in bringing these goals into fruition.

As we look to the future, may we keep in mind our mission to serve as a medium for international co-operation between archives that preserve recorded sound and audiovisual documents. There is much to do and collaboration is key. I look forward to working in my new role with the Executive Board and the broader IASA community. Please engage with the IASA community by posting on the listserv or our social media channels, and by seeking answers to the questions you have and offering your knowledge and experience to others. If we take anything away from the last year, it is the realization that our best resource is each other.

With the kindest regards,

Tre Berney
IASA President
June 2021

GEORGE BOSTON (1942-2020)

George Boston, longtime IASA member, contributor to many IASA and UNESCO initiatives, and a staunch advocate for the preservation of sound and audiovisual materials, passed away on 9 December, 2020.

George joined IASA in 1985. At the time he was working as manager of the camera and sound technicians at the BBC Open University Production Centre in Milton Keynes, UK. He had worked his way up from a recording technician at the BBC music studios in London, through work as a sound and camera operator in Manchester to being assistant head of the Audio Unit in Manchester.

At Milton Keynes, one of his responsibilities was for the safekeeping of tapes and films in the libraries. He sought advice about this duty, which brought him into contact with Helen Harrison - then the General Secretary of IASA - and Dietrich Schüller. Through meeting these IASA members George became more aware of the importance and imperatives of sound and audiovisual archiving, especially in the light of what was then, the approach of digital technology.

In IASA George found many of the answers he was looking for, and also unpacked a whole new set of questions that he hadn't thought to ask before. Not being a person to take without giving, George plunged headlong into the business of IASA. In 1995, Albrecht Häfner was elected Secretary General of IASA and had to step down as Secretary of the Technical Committee. George agreed to take Albrecht's place and served until 2005.

Much of George's work was with UNESCO and not directly for IASA. In the late 1980s, Helen Harrison represented IASA at a number of meetings on subjects as diverse as training for AV archivists, intellectual property and legal deposit. George was asked to accompany Helen to these meetings whenever she felt that a technical voice might be helpful. One result of Helen's work was that the official status of IASA within UNESCO was raised.

As a raw recruit at his first IASA Conference in 1985 in East Berlin (and still, he said, in a state of severe culture shock), George was asked to join the team of people from FIAF, FIAT/IFTA and IASA responsible for organising the second Joint Technical Symposium in Berlin in 1987. At the end of the JTS, UNESCO had arranged two meetings; one about training for AV archivists and the other a meeting of archive technicians with manufacturers of equipment. George was asked to Chair this second meeting.

The meeting was a success and the manufacturers' representatives suggested that a more permanent liaison group of archive technicians be formed. UNESCO agreed and established the Technical Co-ordination Committee (TCC), made up of representatives of the technical committees of FIAF, FIAT/IFTA and IASA, with George as the Chair. The TCC went on to organise the 1990 and 1995 symposia with George as the relentless lead organiser. The TCC also published several texts which George edited and contributed to. George was asked to represent IASA to discuss the establishment of the Memory of the World Programme (MOTW) in June 1992. The original idea was that the Programme would only include text materials.

George was asked to represent IASA again at the first meeting of UNESCO's International Advisory Committee (IAC) meeting in 1993, where he successfully argued the case for sound and audiovisual materials to be included in the Programme. Also discussed at this first meeting was the creation of the Sub-Committee on Technology (ScoT). George was appointed Rapporteur with Dietrich Schüller as the neutral Chair. George continued as Rapporteur until April 2011, all the while maintaining a strong commitment to sound and audiovisual materials and archives. In 2001, the IAC created the Registers Sub-Committee to allow nominations for the MOTW International Register to be better vetted. George was, again, appointed a member and Rapporteur of this new body, serving until 2005.

George also undertook a number of Missions for UNESCO to advise various organisations on ways to improve their library and archive operations. These included trips to Bhutan (twice in 1992), Yemen (1992), India (1995), Kenya (1998) and the Bahamas and Jamaica (1999). He was also asked to examine and report on the condition of the AV archives at UNESCO headquarters in 1995.

In 1995 George, on behalf of the IASA Technical Committee, undertook a Survey of Endangered Audio Carriers for UNESCO and again in 2002 with the addition of a number of moving image formats to the survey's scope.

Seemingly in possession of boundless energy, George maintained his involvement with IASA and UNESCO MOTW even as age slowed him down. He curtailed his involvement only when his wife Sue, who had previously accompanied him on some of his working trips, became ill and required more help and support at home. George passed away in December 2020 and Sue followed 28 January 2021.

George's consistent involvement over the years and his commitment to IASA's aims was commendable, his critical involvement with the organisation was legendary, as was his capacity and willingness to undertake work for the good of sound and audiovisual archiving in general and IASA in particular. He will be sorely missed.

Kevin Bradley
IASA President, 2008-2011

Tribute adapted from Kevin Bradley's remarks at the 2011 IASA Award of Recognition ceremony in Frankfurt, Germany.

JAMES MCCARTHY (1939-2021)

James McCarthy, who served as IASA President from 1993-1996 and as Past President from 1996-1999, passed away in January 2021 after a long illness. James was Sydney Manager at the National Film & Sound Archive of Australia from 1986-1996, and was a long-time board member of the Australian Recorded Sound Association. In addition to his work in audiovisual archives, he was extraordinarily active in composition, conducting, and music criticism. He was Director of Music at Film Australia from 1964-1986, programmed and presented for classical music station Fine Music Sydney (formerly known as 2MBS FM), and was a contributor to Fine Music Magazine, Limelight, Soundscapes, the International Record Guide and Opera-Opera.

Born in Tamworth, New South Wales in 1939, James spent his early childhood in Sydney and Gosford. During the later 1950s and the 1960s James moved in theatrical circles connected to Sydney University, appearing as a piano player in Bruce Beresford's early film The Devil to Pay in 1962. James was, by then, already working as a production assistant at Film Australia in 1959, becoming its Music Officer in 1964. In his time at Film Australia James commissioned, 'produced' and occasionally composed film scores (more than 200 of them!). In his own time, James was frequently the musical director of stage musicals, operettas and operas.

In 1986 James joined the National Film and Sound Archive, becoming the first manager of the NFSA's Sydney Office. James's skills and knowledge extended across Australian moving image and audio culture, but it was, perhaps, his leadership of national and international groups of musical and audio libraries and archives that he made his most enduring contribution. He was a member of the Australian branch of IASA when the membership voted to form a new national organization, ASRA (The Australian Sound Recordings Association). James was an ASRA Board member from 2000-2002, and then went on to serve six terms as ASRA Vice President from 2002-2014.

Diagnosed with stage four melanoma 10 years before his death, James passed away peacefully on 13th January 2021 in Sydney. Gatherings of his numerous friends and colleagues in Sydney and Canberra were accompanied by messages of affection and regret from around the world.

Jeff Brownrigg
Australian National University

The IASA Journal thanks Dr. Brownrigg for his permission to republish an edited version of a tribute which he delivered at both James McCarthy's funeral and at a celebration of his life at NFSA earlier in 2021.

ULF SCHARLAU (1943 - 2021)

"*IASA has broadened my personal and occupational horizon. Moreover, friendships have developed, friendships that last far beyond the point of retirement of some former IASA colleagues. I am very grateful for this*"
— Ulf Scharlau, from "A personal review of thirty years of IASA (1969-1999)", *IASA Journal 18*, 2001

Former President of IASA, Ulf Scharlau, has died. We send our condolences to his family and loved ones and extend our gratitude for his many years of service to IASA.

Ulf joined IASA in 1974 and served on the Executive Board as Treasurer from 1978-1984, as President from 1984-1987 and as Vice President from 1987-1990. Under his presidency, IASA began its cooperation with other international associations and became an active member of the UNESCO Round Table on Audiovisual Records, which also included the International Federation of Television Archives (FIAT/IFTA), International Federation of Library Associations (IFLA) and International Council on Archives (ICA). This body organised the 1987 Joint Technical Symposium in West Berlin, in which the IASA Technical Committee played an essential role.

During Scharlau's terms of office with the Board, important reorganisations were also initiated within IASA. It was proposed to delegate various tasks to other members of the Board in order to relieve the Secretary General. As a result of this reform, Scharlau was deputy to the President (Helen Harrison) and responsible for contacts with international organisations during his term as Vice President (1987-1990). In addition, he was to provide the Editor of the Bulletin with information from the Board.

Scharlau's professional profile can be gauged from the papers he presented at the annual conferences and published in the Phonographic Bulletin and subsequently in the IASA Journal.

He became concerned with digitisation in radio archives at an early stage. At the 1982 annual conference, as Chairman of the IAML/IASA Committee on Music and Sound Archives, he chaired a session on "Data Processing in Radio Sound Archives". The results were extended by contributions from various European broadcasting organisations and published in Phonographic Bulletin 35 in 1983.

Since 1988, IASA members have debated whether the Association should extend its activities to moving images. In 1993, at the annual conference in Helsinki, Scharlau expressed great reservations about the project, saying that IASA should concentrate on the tasks set out in its constitution and pointing to the coming challenges posed by the digitisation of audio archives (Scharlau, "Should IASA expand to include moving images?" *IASA Journal 3*, 1994).

The fact that Scharlau, in the face of advancing digitisation, came to the recognition that radio sound archives should also orient themselves towards multimedia is expressed in his paper for the 1996 annual conference in Perugia on "Digitisation and its consequences for radio sound archives". The six theses on how to deal with digitisation that he put forward in this paper go far beyond the particular problems of radio archives and are still valid today (IASA Journal 08, 1996, p. 12-15). In 1999, Scharlau once again described the challenges for a radio archive that has become multimedia (Scharlau,

"Perspective of the present and future situation of sound and audiovisual broadcasting archives in Germany: a personal view", IASA Journal 14, 1999).

On the occasion of the IASA's thirtieth anniversary, Ulf Scharlau wrote "A personal review of thirty years of IASA (1969-1999)". He described the development of the Association as a success story: "A professional organisation with world-wide activities, even if it is relatively small, can succeed in pursuing and reaching its targets through persistent work" (IASA Journal 18, 2001). As far as I can see, this was Ulf Scharlau's last contribution to the IASA Journal.

Scharlau's merits in founding a regional branch for Germany and German-speaking Switzerland must also be mentioned. While serving as IASA Treasurer in 1979, Scharlau promised at a meeting of the Executive Board that he would try to convince the radio archives of Germany to become members and to get an overview of the many small sound archives in Germany (Phonographic Bulletin 24, 1979). It was not until 1990 that the German/Swiss German Branch was founded in Wiesbaden. Scharlau was never a member of its board, but the branch owes much to his efforts behind the scenes. It became one of the most active branches in IASA and organises an annual autumn conference, where not only professional archives but also private sound recording collections are discussed.

With his exceptional professional and human qualities, Ulf Scharlau was an important protagonist in IASA's history for many years. We will not forget him.

Kurt Deggeller
IASA President (2002-2005)

TWO YEARS LATER - THE FUTURE OF SMALL-SCALE AUDIOVISUAL ARCHIVES IN ASIA

Ahmad Faudzi Musib, Putra University, Malaysia (UPM), Faculty of Human Ecology, Music Department, Malaysia
Thongbang Homsombat, National Library of Laos, Archives of Traditional Music in Laos
Gisa Jähnichen, Shanghai Conservatory of Music, China
Xiao Mei, Shanghai Conservatory of Music, China
Chinthaka Prageeth Meddegoda, University of the Visual and Performing Arts, Colombo, Sri Lanka

Abstract:

At the 2017 IASA Conference in Berlin, panellists analysed innovation and human failure in small-scale AV archives and asked the question "What do we need to learn from each other?" The many contributions to the discussion helped in overcoming difficulties that were presented. In 2019, the same panellists met again to discuss the outcomes of the learning process and to focus on the future of small-scale audiovisual archives in Asia. What makes small-scale audiovisual archives so special and different from large broadcast and national archives? What types of support networks will the future bring, and how can technical staff, archive users, administrators, and the larger community work towards an effective implementation of standards that will help to make knowledge available to all? The discussion took us to institutions in China, Laos, Malaysia and Sri Lanka, and laid the groundwork to establish continuity in dedicating professional efforts to support audiovisual archive organizations in emerging and developing countries. The panel members intend to engage in further discussion and to draw attention to the weak connections between archival goals and the general understanding of continuity in some Asian institutions. This is also a creative report of the panel organizer's work as IASA Ambassador in this region.

Keywords: Small-scale AV archives, archiving goals, communal understanding, emerging and developing countries

1. Ahmad Faudzi Musib: All About Priorities

I represent a small-scale university archive at Universiti Putra Malaysia that deals with sound and audiovisual content. Located south of Kuala Lumpur, UPM is the second-largest state university in Malaysia.

I offer an update on our recent work since the report from 2018 (Musib et al. 2018). We started raising awareness through revising course content, and introducing short courses for internal staff at the department as well as at faculty level. The Audiovisual Research Collection for the Performing Arts, abbreviated ARCPA, (Musib, Meddegoda & Jähnichen 2014) is a database containing collections of past research work conducted by students as well as lecturers. Functionality of the database can be improved through implementation of faceted search based on original format of deposited materials. Materials will include theses, still images, partly-digitized VHS tapes, audio CDs, digital WAV files, partially-digitized magnetic cassette tapes, and partially-digitized 4-track cassettes. Furthermore, there are hard drives and hard disk recorders which require special attention.

At the moment, most of these materials are in the midst of migration. Migration to a stable medium requires technical expertise with a variety of digitization tools and methods. Those who are already trained to an elementary level of both theoretical and

practical aspects of audio signal migration processes such as sampling rates and RIAA[1] specifications when dealing with 78rpm discs are able follow a simple digitization workflow. Migrating more complex multi-track recordings of electroacoustic music collections pose challenges for staff. For example, varying tape speeds and different wrappers cannot easily be handled by non-experts.

Staffing is an ongoing issue. At present, the music department is comprised of teaching as well as support staff. Technical staff are not exclusively employed in the archive and are involved in general technical work of the institution. Their responsibilities include maintenance of projectors, PCs, and air-conditioning systems, as well as audio systems. A senior lab assistant at the music department assists students in maintaining musical instruments' tuning, minor repairs, and managing an inventory of instruments. The teaching staff of the music department are diverse in their fields of specialization, which include performance (Classical and contemporary), voice, music therapy, orchestral studies, ethnomusicology, and sound studies. An administrative assistant, a senior laboratory assistant, and two operational assistants serve as support to the department.

One goal for the archive is to train not only the department's staff, but all who need to work with sound and audiovisual materials in the future. This includes technical staff, students, and lecturers, as well as archive users, administrators, and the general community. The effective implementation of research standards will help to ensure that knowledge is available to all stakeholders.

Curriculum development and instruction are my main responsibilities at UPM. The continuous improvement of course content is one of my many approaches. During their freshman year, students begin to learn about the significance of audiovisual preservation and the use of archives through the course MZK 3610: Introduction to Music Technology. Aside from an introductory lecture on audio equipment and devices to the students, there is space to explore both theoretical and practical issues. Through this teaching initiative and continuing efforts to encourage the proper use of materials in ARCPA (Casey 2015; Jähnichen 2017), a strong foundation based on archival principles is being established.

Figures 1 and 2: Introduction to audio devices training (photos by the author).

1 RIAA equalization is a specification developed by the Recording Industry Association of America (RIAA) for recording and playing phonograph records. The equalization aims to allow longer recording times (by reducing the mean width of each groove), enhance the sound quality and decrease the groove impairment that would otherwise appear during playback.

We introduce students to sound archiving knowledge in general, exploring the requirements for preservation and planning as well as the historical, philosophical and ethical implications of sound and audiovisual archiving, including the practical handling of analogue tape recorders and magnetic tapes, and independent digital audio recording technology that requires specific skills in signal extraction for migration purposes of mono, stereo, and multi-track audio. Issues of tape degradation, refurbishment, and restoration, practical digitization techniques, file creation, and creation and management of metadata are all subjects included in the course.

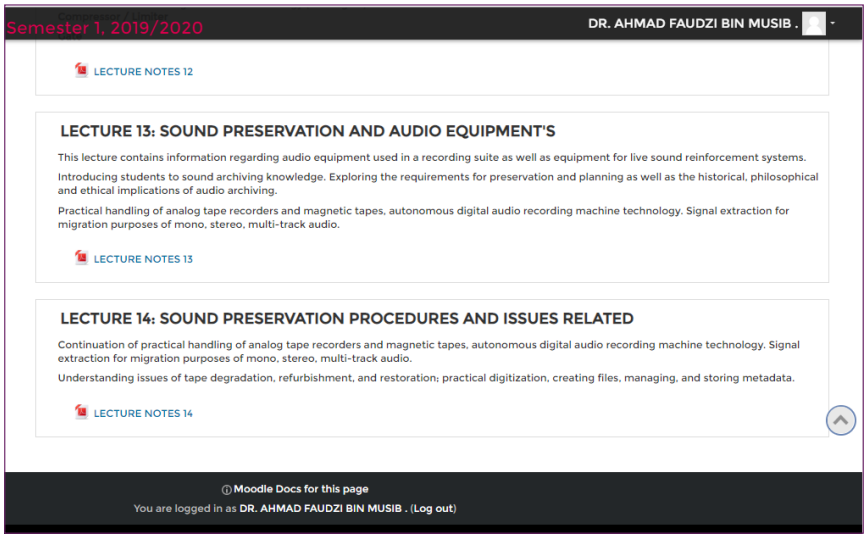

Figure 3: Course description of MZK 3610: Introduction to Music Technology for weeks 13 and 14 (UPM portal, internal access only).

Awareness of the importance of audiovisual preservation in the arts and humanities is cultivated, allowing students and others to benefit from their efforts, so that young people will hopefully be able to defend preservation efforts if questions are raised by the university. Another aim is to educate students to properly cite their own fieldwork data, and also to enable them to cite other researchers according to established citation practices, thus preparing them to engage in academic discourse.

There are two paths through which archival requirements can be applied. The first is by establishing ARCPA as a place where all archival materials are available to the department and can be directly observed when a search is made. Networking between the main university library and the music department must be further developed. The department is not ready to handle mass requests regarding online replay of digitized items at the moment. The department is extremely understaffed and while student workers help, their employment is only on a temporary basis.

The second path is through the university's learning management system, known as PutraBLAST. Staff are required to upload and maintain teaching materials for students, and to supplement the learning process with audiovisual materials, including audio clips and video footage. There is a serious problem with handling copyright issues (Jähnichen 2017). Staff from across the university can access archived materials online and re-use all these materials for upcoming semesters, which means that outdated materials will

soon inhabit the servers and congest traffic. Students can download lecture notes, videos, and sound files prepared by academic staff. Teaching materials available online can only be accessed for 1 semester (14 weeks). Students are also able to upload their work online and can make it accessible to their classmates. Unfortunately, this practice also leads to copyright issues (Seeger 1996).

Figure 4 illustrates that within the PutraBLAST LMS, instructors are required to upload all lecture materials according to internal system rules, not according to general copyright status. Copyright issues may arise when such materials include audiovisual content that is not yet in ARCPA, and when no collection-level or user agreement is in place. New policies for incorporating research outcomes and other audiovisual materials in the LMS should be implemented to better incorporate sound and audiovisual content into instruction practices. This would encourage respect for the work of both the researcher and for the archive itself. The shortcomings of the current system have not been addressed by the university. Educating students to possess a mature understanding of rights management issues will at least encourage individual preparedness and responsibility to not continue these practices into the next generation of scholars and educators.

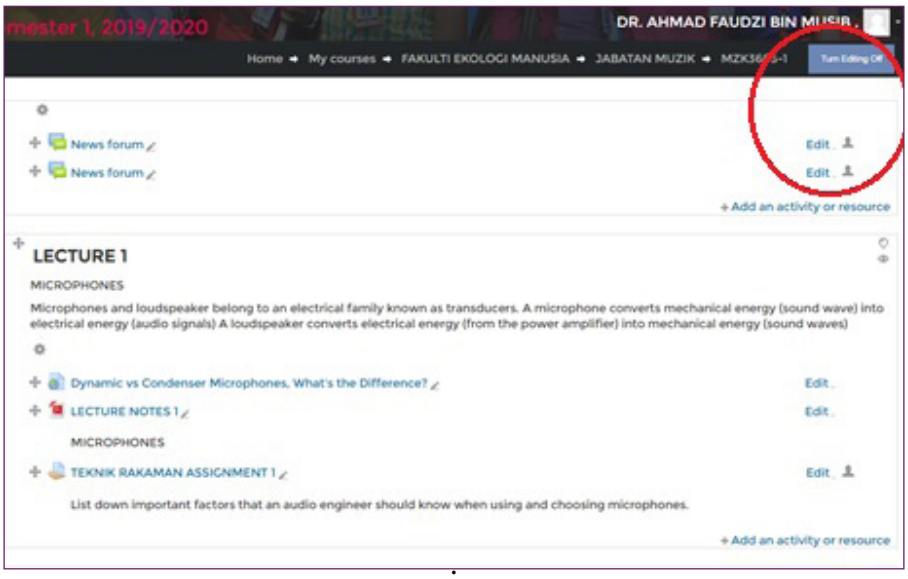

Figure 4: Learning management system in edit mode, which enables the account holder to control what is available for the students to view (UPM portal, internal access only)

At the moment, our situation seems better compared to other institutions in Malaysia, yet it is hoped to implement meaningful changes to systems and processes. It is very difficult for dedicated lecturers to produce high-quality publications for Q1 and Q2 indexed journals. The music department needs a properly functioning archive to serve the academic community as well as non-academic staff. A sense of urgency does not exist. Staff members mainly focus on their own outcomes without looking at the connection to the archive and its potential, or the problems it faces.

2. Thongbang Homsombat: All about Understanding Purpose

I represent a small-scale sound and audiovisual archive at the National Library of Laos. In 2019, it celebrated its 20-year anniversary.

Since establishing the Archives of Traditional Music in Laos, Gisa Jähnichen has worked to highlight the importance of researching, archiving, and providing access to the public. She has also supported the purchase of equipment and training of specialized staff to continue the culturally vital task of documenting and preserving traditional music and dance in Laos. From 1999 on, colleagues and students have regularly visited the ATML—first at the old building on the second floor, and now in its new location. Everyone involved with the ATML tries to undertake fieldwork and help at our archive. However, we still face many unresolved problems.

At the end of 2016, the National Library moved to a new building that is located six kilometers from the old building. The new building is much larger, with four floors, a lift, and specific safety infrastructure. At first, the Archives had two separate main rooms: a storage room containing original tapes and a public room for access to copies. The original tape storage room was on the second floor, and the main office space for our two staff members, myself and Bounmy Phonsavan, was on the fourth floor.

We had to separate the ATML space according to the architectural situation of the new building. The small storage room was not adequate to provide public services and the originals would have suffered from its uncontrolled environmental conditions. One year ago, we discovered that the original tape storage room posed problems due to changing temperatures and humidity. I considered this is a really big problem and an important issue to get a safer storage room, so I urged the director of the National Library of Laos to provide a new room to preserve sound and audiovisual materials sustainably.

Some coinciding events helped in obtaining a new space: In 2018, the Lao People's Democratic Republic, led by the Ministry of Information, Culture, and Tourism, celebrated the inscription of *Khaen* music of the Lao people on the UNESCO Representative List of the Intangible Cultural Heritage (ICH). According to the UNESCO ICH Convention, safeguarding the cultural heritage, including measures like documentation, research, and preservation, should be prioritized. The National Library of Laos, as an important community participant in safeguarding *Khaen* music, also recognized the significance of the UNESCO ICH inscription, and so it was agreed to arrange a new room for the ATML.

At the beginning of 2019, the Chinese Cultural Center and the Chinese Embassy in Laos donated 30 computers to the National Library for public users, especially for the playback of audiovisual and sound recordings. We received 15 workstations and 15 sets of musical information software for audiovisual items. The donation helped in providing additional space for researchers and students, who use the equipment regularly.

Figure 6 and 7: The donated computers for users and the archive entrance (photos by the author).

Today, the ATML is located on entirely on the 3rd floor. The temperature and the humidity are lower, and the working conditions are much better. But this was only a solution for certain preservation and logistical challenges. Additionally, while the new building is large and in good condition, it is too far away from the city center and the number of visitors has decreased dramatically.

Another definite problem is that we are not flexible enough in making many daily decisions. The archives, which makes research information on traditional music and Lao popular music available, depends on the general service section of the National Library. This section coordinates access to resources and materials. And the National Library itself is managed by the Publishing Department of the Ministry of Information, Culture, and Tourism. A decision of any importance must be approved by several people, and decisions may not be made quickly enough.

Our small staff is well-trained, yet we always need fresh updates and better knowledge of global trends in order to find creative ways to serve the public. We have learned in the last two years that we have to personally fight for improvements, and that we have to make use of knowledge far beyond archiving matters to reach our goals. Thus, advocacy work is our main focus at the moment.

3. Gisa Jähnichen & Xiao Mei: All about Being Included

We work at the Shanghai Conservatory of Music, which has its own small-scale archive. We are trying to establish an informed source of archiving of sound and audiovisual material throughout ethnographic institutions and universities in China. We are working to establish an educational and professional network in ethnographic institutions and universities in China to advocate for the needs of audiovisual archival collections. With workshops and direct interventions, we convey the message that there is no shortcut around the hard work of digitizing and providing access to audiovisual collections.

The Shanghai Conservatory of Music has achieved many significant goals in the past two years. These include for example the construction of the Great New Opera House, prizes won in both local and international music contests by staff and students, and successful recruitment of new students and staff. However, not very surprisingly, archival work and necessities are not among the first-grade achievements. Thanks to Xiao Mei, an engaged professor of ethnomusicology, Han Bin, an administrator of the Institutional Library,

and other staff, a large mobilization project for audiovisual archives was funded by the central government. It includes workshops, training, visitations, inventories, and local actions throughout the entire country. This will positively impact on work in Yunnan, Sichuan, Liaoning, Shanghai, and Zhejiang. The project is still in its very early stages. Regarding our own archive as well as a number of other archives at universities, the following problems are noted:

There are few institutional guidelines for the operation of AV archives in general (Xiao Mei 2019a). As some may know, China employs a rotation principle, in which people working for state companies must change their workplaces regularly in order to prevent corruption and educational standstill. This principle is good but has a shadow side. It can be difficult to implement organizational change or to effect long-range and strategic plans when directors are rotated. Over the course of seventeen years, Xiao Mei built up a well-functioning archive in Beijing, but due to a change in leadership, the work declined and she had to move to Shanghai. There, the entire procedure for establishing archives started from scratch. First efforts to reliably continue audiovisual archiving in an effective way were undertaken through people working in the field of arts museums (Xiao Mei 2019b). The most difficult problem is that there is no staff for the daily tasks and also no general teaching program that integrates knowledge about AV archives and archiving (Musib et al. 2017). With new staff on board, some small steps have been undertaken to ensure the younger generation takes up the responsibility. One, for example, is to send students for internships in other audiovisual archives abroad.

The next big problem is missing national guidelines regarding audiovisual archiving, including principles of digitizing, managing, and providing access to audiovisual collections. There is not yet a unifying idea (Breen et al 2014) about how to deal with "overcollecting" (Topp Fargion 2019). Progress in archival work is usually achieved gradually and there is no instant gratification. Unfortunately, many staff members prefer to transfer to another department instead of committing to long-term, incremental change. Staff impermanence de-emphasizes the importance of in-depth exploration of a professional domain that leads to expertise. The archival profession in China would be better served if its employees were viewed more like orchestra conductors or professors, who are exempt from the rotation principle. Continuity and consistency of staffing would better promote the achievement of long-term institutional goals. These staff members need strong support and protection in order to develop. Students who regularly help out in archives are also not much attracted to this work. They often return home or go elsewhere after finishing their studies with the same background: too little attention, no gratification, no protection.

The third problem is historically weak cooperation among institutions. Cooperative endeavors are often contingent on personal relationships between leaders, and can be jeopardized if leadership changes. In addition, there is a general distrust of cooperative efforts. Staff members, even if employed long term, are often afraid of personal dependencies (Jähnichen 2015). In the mood of underlying competition for financial and central support, many institutional decisions are made too slowly or ineffectively, especially when they have to pass a number of decision-making departments.

The new project widely promotes cooperation between state and state institutions and between private and state institutions. It aims to broaden institutional attitudes towards joint goals. Upgrading current needs and improving cooperation based on trust and understanding of the archive is essential not only within China, but throughout the region, and can be encouraged through increased contact with the IASA community.

Besides many good steps, there must be resistance against setbacks. The Magnetic Tape Alert Program[2], which Janet Topp Fargion[3] repeatedly made us aware of during the course of its existence, was well thought through, yet many of the archives working with this type of material do not know enough about the entire archival process in order to follow the questions. The fear of mistakes and misunderstandings among higher-ranking report units is greater than the hope for improvement. A summer workshop recently held in Shanghai, which involved AV archivists and librarians from all parts of the country and which was supported by the Archives of Traditional Music at Indiana University, has shown that an acceptable concept of audiovisual archiving is still missing and that many who consider themselves pioneers in the field are still on the side of merely collecting and publishing research. In summary: The work to be done in China is as huge as the country itself. It will require a lot of energy and a working strategy for the long term, patience, and positive input from all sides. It is also clear that workshops emphasizing primarily technical matters will not solve the problems which will pile up in the coming years. Technical understanding is the least worrying part of the process. The most burning issues are making informed decisions to establish a flexible and feasible system and concept of audiovisual archiving that can be applied to all state and private institutions as well as development of new ways of cooperation among them.

4. Chinthaka Prageeth Meddegoda: All about Survival

The latest survey of literature and updates on websites of various archives in Sri Lanka indicate that sound and audiovisual materials are not recognized as being in need of urgent preservation (Mohamed Majeed Mashroofa, 2016; Navirathan & Jeyakananthan 2018; Balasuriya 2018). The National Library of Sri Lanka has updated their official website and has listed available materials. In the conservation process, paper materials have been given a higher priority than the sound and audiovisual collections in the National Library, and several collections are available via microform formats. While sound and audiovisual items on their original carriers are available to library patrons, they are only mentioned on the library's website under broad, mostly format-based categories and have not been digitized:[4]

> Audiovisual materials and microform can be used by readers to obtain required information. At present the entire audiovisual and microforms collection consists a large number of materials.
>
> The collection is divided as follows:
>
> - Microfiches
> - Annual reports of the Central Bank of Sri Lanka
> - Government publications of Sri Lanka
> - Bibliographies of some of the National Libraries in the Asia Pacific region
> - International Standard Serial Numbering (ISSN) register

2 http://www.mtap.iasa-web.org/node/2, last accessed October 25, 2019.
3 She took the initiative to alert all IASA ambassadors. Her recent work reflects on her deep knowledge about the topic.
4 http://www.natlib.lk/collections/audio_visual.php, last accessed October 3, 2019.

- Microfilms
  - Theses and dissertations on Sri Lanka
  - Some of the National Newspapers
- Audio-cassettes
- Video tapes
- CDs and DVDs
- Gramophone records of Sri Lankan songs, documentaries, plays and teledramas.

I met Udaya Cabral, the Assistant Director of the Preservation Division of the National Library, on 12 September, 2019, in his office. His division is responsible for the preservation of newspapers, magazines, and some audiovisual materials. The conservation department has large collections including nearly forty thousand digitized field recordings which were recorded on magnetic cassette tapes by staff of the National Library. A compact disc with about twenty folk songs extracted from these recordings was published, which drew upon field recordings of farmers, fishermen, and various service workers. As Udaya says, the biggest challenge is the pressure to use the sound recordings for commercial purposes. The newly-introduced copyright law limits this approach in many ways. With the intervention of the National Library, some folk performances have been classified as world heritage. However, these recordings have not yet been explored by any researchers. Udaya confirmed that they have already digitized all the recordings through outsourcing the transfer work, as this is much cheaper than doing it by themselves. Unfortunately, the noise in the recordings was removed using a special software while digitizing, which presents issues of file integrity. The National Library did not have any staff devoted to digitization work. There are two servers where these digitized recordings are stored. Two access copies were also made of each recording on compact disc. However, all the items are not only on the same type of carrier, but are stored in a single location, which poses preservation risks.

Reflecting on the lack of use and understanding of the collection, I could see that there was not much awareness of the value of sound and audiovisual archives beyond the potential for commercial exploitation. Those recordings are not yet understood as knowledge resources that must be sustained in order to enrich human culture in general (as suggested by the Council on Library and Information Resources and the Library of Congress). Udaya named a few archives where archiving is supposedly well-executed in Sri Lanka. Those are the National Library (his own institution), the National Archive, which has enjoyed several stimulations through external workshops and events, the National Film Unit, and the private film archives of Thissa Nagodawithana and Hemapriya Kandambi. The state television and radio broadcasters, Sri Lanka Rupavahini Corporation and Sri Lanka Broadcasting Corporation, received many offers from foreign funding sources to preserve their historic recordings. Unfortunately, the current directors of those institutions were reluctant to let their materials be digitized or to outsource this task, as there was speculation that the recordings could be misused by others.

Most university archives in Sri Lanka face strong administrative barriers hindering their development. The University of the Visual and Performing Arts is a clear example. Archive budgets have been historically small and their mission is often not prioritized at the university level. Progress is often hampered and it's difficult to see initiatives through because of lack of institutional support. So, in the last two years, there have been very few improvements regarding technical matters. The main problem is still the general lack of understanding of the value and character of the knowledge resource that sound and audiovisual items represent.

To illustrate a nationwide problem: The Sri Lankan Department of National Museums website[5] lists the museums which are administered by the government as follows:

- Colombo National Museum
- National Museum of Natural History
- Dutch Museum
- Kandy National Museum
- Ratnapura National Museum
- Galle National Museum
- Maritime Museum
- Anuradhapura Folk Museum
- Independence Memorial Museum
- Magampura Ruhunu Heritage Museum

Unfortunately, not one of these institutions maintains a sound or audiovisual archive.

In summary:
Udaya is one officer in the field of archives who is rather experienced in conservation and aware on what is happening in other archives of Sri Lanka. I have gathered through my observations of his work, his workplace, and his comments, that most archives and archivists in Sri Lanka are strongly confronted with administrative barriers which discourage them and hinder their endeavours and enthusiasm to work freely. As an aside, I wanted to also share how difficult it was to convince the Ministry of Higher Education to give its consent and a Third-Party Note (TPN), which I needed to get a Schengen Visa to travel to Germany to attend the 50th IASA conference. It was a struggle to convince them that academic conference attendance should be considered an official visit for a university academic. However, at the time I am writing this report, the TPN has still not been issued. I had to manipulate the invitation letter and instead go directly to the Foreign Ministry to get the TPN with the help of a friend who works there. It took me much more effort than I spent on writing this contribution. Similar conditions apply to archivists across Sri Lanka, who have to struggle for each step that they plan to enhance productivity in their work.

I know that IASA cannot solve this overarching problem, yet it should not be overlooked when we talk about what is needed the most. Acknowledgement and feedback to our institutions can help in the long term to make our situation safer and more optimistic.

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5 http://www.museum.gov.lk/, accessed October 3, 2019.

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AUDIOVISUAL QUALITY CONTROL AND PRESERVATION CASE STUDIES FROM LIBRARIES, ARCHIVES, AND MUSEUMS

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Abstract

Digital audiovisual workflows are complex. They can hinge on a breadth and depth of knowledge that is difficult to find within a single team or institution. The areas of knowledge called on can range from obscure and obsolete audiovisual carriers, to all the components in a digitization workflow chain, as well as new and evolving community resources and digital competencies for discovering errors during the quality control process. While there are many standardized audiovisual workflows, as this paper illustrates, QC work can be difficult even with a high level of training and experience; and problems, when caught, are often resource-intensive to diagnose and address. This paper details six distinct audiovisual case studies in which different digital preservation obstacles that are difficult to qualify, fully understand, and document are discussed; as well as, when possible, their solutions. They are all unique, but also unexceptional: we expect there are comparable situations, perhaps not-yet discovered or addressed in many audiovisual archives. This paper will underscore difficulties, and guide readers through some of the processes -- both formal and informal -- used to further analyze audiovisual file problems. Ultimately, in addition to helping other staff with similar problems, this paper should emphasize to administrators the special resource needs of audiovisual files and the staff responsible for them.

Introduction

Online resources like QCTools and the A/V Artifact Atlas go a long way in creating a growing knowledge base about artifacts and technological issues that can impact digital audiovisual files.[1] But how can these tools be best utilized by non-specialized staff or those who only intermittently work with digital audiovisual workflows? How can we diagnose and recover from errors discovered in a collection of audiovisual files? What is an artifact and what is "business as usual," especially in cases in which the date of transfer has long past, the vendor is far away, and there's limited information available? With audiovisual files, these distinctions can be very nuanced. Despite the many shared resources available, practical decisions are often made in a gray area of shared emerging practices.

1 "QCTools, an Open Source application created by MediaArea to allow for quantitative analysis of video files in order to enable a more thorough evaluation of digital video." https://mediaarea.net/QCTools. A/V Artifact Atlas is a shared resource for documenting audiovisual errors. https://bavc.org/preservation-tools/av-artifact-atlas.

With digital files, the conversation surrounding quality control most often focuses on layers of fixity at the frame and file level. Fixity information isn't always available from the time of a file's creation, however, and doesn't provide a detailed understanding of the issues that may impact files at the bit level. What are the errors that we should look for and understand collectively? How have our colleagues worked through some of these errors; and how can we build shared quality control models, practices, and language as a field?

This paper will document and share unique audiovisual digital case studies that required investigating these questions in the context of libraries, archives, museums, and broadcast organizations. In each case study presented, archivists worked back from an initial symptom to diagnose issues ranging from errors with digital file transfers, to problems in a digitization chain, to challenges with encoding and decoding proprietary or complex digital file codecs. All of these scenarios proved uniquely challenging to knowledgeable, formally trained moving image archivists and conservators. While not all errors could be fully explained, through investigation and knowledge sharing, all resulted in changes to archival workflows or practice to better avoid the issue in future. Examples submitted by the authors of the present article were initially presented by Julia Kim during her "Questionable File Show and Tell" session at the No Time to Wait 4 conference in 2019.[2]

1. The Checksums Match but the Files Are Bad

Crystal Sanchez, Julia Kim

In 2015, the Smithsonian's National Museum of African American History and Culture received copies of a collection of approximately 100 video interview files from the Library of Congress (LC) to accession into the Museum's collection. As a shared collection, preservation master files were to be stored at both institutions. Upon receipt at the Smithsonian Institution (SI), files were copied to a central staging location and then validated successfully. The checksums matched; thus, the fixity was confirmed. However, we later discovered that fatal errors caused some files to be unopenable or unplayable, and others to exhibit ephemeral digital artifacts during playback (Figure 1), prompting an analysis to identify potential points of failure along the workflow.

2 An archived version of the conference session is available at: https://www.youtube.com/watch?v=A-mm5Mijszk.

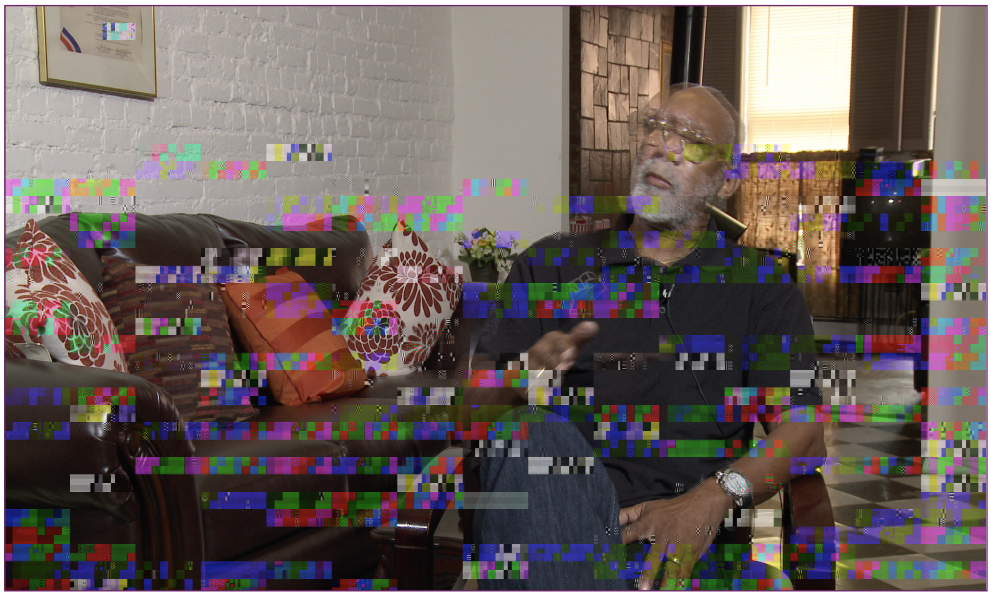


Figure 1. Video artifact in playback.

During the course of the approximately decade long project, digital files were created around the country and then transferred in batches to LC 's American Folklife Center, where they were migrated off of SD cards and drives to a local RAID. They were then transferred to archives staff and minimally processed and bagged upon ingest to long-term tape preservation storage. Each interview was also packaged inside the Bagit specification and copied to external hard drives for transfer to SI.[3] Once at SI, the "bags" were validated before moving forward with storage in SI's Digital Asset Management System (SI DAMS)[4]. Because of the large size of the files, the scale of the collection, and with the limited resources available, not all of the files were visually QC'd before ingest.[5]

Once the files were ingested to the SI DAMS repository, file fixity information was verified again, confirming that the files ingested into the repository were a bit-level copy of the files delivered from LC.

As part of the SI DAMS ingest process, files are automatically sent to transcoders to create proxy images and keyframes for easy reference. The transcoder step not only allows for reference to the files without accessing master files, but also provides another step of quality control for the files submitted to the repository. Transcoder log errors draw attention to any failed files that cannot be decoded, indicating a problem with playback of the original file.

3 Bagit is a standard packaging specification for easy receipt and validation of files when transferring them from one place to the other, https://tools.ietf.org/id/draft-kunze-bagit-14.txt.
4 The SI DAMS is managed by SI's Office of the Chief Information Officer, www.si.edu/dams.
5 See more on the born digital video specifications chosen for this collection on FADGI Digitization Guidelines Initiative's Creating and Archiving Born Digital Video: Part II. Eight Federal Case Histories. (2014), http://www.digitizationguidelines.gov/guidelines/FADGI_BDV_p2_20141202.pdf.

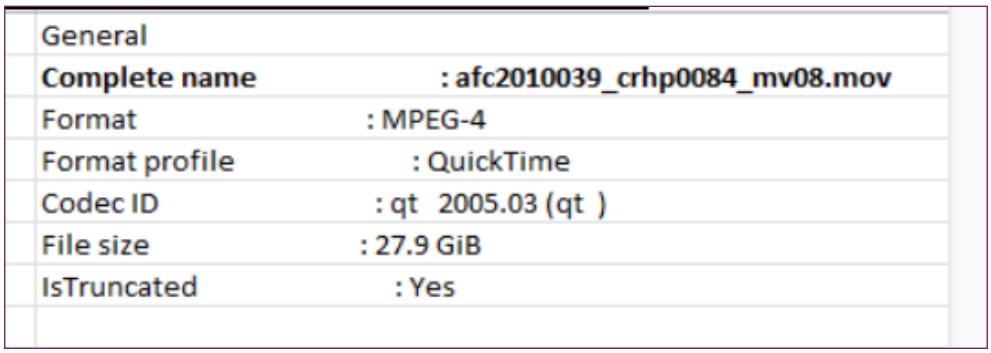


Figure 2. Sample corrupt file with minimal top-level metadata available.

Two major errors were widespread. Out of over 750 video files, 4 of the files failed with an unclear error in the system's Rhozet transcoder: "Process terminated for unknown reason." Further investigation with MediaInfo and Exiftool[6] showed no stream info available in the files, only top-level format data (Figure 2). Consequently, several common media players could not open the files, including VLC, QuickTime, Windows Media Player, and ffplay. FFmpeg provided a more specific error: "moov atom not found" (Figure 3).

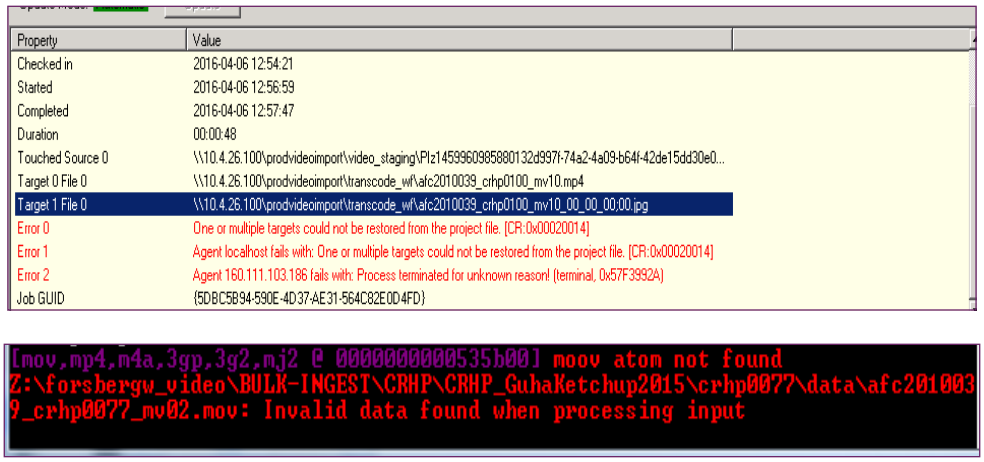


Figure 3. Rhozet error (above); FFmpeg error (below).

The moov atom in the QuickTime format contains information crucial to the decoding and playback of the file. Without this atom, the decoder cannot locate the stream data and has no instructions on how to play the file. Grasping for language to describe the problem, we defined the files as "incomplete" in our institutional correspondence.

6 MediaInfo by MediaArea, https://mediaarea.net/en/MediaInfo; Exiftool by Phil Harvey, https://exiftool.org/.

A second error presented itself only in the Rhozet transcoder, allowing us to target the exact time-stamped location of the error in the video. VLC was able to open the files and play them, but at the point of error, the video erupted in loud screeching sounds and presented colorful glitched blocks, signaling corrupted bits in the video stream. Decoding the file with FFmpeg output hundreds of the same error: "Error while decoding stream" (Figure 4).

```
frame=   57 fps= 15 q=-0.0 size=   33164kB time=00:00:01.76 bitrate=153626.2kbit
frame=   65 fps= 15 q=-0.0 size=   44858kB time=00:00:02.03 bitrate=180544.8kbit
[prores @ 000000000036bd360] invalid plane data size
    Last message repeated 299 times
[prores @ 000000000036bd360] error decoding picture
Error while decoding stream #0:2: Operation not permitted
[prores @ 000000000036bd360] invalid frame header
Error while decoding stream #0:2: Invalid data found when processing input
frame=   67 fps= 13 q=-0.0 size=   44858kB time=00:00:02.10 bitrate=174813.3kbit
[prores @ 000000000036bd360] invalid frame header
Error while decoding stream #0:2: Invalid data found when processing input
[prores @ 000000000036bd360] invalid frame header
Error while decoding stream #0:2: Invalid data found when processing input
[prores @ 000000000036bd360] invalid frame header
Error while decoding stream #0:2: Invalid data found when processing input
[prores @ 000000000036bd360] invalid frame header
Error while decoding stream #0:2: Invalid data found when processing input
[prores @ 000000000036bd360] invalid frame header
Error while decoding stream #0:2: Invalid data found when processing input
[prores @ 000000000036bd360] invalid plane data size
    Last message repeated 453 times
[prores @ 000000000036bd360] ac tex damaged 1024, 1024
[prores @ 000000000036bd360] invalid plane data size
    Last message repeated 2 times
[prores @ 000000000036bd360] error decoding picture
```

Figure 4. FFmpeg errors.

After discovering the errors, we began investigating where in the long path from producer's camera to LC to SI the errors may have occurred and to see if earlier copies of the files were available. Since the LC bags validated at SI, we checked the fixity values against the LC repository values, which matched. We then took a look at the files on the LC staging RAID. These files did not match our fixity values and could be opened and played fully. We were able to replace corrupt files with complete files from the LC RAID; all of the "missing moov" atom files and almost all of the glitch files were replaced.

We concluded that the files were accidentally corrupted in the transfer from the steps and transfers involved from migrating from LC RAID staging to hard drives for the archives staff for ingest into LC's repository when fixity information was created. Creating fixity information at the earliest point possible after the creation of a file is a best practice, because errors can occur in the workflow at any point and *it is possible to validate checksums on corrupted files*. Part of the administrative challenge with this then, is educating non-archival partners and content producers to create fixity values before the collections are ever accessioned and received in the archive.

Discovering the point of failure in the files was also a challenge, as the errors were only easily findable with some tools and not others. With the size of this collection, errors could have easily gone undetected for a while, even past the point of recovery. Based on our investigation of the workflow, the transfer protocols and fixity creation step were amended to mitigate future errors.

2. Static Image for Expected Duration

Rebecca Fraimow

In 2014, WGBH embarked on a project to retrieve all the audiovisual files from our digital asset management system (now deprecated) and send them to a vendor for transcoding and inclusion in the American Archive of Public Broadcasting. These files were stored on LTO-4 tapes administered through Sun Storage Archive Manager's (SAMFS-QFS)[7] server with an automatic tape robot; the files were retrieved in batches from the SAMFS-QFS server and downloaded onto a series of hard drives.

Initially, WGBH staff didn't QC the files after download. However, shortly after the beginning of the project, the vendor began to notice significant failure rates on the drives they were receiving from WGBH. These failures fell into several distinct types: files that could not be characterized as media files and, when analyzed with ffprobe,[8] reported the error message "moov atom not found"; files that could be characterized as media files but, when analyzed with ffprobe, reported the error message "Could not find codec parameters for stream 0"; and files that generated accurate metadata when analyzed by ffprobe, and could be played back with ffplay,[9] but showed visual signs of corruption. These last files would play correctly for a period of time, until the video stopped on a single frame—either a corrupted image from the content, or a green or black screen—that remained static throughout the remainder of the file's duration (Figure 5).

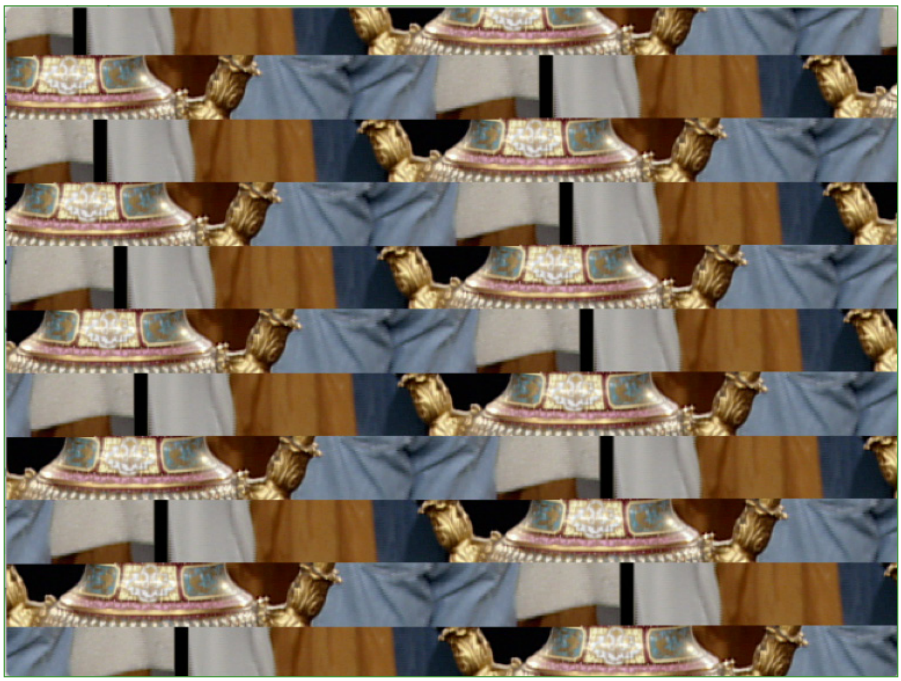


Figure 5. An example of one of the frozen images from a corrupted file.

7 The SAMFS-QFS is an Oracle product with documentation available here: https://docs.oracle.com/cd/E22586_01/html/E22570/glebg.html.
8 For more information about the file analysis tool ffprobe, visit https://ffmpeg.org/ffprobe.html.
9 For more information about the test playback tool ffplay, visit https://ffmpeg.org/ffplay.html.

As a result, WGBH began instituting extensive QC measures when downloading files from the server. Unfortunately, checksums had not been generated for most of these files before they were uploaded to the SAMFS-QFS system, making full file integrity checks impossible. Instead, WGBH started running automated checks on each downloaded file for size match and readability by file characterization tools. If a file did not match the size recorded for it and could not be read by FFmpeg, it was deleted from the drive. In order to detect more subtle failures, WGBH developed a script that automatically created image galleries of thumbnails taken at regular intervals throughout each video. WGBH staff could then identify issues by quickly reviewing the image galleries.

Many of the files that failed on the initial download were later downloaded successfully, which allowed us to compare the successful version with the corrupted one. Analysis with Apple's Atom Inspector, a tool for viewing and editing atom resources in QuickTime and MP4 files, confirmed that despite the different "symptoms," all the files were failing in the same way: a portion of the file was transferring correctly over the network, but at some point, the bit transmission became corrupted.

Each failure type represented differences in the structure of the original files. As discussed in the previous case study, most of the information that instructs a media player in how to process the contents of a QuickTime video file is contained in a data unit called the moov atom, generally located at the end of the file. The files that reported back "moov atom not found" were all QuickTime files structured in this way; when downloading, they became corrupted before the moov atom could be transferred, resulting in a file that could not be interpreted.

Files that reported correct media information but could not be played due to "incorrect codec parameters" were all MP4 files, which are structurally similar to QuickTime files but have the moov atom at the beginning of the file. However, the mdat atom—which stores the actual data content of the file—did not appear in the molecular tree of these files when they were analyzed; the data stream seems to have become corrupted almost immediately after the successful transfer of the moov atom. A media player presented with these files tries to decode the data in accordance with the track information provided in the moov atom, but finds no data to decode.

The files that demonstrated visual corruption were also structured with the moov atom at the beginning, and both mdat and moov atoms transferred successfully. Atom Inspector analysis shows that the original files and the corrupted files match each other exactly on the bit level until the point when corruption sets in, after which the data in the corrupted files appears to become randomized (Figure 6).

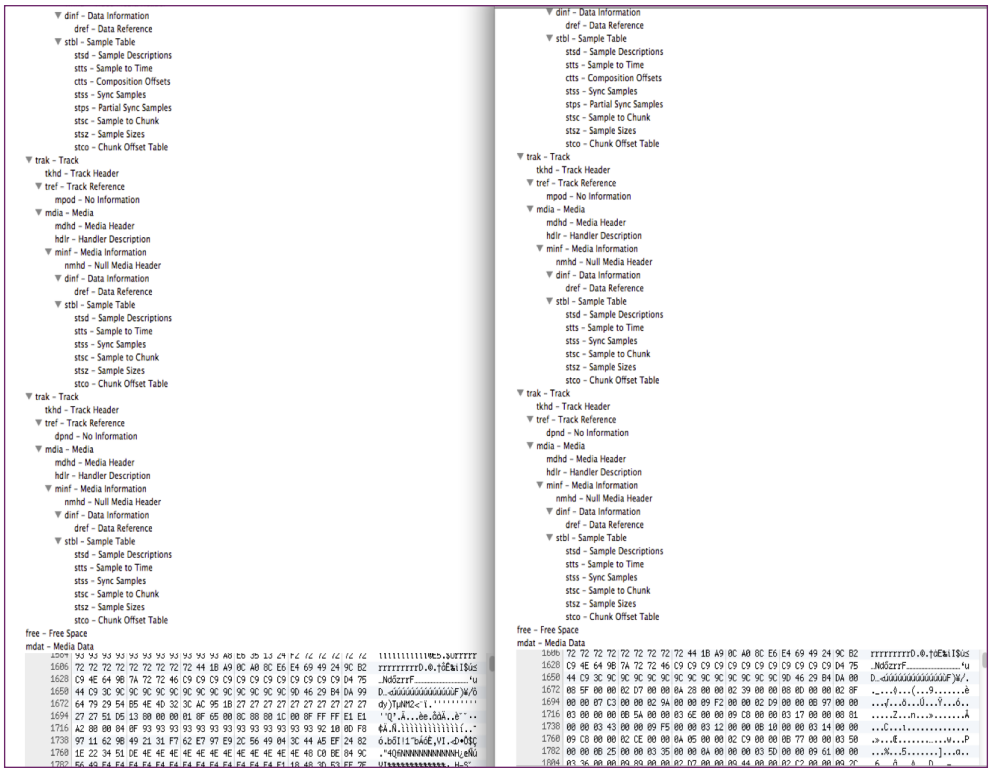


Figure 6. Left: hex data from a successful file. Right: hex data from a corrupted version of the same file. The hexes match until line 1650, after which the corrupted file deviates.

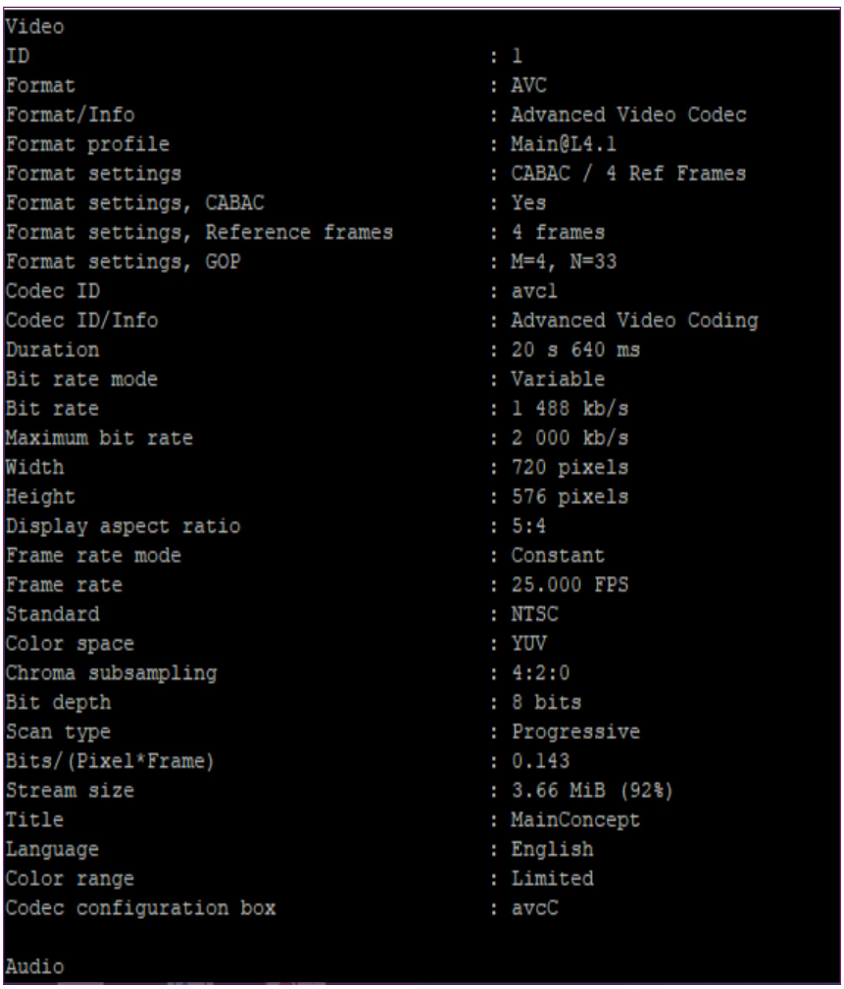
Because many of the corrupted files could eventually be downloaded successfully, we believe that the problems are an artifact of the transfer from the server to the hard drives. We're no longer using the SAMFS-QFS for backup storage, but we've also become more rigorous about fixity checking to ensure we'll catch these issues at the source going forward.

3. PAL and NTSC

Julia Kim

In 2019, an archival staff member at the Media Archive for Central England re-reviewing previously digitized collections noted an unknown artifact potentially created through the mediating digitization hardware and software used. Due to the artifact's uniqueness, she publicized it on Twitter and the A/V Artifact Atlas (AAA), an online resource for anyone to share, learn, and identify potential errors found in digitization QC workflows. The files containing the artifact had all been created through vendor digitization of 1-inch open-reel tape in 2012. While closer scrutiny of several other 1-inch transfers reveals the very same visual QC flaws, at this point in time, it's impossible to definitively trace and correct for the error without re-reviewing all aspects of the 2012 workflow.

During playback, an unusual "horizontal artifact" can easily be noted, which appears as an up and down rippling of the video image. The artifact can be likened to the motion of a wave or unfurling of cloth that shifts the video information up and down.[10] Still images of this playback issue do not reproduce the artifact. A closer inspection of the file's technical metadata (Figure 7) revealed potentially related and unexpected information, inviting further analysis.



```
Video
ID                                       : 1
Format                                   : AVC
Format/Info                              : Advanced Video Codec
Format profile                           : Main@L4.1
Format settings                          : CABAC / 4 Ref Frames
Format settings, CABAC                   : Yes
Format settings, Reference frames        : 4 frames
Format settings, GOP                     : M=4, N=33
Codec ID                                 : avc1
Codec ID/Info                            : Advanced Video Coding
Duration                                 : 20 s 640 ms
Bit rate mode                            : Variable
Bit rate                                 : 1 488 kb/s
Maximum bit rate                         : 2 000 kb/s
Width                                    : 720 pixels
Height                                   : 576 pixels
Display aspect ratio                     : 5:4
Frame rate mode                          : Constant
Frame rate                               : 25.000 FPS
Standard                                 : NTSC
Color space                              : YUV
Chroma subsampling                       : 4:2:0
Bit depth                                : 8 bits
Scan type                                : Progressive
Bits/(Pixel*Frame)                       : 0.143
Stream size                              : 3.66 MiB (92%)
Title                                    : MainConcept
Language                                 : English
Color range                              : Limited
Codec configuration box                  : avcC

Audio
```

Figure 7. Conflicting broadcast standard technical metadata

Most of the technical characteristics found with ffprobe and MediaInfo indicate that the file is in the PAL broadcast standard, matching its broadcast specifications and image size of 720 by 576 pixel resolution and 25 fps (frames per second). This correlates with the audiovisual collection's British geographic broadcast history. However, this is contradicted by tools like MediaInfo, which reports in the file's "Standard" metadata field that the NTSC broadcast standard is used instead (Figure 7). Broadcast audiovisual files

10 See video and error: https://archive.org/details/jowhite_one_inch_tape.

are not created to adhere to a mix of different broadcast standards and this issue may be a contributing factor to the "horizontal artifact" noted with visual QC. In my analysis, distinguishing whether or not this is a glitch with the file itself and/or an issue with verbosity and depth of the existing technical reporting tools available added another level of complexity. In other words, is this case of a PAL standardized file somehow legitimately exhibiting other characteristics that would mistakenly identify it as also NTSC that are less easy to detect with software tools?[11] Or, is it just a "glitchy" file?[12]

In investigating this further, I explored other related technically significant qualities and surprises between the way the file is meant to display information, as noted in the display aspect ratio (DAR), screen aspect ratio (SAR), and pixel aspect ratio (PAR); three mathematically related ratios that help determine how software plays back the file through manipulating, for example, pixel size and ratios (PAR) from non-square (not 1:1 ratio) to square (1:1). The DAR, the most commonly understood and referred to of the 3 interrelated characteristics, is how the file's aspect ratio is resolved for playback for viewers. It's often limited to values such as 4:3, which is referred to commonly as "standard definition," or 16:9 which is referred to as "high definition." The digitized files in question exhibit DAR values and play back with a 4:3 ratio, as expected. This value is related mathematically to the other values,[13] and the screen aspect ratio (SAR) is 1:1, which would mean that while the PAR should be 4:3 or non-square, it's noted as square. Through sharing this case study more widely at the 4th annual No Time to Wait conference with digital audiovisual archivists, developers, and other experts, while no one in the room had experience with the "PAL and NTSC" metadata problem itself, this PAR issue was dismissed as a frequent "red herring" from archivists experienced with this discrepancy.[14]

When this case study was raised for discussion at the NTTW 4 conference, other potential explanations were raised. The "horizontal artifact" error shared was, at least to a 1-inch digitization expert, visually familiar from his experience with similar artifacts created through the digitization and transfer process specific to 1-inch tape, specifically with a faulty time base corrector (TBC), a key component in audiovisual digitization workflows that is used to buffer and stabilize the video signal coming off the original magnetic tape. If this were the case, it seems that the best way to correct for the batch error would necessitate going back to the original analog carrier to redo capture, potentially researching alternative TBCs to use or even treating the media itself for the possibility of improved capture. Other suggestions were that the confounding broadcast metadata is a result of an intervening piece of software with defaults set to the NTSC broadcast standard. This default setting somehow may have gotten saved into the file itself, creating the conflicting metadata.

11 For other reports of both PAL and NTSC Mediainfo reports, see: https://forums.creativecow.net/docs/forums/post.php?forumid=24&postid=988654&univpostid=988654&pview=t.

12 For some further reported PAL and NTSC files and metadata reports, see https://sourceforge.net/p/mediainfo/discussion/297610/thread/14cb90cf/.

13 For a narrative explanation on, see Nagels. "PAR, SAR, and DAR: Making Sense of Standard Definitions (SD) Video Pixels." https://bavc.org/blog/par-sar-and-dar-making-sense-standard-definition-sd-video-pixels.

14 Thank you to Kieran O'Leary for his contributions to this case study during the NTTW 4 "Questionable File: Show and Tell" presentation.

QC in the future could involve checking for this type of broadcast discrepancy to support partial visual QC of batch digitization projects. These types of errors are still relatively difficult to diagnose, in part, thankfully, due to their seeming rarity. The NTTW 4 event, however, brought together specialists who were able to offer feedback based on their otherwise often discretely held specialized knowledge bases with, for example, a particular analog format's characteristics, specific digitization workflow tools, or the inner workings of software checkers in use. While this error, now discovered, can be diagnosed relatively easily, the only practical solutions—to redo the tape transfers or restage the workflow—are not feasible due to resource constraints, which underscores the need to resource and support QC as early in the digitization transfer as possible.

4. HDCAM Output Displayed Through the QCTools Bit Plane Filter

Eddy Colloton

In July of 2019, the Hirshhorn Museum and Sculpture Garden contracted with a vendor to migrate content of one HDCAM tape and one HDCAM SR tape off of their carriers to file-based formats for preservation. HDCAM is a high-definition (HD) digital videotape format released in 1997, used as a professional format for mastering HD productions, followed up by HDCAM SR in 2003, with a higher bit-depth and data rate. We requested delivery of uncompressed 10-bit (v210) QuickTime video files with 24 bit-depth 48 kHz linear PCM audio. I subsequently reviewed the files at the museum. Both files passed all of the museum's quality control (QC) procedures, which involve playing back all files in real time, fixity checks, and review in QCTools.

During a presentation at the 2019 Association of Moving Image Archivists (AMIA) annual conference, Morgan Morel of the Bay Area Video Coalition (BAVC) referenced issues he had observed in certain preservation workflow procedures that resulted in a lack of information in the 9th and 10th bits in a 10-bit depth video file.[15] Morel demonstrated the truncated data in the 9th and 10th bits of a video by using the bit plane filter in QCTools. Viewing video information through bit planes can help to illustrate how the information in the file is stored, with the first bit plane containing the most significant data, and less significant, more granular visual information contained in each successive bit. The QCTools bit plane filter allows a user to view each bit plane of either the Y, U, or V signal individually, or, using the "10 slice" option to view them side by side.

Following the conference, I chose to review our most recent transfers to see if the issues Morel had identified had gone overlooked in my initial QC of the files. Figures 8 and 9 display the Y-channel of the HDCAM and HDCAM SR transfers viewed through the Bit Plane 10 Slices filter in QCTools.

15 Morel, M., Blanche, J., Rice, D., and Hopfauf, L. (2019) Known Issues or Non Issues with AV Preservation Equipment. Association of Moving Image Archivists Conference.

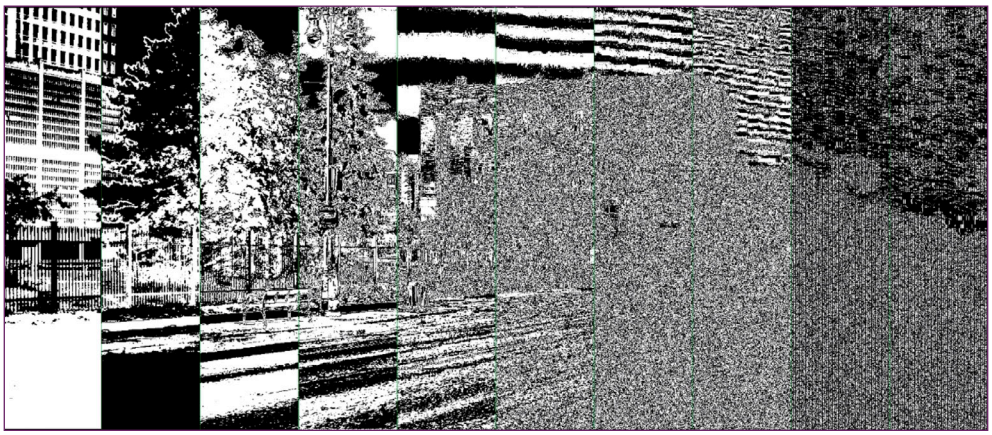


Figure 8. From HDCAM, Y=channel Bit Plane 10 Slices filter in QCTools

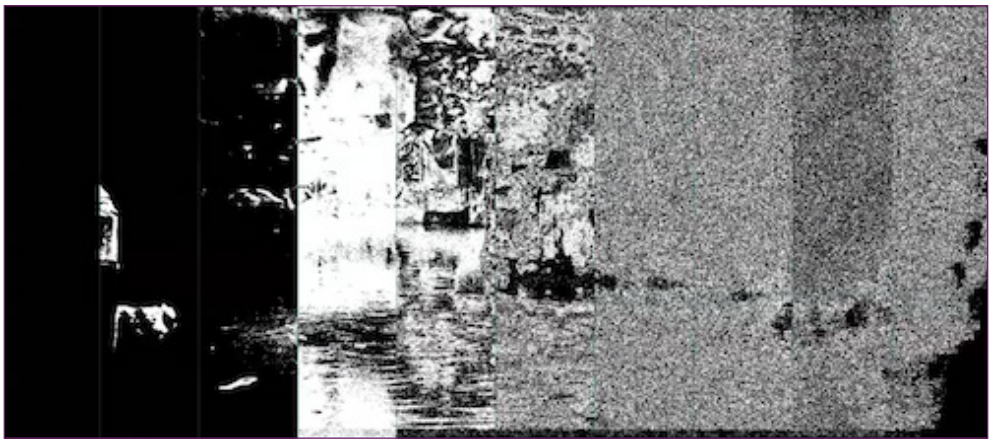


Figure 9. From HDCAM SR, Y-channel Bit Plane 10 Slices filter in QCTools

Typically, the information contained in each bit plane would become progressively more granular from left to right (1st bit plane to 10th bit plane). As these images illustrate, the 9th and 10th bit planes do not necessarily contain increasingly granular information. In the case of the HDCAM transfer in particular, the 9th and 10th "slices" on the right side of the frame appear to contain less unique visual information than the other eight. Keep in mind that these images depict the Y channel of the video signal, which contains both black and white information. While the 9th and 10th bit planes are darker, this does not in and of itself indicate that they contain less information. That being said, the contrast to the other eight bit planes is striking and suggests something unusual may have taken place.

I tweeted short gifs of these bit plane views to see if anyone had encountered similar issues, or had any idea what may have caused this discrepancy.[16] I had a few responses, indicating that there may have been an issue with the deck, or possibly, given that the

16 Colloton, E. 2019. "This looks wrong tho - less info in 9 and 10? From a vendor, so I would have to check [...] Twitter. https://twitter.com/EddyColloton/status/1196908477139968000 [Accessed December 30, 2019].

HDCAM tape only contains 8-bit depth video, the disparity between the 9th and 10th bit planes compared to the other 8 makes sense.

I hadn't really considered this issue when dictating the capture settings to the vendor. Videotape formats are commonly migrated to 10-bit uncompressed QuickTime for preservation.[17] We relied on this practice when selecting a target format for both HDCAM and HDCAM SR. The fact that HDCAM is an 8-bit depth format was overlooked, and may be the cause of the lack of information in the 9th and 10th bits of our preservation master file.

However, HDCAM SR does contain 10-bit depth video. Each tape was played back using an HDCAM SR deck (as HDCAM SR playback decks are backwards compatible with HDCAM). Would the video signal from an HDCAM tape sent out over HD-SDI from an HDCAM SR deck only contain 8-bit depth video or would it have been padded 10-bit depth video? If the source of the issue with the HDCAM transfer is solely due to the format, then why does less information appear in the 9th and 10th bit planes of the transfer from the HDCAM SR tape? Can we know for certain that the issues we're observing in our HDCAM SR transfer are a result of the transfer, and not representative of the information on the tape?

I'm currently working with the vendor to produce video files using the same equipment with different HDCAM and HDCAM SR tapes, to verify that this issue is from the transfer process. If the vendor uses the same transfer process to create files that are not exhibiting this issue, it is possible the issue is a result of the tapes' production, and our transfers are therefore representative of the information encoded onto the tapes by their content creator.

This case demonstrates the complexity of rectifying an issue with a video file once it has been discovered. The source of the issue can be difficult to identify, even harder to understand, and may not necessarily pose a risk, or even be an error at all. If indeed the 9th and 10th bit planes of the video from the HDCAM are simply padding, the additional file size is wasteful, but the original content is still preserved within the digital video file. The video characteristics may not be as representative *as possible* of the original work, but the underlying issue is imperceptible to the viewer, and a low risk to the long-term preservation of the file. Without a thorough understanding of the issue and its source, however, it is impossible to evaluate the issue's significance. Knowledge sharing through conferences, dialog on social media, and conversations with engineers fills a vital need to demystify the complexities of video and empowers stewards of cultural heritage to make more informed decisions. I would not have caught this issue at all if I hadn't seen a presentation about it, nor would I have realized that HDCAM is an 8-bit format if I hadn't tweeted about it; and I would not have been able to troubleshoot the issue without the help of our vendor. Granular and niche challenges, such as the ones described in this paper, present an opportunity to learn from one another, and to build better tools, practices, and communities.

17 For detailed discussion of target format considerations, see Section B of *Guidelines for the Preservation of Video Recordings*, 2019 revised version: https://www.iasa-web.org/sites/default/files/publications/IASA-TC_06-B_v2019.pdf

5. Dolby E Encoding

Shu-Wen Lin and Dan Finn

In 2018 the Smithsonian American Art Museum (SAAM) loaned out a single-channel digital video artwork with dedicated display equipment specified and provided by the artist. While on display, the artist-provided projector died and had to be temporarily replaced. After the loaned equipment was returned, our main objectives were to identify appropriate equipment for a new exhibition format, and to ensure we had everything we needed for long-term digital preservation of the artwork. For long-term preservation, we looked to transfer the HDCAM tape the artist provided at acquisition as a preservation format. However, the work's surround sound audio is encoded on the HDCAM using Dolby E, a proprietary encoding technology which requires specific hardware or software to decode.[18] While this tape format "recipe", HDCAM with Dolby E audio, is common enough in broadcast and production environments, it is not commonly used in a video art context. As a result, we discovered our lab was not prepared to deal with this recipe easily.

In order to ensure we had something preserved for the time being, we copied the exhibition file onto our museum's digital repository. The specifications of that file are lossy, however, so we wanted to generate a higher-quality preservation file by returning to the HDCAM tape.

The SAAM Media Conservation Lab has a Sony SRW-5500 deck that can play HDCAM and HDCAM SR tapes. "Plan A" was to produce a new preservation file by capturing the output of the SRW-5500 using the lab's BlackMagic UltraStudio 4K, the capture card we use to turn video content stored on tape into video content stored in digital files. However, the Dolby E encoded audio made that plan unworkable.

Dolby E is a legacy audio format designed primarily for production and broadcast environments. In the HDCAM context, Dolby E encodes 6 audio channels using only two audio tracks on the HDCAM tape. They are stored on the tape as "non-audio data." While the SRW-5500 can encode Dolby E, it cannot decode that data for capture without additional equipment. Decoding requires specific Dolby E hardware, the DP572, or a proprietary software solution such as Neyrinck's SoundCode or Minnetonka's SurCode.

Our vendor research showed a wide range of potential costs related to decoders. A used DP572 could cost upwards of $4000 USD, but there were also some eBay listings for $200. SoundCode is $2700 for both encoding and decoding of Dolby E, or $2000 for just the decoder. SurCode is $3500, but can be rented for $250 for a week. The rental is the likely choice moving forward. The other price points are achievable for us, but since this piece is the only work in our collection that has an element with Dolby E, we were hesitant to spend 20-40% of our annual lab budget on something that will not be reused. Another determining factor for holding off on either purchase or rental was that the piece is not scheduled for exhibition in the foreseeable future. We decided to first use the equipment and tools that we already had to experiment with no-cost alternatives.

18 For further information on Dolby E in broadcast environments, see de Pomerai, E. "Managing a Real World Dolby E Broadcast Workflow," http://downloads.bbc.co.uk/rd/pubs/whp/whp-pdf-files/WHP175.pdf.

We tried, for example, experimenting with FFmpeg, as it has some capability to decode Dolby E in certain instances. FFmpeg requires the Dolby data to be contained in a file, specifically a transport stream encoded per SMPTE 337 M.[19] Since we have Dolby E on HDCAM as non-audio data, FFmpeg, as predicted, failed in our one attempt.

Based on suggestions on Avid forums, we then tried capturing the non-audio data into two 20-bit 48 kHz channels in order to convert them to surround audio afterwards.[20] After capture, we analyzed the file in MediaInfo and FFmpeg to see if the captured audio was recognized as Dolby E data. The video was successfully captured, but not the audio. When we attempted to play back the captured non-audio data, we only heard hissing and random noise. Attempting to play back non-audio data is not a recommended practice, as the noise produced can damage one's monitors or hearing if the volume is not reduced. We were certainly surprised at how loud non-audio could be. After our experiments to date, there does not appear to be a way to decode and capture the Dolby E surround audio data without purchasing additional hardware or software.

Dolby E is no longer the de facto Dolby codec in use, adding an additional challenge of obsolescence to consider. Next steps will focus on coordinating with the artist's studio in the event they have the audio in a different preservation-level format. Failing that or any other chance discovery, we will most probably rent SurCode for capturing a preservation level audio file.

6. DV Capture and Erratic Display

Annie Schweikert

In 2018, Stanford University accessioned an archival collection that included a significant amount of material stored on hard drives. While surveying the audiovisual component of the collection in 2019, I found that certain video files on these drives did not play as expected. Those files, each created in or around 2005, flickered rapidly and erratically between 4:3 and 16:9 aspect ratios during playback (Figure 10). This issue was present in VLC and ffplay on Mac, Linux, and Windows, but not in QuickTime 7 or X.

Figure 10. 4:3 display aspect ratio (left) and 16:9 display aspect ratio (right).

19 See thread on Dolby E decoder capability ffmpeg-user mailing list archives (September 2017): https://lists.ffmpeg.org/pipermail/ffmpeg-user/2017-September/037112.html [Accessed March 4, 2021].

20 Avid Community, (2009). "Dolby E delivery:" http://community.avid.com/forums/p/69885/391655.aspx [Accessed March 4, 2021].

I wondered how widespread the problem was. Was it isolated to a particular type of file (and thus introduced upon creation), or did it represent a larger problem across the drives? I narrowed down the issue to a small set of files that clearly shared a similar provenance. The video codec of each file was DV, or Digital Video, a born-digital video codec, but one that (at the time) was typically recorded on videotape and then transferred onto a computer as files for editing.[21] The 2005 creation date suggested that the files were transferred from videotape via FireWire, a transfer strategy that would have preserved all technical metadata and data from the original digital video stream (as opposed to treating the original DV tape as solely audiovisual content and substituting new technical metadata).[22] The file format (also called the wrapper or container) is "original" QuickTime—i.e., the Apple specification of the file format, not the later standardized ISO QuickTime profile.[23] The videos were recorded from Israeli broadcast television, meaning the broadcast standard is PAL, and thus the expected display aspect ratio (DAR) is 4:3.[24]

The playback issue clearly stemmed from clashing DARs (4:3 and 16:9), suggesting the problem lay in conflicting technical metadata. At first, it seemed like the conflict could be between the video codec and the file wrapper. The fact that the file is wrapped in the QuickTime file format, and that the behavior disappears during playback in QuickTime, seemed to support this hypothesis, as the specifications for the player and file format stem from the same standards. For example, a QuickTime file header stores metadata in small chunks called "atoms"; perhaps the QuickTime player was reading aspect ratio information from an atom that VLC did not see or could not read.[25]

However, examining the files' technical metadata did not indicate that the wrapper was the source of the wrong aspect ratio. MediaInfo reported a 4:3 DAR for the video stream (i.e., the DV codec), while a tool called DV Analyzer reported a 16:9 DAR for the video stream. Neither tool reported a DAR stored in the wrapper.[26] A closer inspection of the QuickTime header atoms, using Atom Inspector, also did not reveal any DAR information stored in the wrapper.

21 For more information on DV, see "Digital Video Encoding (DV, DVCAM, DVCPRO)," *Sustainability of Digital Formats*, Library of Congress, updated 21 Feb. 2017, accessed 11 Oct. 2020. https://www.loc.gov/preservation/digital/formats/fdd/fdd000183.shtml

22 For more information on DV transfer strategies, see Dave Rice and Chris Lacinak, "Digital Tape Preservation Strategy: Preserving Data Or Video," AVP, 2 Dec. 2009, https://www.weareavp.com/digital-tape-preservation-strategy-preserving-data-video/.

23 The standardized ISO QuickTime profile is based on the earlier Apple specifications, and the use of one or the other is typically a question of date. For more information on the original QuickTime file format, see "Introduction to QuickTime File Format Specification," *Apple Developer Documentation Archive*, Apple Inc., 2004-2016, accessed 20 Jan. 2020. https://developer.apple.com/library/archive/documentation/QuickTime/QTFF/QTFFPreface/qtffPreface.html.

24 For more technical specifications and differences between the PAL standard and NTSC, its North American equivalent, see "Video Learning Guide for Flash," Adobe, 22 Feb. 2011, accessed 20 Jan. 2020. https://www.adobe.com/devnet/flash/learning_guide/video/part06.html.

25 "Metadata," *Apple Developer Documentation Archive*, Apple Inc., 2004-2016, accessed 20 Jan. 2020. https://developer.apple.com/library/archive/documentation/QuickTime/QTFF/Metadata/Metadata.html#//apple_ref/doc/uid/TP40000939-CH1-SW1.

26 MediaInfo reports technical metadata for audiovisual files, with metadata sorted by whether it applies to the file format, the video stream, or the audio stream. DV Analyzer is built around MediaInfo, but it was last updated in 2017 (to Version 1.4.2), and uses an earlier (unspecified) version of MediaInfo than the up-to-date version (CLI version 19.04, released 2019) I used as a standalone tool. "DV Analyzer," *MediaArea*, accessed 10 Jan. 2020. https://mediaarea.net/DVAnalyzer.

I then rewrapped the DV video stream in a new, generic QuickTime wrapper using the following ffmpeg command:[27]

```
ffmpeg -i FILE.mov -c:v copy NEW_FILE.mov
```

The resulting file played successfully in VLC and ffplay, with the expected 4:3 display aspect ratio—a result that seemed to suggest that the problem lay in the original wrapper. However, this result did not explain why different tools were reporting different DARs within the video stream, rather than between the stream and the wrapper.

I brought my issue up during a presentation at the No Time to Wait conference, and FFmpeg developer Carl Eugen Hoyos, who was also attending NTTW 4, offered to take a look at my file. He extracted and played the raw video stream in VLC, where the playback artifact reoccurred. This result proved that the conflicting problem was not in the wrapper, but in the codec itself, as it still occurred when the file was pared down to the raw video stream. He suggested that the file played fine in the QuickTime player, or when rewrapped in a new QuickTime wrapper, because the QuickTime architecture simply picks one display aspect ratio to favor so as not to encounter this error—while VLC does not favor one and therefore reproduces the error.[28]

In pinpointing and addressing this issue, I had to draw on my own knowledge of codecs, wrappers, and diagnostic tools; but especially on the knowledge of others. Though I am still unsure of how the conflicting display aspect ratios were introduced in the first place, I now have a working solution—either simply playing the file in QuickTime instead of VLC, or rewrapping the file to render it universally playable.[29] At the same time, the underlying issue is unresolvable; the original source video and carrier are long gone, and the file cannot be recaptured. I can only understand the files well enough to implement solutions with a layer of security.

Conclusions

Quality control of complex audiovisual signal chains can include any number of steps, but in the past years, many tools have made it easier for cultural heritage professionals to diagnose problems and safeguard their collections. There are now established protocols developed to meet the needs of the many institutions rushing to digitize and ingest at-risk audiovisual content before it's too late. However, bulk or automated workflows are not enough to identify complex problems or edge cases such as the ones discussed in this paper.

Audiovisual workflows necessitate a comprehensive understanding of the full signal chain, carrier history, and file path in order to distinguish and diagnose potential errors, as opposed to norms or issues that may simply be characteristics of the format with no remedy. The lack of documented workflows that fully and honestly engage in these gray areas make it difficult to gain this comprehensive understanding. As these case studies demonstrate, even knowledgeable audiovisual specialists need to rely on sharing

27 This command takes the original FILE.mov, removes the wrapper (demuxes), and creates the output file NEW_FILE.mov. NEW_FILE.mov is a QuickTime-wrapped file with generic default characteristics set by FFmpeg. (This behavior is implied in FFmpeg by giving NEW_FILE an ".mov" extension.) The flag "-c:v copy" ensures that the underlying video codec information remains untouched.

28 Thank you to Carl Eugen Hoyos for this analysis and assessment on 6 December 2019.

29 For a preservation copy, a rewrapped file would need to retain all metadata currently stored in the QuickTime wrapper. A typical access copy would not necessarily need to retain that same information.

and exchanging information with the community to crowd-source potential solutions or explanations. This is even more the case with especially rare or arcane formats, or with staff who do not regularly QC audiovisual files in their day-to-day work.

Collection stewards must accept a certain level of imperfection. Close examination of files can raise dismaying questions, not all of which can be authoritatively answered. No person can know everything, and no project or collection will ever be perfectly preserved. In an environment of limited time, resources, knowledge, and staff, "good enough" is still good, and sometimes has to be enough. Errors, failures, artifacts, loss, and other issues are inevitable, including in repositories where this level of scrutiny is impossible.

There may be no one-size-fits-all answer for QC processes; if the risk of failure is inevitable, then the best answer is to prepare for it. It is sound practice to have multiple points of QC, and validate and keep as much information as possible about files at every point along the signal chain to have a greater chance of pinpointing the exact source of failure when something goes wrong. Perhaps most importantly, this article underscores the importance of consulting with colleagues working on similar projects, sharing resources, and documenting challenges. The problem one institution spends weeks or months solving today could save another organization those weeks or months of headache in the future, or lead them to discover an issue they didn't know they had.

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We'd also like to acknowledge and thank Joanna White, Blake McDowell, Caitlin Stewart, Erica Titkeymeyer, and Maddy Smith for providing us with invaluable feedback and comments.

THE PRIVATE PAPERS OF A GHANAIAN TEACHER, POLITICIAN AND CHIEF: J. K. MBIMADONG, A.K.A. NANA OBIMPE[1]

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Abstract

Nana Obimpe, known in private life as Joseph Kwesi Yumpo Mbimadong (1908-2013) was an educator, politician, academic, advocate and traditional ruler. This paper seeks to present the life story of Nana Obimpe and how local, national and global politics made him establish his own archives. The paper argues that his collections are of historiographical essence and could be valuable additions to information from some of the state archives in Ghana.

Key Words: Archives, Ghana, Politics, Chief

Introduction: A brief on Nana Obimpe

Kwesi Yumpo was born around 1908 into the Kabesu clan of the Balai Nawuris in the Kpandai District of the Northern Region of Ghana.[2] His father was called Mbimadong and his mother was a Chala from Agou, in present day Nkwanta District of the Oti Region. Nana grew up in an area which was administered by both the Germans and British until the plebiscite of 1956 that made the area part of Ghana.[3] Nana received both traditional and Western education. At the traditional level he learned the language, culture and history of his people. He also received Western education in Kete Krachi from primary school through to the Standard Seven exams under Wilhem Henkel, an educator with a German and Ghanaian background, where he learned German, English, history, algebra, civics and civilisation. Later he attended teacher training college in Pusuga near Bawku in the Upper East Region of Ghana.[4]

Figure 1. Photo of J. K. Mbimadong when he was the Parliamentarian for Kpandai constituency.

1 I shall use the name Nana or Nana Obimpe throughout the paper. This was the name that became popular in his last years.
2 Nana's date of birth was reported as 1922. But interviews with some family members point out his date of birth as 1909.
3 For systems of administration in Ghana in the Colonial and post-Colonial period see Bening R.B. *Ghana Regional Boundaries and National Integration* (Accra: Ghana Universities press, 1999).
4 Ntewusu, S.A., (2016) 'Between Two Worlds: a biography of honourable Nana Obimpe, a.k.a. J. K. Mbimadong of Ghana'. Leiden: *ASC Working Paper* 132.

In the 1950s he became a teacher and taught in several schools in Ghana. In 1969 he stood for the parliamentary elections on the ticket of the National Alliance of Liberals party and won, becoming the first Member of Parliament in the Kpandai Constituency to be elected into the Parliament of Ghana's Second Republic. However, Nana could not finish his four-year term in office. The military government under I.K. Acheampong overthrew the democratically elected government in a coup d'état in 1972.[5] Nana went back into teaching, at the same time working for the Nawuri Youth Association, which he and other Nawuris founded in the 1950s. In the 1990s he was made chief of Balai, an aboriginal Nawuri community in the Kpandai District of Northern Region of Ghana, a position he held till his death in 2013.

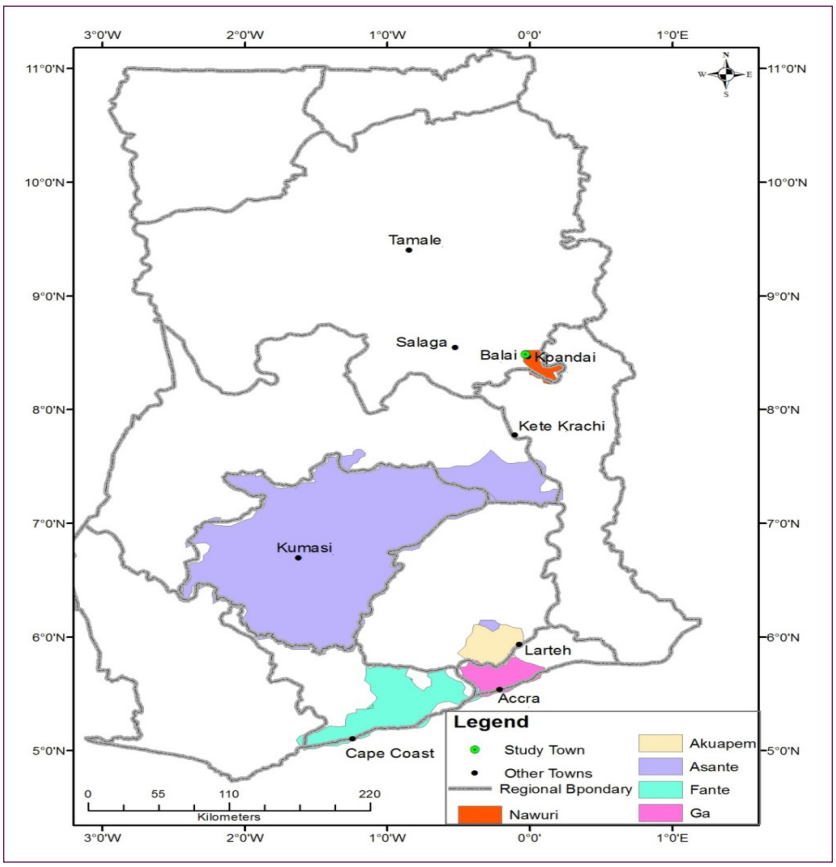

Figure 1. Map of Ghana showing J. K. Mbimadong's ethnic group, birth place marked in red. This is also the area where the documents were kept until their transfer to Accra.

Nana left behind a number of documents, papers and audio-visual material which are of historical and social importance. For the sake of this write-up, we shall call the documents the Nana Obimpe Papers and Audio-Visual Materials.

5 For more on the political history of Ghana see Buah, F.K., (1980). *A History of Ghana*, London, Macmillan.

Keeping Documents: A conversation with Nana Obimpe

In Ghana, there are broadly speaking two kinds of archives: state or government archives and private archives which are kept by individuals, families or missions. The most popular are the state archives, usually designated as national or regional archives, located in Accra and other regional capitals in Ghana.[6] Within the same category of the state archives are those that are identified as institutional archives kept by various Ministries, Departments and Agencies (MDAs), the majority of which are sometimes transferred to the National Archives in Accra or kept at the regional capitals throughout the country. Some of the private archives include: The Bells Photo Archive kept by Professor Esi Sutherland and the Mmofra Foundation in Accra, the Presbyterian Archive at Akropong, in the Eastern Region of Ghana, and the Roman Catholic Church Archive in Navrongo in the Upper East Region of Ghana.

It is important to point out that collections of individuals are rare in Ghana, and for those who do keep their papers, usually the papers are of limited size. The reason is that the ability to keep documents in good condition and in order is always a challenge. The weather, limited space, and the general idea of lack of monetary rewards that will accrue to an individual as he or she keeps the documents are enough factors that limit the interest of many people to keep personal documents.

Also, there is a cultural element to this. In most Sub-Saharan African countries including Ghana, information and records are often kept in oral form. Ghanaians privilege the oral over the written, which directly affects the value that is attached to written documents. Even though academics such as Thomas Spear share a contrary view on the issue of orality as a historiographical source, arguing that the oral is recorded in the past and passed down unchanged into the present, oral traditions have to be remembered and retold through successive generations to reach the present. Such a process poses problems of accuracy, especially as the subject matter may be subject to lapses in memory and falsification in the long chains of transmission from the initial report of the event in the past to the tradition told in the present.[7] In spite of the limitations, many still hold on to oral forms of record keeping because of the personal connection that it provides: information is usually passed on from one family member to another.

Although there are numerous challenges of keeping physical records, some families and individuals, including Nana Obimpe, still keep documents that they or other families generated. It is on this basis that the private papers of Nana Obimpe demand academic attention and discussion.

When Nana was alive, I visited him a number of times to research the history of Ghana. From 1996 until 2013 I would visit him in his hometown in the north of Ghana, or whenever he was in Accra, the capital of Ghana, he would call me to meet him so he could pass a 'piece of history' to me that he would have forgotten in our previous meeting. The fact that he would also add information to what he had already given me shows how, in spite of the documents he had, he still considered them inadequate in explaining a particular issue.

6 Ntewusu, S.A., (2014). 'Serendipity: Conducting Research on Social History in Ghana's Archives'. *History in Africa,* 41, pp 418.

7 Thomas, S, 'Oral Traditions: Whose History?' *The Journal of Pacific History*, Vol. 16, No. 3 (Jul., 1981), p. 133.

In my visits to his house, I noticed a stockpile of documents which were kept in the ceiling and in boxes on the table. Any time we had some discussions he would pick up one or two documents to elaborate a point or disagree with an issue. But it never occurred to me to really ask about the historical profile of the documents. It was after he died in 2013 that I asked if the documents could be relocated to a place where they could be stored in a manner that would let them last longer. I had to wait for another year because in most Northern Guan cultures—especially Nana's ethnic group, the Nawuri—the deceased is still part of the physical community and still holds on to his status and property until the final ritual journey to ancestors (*Nlidra*) is performed. Therefore, it was after the *Nlidra* that traditional clearance was given to his son, Martin Luther King Mbimadong, to bring the documents to Accra.

As earlier pointed out, Nana was born into a community noted for preservation of their tangible and intangible cultural heritage. Traditional histories and cultural objects are specially kept in the Nawuri community and form a fundamental basis for the re-enactment of history whenever such occasions arise. For example, at the death of an individual, singers and drummers called *Alumbepu* and *Alampu* are brought to sing and drum the history of the deceased, especially if the person belonged to the family of hunters, blacksmiths or farmers. Such performances are very close to the way an archive functions, since singers and musicians go back into the reservoir of songs to retrieve those relevant for the occasion. The jaws, tails, horns, and bones of animals that have been kept are also brought out for the performance of the hunter's dance, where the history behind every bone, and the metal objects or weapons that were used during the hunting expedition is narrated in the dance square. Nana also grew up in a community that had a rich culture of storytelling, traditionally called *Asirikpan* and *Kisirikpan*, which are similar to the Ananse stories of the Akan. Storytelling is said to have originated from the families of hunters and blacksmiths and later spread to the rest of Nawuri society. As an individual that belonged to the family of hunters, Nana himself told a number of stories that emphasised the greatness of individuals in the community as well as the philosophy of life in the area. Nana indicated that since stories were also forms of preserving the culture and language of his people, they were the basis for his initial thoughts for preserving other documents that he came across. One could therefore find a direct transposition of ideas from traditional systems into the modern system of record keeping.

Aside from these cultural aspects that shaped his thoughts on preservation of documents, he was also among the first six people from his ethnic group to receive a Western education, along with Friko of Katiejeli and Agbaji of Nkanchina. Being among the few thus educated in the area meant that when any member of the community wanted to write a letter or if they received any letter or document that they wanted someone to read, that role rested with them. Each letter or document that was received was kept. Furthermore, Nana schooled at Kete Krachi in former German Togoland under Wilhelm Henkel, an educator with German and Ghanaian parentage (his father was German and his mother Ghanaian). Henkel kept every document, especially letters that he received from German and later British administrators. His practice of keeping documents also influenced Nana.

There were also some major historical and social movements at the time that Nana was growing up that influenced his decision to keep documents. At the time of the Second World War, the British relied heavily on propaganda. Information was transmitted to communities by vans with loud public address systems, and there were also propaganda posters. He indicates that these were times that everyone in the community was en-

couraged to keep every form of information that they got from any source, written or verbal, so long as it was related to the war. This practice further shaped his thoughts regarding collection.

Besides all these factors, if there was one singular and most important factor that influenced him to keep records, it was the introduction and progression of Indirect Rule in Ghana under British colonialism. As a policy that relied heavily on chiefs and British colonial officials, communication between these two parties was key. It was during this period that Nana was brought in to write letters of protest against the political regimentation of the north, especially along the lines of 'majority' and 'minority' ethnic groups, by the British. Such alignments brought sharp divisions between the more Islamised groups such as the Gonja, Mampruise, Dagomba, Wala and Nanumba, who for purposes of Indirect Rule were regarded as the majority against Vagla, Nawuri, Nchumburu, Konkomba, Frafra, Kusasi, Builsa, and Dargati, among others, who were termed as minority. These divisions privileged paper documentation over the oral, and in particular maps that were produced by the Germans, French and British were valued. These initial maps, especially those produced by Germans, represented regions based on the ethnicity of their inhabitants.[8] Nana searched for and collected many such maps.

The collection

The collections that were brought by Mbimadong Martin Luther King are kept at the Kwabena Nketia Archives located at the Institute of African Studies. The Institute of African Studies (IAS) is part of the College of Humanities and is located on the main Legon campus of the University of Ghana. The IAS was established in 1961 as a semi-autonomous institute within the University. The mandate of the institute is to conduct research on the history of the peoples of Africa, including their cultural and artistic heritage, and to disseminate the findings through teaching and outreach programmes. It made sense to bring the boxes to the Nketia Archive, since it is one of the units within the University that is dedicated to the protection of historical collections. The family through Mr. Jones Atabasu Mbimadong and Martin Luther King Mbimadong agreed verbally for the documents and audiovisual materials to be made available for research purposes. Arrangements are being made for a formal donor agreement to be made with signatories.

The boxes and an overview of their contents

As noted earlier, the documents are kept in three containers. One of the boxes measuring about four feet long and two feet high was bound with a thick plastic rope that measured about seven feet long. The rope was used to tie the plastic box to prevent the documents from falling out. The other containers were two plastic sacks popularly referred to as 'Ghana Must Go' bags.[9]

8 See for example Basel Mission Archive (BMA) 97255 "Karte von Togo. C1. Bismarckburg", 1906.

9 In the 1970s Nigeria had an economic boom following windfall from their Oil Industry. The economic success made several nationals within the West African Sub-region to move into Nigeria to work. By the early 1980s relationship between the migrants and their host grew sour particularly Ghanaians and Nigerians. The Nigeria government decided to deport Ghanaians. Articulator vehicles usually meant for transportation of goods and cattle were lined up in most of the major cities in Nigeria to transport Ghanaian migrants to Ghana. Since time was not on the side of Ghanaians they went in for the plastic made bags which were not only cheap but large enough to contain their belongings. The name given to the plastic carrier bags was 'Ghana Must Go' referring to the order that was given to them to leave within the shortest possible time.

Figure 3. The metal boxes popularly referred to as *trunk* in Ghana and a plastic bag where the documents are kept.

The documents in the containers include letters, court records, reports of commissions of enquiry, maps, audio recordings, and photographs. Some of these document sets are beyond the scope of this paper, but special attention will be paid to letters, reports, maps, write ups and audio-visual recordings.

Letters

Letters comprise about seventy percent of all the documents. They cover the 1940s to 2013 with some of the letters written and received just two weeks before Nana's death. The period of intense correspondence was from the 1950s to the mid-1990s. This is not accidental at all. The physical distance between Nana and his networks, especially at a time that there were no mobile telephones, meant that much of the transactions and communications had to be conducted through letters. The letters could further be categorised into several fonds. Those that he exchanged with his friends and family had broad subjects revolving around the activities of individuals and their families including marriage, births, deaths, education, children; general information about cultural activities such as the celebration of festivals and funerals, travels outside of their communities; and occasionally more unusual topics including curses, broken taboos, and the planting and harvesting of crops, among others.

The second set of letters relate to issues of land, chieftaincy and British colonialism. In this set of letters Nana wrote and received letters which were addressed to him personally, or sometimes addressed to the Nawuri Ethnic group or its Youth Association which he co-founded. Most of the letters were complaints, strategies and protests, especially against the British system of government and the subjugation of Nawuris under Gonja Rule. When he was made the chief one finds also letters to other ethnic groups in the area on the issue and need to celebrate festivals together. These were invitation letters to people to join in the celebration of the yam or guinea corn festivals. In the early part of the 2000s there had been a number of inter-Nawuri conflicts that shook and continue to shake the unity of the ethnic group. Some of the letters address these divisions and the way to move forward.

Figure 4. The author with some of the letters from the boxes (Picture taken by Mr. Nat, Senior Technician at Nketia Audio-Visual archive, University of Ghana, Legon).

The third category of letters are institutional and governmental in nature. One finds letters related to his education—those written by his school authorities, teachers and classmates as well as application letters to, and responses from, a number of Christian and governmental agencies for jobs. Out of the several applications, some were successful and others were not. Two particular jobs worth mentioning are as a teacher with the Presbyterian Mission Schools and later the Local Authority schools and also as administrator of the Ghana Farmers' Co-operative. As an administrator there was a lot of communication that dealt with his job, especially his work schedule, treks, problems and their resolutions. The same holds for his employment as a teacher where there was correspondence related to the establishment and administration of schools.

Within this category one also finds some of the letters related to politics in Ghana, especially the formation of political parties and elections. In all cases one finds a lot of tensions regarding politics in Ghana.

Reports, maps and write-ups

Aside from the letters, one finds reports, maps and short write-ups in Nana's collections. Popular among them is the Dixon Report.[10] While he was alive this was the most important document that he relied upon to deal with issues related to land and chieftaincy. There is also the German map Karte von Togo of 1904, a map which has already been referred to in the previous pages and which he consulted on the land claims in

10 J. Dixon , 'Report of Mr. J. Dixon, Administrative Officer Class I, on the Representations Made to the Trusteeship Council of the United Nations Organisation, Concerning the Status of the Nawuris and Nanjuros within the Togoland Area of the Gonja District, (1955).

the Nawuri and Gonja area. Nana also attempted writing a history of the Nawuris. Some of the information was used during the Justice Ampiah Committee, which was set up in 1991 to investigate the root causes of the ethnic clashes between the Nawuri and Nchumburu against the Gonja, and to provide possible solutions to the problem.

Audiovisual materials

Nana's collection has audiovisual material on compact cassettes and CDs. The compact cassettes are two and contain stories. These were stories narrated by the elderly to children. The stories which featured human beings, animals, insects and vegetation offered insights into the philosophical world of the Nawuris, and was narrated by elders in Balai to children in the community. The CDs are also two in number and deal with the celebration of funerals and their associated rituals. The first CD, which likely dates to the early 200s, contains video recordings of the final funeral rites performed for over ten people in the Village of Balai, where Nana was chief. The second CD was produced during the funeral of Nana Obimpe himself and would have been added to the collection by one of his sons. The CDs are in good condition, but there are portions of the videos where brightness, sound and picture quality is poor. The Kwabena Nketia Archive will digitize the CDs to ensure future access. Permission was sought before the recordings were made and therefore families do not have a problem with researchers being granted access to the material.

Importance of the documents to researchers

As the records of someone who served his community and Ghana in several capacities, the documents are of valuable importance to researchers and historians. The historical records offer a unique opportunity to analyse a number of issues by connecting the various histories between the periods that Nana lived to the present. For example, the early years of his correspondence dealt with the culture of the Northern Guans as well the way and manner traditional institutions functioned in the area.[11]

Letters relating to his job as a teacher with the Ghana Education Service and as an administrator also provide very useful insights into the way and manner in which the Ghanaian civil service operated. In essence some of the correspondence revealed quite some level of nepotism and tribalism in the civil service, a factor that greatly affected his application for jobs for a number of years.

Since he was a Member of Parliament until the military coup d'état of 1972, his documents reveal that turbulent period of Ghana's history. Most of his communications to friends and members of the civilian government that was overthrown went on until his death. He corresponded with most of his parliamentarian friends, too. Researchers interested in Ghana's political history especially after the overthrow of the Busia government will find the correspondence highly useful. Above all, his correspondence is an important addition to important documents that are held by the state archives among which include:

- Public Records and Archive Administration (Hereafter, PRAAD), Tamale, NRG 8/1/2, Boundary dispute, 1921;
- PRAAD, Kumasi, ARG 1/1/106, Transfer of Kratchi, Mandated area to the Northern Territories Administration, 1922-28;
- PRAAD, Tamale, NRG, 8/1/2, Boundary Disputes, Togoland, 1921;
- PRAAD, Kumasi, ARG 1/1/106, Transfer of Kratchi, Mandated area to the Northern Territories Administration, 1922-28;

11 Guans are a group of ethnic groups that claim to be the original inhabitants of Ghana.

- PRAAD, Tamale, NRG. 8/2/5. Native Administration, 1925;
- PRAAD, NRG 8/2/1 The History and Organisation of the Kambonsi in Dagomba;
- PRAAD, NRG 8/2/217 M.M. Read, Essay on the Peoples of North-West Province, n.d.;
- PRAAD, NRG 3/2/1 History and Constitution of the Mamprusi tribe, 1922;
- PRAAD, NRG 3/2/4 History of the Buli, Nankani, and Kassina people in Navrongo area of the Mamprusi District, n.d.;
- PRAAD, Tamale, NRG, 8/3/36, General Report, 1933-1947;
- PRAAD, Tamale, NRG 8/3/125, Gonja District Report, 1944-1945;
- PRAAD, NRG 8/2/210, Nawuri and Nanjuro (NTs) Under United Nations Trusteeship. 1951-1954.

Importance of the Audio-Visuals

The audiovisual materials, though very limited in number compared to the paper documents, have a lot to offer to researchers. For example, the stories enable one to understand Nawuri epistemological issues in relation to life: they reveal a central part of the Nawuri knowledge system, especially the nature of power dynamics in Nawuri society. Storytelling and proverbs are expressions of personal and social experiences, hence for a researcher to be able to understand their way of life, one must have recourse to their stories. It is in this that the tapes become very important to researchers.[12]

The CDs on Nawuri funerals are also very important. The final funeral rites of Nawuris are avenues through which one can learn a lot about their religious life and belief systems. For example, in the videos one finds the processes of transferring the spirit of deceased members of the community to the 'spiritual world'. The CD on the funeral of Nana Obimpe himself offers insights into the Nawuri 'Warrior Cult' and the performance of 'Onyinawu', a dance which is reserved for accomplished hunters, chiefs and earth priests. The CD reveals the historical connections between the Nawuri and other ethnic groups such as the Gonja, Nanumba, Dagomba and Konkomba. Each of the ethnic groups attended the funeral with their leaders and cultural dances.

Conclusions

Nana Obimpe's papers and audiovisual materials are critical to the study of the social history of Northern Ghana. The papers cover a wide range of issues that are of past and current relevance. Indeed, with the papers much of the correspondence relates to the so-called negative consequences of Indirect Rule, a factor that till this day continues to have a very interesting impact on the people of Ghana. For example, the conflicts in Northern Ghana that began in the 1980s and 1990s continue to be a part of the social tensions and intermittent wars even in the present. Some of the letters and correspondences in the 1960s already pointed to the likelihood of such conflicts in the future if the state and state institutions did not address such negative colonial and post-colonial policies. Of greater interest is the way the letters could help one visualize the historical changes that have taken place in the area during and after the conflicts in northern Ghana. For example, some of the communities and settlements that were referred to in the correspondence have undergone some significant changes due to destruction and migration during and after the wars. In the same way there has been a general shift in

12 Ntewusu, S. (2021), 'If you want to understand Africa's Politico-epistemological world, Look at the Chameleon'. In' Francis B. Nyamnjoh, Patrick Nwosu and Hassan M. Yosimbom Being, eds. *Becoming African as a Permanent Work in Progress: Inspiration from Chinua Achebe's Proverbs.* Langaa RPCIG, Bamenda, Cameroon.

discourses on land and chieftaincy in the area. The inter-ethnic conflicts that characterized the exchanges of letters soon shifted to intra-ethnic and inter-family conflicts and disputes. Researchers can easily track down these changes due to the letters that have been kept.

The papers are relevant in filling out the missing links from the state archives, especially when it is evident that today many of the relevant documents that are related to chieftaincy and land in the state archives are continuously being weeded out from the archives by litigants who are paid by chiefs, families and politicians to pick out and destroy documents that do not favor their cause.

The audio-visual material though few are most important. They serve as permanent recordings and therefore could easily be used to track the social and cultural changes among the Nawuri.

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Thomas, S, 'Oral Traditions: Whose History?' *The Journal of Pacific History*, Vol. 16, No. 3 (July 1981), pp. 133 -148.

SOUND ARCHIVES AND MUSICAL REPRESENTATIONS OF MODERN INDIA: THE CASE OF THE FELIX VAN LAMSWEERDE COLLECTION (1963-2005)

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Abstract

This essay presents a critical social history of the context in which the Felix van Lamsweerde Collection came together. Felix van Lamsweerde (b. 1934), a Dutch collector, cultural anthropologist and impresario, extensively recorded Indian expressive cultures in the Netherlands and India between 1963 and 2005. This collection was digitised and catalogued between 2017 and 2020 at Georg-August-Universität Göttingen and the Berliner Phonogramm-Archiv in Germany as part of a German Research Foundation (DFG) project. It includes a wide range of first-hand and commercial audio/video recordings of music, dance and theatre genres from across India along with accompanying notes, photographs, and a vast collection of books, magazines and journals. Van Lamsweerde's journey into studying musics of India and the collection itself points to how India's cultural politics evolved in the immediate decades following its independence from the British in 1947. Whilst historicising the colonial, oriental and nationalist legacies of music collection in India, this essay examines the Van Lamsweerde Collection and archival projects at large through a source critical approach. It attempts to demonstrate the ways in which caste, class, gender and racialisation processes and the sound archive shaped one another in the formation of transnational cultural representations of India. Drawing on discussions in ethnomusicology, social theory and archival studies, this essay offers an interpretation of how musical knowledge and a homogenous construct of Indian culture has taken shape in Western European and American academe.

Introduction

This paper analyses the collection of Felix van Lamsweerde (b. 1934), who extensively travelled, studied and recorded expressive cultures in post-independence India and the Netherlands between 1963 and 2005. The Van Lamsweerde Collection spans over four decades and is institutionalised at the Department of Musicology, Universität Göttingen in Germany. It exemplifies a wide range of audio and video recordings of music, dance and theatre genres from across India, and an extensive collection of photographs, journals, magazines, books and commercial recordings. About 900 first-hand sound recordings from this collection were digitised between 2017 and 2020 at the Berliner Phonogramm-Archiv followed by completion of an online database available on the Staatliche Museen zu Berlin (Berlin State Museums) official website. Given that it is newly institutionalised, this essay begins by offering some preliminary impressions of the Felix van Lamsweerde Collection with a view to highlight its scope and the historical context in which it came together. The essay then examines classification, categorisation, inventories and descriptions in the collection to explore how it was informed by the cultural politics of modern postcolonial India. This examination is based on the inventories and notes which clarify the broad scope of this collection, also prompting legacies of Indologists, orientalists, collectors and musicologists such as Anthony van Hoboken (1887-1983), Jaap Kunst (1891-1960), Arnold Bake (1899-1963), Alain Daniélou (1907-1994) and Nazir Ali Jairazbhoy (1927-2009). Finally, I draw on my interviews and follow-up conversations with Van Lamsweerde conducted in 2018 and 2019 to support my analysis. These manifold approaches allow me to respond to Walsham's (2016) and Stoler's (2009) call to interrogate the ethnography of archives and collections so as to place them within the politics of power (Cushman, 2013; Foucault, 2004 [1969]; Fox, 2016; Garcia, 2017; Mignolo, 2011; Seeger, 1986; Seeger and Chaudhuri, 2004 et.al.). These approaches allow me to put sound archives 'under suspicion' (Garcia 2017) in a move towards challenging the impulse of

'the imperial archive's insistence on expert codification of knowledge' which is 'hermetically sealed, contained and unchanging' (Cushman, 2013: p.116-117). These approaches also help in understanding the role of the collector, communities and individuals who are recorded (and those left out), cultural brokers and institutions involved in the task of knowledge production and dissemination. As a Hindustani music practitioner of two decades, a Marathi (official language spoken in the Western Indian state of Maharashtra) high-caste or brahmin woman, and an ethnomusicologist, I reflect critically on how caste, gender, and class dynamics have shaped pedagogies of music. This background further enables me to draw on my doctoral research, which examined the soundscape of an anti-caste movement in Western India to propound a feminist historiography and caste-based framework to analyze music of modern India. This is particularly important in the case of Hindustani music (also known as North Indian classical music) which was reformed and brought into a nationalist modern public sphere, largely by Marathi high-caste men from Western India. Thus, positioning my experience as a musician on the axis of caste, gender and regional lines helps me to critically examine what constitutes 'Indian music' and musicianship in a Western European sound collection of India. How have archives fashioned an understanding of music of India? How can we negotiate with the challenges presented by orientalist modes of knowledge production, particularly the textuality of sound archives? What and who is part of the Van Lamsweerde Collection and who/what is left out? How can we examine the impact of British colonialism and Indian nationalist modernity on this collection? While accounting for contemporary efforts and developments towards repatriation and recovery, how can we locate the potentials of music/sound archives?

I address these and related questions in the following sections, beginning with an introduction of the collector, his journey into the study of India and the context in which the sound collection came together. Then, the essay looks at the structure and content of the Van Lamsweerde Collection by focusing on its classification represented by handwritten notes accompanying each item. This supports an analysis of the history of music collection in India and further revises the history of music's classification/categorisation (particular classical and folk) and classicisation in the 19th and 20th centuries. Finally, this essay focuses on Van Lamsweerde's journey as a collector, the content of the collection, the structures that shaped (sound) archives and their influence on academic and cultural spheres at large.

Felix van Lamsweerde: a biography and background to the collection

Born in 1934 and brought up in Amsterdam, Felix van Lamsweerde grew up in a family of artists and was fascinated with music from a young age. He took piano lessons as a child, studied European classical music and grew up listening to diverse musics on the radio. Van Lamsweerde stumbled upon a sarangi recital by Ram Narayan on All India Radio when he was bedridden with tuberculosis as a teenager. He recalled during an interview how deeply moved he was by this sound and wished to pursue his interest further. Van Lamsweerde described this as the very first moment of his deep interest, curiosity and passion for music of India.

Felix van Lamsweerde worked professionally as a sound engineer while completing his education in the Netherlands. He provided background scores for numerous theatre productions and recorded a number of live performances as part of music and dance festivals. From 1956 to 1962, Van Lamsweerde worked at the Royal Tropical Institute (Koninklijk Instituut voor de Tropen) as a research assistant under musicologist Jaap Kunst. On Kunst's advice, Van Lamsweerde majored in cultural anthropology, which would be a stepping-stone to pursue the latter's interest in musics of India. Van Lamsweerde completed

his pre-doctoral degree in 1962. His thesis examined textual and music records at the Indian Embassy and sources at Leiden University. Commenced under the mentorship of Kunst, this study enabled Van Lamsweerde to enter a network of scholars and collectors of Indian music from the UK, US and other parts of Western Europe.

As a result, in 1962 Van Lamsweerde was offered a six-month research fellowship at the School of Oriental and African Studies in London under the supervision of musicologist and collector of Indian music Arnold Bake. This project focused on preparing a fieldwork trip to India together with Bake's assistant Nazir Ali Jairazbhoy. Van Lamsweerde went to study the sitar at Benares Hindu University (BHU) in India on a two-year student exchange scholarship (1963-65) from the Dutch and Indian governments. During the interview, he shared how he was increasingly drawn to sitar, particularly as this was also the era when the instrument came to be associated with the mythical East (not to mention the growing popularity of Ravi Shankar and his collaboration with the Beatles). Van Lamsweerde, however, wanted to learn the sitar from Ustad Vilayat Khan. Due to Khan's busy schedule and residence in Mumbai, Van Lamsweerde could not pursue his training consistently. At music conferences in Delhi, particularly those of the Sangeet Natak Akademi, Van Lamsweerde met some of Vilayat Khan's contemporaries and students, one of whom was the latter's brother Ustad Imrat Khan. With a view to taking lessons from Imrat Khan, Van Lamsweerde moved to Mumbai six months into his master's programme. He was registered as a student at the Deodhar School of Indian Music in Mumbai.

In 1963-64, he joined Nazir Ali Jairazbhoy for his field trip to India where he learnt about and recorded music, theatre and dance genres of diverse communities, castes and classes in Central and Western India. Van Lamsweerde also travelled by himself to a number of places during this time to explore his interests in musical traditions based on his early academic study of Hindustani and Karnatik classical music. He shared how he was glad to have developed an interest in both classical traditions since most scholars studied North Indian or Hindustani music. He simultaneously pursued sitar lessons with Ustad Imrat Khan.

On his return to the Netherlands in 1965, the Department of Anthropology at the Royal Tropical Institute appointed Van Lamsweerde as curator of ethnomusicology. Over the next few years, he also curated a number of Indian musical instruments for the collection at the Tropenmuseum. In 1969, he published an article, "Musicians in Indian Society: An Attempt at Classification" based on his fieldwork and preceding review of literature. Additionally, he delivered lectures and designed programs for Dutch radio, which served as introductions to Indian music in Western Europe and North America. Van Lamsweerde continued visiting India to attend music festivals, conferences, and concerts and to meet his teachers, colleagues and friends. But his time in India between 1963 and 1965 seems to be the longest and most significant of all his visits to India.

Van Lamsweerde was also influential in the introduction of some of the most well-known musicians of India to the Netherlands through public and house concerts. These include Ravi Shankar (sitar), Nikhil Banerjee (sitar), Dagar brothers (dhrupad, a style in North Indian vocal music), Vilayat Khan (sitar), Bismillah Khan (shehnai), Hariprasad Chaurasia (flute), Bhimsen Joshi (Hindustani vocal music) and Lakshmi Shankar (Hindustani vocal music), Chitti Babu (veena), among others. Along with these prominent artists, Van Lamsweerde also introduced elite theatre traditions (e.g., Marathi Sangeet Natak) as well as classical dance traditions like Kuchipudi, Bharatanayam, and Odissi to the Netherlands. Within the legacy of collectors of Indian performance traditions mentioned earlier, Van Lamsweerde must be recognised as one of the first collectors and impresa-

rios to have introduced 'Indian music' to the West with his sound recordings, lectures, and as an intermediary between the Netherlands and Indian cultural spheres in post-independence India. This collection thus represents a compilation of Van Lamsweerde's musical endeavours from the 1960s until 2005, a long span of over forty years in post-colonial India which witnessed a number of economic, social and political changes. This particular time period is also representative of the emergence and institutionalisation of the discipline of ethnomusicology. Van Lamsweerde's training in cultural anthropology was strategic in that sense. However, musical analysis in the ethnomusicological sense also was influenced heavily at the time by comparative musicology, orientalism, Indology and the legacy of sound collectors in colonised countries. In the following sections, I will draw on examples from the collection to demonstrate these influences on the content and structure of this collection.

Structure and content of the Felix van Lamsweerde Collection

Van Lamsweerde categorised the entire collection into six series (A, B, C, D, E and F). Series A is currently at the Tropenmuseum, while almost all items in other series are at Universität Göttingen. Given the enormity of this collection and swift changes in recording technology over the four decades, one can find a number of recording formats like open-reel tapes, VHS tapes, CDs, Hi8 tapes, audio cassettes and so on. Many of these contain second-hand recordings of concerts (recorded by other music connoisseurs and collectors) as well as films, documentaries, and radio broadcasts.

Although Van Lamsweerde has not inventoried all items in one consistent format or a single sheet, almost each item is accompanied with a hand- or typewritten note (Figure 1).

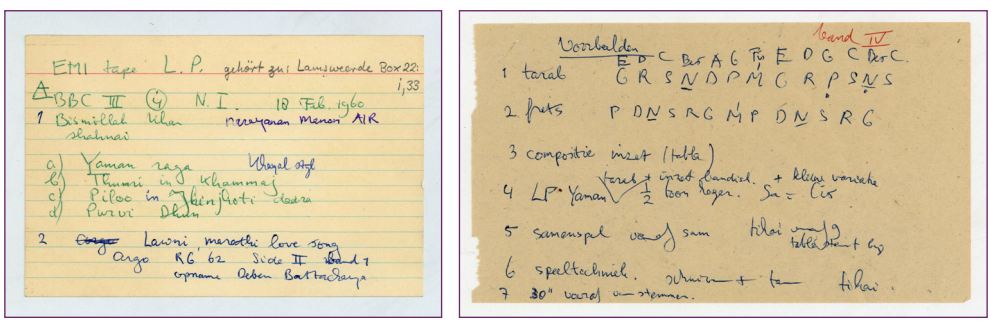

Figure 1. Handwritten notes accompanying two items in the Felix van Lamsweerde Collection.

However, separate inventories do exist for much of the material, often including the same information as on the note accompanying a recording. The style and content of the notes supplementing recordings changes over decades or depending on the recorded genre. These notes offer guidance not only for researchers but also for sound technicians/engineers as metadata. In terms of content, however, certain genres and classification dominate the collection. For example, Karnatik and Hindustani classical music and classical dance traditions like Kathak, Bharatanatyam and Kuchipudi make up a significant portion. Names of classical musicians, raags *(melodic patterns or modes),* taals *(rhythmic cycles),* duration of performances, length of each section, and place and year of recording can be found more consistently. In most early recordings, raag names appear in capital and bold type as titles and are followed by names of musicians. These notes serve as an important source to analyse the structure of this collection. For instance, notes of recordings and genres are organised neatly by musical categories (Figure 2, bottom to top: religious music, folk music, tribal music, film music).

Figure 2. Musical categories and classification in a shelf of notes.

Descriptions are most often in Dutch and/or English. There are occasional remarks in Hindi (Devanagari script). One sporadically finds lyrics written in Devanagari (which may have been offered by the performer). Notes for some early recordings include staff notation, supplementary details in diacritics and at times, signs and symbols used in an Indian musical notation system (see note on the right in Figure 1). Further, it is interesting to note that Hindustani and Karnatik music recordings most often do not have terms describing genre/tradition like in the case of 'folk' and 'tribal' music[1] (Figure 3). The note to the right on classical music includes the name of the artists, duration of their performance and year of performance, among other metadata. The majority of first-hand sound recordings constitute Karnatik and Hindustani classical music, while those of folk and Indigenous tribal (known as Adivasi) communities are fewer in number.[2] In the case of Adivasi music, only the name of the community is mentioned without reference to other contextual details like song-texts, performers or meaning/lyrics of the song. The number of women musicians is smaller and very few appear consistently (e.g., Lakshmi Shankar, Hirabai Barodekar, Pia Srinivasan and Gangubai Hangal). Women performers are however dominant in recordings of classical dance (viz. Bharatanatyam, Kathak, Kuchipudi, Odissi and so on). Despite the marginalisation of Muslim musicians from the public sphere in the 20th century (see Katz 2017), this collection includes

1 I have put both these categories in quotation marks to present their original usage in the archive and to also acknowledge their contestation, given that musical classification was based on class, caste and racial politics in colonial India (see Fiol 2015, 2017).

2 Karnatik and South-Indian are terms used synonymously, similar to tribal and Adivasi. It is difficult to provide the exact number of recordings of each kind because each recording often consists of multiple discrete tracks. These details could be explored during further research, as one would have to get through closely listening to more than a thousand items.

first- and second-hand recordings of many Muslim musicians performing vocal styles in North Indian music like dhrupad and khayal.

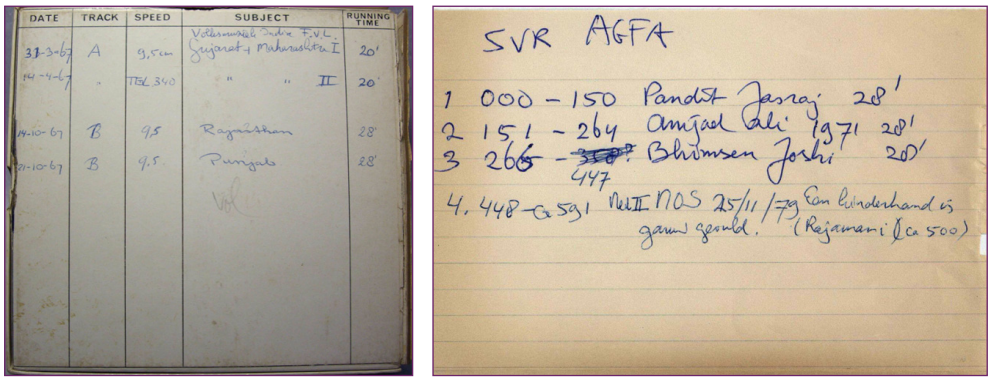

Figure 3. Description of folk music ('volkmuziek') on the left and classical music on the right.

While these observations cannot be the sole basis upon which this collection can be analysed, the significance of recordings, notes and their tangibility as a first source of information cannot be understated. What the collection may open up as a result of further enquiry is a matter beyond the scope of the present discussion. My observations on music and musicianship based on the materiality of these recordings and their notes must be situated in the socio-political context of postcolonial India. The socio-economic conditions and meanings around musicianship drastically changed with the impact of British colonial rule, modernity, music's direct link to the crystallisation of a Hindu nationalist ideology, and music's classicisation and institutionalisation. The ways in which notes in this collection are written – descriptions of the traditions which predominantly constitute this collection, the artists, and their socio-economic setting – are an indication of how musicianship came to be regarded in postcolonial India. So, what constituted musicianship in colonial India and how did it change in postcolonial times? What kind of music was leveraged in the formation of the Indian nation-state? Who determined ideologies and pedagogies of music and musicianship which are understood today through institutionalised and archived vocabularies? These processes may throw light on how musics of India are represented in Euro-American academic (and non-academic) spheres and how ethnomusicology, a newly emerging discipline in the 1950s, shaped the understanding of musicianship of modern India (of which Van Lamsweerde was one of the first international representatives). To locate the Felix van Lamsweerde Collection in this context enables a critical engagement with recent studies on politics and the colonial history of archiving, authenticity and analysis (e.g. Caswell, et.al., 2017; Dunbar 2006; Harris 2005, 2007). Current debates focusing on confronting and reshaping institutions (including museums, archives and universities) that have inherited colonial thought (see Chavez and Skelchy 2019; Garcia 2017; Ingle 2016; L'Internationale 2016; Lonetree 2012; Luker 2017; Mbembe 2015; Schwartz and Cook 2002) provide a helpful lens to examine the role of music in reshaping and institutionalising 'culture' in postcolonial societies like India. Furthermore, these debates necessitate an analysis of archives from the standpoint of oppressed communities given their exclusion, underrepresentation or misrepresentation in colonial, postcolonial and national records which may further enlighten us about issues of repatriation, copyright, ownership, cultural rights and archival ethics. In this vein, the following section locates the Felix van Lamsweerde Collection in the legacy of European music collectors and writers of colonial/postcolonial India. It focuses on what role musicianship was to play in the project

of nation-building and how it shaped the music archive of modern India, thereby altering caste, class, and gender relations.

Colonial expositions on Indian music: foundations of nationalism and music's classicisation

Music scholars and historians have noted how European treatises on music of India in the modern period began as an imperial and colonial enterprise (Bakhle, 2005; Ghuman, 2014; Katz, 2017; Weidman, 2006 et al.). The age of exploration and Enlightenment, which sparked interest in musics of the 'other', were driven by agendas designed to represent the superiority of European civilisation and justify colonial rule. Racialisation of communities through music has also been observed as a key aspect of imperialism still reflected in disciplines like historical musicology, music theory and ethnomusicology (see Radano and Bohlman, 2000). This section draws on extant literature to arrive at a conclusion that problematises the modern sources of understanding Indian music and links it to national and regional manifestations of class, gender and caste.

While music has been documented in several forms and modes throughout Indian history, European colonial projects particularly documented and produced discourses that would serve as tools of power which refashioned music's fate in modern India (Bakhle, 2005; Schwartz and Cook, 2002). Musical accounts were extensively found in travelogues of colonial commentators, army officers and civil servants (with Christian missionary passion), who operated on the principle that the pathway to really understanding Indian music was through Indian religions, particularly Hinduism (Bakhle, 2005). Orientalist authors like Sir William Jones and his colonial descendants, for instance, devised a canonical understanding of Indian music which required nation, notation and religion in order for it to become 'authentically classical' (Bakhle, 2005: p.52). Jones's works must in fact be considered as the starting point of what Bakhle (2005: p.51) terms as the 'colonial sociology of music' based on myths, misinterpretations and propaganda as justifications of colonial rule.

The supremacy of texts on music must be highlighted here, despite the dominance of aural/oral modes of transmission of music across the Indian subcontinent. The written text was not only assumed to be the primary method of accessing knowledge about music, but in turn was used to reshape it. Jones's (in)famous *On the Musical Modes of the Hindoos (1789),* a treatise on Indian music which he drafted after living in India for a year, cited his sources as 'Pandits and Rajas', not musicians (Bakhle 2005: p.9). While he did not know or learn Sanskrit at the time, he referred to transliterated versions of Sanskrit texts to describe musicological terms and claimed that all Indian knowledges emanated from the Vedas (ibid.).[3] Colonial writers like Jones referred to Sanskrit texts on music such as Damodar's *Sangitdarpan (17*th century), Ahobal Pandit's *Sangit Parijat (17*th century) and Somanatha's *Ragavibodha (17*th century), rather than speaking to musicians themselves (ibid). Jones and his orientalist descendants like Augustus Willard and Sir William Ousley linked Indian music to a unitary classical Hindu civilisation, philology, etymology and music theory (ibid.). The modes of Indian music that these authors studied were part of Hindustani musical tradition (mostly khayal) which was primarily associated with hereditary Sunni Muslim musician families (gharanas), which operated as semi-professional groups patronised by princely courts. It is striking then, that despite the predominance of Sunni Muslim hereditary musicians, Jones' key respondents were

3 The term 'Hindoos' in this title and throughout his treatise is indicative of the British discovery of 'Hinduism' and the communalisation of music in the 19th century (see Doniger, 2009; Marshall, 1970).

pandits (high caste males) and his sources Sanskrit texts. However, the British discovery of Hinduism in the 18th century (Marshall 1970) led to the emergence of Indology, its disciplinary form (with Max Mueller), which reified racial, sexual and religious discourses on virility, particularly of Hindu and Muslim men (see Figueira, 2002; Omvedt, 2006; Sinha, 1995; Tzoref Ashkenazi, 2015). These, among other socio-political processes gradually institutionalised the equation of India as a Hindu nation. Such divisions were central for the solidification of British colonial rule.

Colonial literature, particularly works authored by Jones, was increasingly disseminated in the public sphere in the 19th century. The emergence of music appreciation societies led by the elites (brahmin and Parsi men, particularly in Western India) were a response to claiming the music of an ancient Hindu culture (Bakhle 2005). Bakhle shows us how music appreciation societies uncritically drew on the treatises and claims of William Jones and his pedigree (2005). The societies weaponised music to claim that the ancient (Hindu) tradition of music had always been religious and scientific, was appropriated by Muslims and needed to be urgently rescued and sanitised (Bakhle, 2005; Katz, 2012, 2017). Indian nationalism in the 19th century was based on similar logics of religious and caste divides that preserved high-caste status and power. Consequently, the task of notating and institutionalising music was taken up in late 19th and early 20th centuries by music reformers like V.D. Paluskar and V.N. Bhatkhande (both Marathi chitpawan brahmin men)[4]. A number of studies have shown in recent years how elites, particularly brahmins, stole livelihoods by usurping khayal (and in certain cases dhrupad) traditions which were until then practised by Muslim hereditary musicians as well as performance traditions of caste-hereditary musicians like Dalits (described as outcaste musicians) to create a dichotomy of classical/national and regional music and dance forms (Bakhle, 2005; Katz, 2017; Putcha, 2013; Soneji, 2012; Weidman, 2006 et. al.).

Influenced by the nationalist project, brahmin male figures like V.N Bhakhande travelled extensively across the country to research and collect music in order to trace the history of this ancient tradition (Bakhle 2005). His extensive research across the country became the basis of his famous five-volume work, *Hindustani Sangeet Paddhati.* He asserted the primacy of Sanskrit and delineated the history and theory of Hindustani music through compositions of a number of couplets in Sanskrit. He also compiled thousands of compositions he learnt from Muslim hereditary musicians during his travels. Like Bhatkhande, V.D Paluskar devised his own notation system. Considered as the moderniser of music today, Paluskar successfully institutionalised Hindustani music as a religious practice and developed an authoritarian sacralised pedagogy that upheld what he believed to be the only true faith of India, Hinduism. Through his written works such as *Bharatiya Sangeet Lekhanpaddhati,* and the founding of the nation-wide institution Gandharva Mahavidyalaaya, Paluskar essentially propagated a brahmanic Hindu sacrality. He championed for music to be rescued from the so-called non-native authors and ignorant classes, namely Muslims and Dalits,[5] whilst simultaneously racializing them and claiming music as a devotional phenomenon that belonged to a religious-caste-racial group. From being an unmarked practice in the 18th century, music came to be classicized in the 20th century, with an entirely new authorship (from Muslim heredi-

4 This detail needs to be emphasized as chitpawans, among the many brahmin sub-castes, assume their descendance from Aryans in Western India and pride themselves on their fair complexions and green-grey eyes – a form of racial superiority based on a myth of origin (Figueira 2002).

5 Bhatkhande's and Paluskar's books form a significant part of the Felix van Lamsweerde Collection, like most schools and institutions of Indian music across the globe. Their distinct notational styles and musical works are considered seminal in the study of music of India to this day.

tary musicians to predominantly brahmins, Parsis and other elites) and with a Hindu religious/nationalist pedagogy. Ironically, in their sacralised vision of an anti-colonial nationalism, nation, notation and religion did become inseparable to music as prophesised by William Jones.

These processes reveal the paradox and complexity of how projects of modernity, nationalism and a unitary notion of Indian culture were developed by colonial and native elites through the weaponisation of music. Music came to be taxonomized, canonised and thus regimented in ways that would only favour elite classes. Not only is this history central to how sound archives of India are shaped, but is also neatly institutionalised in Indian, European and American universities today without much critical reflection – at least not in pedagogical or performance spheres. Classical Indian music and other elite performance genres are central to musicology curricula even today. Classical music is the key representative of 'Indian culture' and the nation within diasporic and transnational public spheres. As we critically examine musical categorisation/classification and its modern representations, we need to further enquire the basis on which it became possible to uphold classical or classicised music against other forms of musicianship and aural traditions of performers from oppressed caste groups. What was placed in opposition to classical music that led to its valorisation whilst demoting other musics and their authorship, whilst at the same time displacing the latter from their professional and economic sphere?

Folklore studies, music/sound collection and regionalism

Folk music collection in 19th and 20th century Europe played a strong role in the formation of nations, particularly, the need to define an authentic 'national' music and culture. Folktales, folksong lyrics, melodies and rural speech were collected and turned into operas and rhapsodies among many other forms in the 'national spirit' for the urban bourgeoise (Rice, 2014).[6] The collected material was also transcribed, notated and compiled into books by composers and found a place in national libraries beside art music and literature (ibid.). The interest in the music of the 'other' persisted and found a new place in European academia with the emergence of the field of musicology or Musikwissenschaft. New nations that emerged after the overthrow of European colonial regimes in the 20th century also became interested in developing their own national musics.

The emergence of folklore and folk studies in South Asia[7] in the late 19th century was foundational to music collection in India initiated primarily by three groups: European missionaries and women, British military and administrative officers who wrote as scientific scholars and finally, elite Indians (dominant castes and classes) who worked with the colonial civil service (Fiol 2015: p.319). These groups collected a vast amount of data and classified it into discrete genres such as superstitions, myths, rituals, ballads, songs, stories, proverbs etc. (ibid). These collected works were shared among the three groups mentioned above who communicated about them exclusively in English, aiming for an elite readership (ibid). Korom (2006: p.30) rightly points out that the folk concept evolved as a result of the 'colonial encounter between British and Bengali social elites...

6 The impetus to collect music was indeed not the same in every part of the world (viz. nationalism). But in the context of the present paper, European nationalist legacy of music collection defined the course of musicianship in India.

7 There is much to be explored about the emergence of the folk concept in India evolving from the German 'Volk' and English 'folk' which overlaps with the Sanskrit 'lok-a' (people). The translation of 'lokasangeet' as folk music has come to be criticised for its mistranslation so as to justify profit for colonial and native elites (see Fiol 2015).

who subsequently channelled this concept into self-serving colonialist and nationalist ambitions respectively' (Korom 2006: p.39). The emergence of folklore and folk studies served to validate the narrative of superiority of the colonial elite and their racial and cultural unity against the primitive colonised subject, particularly Dalits, Muslims, and Adivasis (Fiol 2015). They reified orientalist notions such as the Aryan migration theory which affirmed the supremacy of the brahminic, Sanskritic Indo-Aryan, thereby contributing to the nationalist agenda as seen in the previous section (Figueria 2002; Fiol 2015).

Music collection and classification was thus central to the project of nation-building and was predicated on caste, racial and gender relations. In different parts of India, these processes were replicated in order to assert regional identity (Rege 2002). The cultural politics that played out during the formation of Indian states based on linguistic grounds in 1956 is of particular importance. Different musics were conceived of and categorised as folk, tribal and so on in opposition to the complex and superior classical music based on racialisation, class and caste hierarchy. This implied that all musics placed in opposition to classical somehow did not require much skill, that they were simple and amateurs could sing/perform them. For instance, in the formation of the present-day Western Indian state of Maharashtra, lavani, tamasha and powada became some of the most important representatives of folk genres to be employed for asserting regional identity and are recognised as such today. However, the folk category is hinged on economic exploitation of Dalits or caste-hereditary musicians - the hereditary authors of these genres - at the hands of dominant castes (mostly brahmins and Marathas), given that many of the former were dependant on performance as the only source of income. Lavani (erotic song) was stigmatised for its sexual content and Dalit female authorship, while powada (war musical/ballad) became a site of caste contestation among brahmin and non-brahmin men who extensively collected and composed (new) powadas in the quest to reclaim or refute an Indo-Aryan past (Ajotikar 2019; Rege 2002). Thus, the exploitation of musicians was embedded in their caste-class-gender locations. Regional and national cinema, and Sangeet Natak (elite Marathi musical drama/theatre) continue to celebrate (and exoticise) hereditary genres in contemporary Maharashtra when hereditary musicians bear the brunt of the high caste takeover of the performance sphere (see Ajotikar 2019).[8]

The construction of the folk category in the process of classicisation of Hindustani music largely shaped post-independence nationalism and regionalism for other states too. It paved the way to further capitalise on folk traditions through modern technology and media. Indeed, music archivists and collectors, whether native or European, played a key role in reshaping music based on orientalist ideas of India.

This is also evident in the legacies of other collectors of musics of India. With the advent of recording technology in late 19th and commercially-available recording technologies in the 20th century, institutional sound archives began and music collecting took on a new dimension. While music recordings of different genres became part of a massive industry, it also became viable to record sound in addition to written texts for early ethnologists, comparative musicologists and collectors. Among the most well-

8 It may be interesting to note that the Felix van Lamsweerde Collection includes a very small number of lavani and powada recordings, which are titled 'folk music'. Recordings of Sangeet Natak, the elite Marathi musical theatre, on the other hand, represents classical theatre thereby assuming the primacy of the latter. This is also evident in the fact that Van Lamsweerde was also instrumental in bringing a Sangeet Natak troupe to perform in Amsterdam in 1999. The play, *Sangeet Sanshaykallol* was also translated in Dutch.

known European collectors of Indian music in 20th-century British India were Arnold Adriaan Bake (1899-1963) and Alain Daniélou (1907-1994). Their legacy persevered with John Eijlers (1943-2004), Nazir Ali Jairazbhoy (1927-2009) and Felix van Lamsweerde. The prominence of Dutch music collectors in this trajectory is intriguing and could be for a number of reasons including the modern establishment/institutionalisation of Indology/ Indian studies in the Netherlands and Dutch colonial relations with India lasting nearly two centuries (17th to 19th).[9]

Poske's (2017) re-study of the Arnold Bake Collection at the British Library indicates that Bake may have been the first Western European (Dutch) scholar to record sound/ music across the Indian subcontinent between the 1930s and 1950s. Himself a trained musician in the European classical tradition, Bake's interest in musics of India may have been sparked because of Nobel laureate Rabindranath Tagore's (1861-1941) visit to the Netherlands in 1920. While Bake studied Sanskrit and other South-Asian languages in Leiden and Utrecht, he decided to finish his doctoral dissertation on *Sangit Darpana (1*7th c.) at Vishva-Bharati, the university founded by Tagore in West Bengal. On his return to Europe, Bake delivered a number of lectures and gave demonstrations of songs (ibid). In significant ways, Bake carved a pathway for collectors and musicologists in the following decades including Nazir Ali Jairazbhoy, who was his student at SOAS University of London as well as for Felix van Lamsweerde, who worked as Bake's assistant briefly in 1962. It is striking then, how Bake's musical journey closely resembles that of Van Lamsweerde and Daniélou.[10] In 2019, I was intrigued to find a resemblance between a portion of Jaap Kunst's collection at the University of Amsterdam and that of Felix van Lamsweerde. The cataloguing and naming styles in Kunst's archival material had close affinity with Van Lamsweerde's method and style, which the latter, most certainly learnt during his early work with Kunst. These networks of Western European collectors (all of whom happen to be men) who have built on each other's work and vision to produce the modern sound archive of South Asia encapsulate what Sara Ahmed (2013) terms as the politics of citation: 'a rather successful reproductive technology, a way of reproducing the world around certain bodies...These citational structures can form what we call disciplines...The reproduction of a discipline can be the reproduction of these techniques of selection, ways of making certain bodies and thematics core to the discipline, and others not even part' (Ahmed 2013). These reproductive technologies not only reproduce disciplines and the ensuing techniques, but also institutions (like archives) and the practices that sustain them. The sound collections of India/South Asia demonstrate how the politics of citation are played out over generations. They also emphasize my earlier contention about the ways in which colonial and local elites together shaped nationalist modernity and Indian culture through music. The role of women in shaping this nationalist modernity was central and remains somewhat underrepresented in the study of sound archives.

9 For more on this, see Van Straaten's upcoming essay in the themed issue on postcolonial archives in The World of Music Journal.

10 For more on Alain Daniélou, see his autobiography *The Way to the Labyrinth: Memories of East and West* (1987), https://www.alaindanielou.org and L. Cimardi's work on Daniélou's IITM Collection.

Gender in the making of a postcolonial sound archive

The crystallisation of a nationalist ideology in 19th century British India was a result of the formation of 'Hinduism' as a monotheistic and a supra-local identity as established in the previous section. High caste men in particular were the chief proponents of what is often termed as 'Hindu nationalism', characterised by theories of race, ethnicity, gender, sexuality and culture that had roots in post-Enlightenment European and oriental texts. Many of these texts misinterpreted the word 'arya' in Vedic texts in racial terms rather than in terms of language and observance of caste regulations and thus, provided an incentive for colonial scholars studying India (Doniger 2009, 2014; Figueira 2002; Sinha 1995; Thapar 1992).[11] As philology showed the relationship between Sanskrit and European languages (including Latin, Greek, German and English) and despite the discovery of apparently non-Aryan Indus Valley civilisation, the assumption that Indo-Aryans were originators of Indian civilisation was reinforced. The brahmin in the Aryan theory of race had supposedly preserved the purest Aryan strain with racial exclusivity maintained through the endogamous caste system. Brahmins regarded themselves as descendants of ancient Aryans in order to reassert their self-esteem under colonialism, thereby ensuring a continued superiority and dominance of their culture and social location. Without much evidence, this nationalist ideology presented the vision of a glorious past marked by high culture of which Aryans were the sole creators, deeming Dravidians, low castes, Adivasis and Muslims as barbarians (ibid). While the trope of the barbarian was flexibly utilised based on religion, caste and community, the Aryan always represented the epitome of civilized culture, establishing a dichotomy of the civilised Aryan as functioning against the barbarian Other. Surely, the non-Aryan influences were represented as the reasons for degradation of a social order of the truly pure and superior race and culture (ibid).

In reinterpreting Vedic scriptures and ancient texts, brahmin men – the indigenous custodians of knowledge such as Raja Rammohan Roy (1772-1833), Dayanand Saraswati (1824-1883), Vivekanand (1863-1902) and Bal Gangadhar Tilak (1856-1920), among many others – rewrote the caste system as 'meritocracy and presented a discourse on the retrieval of an 'Aryanised' Hindu masculinity' (ibid, 119). In other words, the Aryan theory of race as interpreted in British India was deeply rooted in the articulation of the loss of brahmin masculinity attributed to India's subjugation and England's use of colonial power to assert masculine superiority (Figueira 2002; Sinha 1995). Such a sexualised and gendered construction had an oriental legacy of British writers who often invoked the 'softness and indolence of Hindus' (Tzoref Ashkenazi 2015: p.82). Mrinalini Sinha (1995: p.1) also underlines how the dynamics between 'colonial and nationalist politics are best captured in the logic of colonial masculinity' as seen earlier.

This process of remasculinisation necessitated reshaping womanhood through social reform. 'Since identity was text-centred, the Aryanization of the modern Indian male centred on reading Vedic canon as texts written against the female body' (Figueira 2002: p.120). Sinha (1995, 1999), Sarkar (2001) and Mukherjee (2011) profoundly reveal the construction of a Hindu domesticity wherein the Hindu brahmin male, having allowed himself to be colonised from the West and having limited influence in the colonial public sphere constructs the wilfully surrendering chaste Hindu woman as marking that difference of the Hindu from the West. Such a womanhood was an intriguing combination of Victorian and Hindu values which glorified suffering and self-sacrifice as justification

11 Hock's (1999: p.15) reminder that a racial interpretation of premodern texts and societies is an 'invention of early modern European colonialism and imperialism' is important here.

for the subordination of women. These observations link to the ideals of middle-class womanhood, wifehood and motherhood central to the pedagogy and performance in Hindustani and Karnatik music as well as in elite theatre genres like Sangeet Natak (Marathi elite theatre), whilst replacing Dalit and Muslim hereditary female performers.

In Paluskar's pedagogy, women were encouraged to learn vocal music so their offspring could be initiated in this music tradition from an early age. The honour and respectability conferred upon women by their caste location was to represent the honour and purity of Hindustani music itself. Paluskar wanted women from respectable households (kulin stri) to be confined to the domestic sphere and companionate marriage while engaging in music education as the 'noble upholders of nationalist ideology' (Bakhle, 2005: p.173). This was further affirmed by the music appreciation schools where the dual trope of 'wife/whore' reappeared to promote a modern nationalist vision. For instance, a philanthropist named K.N. Kabraji founded the *Parsi* Gayan Uttejak Mandali in 1870. Through this music appreciation society, Kabraji linked musicianship and prostitution and believed that 'if respectable women could learn music, they could prevent their husbands from leaving them at night for extramarital nocturnal entertainment' (Bakhle, 2005: p.72). Kabraji further reminded connoisseurs of the divine status of music and warned those who loved music too much to not tolerate the "presence of whores" (ibid).

Indian music's purity and sacrality was linked to high caste or respectable women (perhaps Parsi women and others from elite backgrounds), endogamous companionate marriage and emerging notions of bourgeois religiosity. It aimed at preserving brahmanical patriarchal control of high caste men which dictated disposal of the performance spheres of Dalit and Muslim women who were, in the first place, labourers and authors of traditions that are classicised today.[12] Singing and dancing emerged as two separate spheres of performance to draw a clear line between respectable women and courtesans/entertainers, thereby defining the margins and meanings of womanhood. Similar processes materialised in different parts of India where musicianship/dance embedded in caste-based hereditary occupations were usurped and sanitised to preserve caste-class-gender dominance and divisions (see Katz, 2017; Putcha, 2013; Soneji, 2012; Weidman, 2006). Interpreting the modern history of music through the lens of caste, racialisation, gender and sexuality thus lends us certain suppositions about the colonial/postcolonial music archive.

With this, I will return to my initial questions about the postcolonial music archive of India: Can the history traced in this essay be read as background to the Felix van Lamsweerde Collection? What comprises this music collection and what is excluded from it (intentionally or unintentionally)? As a result, what music and performance genres and traditions are preserved and what remains marginalised or excluded? What can we decipher from the ways in which musical knowledge is constructed, represented and disseminated through collections like the one in focus in this essay?

Historicity of sound objects

Data preserved in sound collections and archives cannot be treated as reliable, unquestionable or authentic sources or representations of history. Perhaps the questions music scholars need to address should concern the corrective practices that could emerge out of revised histories which question the foundations of archival knowledge and their scope. What could be addressed are concerns about how postcolonial archives still re-

12 See Chakravarti's (2003) conceptualisation of brahmanical patriarchy.

produce colonial, oriental, and nationalist knowledge structures. As Garcia reminds us (2017: p.14), music or sound collection as institutions/archives are rooted in the 20th century scientific and 'positivistic imaginary' that sounds were things to be collected. And today, the way we understand the act of collecting is what Garcia (ibid) terms 'harvesting and accumulating' as a means to control representation. Collections are not free of the collector's influence and indeed cannot be removed from their contexts or alienated from their creators (ibid). Sound collections in fact operate on these terms and further represent musical and cultural knowledge in textual terms discursively, aesthetically, materially and ideologically (ibid). In this sense, Western European sound collections, like European classical music, are bound by textuality. Their descriptions and organisation are meant for a specific reader/listener/audience and ensuing literacy (see yamomo 2016, 2018). If one were to examine a collection only on the basis of its sound recordings, the reader/listener/audience would need a socio-political lens to make meaning out of these sounds, or the assumption would be that the reader/listener/audience is disembodied. A sound recording brought out of its socio-political context (i.e. from South Asia to Western Europe in this case, or from the Global South to the Global North for many others), can make meaning only through textual descriptions, which are inherently situated in ideological and political worldviews. Technological mediation, the collector's intention, locations of cultural broker(s) and musical categorisation at large further add to these power dynamics. Sound collections/archives of musics of India in the colonial and postcolonial periods present themselves with more or less the same configurations. Representations of music and culture are derived from social relations, in this case, the intersections of caste, racialisation, gender and sexuality.

It becomes clear from the previous sections that music's classicisation in India was one of the most significant shifts that redefined musical knowledge and authorship. The dominance of classical music traditions (Hindustani and Karnatik) and their predominantly brahmin authors in the Van Lamsweerde Collection testifies the reinforcement of high caste cultural nationalism in India. Indian music, perhaps not perceived as a unitary musical identity of a nation, was certainly characterised by the assumption of superiority of classical music, which still remains to be critically questioned in entirety. Classical music placed against all other musics, particularly folk, explains the latter's subordinate status as discussed earlier. Collectors' aural literacy, then, is intimately linked to the historicity of sound objects.

An important aspect of such literacy in the Van Lamsweerde Collection is that of connoisseurship and eclecticism. This is not only because of the wide-ranging performance traditions and genres recorded over four decades in this collection, but also because of the ways in which they are structured, categorised and represented. Alaghband-Zadeh (2017) analyses the embodiments of music connoisseurs (rasikas) as a matter of social class, particularly middle and high class in case of Hindustani music. She shows through ethnographic research how 'embodied ways of attending to music are intertwined with issues of history, status, class and prestige' in postcolonial India (Alaghband-Zadeh, 2017: p.210). Listening is performed to characterise a sense of expertise that carries moral and ethical dispositions (Alaghband-Zadeh, 2017; Rahaim, 2012). Alaghband-Zadeh (2017) demonstrates how prescriptions and discourses of aurality with regard to an ideal connoisseur of classical music are marked by values of 'good' and 'bad' listening, open-mindedness, sincerity and expertise. Musicking bodies, after all, are 'always already embedded in social relations' (Rahaim, 2012: p.109). In this sense, those collecting and naming musicianship are also musicking bodies and so are the collections themselves; in this case then, the Van Lamsweerde Collection embodies this connoisseurship envisioned in the making of modern postcolonial musicianship in India.

The diverse musical, dance, and theatre traditions and the rigour behind studying and recording them over decades present the eclecticism and open-mindedness of this collector. It resonates also with preceding collectors such as Arnold Bake. Indeed, Van Lamsweerde himself summarised this during an interview (Lamsweerde, 2018) when he shared about his musical endeavours over the decades: 'I am a music lover and a big fan of Indian music. My taste is not exclusive but inclusive'.[13] Along with sound and video recordings, the Van Lamsweerde Collection consists of textual materials, some of which date years before Van Lamsweerde started learning about musics from India. His journey into Indian music is also representative of the orientalism of hippie counterculture as represented by Ravi Shankar, who went on to become a sitar icon (see Hall 1968). Van Lamsweerde studied the sitar in particular and familiarised himself with the pedagogical and aesthetic schools of the instrument. The written notes accompanying each item in the collection, especially early recordings from the '60s and '70s show a clear pattern of a specific kind of connoisseurship learnt from the elite nationalist pedagogy of music. All these observations reflect a sense of sincerity, patience, dedication, open-mindedness and willingness to cultivate expertise.

According to Alaghband-Zadeh (2017), these qualities are representative of middle-class values that emerged in postcolonial India and are embedded in the ways that music connoisseurship is understood today. While this observation is important and may lead to further analyses of Western European middle-class morality and ethics in archival research, what remains to be stated is how such a connoisseurship fits within modern musical pedagogy in the context of India. Sincerity, patience, dedication, open-mindedness and expertise were qualities also of the sacred, devotional (bhakti), religious and casteist nature of music of modern India (Bakhle 2005). Alaghband-Zadeh (2017) further goes on to show how the ethical and moral dispositions, the 'good' and 'right' ways of listening and performing restrict access along lines of expertise, exclusive only for a certain social class; in this case, the connoisseurship of dominant castes and classes (particularly brahmins).

Further, Amanda Weidman underlines how training in classical traditions 'inculcates and hones gendered and classed sensibilities' (2014: p.214). Schofield (2010) explores music and gendering processes, particularly how contemporary connoisseurship of North Indian classical music reproduces masculine sensibilities and socialities. The Van Lamsweerde Collection thus reflects through its structure the quintessence of modern connoisseurship envisioned in the nationalist imagination based on caste-class-gender lines. It also presents how institutionalised forms of (musical) knowledge are produced through collaborations of cultural brokers. The very small number of first-hand recordings of women featured in the Van Lamsweerde Collection testify to these observations. But numerical statistics can support arguments only partially. Feminist ethnomusicologist Ellen Koskoff's (2014) reminder about fieldwork gender dynamics may be noteworthy here. She explains how in the early years of anthropological research, men in the field often ended up accounting only for the voices of men in the community often due to reasons related to access, thus interpreting a partial worldview of that community and reinforcing male-dominated narratives. Thus, knowledge which came to represent an entire community (culture, or nation) was produced mostly based on the experiences of men. This is reflective of the extent women were accounted for in the Van Lamsweerde Collection and opens up broader discussions which need to be addressed

13 While Van Lamsweerde's training as a sitarist was relatively inconsistent, he certainly regards himself as a serious connoisseur of classical Indian music.

independently. In this light, the patterns of collaboration between Nazir Ali Jairazbhoy and Felix van Lamsweerde, Rabindranath Tagore and Alain Daniélou or Arnold Bake makes one curious. They draw on each other's life-worlds to further common goals. A revised feminist history of music in modern India presented in this essay also points to how women's names documented in this archive, either as dancers or singers, are mostly middle class brahmins. While one can listen to a number of women performers in the collection, their namelessness or representation as 'dancing girl' or 'folk singer' further complicates the ways in which one could infer caste dynamics and gender-based stigmas of musicianship in India.

These observations resonate also with folk music collected from different regions of India carrying titles like 'folk songs and dances of Bihar', 'folk music from four states in India', 'folk music of Kashmir' and so on. A number of notes such as 'beggar's song in Bombay', 'tribal song', 'watchman singing (Benares)' among others sit awkwardly with the properly inventoried items of classical music. While counter-hegemonic musical cultures (like Ambedkari jalsa, bhimgeet or buddhageet from Western India) performed by Dalit and anti-caste musicians were extremely popular from the late 19th century and especially in post-independence India, these performances do not make up a large part of the collection, despite the fact that they were widely broadcast on radio and performed in live settings. Certainly, a collection cannot possibly include everything. Neither is it analytically useful to accuse a collector of not being interested in all performance traditions. However, what must not be forgotten is the structural basis upon which certain cultures and people remain on the margins or tend to be entirely excluded. The modern postcolonial elite subject is prescribed to consume and identify specific markers hinged on caste, class and gender. A form of citizenship is built through our sonic/musical sensibilities that have come to be shaped through processes controlled by hegemonic structures and the ways in which we employ them as performers, listeners and cultural agents (Andrisani, 2015; Ingraham, 2016; Punthambedkar and Mohan, 2017). This can also be observed in cultural policy of the Indian government: the Films Division documentaries are a rich source of how the postcolonial Indian elite was moulded in the initial decades of independent India (see Sutoris, 2019).

It is worth the mention then, that despite the brutal marginalisation and exclusion of Muslim gharana musicians in the nationalist project, the Van Lamsweerde Collection includes a number of first-hand recordings of Muslim artists like Bismillah Khan, Vilayat Khan, Ali Akbar Khan, Imrat Khan, Rais Khan, the Dagar brothers and others. Muslim women performers of thumri like Zohra Bai, Kali Jan and Gauhar Jan also constitute a small part of this collection, although as commercial recordings. What also makes this collection special is the reasonably large number of first-hand Karnatik music recordings with diverse instruments and vocal performers, as most scholars of South Asia have tended to focus on the North Indian context. Van Lamsweerde himself expressed anguish for the conflation of North Indian music with Indian music, and rightly so.

Given that music collections such as the one associated with Van Lamsweerde present an opportunity to examine complex socio-political and economic processes in postcolonial India, it may be worth making some remarks and posing questions about the potential use of the material in this collection for further enquiry. If we assume archives as memory institutions have 'a collective mandate to document and preserve national cultural heritage', the Van Lamsweerde Collection fits into the nationalist vision of India (Sutherland 2017: p.1). However, this essay has attempted to critique not just the role of collections, but also of the ensuing ideas of nation, nationalism, archives and colonial histories that produce them in the first place. Such approaches

towards examining archives have recently been addressed in critical archival studies and encourage positing 'practical goals for how archival research and practice can and should change' (Caswell, Punzalan, and Sangwand 2017: p.2). What counts as cultural heritage, and what is deemed worthy of preservation, and for what purposes? Given that a number of recordings in the Van Lamsweerde Collection may present ethical dilemmas, how can materials in this collection be used towards narrating corrective histories and presents? Can materials in this collection be repatriated and to whom? How can copyright issues be addressed, particularly in the case of nameless musicians? Most importantly, to what extent can music archives such as the Van Lamsweerde Collection be used to disrupt Indological and orientalist assumptions (of which the archives themselves are laden), thereby shifting the lens from a purely culturalist analysis within disciplines? Can digitisation, database creation and open-source accessibility be leveraged to that end? While these questions are crucial, addressing them is well beyond the scope of the current essay, and can be taken up in future research.

What may be useful to emphasise here is the importance of a source critical approach while analysing sound archives. In the process of understanding and entering the world of a (new) archive or collection, such an approach ensures a critical reading and interpretation of history. While this approach will (and must) preserve original classification and examination, one needs to be able to read between the lines. It would be crucial not only for a researcher to be equipped with the politics of archives, but also for other stakeholders, like archivists, technicians and historians. Such an approach will directly impact how metadata are captured or what can be found in a database beyond original categories and descriptions, thereby arriving at more complex conclusions as opposed to simple historical 'facts'. Similarly, an ethnography of the archive or collection whilst placing the collector at the centre when possible, would enhance a source critical approach. It may be important to offer a caveat: it is certainly not my suggestion that a collection or archive is only an inept historical source or that the collector is only a challenging figure (I do not intend to criticise Van Lamsweerde, but to place his work in a political context, often not afforded by music studies). Collections are much larger than an individual when they are also inscribed in the collector's vision. I echo Bithell's (2008) pertinent insight on this matter when she places ancestors of anthropology and ethnomusicology in their own historical context. Our ancestors, she says —

> lived in a different age, 'knew' different truths, incubated different complexes, learnt from different mistakes... some, at least, of those... were pretty radical in their own time. An anachronism does not have to be discredited. We don't have to throw out the grandfathers with the bathwater. How quaint might our carefully formulated pronouncements sound to our own grandchildren? On what account or charge might we be exorcised in our turn? And what would we say in our defence? (Bithell 2008: p.77)

Closing remarks

With a focus on the Felix van Lamsweerde Collection, this essay has traced the impacts of colonialism, orientalism and nationalism on the postcolonial music archive, musicianship and the epistemologies of music in modern India. Particular examples from the Van Lamsweerde Collection as well as his life journey further illustrated how music in India was perceived in the modern imagination. These examples also illuminated the caste-class-gender-based construction of musical connoisseurship (and authorship) in

the sphere of classical music and the affordance of eclecticism. Finally, this essay has attempted to put forth a feminist historiography of music and the importance of source critical approaches in examining archives.

On the one hand, the Felix van Lamsweerde Collection is a continuation in the legacy of most European music collectors and authors of Indian musics and on the other, it presents much more inclusivity and impartiality. While it reproduces orientalist and nationalist tropes, it also presents a critical history by documenting voices of hereditary musicians from both Muslim and Dalit communities. Despite these contradictions, there is no doubt that this collection would prove to be rich material for performers, students and scholars of musics of South Asia, particularly those interested in Karnatik and Hindustani classical styles. Additionally, the innumerable live recordings of recitals, particularly house concerts in the Netherlands and India, the rare live recordings of artists who are now deceased and a number of tapes that include largely unheard-of artists and raags characterise the affluence of this collection. Ultimately this collection will provide an opportunity for scholars to theoretically and practically reflect on how we envision music archives of the future where curation and representation would present historiographies and knowledges that would avoid reproducing elite interests.

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MIXTAPES FROM HEAVEN: THE GLOBAL DUKE ELLINGTON FANDOM AND THE MUSIC THEY PRESERVED

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Abstract

The Rhodes S. Baker, Jr. Collection of rare and unissued sound recordings at the University of North Texas Music Library demonstrates that, in archival settings, the incidental content that is often deleted from commercial releases is actually "a feature, not a bug," so to speak. This article elaborates on two reasons for the desirability and necessity of such content: First, it often provides the context necessary to make sense of a given recording, determining a date and release status, especially for recordings that are not well labeled. It also provides lasting evidence of the human activity underlying every aspect of the performance, capture, distribution, and preservation of a recording.

The Rhodes S. Baker, Jr. Collection's unissued recordings of Duke Ellington and other major jazz artists, packed onto reel-to-reel tapes like the "mixtapes" of decades later, have obvious intrinsic value. Still, preserving and acknowledging the human activity that compiled them adds value: doing so provides a window into the depth and intensity of the "fandom" (or community of fans) that thrived for Ellington even in his sixties, along with the multifaceted efforts to preserve his live performances.

Ellington and his music created an international fan community, and their story augments his own. This article describes historically significant content from the Rhodes S. Baker, Jr. Collection, digitized in early 2016, in the context of the social participation of Baker and other fans and collectors, including the prominent Swedish collector and discographer Benny Aasland. The preservation and description of the collection demonstrates a complementary relationship between archival practice and musicologist Christopher Small's concept of musicking. Insights from Pauline Oliveros and John Cage further inform an approach to musicking inclusive of incidental sounds and other artifacts of recorded live performance which might otherwise be dismissed as "noise," but are essential to the full context of the captured performance.

Introduction

"Someone has to be the audience," said University of North Texas Music Library volunteer Daisy Rogers when asked if she played an instrument herself. Mrs. Rogers made an important point regarding the social dimension of music performance: It is all too easy to treat recorded music — whether live or from a studio — as if it occurred in a vacuum. This approach strips out contextual information and evidence of human participation, not unlike taking the "perfect" photo of a beach sunset while carefully cropping out the other tourists also taking a photo of the sunset, as if striving toward the Platonic ideal of a sunset with the illusion of no intermediary effect of human perception or observation. Someone, indeed, has to be the audience, or the sunset goes unseen – an astronomical event, but not a human one.

Broadly speaking, overlooking the experience of the audience also helps to set the stage for the perennial student question in classes about historically significant musicians, artists, and authors. Who "decided," for example, that Duke Ellington was so important as to merit close study in jazz history courses to this day? Of course, questions surrounding the establishment and maintenance of a canon require ongoing scrutiny, but

evidence of audience reception partly addresses the retort of "says who?" when historical narratives recognize an artist as an important figure.

The existence of jazz has overlapped with the era of recorded sound and radio, and live concert recordings preserve an immediacy and a participation in the moment for those listening long after the recorded event. Here, collectors and cultural heritage institutions become crucial participants in ensuring that the listening may continue, and the audience may grow. All such agents find a home in musicologist Christopher Small's concept of *musicking*, which refers to participating "in any capacity, in a musical performance, whether by performing, by listening, by rehearsing, or practicing, by providing material for performance (what is called composing), or by dancing" (Small, 1998, p. 6).

In broadening the scope of musical participation as a social activity, musicking provides a framework that restores to historical recordings the context that archival practice prizes so highly: Not only the materials are important, but also the activities that generated them, and the people who participated in those activities (Society of American Archivists, 2013, p. xv). Understanding a collection and its creator are interdependent, as an archival collection is on many levels an autobiographical entity – hence the imperative for description and structured metadata that addresses those connections. The Rhodes S. Baker, Jr. Collection of Duke Ellington recordings at the UNT Music Library thus provides an object lesson in how the contextual contributions of numerous "musicking" participants complement and elevate the intrinsic value of a significant set of unissued live Ellington recordings.

The tapes also capture messages from Swedish Ellington expert Benny Aasland (who called Baker by the nickname "Bake"), and Staten Island discographer Bob Kumm, who in lieu of a cover letter recorded introductions describing what was on the tapes they sent to Baker. In addition, Houston radio personality Ed Case appears on multiple occasions, both on radio interviewing Rhodes Baker, and as master of ceremonies for an Ellington concert in Houston, Texas. These contacts point to a transatlantic network of Ellington enthusiasts sharing recordings. The existence of such a dedicated community before the affordances of electronic communication is itself remarkable and worthy of study; Baker's collection preserves tangible evidence of this musicking activity that facilitated the preservation of rare and unissued jazz recordings.

Moreover, even where content has been commercially released, it is of historical interest to have it accessible in "raw" format, which often reveals a different performance order, bandstand chatter, the voices of radio announcers, advertisements, or the war bond appeals that were the reason for many broadcasts. Indeed, the very contextual material that may be discarded from a "refined" recording is often crucial for making sense of it: As *Deep Listening* author Pauline Oliveros noted, "there's always more to the sound than just the sound" (Andrews and Maloney, 2020). Oliveros was calling attention to the effects of reverberation, but her statement applies broadly to the ambient circumstances of a sound environment. In a similar vein, John Cage observed that "Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating" (Cage, 1973, p. 3). Granted, archival recordings and commercial recordings serve different purposes and audiences: For those analyzing or transcribing from the recording, clarity is paramount, and for those listening for enjoyment, artifacts of recording may distract from the sense of a front-row seat. However, archival and commercial recordings are complementary, and a high-quality instance of the latter depends on access to and understanding of the former.

Oliveros' and Cage's comments suggest a holistic approach to the intersecting settings in which musicking takes place: not in a social vacuum, and also not in an environmental vacuum. With that approach in mind, this article details the history and contents of the Rhodes S. Baker, Jr. Collection, and the many stories it tells. Those stories cross geographical boundaries and go beyond Ellington himself, but lead back to him as the unifying focus of such devotion from his fans on both sides of the Atlantic Ocean.

The life of "Bake"

The creator of this collection, Rhodes Semmes Baker, Jr., followed in the footsteps of his father in several respects: As an attorney, Rhodes S. Baker, Sr. attained the distinction of arguing in front of the United States Supreme Court. He also served as president of the Dallas Art Association, and participated in the campaign that established Dallas as the location for Southern Methodist University, which is now a prominent private university. Notably, Baker Sr. was also an expert art collector (Hart, n.d.), and certainly appears to have passed on to his son an affinity for curating a comprehensive collection of rare, important, and high-quality materials.

Baker Jr., for his part, was born in Dallas on 27 November 1912, and received bachelor's, master's, and law degrees from Southern Methodist University. After serving in the U.S. Army during the Second World War, he worked as a tax attorney with the Department of Justice in Washington, D.C. before relocating to Houston in 1951 (Southern Methodist University, 1968, p. 6). It is unclear when he became a devoted fan of Duke Ellington, but working in Ellington's hometown of Washington, D.C. would have availed him of many opportunities to see Ellington and his band, and to hear him via local radio broadcasters such as Willis Conover, Felix Grant, and Emerson Parker. Baker only lived to be 54 years old, and died on 25 November 1967 (Ancestry, n.d.).

An October 29, 1968 press release from what was then North Texas State University (NTSU, now UNT), found in the papers of former One O'Clock Lab Band director Leon Breeden, describes the acquisition of Baker's collection: "Lab Band director Leon Breeden and Music Librarian, Vernon Martin, announced today the purchase of a collection of books, recordings, tapes, and discographies of the work of the fabulous Duke Ellington. The collection was acquired from the widow of prominent Houston attorney, Rhodes Baker. [Mrs.] Baker reports that her husband was an ardent Jazz buff and made a point of collecting everything recorded by the eminent jazz musician." The release goes on to note the One O'Clock Lab Band's recent contact with Ellington when the band played at the White House in June of 1967, thoroughly impressing Ellington, who reportedly vowed to go conduct a five-hour rehearsal of his own band (Leon Breeden Scrapbook 1, 1968).

An initial inventory sent from Vernon Martin to Breeden valued the collection at $4500 in 1968 (Leon Breeden Scrapbook 2, 1968), or $33,670.86 in 2020 dollars (US Inflation Calculator, 2020). Even after adjusting for inflation, the sum is arguably quite modest. The collection consists of two boxes of papers, 82 reel-to-reel tapes, dozens of radio airchecks, and hundreds of 78 rpm and LP records. The papers are mainly records of Rhodes Baker's bidding in auctions, along with inventories, and discographies. The reel-to-reel tapes are of particular interest, due to the presence of live and unreleased performance. The press release's description of the reels is strikingly understated in hindsight, as they hold the most rare and unreleased material.

Most of the tape boxes are sufficiently labeled to determine at least some of their contents, but the tapes themselves are densely packed with music. It appears that Baker dubbed recordings wherever there was room on a tape, and many tapes contain four tracks with up to 90 minutes of audio on each track. Studio recordings are juxtaposed with live performances, and commercial releases segue to unreleased material and alternate takes. While the term "mixtape" generally brings to mind cassette tapes from the 1980s and '90s, Baker's reels follow a similar pattern, constituting expertly compiled "mixtapes" of exceptional importance due to the proportion of rare and unreleased content they contain.

Literature

Several resources either lend context to the contents of Rhodes Baker's collection, or provide a reference for confirming or clarifying the identity of a given recording. First, the Ellingtonia online discography (Discography | Ellingtonia, 2020) and Tom Lord's The Jazz Discography database (The Jazz Discography, 2020)[1] have been indispensable for identifying performances, verifying contents, and assessing whether recordings have been commercially released.

In addition, the Internet Archive's Wayback Machine captures of the site *A Duke Ellington Panorama* (formerly depanorama.net) have provided access to the Duke Ellington Music Society's *DEMS Bulletin* (Wayback Machine, 2020). Day-to-day itineraries of *The Duke - Where and When* (Palmquist, 2020) helped determine whether an uncertain date was plausible according to Ellington's known activity around that time.

Since many of the recordings in Baker's collection originated in Sweden, the blog postings of the Duke Ellington Society of Sweden (Duke Ellington Society of Sweden, 2020) have provided background information about numerous Ellington concerts in Sweden and elsewhere. A section accessible with a membership fee offers access to recordings from Benny Aasland's collection, but this article does not discuss the recording content since it is not publicly posted. A listing of the contents of the Music Library's collection is posted and discoverable (Feustle, 2020)[2] via search engines like Google, though copyright restrictions limit access to on-site use.

Technical process

As the UNT Music Library acquired the Rhodes Baker Collection in 1968, efforts to make sense of the contents have occurred in several iterations. Around 1990, librarian Michael Cogswell (who went on to become Executive Director of the Louis Armstrong House Museum) supervised a project to transfer some of the tapes to Rotating head Digital Audio Tape (R-DAT). As is so often the case in physical preservation media, the reformatting media itself ultimately reached obsolescence, and in the 2000s, librarian Andrew Justice reinvestigated the available information about the reels and R-DATs, with a new inventory prepared.

Funding was also an obstacle on top of the advancing age and obsolete formats of the recording and their R-DAT copies; however, as time passed, digitization became technically and financially feasible. The Music Library explored different options for funding;

1 Accessed via an institutional subscription.
2 The reel-to-reel tapes are described in Series 3.

ironically, smaller projects may be harder to fund, however valuable the materials, due to minimum asking amounts for grants, and the understandable desire by funders to associate their names with large, transformational projects. The Music Library ultimately funded the digitization of the Rhodes Baker reels in early 2016, via George Blood Audio LP in Fort Washington, Pennsylvania. Also included were a smaller number of reels from a different Ellington-related collection compiled by former U.S. Foreign Service Officer Dennis Askey. Upon completion of the digitization project, the Music Library received .wav preservation masters, each of which was accompanied by an md5 checksum file for data integrity.

Listening and research

As noted earlier, descriptions provided in and on the tape boxes were generally of some use, but necessarily limited by space. The only way to confirm what was on each tape was to listen in real time, a task which began soon after receiving the tapes, but was greatly facilitated by teleworking during the Covid-19 pandemic due to the ability to allocate focused listening time while working at home. Listening to and researching the tapes took a total of four to six months, though regularly interspersed with other duties. In general, the workflow proceeded as follows:

1. For each performance, note in a Google Docs file if it appears to be live or from a studio. For live performances, note tune changes by timestamp (hour:minute:second).
2. Note the names of tunes if recognized.
3. If present, three consecutive tunes are generally enough to identify a live performance (or a set of plausible performances) at Ellingtonia.com, though one exceptionally uncommon title may suffice to isolate a performance date. The Tom Lord discography served as a backup resource if a performance was not listed in Ellingtonia.
4. Continue listening to confirm or rule out performance identification and verify contents.
5. Note release status: If partly released, note unreleased material.

The process of listening and identifying recordings was labor-intensive, and required specialized knowledge in recognizing Ellington's extensive repertory, as well as general dates of certain band members whose presence could narrow a time frame. For example, Joe "Tricky Sam" Nanton died on July 20, 1946, so any live recording announcing his presence was made before that date. On the other hand, the presence of Swedish singer Alice Babs provided an immediate signal to browse Swedish dates in the 1960s. Ellington theme songs prior to "Take the 'A' Train," such as "East St. Louis Toodle-Oo," narrowed the time frame for performances, and the evolution of fixtures on Ellington's set lists also suggested a date range: For example, one may note characteristics of the initial release of "Take the 'A' Train" in contrast with its reworking for the album *Ellington Uptown*, and a frequently used phrase ending that bounces across octaves in Ellington's piano solo that situates it in the 1960s.

Findings

Several recordings merit highlighting as being especially illustrative of the contents of the collection and the contextual information required to make sense of them. For example, one tape that was especially packed with content was labeled B-57, on which five out of six performances were listed as unissued in Ellingtonia.com's discography (Discography | Ellingtonia, 2020). Figure 1 details the contents of tape B-57.

Performance	Date	Release status
Konserthuset, Stockholm Second concert followed by first concert	9 March 1964	Second concert partially unissued, first concert entirely unissued
Civic Opera House, Chicago	10 November 1946	Django Reinhardt feature only, commercially released
Storyville, Boston	Between 23 and 29 September 1957 (Palmquist, 2020)	Unissued
Basin Street, New York	31 December 1954 overnight into 1 January 1955	Unissued
Liederhalle, Stuttgart	12 February 1963	Unissued
Liederhalle, Berlin	15 February 1963	Unissued

Figure 1: Contents of tape B-57.

As tape B-57 illustrates, the reward for this labor-intensive effort was considerable, above and beyond the nearly 60-page log of the contents of the digitized reels. B-57 begins with a spoken message from Benny Aasland to Rhodes Baker, and Aasland announces each of the performances – a benefit not present on most tapes. Following the Storyville performance, Aasland calls the Stuttgart segment "a rather unsatisfactory recording," but future generations are surely grateful to have it, despite whatever shortcomings Aasland saw in the recording quality. Above and beyond the music, B-57 is evidence of the friendship between the two men, and Aasland's generosity in sharing Swedish Ellington recordings with an attorney in faraway Houston, Texas.

In contrast, tape B-4 describes a concert in Gothenburg, Sweden, held on November 18, 1958. Consulting the Ellingtonia and Tom Lord discographies uncovered an immediate problem: Ellington and his band were performing in Basel, Switzerland on November 18 (where the recording was listed as unissued), but they had been in Gothenburg on November 6. The tape included an introduction from Aasland identifying the concert as being in Sweden, not Switzerland, but it was worth verifying. The discographies show the content of the concerts on this tour of Europe was highly consistent, so close listening was required to confirm or rule out the date and location. If the recording was indeed from Sweden, there was then the task of confirming which of two concerts on November 6 the recording contained.

Ellingtonia.com shows the first concert as being entirely released, with a handful of unissued selections in the second concert (Discography | Ellingtonia, 2020). Curiously, the very information that definitively identifies the recording as the second concert in Gothenburg is listed as being unissued: Near the end of the concert, Ellington notes that the date was singer Ozzie Bailey's birthday, which is November 6, and the band plays "Happy Birthday" for him. This addition to the program only occurs in the second concert. Perhaps the protracted legal struggle over the copyright status of "Happy Birthday" in the United States hindered its release in some small measure (as one more track in need of copyright clearance), but it is a valuable service to listeners to include with recordings some of the evidence that helps make sense of them.

Closer to Rhodes S. Baker, Jr.'s home, tape B-23 contains a recording of Ellington's storied Fargo, North Dakota concert of November 7, 1940, capturing at least one iteration of recordings from that concert in collectors' hands in the 1960s. The blog of the Duke Ellington Society of Sweden (DESS) thoroughly details the story of the Fargo concert's long journey to commercial release, from its recording by Jack Towers and Richard Burris on portable equipment to initial bootleg releases beginning in the sixties from a "very poor tape" which Dick Buckley "gave to someone who visited him in Washington." Towers facilitated legitimate releases beginning in 1975, though the concert was not released in its entirety until 1990 (Fargo Nov. 7, 1940, 2020).

The provenance of this item in Baker's collection is unclear, but his copy of the Fargo concert is plausibly connected to Dick Buckley's "very poor tape." It contains notable issues of balance, particularly in selections featuring vocals from Ivie Anderson. However, the full, unedited spectrum of sound in this raw recording exceptionally captures the energy and excitement of Ellington's appearance in Fargo. Digitizing archival collections such as Baker's ensure that listeners can access both the polished commercial releases (which were clearly a labor of love, from the description in the DESS blog post), and the unedited recordings where even the flaws help to document the experience of that winter night in North Dakota, through crowd noise, the acoustics of the venue, and the position of Towers and Burris' recorder. In this way, the commercial releases and archival recordings are complementary, with each aiding the understanding and appreciation of the other.

Baker's collection also captures audio from numerous telecasts in the 1960s, including Ellington's appearances on NBC's *Tonight Show* (tapes B-36 and B-56) and a CBS telecast (B-36) with Ella Fitzgerald on CBS on March 7, 1965. Other television performances in the collection include Ellington's appearance on the Keefe Braselle show with dancers Noelle Adam and Swen Swenson on or around July 31, 1963 (B-56), the Barbara McNair Show on November 2, 1966 (B-36b), and a special presentation on New York City's Channel 2 (WCBS-TV) of Duke Ellington's Sacred Concert (B-36a and M-10a). The program is preceded by an interview on the program *The Way to Go* with the Rev. Dr. Bryant Kirkland of the Fifth Avenue Presbyterian Church (Saxon, 2000), where the concert was performed. While the telecast is of obvious musical significance, the interview with Kirkland exposes persistent societal prejudices about jazz and jazz-related music in the 1960's. Even with a distinguished artist such as Ellington, the interviewer quizzes Kirkland on everything that could conceivably go wrong and various objections to Ellington's performance in his church. The interview preceding the program thus greatly alters the context of the performance, restoring to the present day a sense of what a controversial undertaking it was at the time.

Although Baker's collection is primarily concerned with Duke Ellington, other major artists are also present. Some recordings feature unissued material, while others lend context to material that has been released, as with the 1940 Fargo recordings described above. Performances from artists other than Ellington which appear to be unissued include those from Harry James from a split broadcast with Ellington on WEAF (tape "Jerry VCI") on May 1, 1943 (Garrod and Johnston, 1985, p. 31) an interview with Count Basie in Sweden (likely August 9, 1962 due to the mention of opening night at the Grona Lund), separate performances by Count Basie (B-63) and George Shearing (M-54) not located in discographical entries, and what appears to be a master recording of a Louis Armstrong concert apocryphally known as the "Cornell Concert" (also on tape "Jerry VCI").

Ricky Riccardi, the Director of Research Collections at the Louis Armstrong House Museum, clarified that both the location and date of the "Cornell Concert" are incorrect, because the musicians on the concert only performed together between August and November of 1953, not on the often-cited date of February 25, 1954, and not at Cornell University (R. Riccardi, 2018, personal communication, May 8). Indeed, the exact date and location remain unknown (The Jazz Discography, 2020). But the importance of Rhodes S. Baker, Jr.'s recording is that it provides insights into the original performance order, as the master tape order differs from that of various commercial releases and efforts by discographer Jos Willems to reconstruct the performance order (Willems, 2006, p. 234). Figure 2 provides the order present on the tape. The tape likely proceeds in chronological order, but the figure notes places where the recording stops and restarts:

Track 3, 21:17 When It's Sleepy Time Down South
Track 3, 24:29 Armstrong; Back Home Again in Indiana
Track 3, 29:28 Armstrong; A Kiss to Build a Dream On
Track 3, 33:35 Armstrong; The Bucket's Got a Hole in It
Track 3, 36:55 Armstrong; [audible restart in tape] Tin Roof Blues
Track 3, 42:08 Armstrong; Muskrat Ramble
Track 3, 48:05 Armstrong; Barney Bigard; High Society
Track 3, 51:34 [audible restart in tape] Armstrong (tells joke); Limehouse Blues
Track 3, 57:50 Announcer introduces Milt Hinton; Hinton introduces These Foolish Things
Track 3, 1:02:30 Armstrong; Blueberry Hill
Track 3, 1:05:20 Armstrong introduces Trummy Young; Margie (with two reprises)
Track 3, 1:10:18 Velma Middleton, Mama's Back in Town
Track 3, 1:13:48 Middleton; That's My Desire, duet with Armstrong
Track 3, 1:19:01 -1:23:48 Middleton introduces drummer, "Mop-Mop"

[10 seconds of tape silence]
Track 3, 1:24:01 When It's Sleepy Time Down South
Track 3, 1:26:12 Armstrong introduction; Didn't He Ramble
[Track 3 ends, Track 4 resumes with Didn't He Ramble after dirge section]
Track 4, 0:00 - Resumes Didn't He Ramble
Track 4, 3:35 - C'est Si Bon [unissued per Tom Lord discography (The Jazz Discography, 2020)]
Track 4, 6:02 - Rockin' Chair
Track 4, 10:45 - Way Down Yonder in New Orleans
Track 4, 16:16 - Armstrong introduction; C Jam Blues
Track 4, 21:30 - St. Louis Blues
Track 4, 26:21 - Announcer, Hinton, Pick and Pat
Track 4, 29:27 - 34:19 Armstrong, Trummy Young, Basin Street Blues

Figure 2: Performance order of Louis Armstrong's "Cornell Concert" on Rhodes Baker tape "Jerry VCI".

The "Cornell Concert" master again points to the complementarity of archival recordings and commercial releases as means of access. To return to Christopher Small's concept of musicking, the not-actually-Cornell performance demonstrates that the musicking activities of one group can facilitate better musicking by another, in layers of activities that add value: The first occasion of this example of musicking was the public concert circa 1953, but someone had to record it, someone had to duplicate it, and someone had to send a copy to Rhodes S. Baker, Jr., who had to dub it onto his own densely packed "mixtape" and maintain the copy. After his death, the Music Library acquired the recording, and multiple librarians over the years shepherded its preservation and eventual digitization, after which intensive listening finally confirmed the contents. The substantiated contents of the tape revealed findings that enhance the understanding and enjoyment of this concert, and provided a master or near-master as a point of comparison for the commercial releases found primarily on disparate, small labels (The Jazz Discography, 2020). Finally, it is incidental sounds – evidence of a tape stopping and starting – which testify to unanswered questions: What was skipped over, by whom, and when? Barring the emergence of another recording (one may dare to hope), those questions may remain unanswered, but questions left unanswered are distinct from questions never known to exist in the first place.

Conclusion

The process of digitizing and describing the materials in Baker's collection offers three principal lessons for similar projects: First, labor-intensive listening and research can yield exceptional returns on the investment of time and labor. Second, Christopher Small's musicking offers an enlightening framework for archival practice with recorded music, capturing the full scope of human activity and interventions that practitioners may document and describe. Not only does someone have to be the audience, as UNT Music Library volunteer Daisy Rogers noted, but they are part of the full story. Lastly, one may regard incidental and extra-musical content as enhancing the listening experience, and as a source of valuable contextual information.

The digitized reel-to-reel recordings from the Rhodes S. Baker, Jr. Collection are a monument to Duke Ellington, but they are also a monument to the dedication of his "musicking" community of fans which spanned the globe — particularly with respect to the friendship between Benny Aasland, the Swedish Ellington expert, and Baker, a Texan who was an attorney by day, and a passionate collector of Ellington on his own time. Baker's collection says as much about himself as it does about Ellington, and over 50 years after his passing, he would surely be pleased to know his love of all things Ellington lives on as part of his legacy, and that the story continues to be told.

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