

Film Preservation in the Digital Era: Pitfalls and Potentials

Kudirat Ajoke Ayoola

National Film Video and Sound Archive, Jos
M.A. Film Culture and Archival Studies
University of Jos/ National Film Institute, Jos
Email Address: k.ayoola10th@gmail.com

DOI: 10.56201/rjhcs.v8.no1.2022.pg52.58

Abstract

This paper highlights the pitfalls and potentials of digitization of film heritage in the archival domain. The largest issue encountered by the global archive community would be the recent transition from analog to digital technology in the capture, post-production, and distribution of cinematographic works. Due to the emergence of new platforms for access and the fact that digital copies are not susceptible to the same wear and tear as analogue film elements, digitization of historical films has the potential of enabling access on a larger scale. The conflict between the necessity to preserve originals and the need to offer access has been somewhat lessened by digitization. By acting as stand-ins for quick access or as backup copies in case original materials are lost or damaged, digital versions serve preservation functions. Also, negatives that are losing their information value can be preserved by digitization in order to extend access to them and preserve their content. The value of digitization as a preservation tactic has been hotly contested. Despite the benefits of digitization, there are significant technological, legal, financial, and curatorial obstacles or pitfalls that must be addressed in order to realize the potentials.

Keywords: *Preservation, Digitization, Restoration, Potentials, Pitfalls*

Introduction

Film Archives are storehouses of treasures in terms of preserving cultural heritage for posterity (Lauren 398). The preservation of media heritage has been crucial for understanding and experiencing the history and aesthetics of contemporary society, and film archives have played a major role in this process (Luca, 1). Films are more than simply entertainment; they are a reflection of our society's development, a record of our culture, and occasionally even a time capsule of our turbulent pasts (Jon, 126). One of the most crucial methods for preserving our history and heritage is through archiving. Most Film Archives have in their holdings analogue films spanning more than a century. When archives disappear, a period of culture and history is lost as well as a certain age (Suzanna, 1). Film is an important element of visual arts because of its global acceptance as a form of human expression and its enormous impact on culture which

necessitate its preservation. As a result of the delicate nature/elements used in the production of film stock (nitrate /acetate), films require archival care and preservation.

The problem facing Archivists is determining which films have worth, and which do not. They all acknowledge the importance of film as a medium, but due to lack of funding and storage facility, many films are given over to a hierarchical system that determines which ones will survive. Even if it may not seem challenging to identify significant films in modern culture, it is impossible to predict which films would be regarded as significant by future generations because what may not seem significant today may be crucial in twenty years (Fossati, 13). Since many archives follow the idealist philosophy that everything should be saved, they are presently overflowing with information that they are unable to store or maintain. The belief that every film should be conserved has been subtly replaced by empirical data, but it persists in the archives' attitude and is still taken for granted, much like the goal driving modern efforts to preserve and make available the entire Internet (Bastron, 3).

Preserving and restoring older pictures before they reach their nitrate/acetate -induced expiration date as well as properly storing and caring for modern films have become a priority. Sadly, this outlook is insufficient to ensure the discovery and restoration of films prior to when decay sets in (Bastron, 1). Archivists and Preservationists face a plethora of moral and technological conundrums when attempting to accomplish this frequently impractical task of presenting a film in its original format, length, crisp black-and-white, or vibrant color to present it to audiences now as it was presented to audiences then. They compete with freely available and easily accessible digital archives like the Internet Archive and video sharing websites like YouTube and Google Video. They also face issues with authenticity, value, and adaption to modern technology. They also suffer financial constraints, lack of resources and storage space. The requirement for the archiving institution to remain in light of the growth and popularity of the world wide web and digitalization techniques frequently clashes with the ethics and aims of the film Archivist (Bastron, 1).

The concept of the record lies at the heart of archival theory. The archival theory focus on the archival principles such as provenance, records and principles. To build and curate an archive, one must acquire and evaluate recorded materials, and be able to access them later. According to Gränström, archives are arranged and described according to the “principle of pertinence,” where archives are arranged in terms of their subject content regardless of provenance and original order” (1). To this end, archival science seeks to improve methods for appraising, storing, preserving and cataloging recorded materials. An archival record preserves data that is not intended to change. In order to be of value to society, archives must be trustworthy. Therefore, an Archivist has a responsibility to authenticate archival materials, such as historical documents and to ensure their reliability, integrity, and usability.

Cinema heritage preservation is particularly unusual archive activity because of its highly technical nature and the enormous gear that was originally required to make films. As a result, unlike the majority of other archival procedures, film archiving has always been heavily reliant on industrial activity (Jon, 125). Archives have preserved and duplicated historical films using the same laboratories used to prepare modern films. Changes in the industrial production of film stock have had an impact on how archives conduct preservation of films. Heritage movies have been screened using the same playback equipment that is used for commercial releases. Whether

they wanted to or not, the archives had to shift as the commercial market did, hence the need for digitalization.

Pitfalls of Film Digitization

In the digital age, collection organizations like Libraries, Archives, and Museums surely face significant changes. They must rethink their position as stewards of cultural heritage in the face of numerous obstacles. Due to the specialized nature of their collections, Cinema Archives may feel the impact more painfully than other archives (Heftberger, 135, Matusiak *et al.*, 242, Bastron 1). While digital technology offers new opportunities for better exposure, the potential for successful collaboration with other institutions, expanded opportunities for information exchange, and new forums for dissemination, it also has some drawbacks and traps. The discussion over employing digitization as a reformatting approach is centered on the difficulties with digital preservation. Since the beginning of digitization projects, the cultural heritage community has been debating on digitization as a preservation technique. The conflict between preserving information for the long term and expanding access is the main topic of discussion. Initially, digitization was acknowledged as a method of copying for wider and easier access, but not as a way to make copies of original things that could be preserved. Both advocates and detractors of digitization as a preservation technique acknowledge how technology enhances efforts at traditional preservation and conservation by increasing access and minimizing handling of delicate originals (Bastron 6, Matusiak, *et al.*, 242).

The durability of digital formats, digital storage medium, and the integrity and authenticity of digital data are the main issues with employing digitization as a method for the long-term preservation of analog artifacts (Matusiak *et al.*, 248). The IT industry's continued use of planned obsolescence is the main challenge to preservation sustainability. Due to this commercial activity, Film Archives are compelled to create digital preservation procedures based on frequent data migration cycles and up-to-date maintenance schedules. Most Film Archivists acknowledged the difficulties associated with data transfer to varying degrees; nevertheless, in the short to medium term, hardware issues appear to be the most pressing ones. Linear Tape-Open (LTO) tapes are the most popular physical preservation media because they are less expensive in terms of power consumption than alternative storage media (e.g., hard drives). However, because LTO cassettes are only backwards compatible for two generations, most Archivists believe that they are still not the best choice for preservation. With a technology that seems to advance faster than humans can keep up with, it is likely that digital data and records will need to be reformatted at least every three to five years, giving them a much shorter lifespan than film. Preservation system must meet or surpass the current analog photochemical film system's performance characteristics benefits, which include a global standard, guaranteed long-term access (at least 100 years) without quality loss, the ability to create duplicate masters to satisfy unforeseen future distribution needs and opportunities, and immunity from rising costs. There is currently nothing in the digital realm that even comes close to this (Bastron 6).

Another effect of digital restoration is the alteration of the uniqueness and content of the film. From the audience's point of view, digitization significantly changes the experience of watching a movie due to changes to the original content (Bastron 7). The existing intrinsic image quality

degradation in even the best digital technologies is not acceptable by the ethical standards of archive preservation. The physicality of the film experience as a historical occurrence is lost, even if this conundrum is ultimately resolved technologically, with digital formats nearing an acceptable degree of simulation. Such a loss is difficult to justify (Kilcoyne 63). The preservation of the film aura in digitization is another point of debate among Archivists. The majority of early 1920s films were silent films with live orchestra, regrettable pops and hisses, hurried but ambitious 1950s display techniques, eye-popping Technicolor saturations, etc. Archivists do not surrender such auras lightly, but if a film features a different period and location, or an obsolete format, its aura cannot be preserved in its entirety. There are several levels of compromise, but restorers go too far when they "enhance" the visuals and sound track to the point where they start to degrade the original work. Sadly, viewers and Archivists have little control over this (Bastron 10). It is very impossible to determine the cost of digitizing and conserving an entire collection, although it is higher than that of traditional filmmaking and preservation techniques. Between 8 and 10 terabytes of data can be produced by a single scan of a film, which shows that the cost of storage is considerable, depending on whether the data is kept on discs or tapes as well as the energy cost. To keep up with any technological breakthrough, digital copies themselves need to be repeatedly reformatted, which is an expensive procedure (Jon 128, Conrad 34). When the entire collection is digitized, the cost of storing all the data will be high. It should also be kept in mind that as more digital-born films are added to the archive each year, the amount of data grows as well. According to the Academy of Motion Picture Arts and Sciences (AMPAS) report the cost of preserving a 4K-digital master is \$12,514, and the annual expense of doing so is \$1,059 per title (Giardina 8). Hard drive failures, infections, unauthorized changes, and bodily harm are additional risks associated with digital technologies. Films created digitally are still difficult to collect and preserve because, unlike traditional film archiving, digital archiving is a continuous process. Hard disks and data tapes cannot be stored on a shelf to be used a few years down the road. From the day a file enters the collections, it must be monitored for migration requirements and converted in to multiple production file formats for archival, open-standard file formats. There is a huge risk that the movies of today and tomorrow may be lost if immediate action is not taken because many nations are still ill-prepared to manage aspects on digitally-born pictures.

Potentials of Film Digitization

Celluloid films that are losing their informational value can be preserved by digitizing them in order to increase access to them and preserve their content. While digitization cannot stop the deterioration of original materials, it offers a chance to recover the information present in deteriorating celluloid film materials, increase access to them, and restore their value as information sources by bolstering intellectual control and offering item-level description. Given the hazy future of celluloid, digitization offers significant improvements for film archives. (Matusiak *et al.*, 242). The amount of damage a film endures with each projection or screening is reduced, and digitization lengthens the catalog's shelf life and public accessibility. Additionally, digitization improves the possibility that leftover celluloid may endure longer (if maintained properly) and can be redone digitally in the future using new standards and formats. It also makes access possible without the use of expensive (and difficult to find and maintain) equipment (Lauren, 396). Important and priceless archival records have been lost forever due to the instability of nitrate and acetate films, but digital technology can reduce further losses to a far

lower risk level. Although there is still no reliable solution for permanently preserving film, digital techniques present a promising barrier against total destruction while we wait for a system for permanent preservation to be discovered (Bastron, 6).

Digitization has changed the way that access and preservation of cultural heritage resources in archives, libraries, and museums interact with one another. Even while access and preservation go hand in hand, there are times when they come into conflict and when the original materials' state makes them less useful. The connection between access and preservation is particularly delicate in the case of film-based photographic resources, where fragile and difficult-to-access analog formats not only impose usage limits but also pose preservation concerns (Jon, 127, Bastron, 5). Although the majority of archivists understand the importance of exposure and accessibility, there is no established protocol for handling access to conserved films. Film is delicate, and maintaining accessibility can occasionally be challenging. In an effort to protect its collection and (consciously or accidentally) restrict access, some archives, like the British National Film and Television Archive, charge a small fee to students, researchers, and historians. The researcher, who is in charge of defraying the charges, has two options in the absence of a viewing print: outright refusal or a protracted wait. Due to the inevitable truth that every time an original film is seen, moved, or handled in any way, its fragility brings it one step closer to extinction, many archivists find these situations to be aggravating (Bastron, 5). The International Federation of Film Archives (FIAF) Code of Ethics states that archives would rather deny access than risk, jeopardizing special or master material by exposing it to projection or viewing dangers (2008, section 1.2). Digital preservation is helpful in this case since a film that has never been seen could not possibly retain its worth. Access to film archives is critical, and is generally agreed upon but with a tinge of hesitation. While institutions are aware that a large demand for access would be unrealistic for both them and the films, access and visibility nonetheless increase public awareness, support obscure films, and ultimately encourage financial support. Digitization has partially alleviated the contradiction between the need to provide access and the need to preserve originals (Bastron 6, Matusiak, *et al.*, 242). Digital versions offer preservation purposes by serving as substitutes for rapid access or as backup copies in case original materials are lost or damaged. (Matusiak *et al.*, 242). Additionally, archives can raise public awareness of those parts of the collections that have not previously been seen or heard of by allowing access in digital formats. The move to digital technology has forced archives to review their holdings, valorize them, and curate them differently. It has also given archives the chance to make legacies more accessible (Jon, 127). The digitization of analog non-textual assets, such as film negatives, audio tapes, and video tapes, opens up new technical possibilities for reformatting and gathering the information contained in these deteriorating resources.

The ability to create digital copies without destroying the originals is another advantage of digitization. Additionally, the digital copy itself won't be harmed by projection, broadcast, or any other kind of presentation or transmission. For theatrical use, high-quality digital copies can be created that mimic the appearance of a 35mm original print. Copies can also be rendered for a variety of home entertainment devices and platforms used with tablets and mobile phones, televisions, and computers (Jon, 127). For cataloguing, digitization can be helpful in gathering item-level descriptions and standardized access points like title, date, subject, or location. Visual resources and other non-textual assets are being forced to be indexed at the item level by digitization, as it is impossible to build a viable digital collection without subject terms and other

access points (Matusiak *et al.*, 245). Visual content can be accessed right away thanks to digitized copies, but issues with intellectual control can only be solved by consistently and thoroughly indexing pictures at the item level. In addition to producing copies that may be used right away, digital conversion projects carried out in accordance with digitization standards also produce archival master files, a new valuable asset that needs long-term digital preservation. Although digitization cannot stop the deterioration of original materials, it does provide a chance to recover the information contained in deteriorating film negatives, increase access to them, and restore their value as information sources by strengthening intellectual control and providing item-level description. (Matusiak *et al.*, 242).

Conclusion

Digital technology offers previously unheard-of options and possibilities for distributing both known and unknown cinematic heritage to a much larger audience than ever before. Digital cinema copies may be made available at practically every theater, eliminating the need to turn down majority of the requests for access to the collections through lending prints, since the borrower cannot handle or project the prints in a proper manner. In addition to enabling access in a theater setting, high-quality digitization also enables the availability of cinematic history in other windows and on other platforms. (Jon 134).

Like most new technology, digital preservation had promises when it initially came out. However, as is common with many novel technologies, flaws have come to light over time that contradict earlier theories. Digital formats are more prone to manipulation, viruses, and scratches that make them unplayable, and their quality is inferior to film. Additionally, digital formats evolve quickly and have a considerably shorter lifespan than film. These drawbacks must be acknowledged and they constitute sufficient justification for supporting conventional film preservation techniques. However, digital techniques do raise public awareness of an archive's holdings, make obscure films more accessible, promote monetary and cultural support, and overall uphold the idea that the film plays a significant role in our history and culture. These advantages also cannot be disregarded. Although digital techniques can prevent films from being lost totally, they still have a long way to go before completely displacing conventional film preservation. (Bastron 10).

References

- Hefberger, Adelheid "Film archives and digital humanities—an impossible match? New job descriptions and the challenges of the digital era." *MedieKultur—Journal of media and communication research* 30.57 (2014): 135-153.
- Bastron, Becca. Preserving Film Preservation in the Digital Era. *School of Information Student Research Journal*, Vol. 2, no. 2, 2013. <https://doi.org/10.31979/2575-2499.020206>
- Battin, Patricia. "Introduction: The Importance of Archives." *The American Archivist* (1990): 188-190.
- Brennen, Scott., & Kreiss, Daniel. "Digitalization and digitization". Culture Digitally. Retrieved from <http://culturedigitally.org/2014/09/digitalization-and-digitization/>

Conrad, Suzanna. "Analog, the Sequel: An Analysis of Current Film Archiving Practice and Hesitance to Embrace Digital Preservation." *Archival Issues* (2012): 27-43.

"FIAF Code of Ethics" International Federation of Film Archives. 3rd Edition, 2008.
<http://www.fiafnet.org/pages/Community/Code-Of-Ethics.html>.

Fossati, Giovanna. *From Grain to Pixel: The Archival Life of Film in Transition THIRD REVISED EDITION*. Amsterdam University Press, 2018: 13

Giardina, Carolyn. AMPAS: Do your archiving before it's too late. *Hollywood Reporter* (2007). International Federation of Film Archives. "Code of ethics". 2002. Retrieved from <http://www.fiafnet.org/~fiafnet/uk/members/ethics.html>

Jon Wengström. "Access to film heritage in the digital era – Challenges and opportunities" 2013. Retrieved from www.idunn.no

Kilcoyne, Sean Patrick. "You shouldn't have been that sentimental: Film restoration ethics in Hitchcock's *Vertigo*". *Journal of Information Ethics*, 19(1), 2010, p.57-73.

Lauren Tilton, "Preservation First? Re-Viewing Film Digitization," *Collections: A Journal for Museum and Archives Professionals* 12, no. 4 (2016): 391-199

Luca Antoniazzi. "Digital preservation and the sustainability of film heritage, *Information, Communication & Society*". (2020).

Matusiak, Krystyna K., Mary Stansbury, and Ewa Barczyk. "Educating a new generation of library and information science professionals: A United States perspective." (2014): 242 - 248