The Conservation of Moving Images

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Generally speaking, moving image preservation has developed in relative isolation from other disciplines related to the conservation of the cultural heritage. This is mainly due to the short history of the medium and to the fact that film preservation has become the object of scientific study only in the past few decades. However, there are other reasons for this phenomenon, ranging from the popular perception of cinema and video as expressions of the entertainment industry, to the belief that moving image carriers represent an 'art of reproduction' and therefore do not possess the 'uniqueness' required to warrant the conservation treatment given to other artifacts. The transition from analog photographic motion picture film to digital media has both exacerbated and contradicted this perception: while digital moving images can apparently be duplicated indefinitely, the physical elements produced before the digital era are now acquiring the status of unique objects previously denied to them. This paper presents a case for the inclusion of film preservation in the overall context of the preservation of cultural heritage through an enhanced collaboration between moving image conservators and specialists in other areas.

INTRODUCTION

In the late 1920s a major European manufacturer of motion picture film stock, AGFA (Aktiengesellschaft für Anilinfabrikation), published a multi-volume promotional book showcasing actual samples of 35 mm negative and positive frames on a nitrate cellulose base [1]. The condition of the extant copies is often astonishing. The sharpness, translucency and vibrancy of the images is matched by the pristine condition of their 'photochemical' carriers. Other companies in Europe and the United States – notably Pathé [2] and Eastman Kodak [3] – produced similar booklets exhibiting their products. Many of them are still excellently preserved, although their quality can hardly be compared with that of their German competitor. Several prints and negatives of films produced between 1896 and 1908 by the French firms Lumière and Pathé, by the British company Mitchell & Kenyon, and by the Biograph Company of New York are in such good shape that they could be safely handled with the appropriate equipment. What is so special about the AGFA frames, however, is that they make us acutely aware of a lost opportunity; had they been stored in ideal conditions of temperature and humidity from the moment of their creation, the films they document could probably have been projected today. Their progressive obliteration in the ensuing decades was a likely, but not inevitable, event. According to informal estimates established by the members of the International Federation of Film Archives (FIAF), approximately 80% of the films produced during the so-called 'silent era' (1894–1930) are now considered to be lost.

There are, of course, compelling reasons why the destruction occurred. Cellulose nitrate film was the main carrier of 'photochemical' moving images until it was commercially replaced by cellulose triacetate film – a carrier also prone to a form of chemical decomposition known as 'vinegar syndrome'. Acetate-based film had been used at least since 1912 for Chronochrome, a color system on 35 mm film commissioned to the Eastman Kodak Company by the French producer Léon Gaumont; diacetate and triacetate film were used on a larger scale after 1920 for amateur and non-theatrical formats such as 16 mm films. Acetate-based film was, in

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turn, replaced by polyester film in the early 1990s for release prints. It is worth noting that acetate-based film is still in use for original camera negatives; this is due to the fact that the much higher tensile strength of polyester film may cause damage to the camera equipment if it is incorrectly threaded within the machine. Cellulose nitrate film stock is chemically unstable [4]; but so are many other artifacts of cultural value. Motion picture film was – and still is, even in its current incarnation on a polyester base – meant to be discarded after use, but this also applies to other and much older works exhibited in museums. A short film by Paolo Lipari, *Due dollari al chilo* (2000), shows a machine for shredding 35 mm feature films after their commercial distribution. The equipment, known as 'the guillotine' and located in Cinisello Balsamo near Milan, Italy, was known to shred over 150000 prints of polyester film per year in 1999, sent from all parts of Europe. The stock is converted into low-cost fuel for electricity generation, and raw materials for benches, combs, spectacle frames and clothing. A similar plant in Millesimo, also in Italy, was dedicated to the recycling of triacetate cellulose film.

THE FIELD OF MOVING IMAGE CONSERVATION

For a long time, the moving image was not regarded as an art form, but the same can be said of countless items now displayed in public and private collections all over the world. The presumed difference between cinema and other types of aesthetic expression relied upon two basic assumptions: first, that film is progressively altered by the very act of its presentation by means of a machine; second, that the creative works it embodies are subject to reproduction from a master copy, and that new copies can be made at will, thus making the conservation of the individual print unnecessary. The intrinsic flaw in these seemingly uncontroversial statements lies not in the arguments themselves, but in their unquestioning reliance on quantitative variables. All human-made objects deteriorate in time, whether by usage – a pot, a piece of jewelry – or through exposure to their normal environment. The distinction lies in the rate of decay: millennia for ceramics (if they are not broken), centuries for paintings and frescoes, decades for an unprotected daguerreotype. Etchings, albumen photographic prints and Babylonian seals were also made from matrices; the survival or disappearance of the latter does not affect the value attributed to copies made from them before their acquisition by a collecting institution.

The closest equivalents to motion picture film in this respect are magic lantern slides and phonograph discs. Like film, they were produced in multiple copies; like film, every viewing or listening event involved some wear and tear of the carrier; like film, they cannot be experienced without an apparatus – which is where any useful comparison between moving images and most of the other arts seems to fall apart. Magic lantern specialists have begun to discuss informally whether or not it is preferable, or even advisable, to show original glass slides as opposed to analog or digital reproductions. The option of playing (on special occasions) original phonograph discs instead of reproductions of their sound recordings is occasionally discussed in recorded sound archives, but no technology for analog preservation on a mass scale is currently available to them. The field of moving image conservation is taking yet another approach, influenced by at least two popular lines of thought. The first view – by far, the most common – is that cinema is regarded primarily as entertainment, the product of an industry providing audiovisual 'content' to consumers worldwide. This leads to the opinion that those who view moving images are indifferent to – or unaware of – the technology adopted for this purpose, thus providing a rationale for preserving films on whatever media are available at the lowest cost.

The second presumption – encouraged in the academic world by a superficial reading of Walter Benjamin's canonical essay *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit* (1936) [5] – is that the lack of an 'aura' of uniqueness in the traditional photographic film gives no incentive to treat the copy in question as an artifact, thereby endorsing the view that a damaged item can always be replaced with an identical copy. The consequences of this approach to the conservation of moving images as part of the cultural heritage have been profound. The physical deterioration of film has been taken for granted not only in the commercial circuit but also in archives and museums, to the point that the creation of a so-called preservation element – for instance, an intermediate negative – has been implicitly regarded as a suitable response to the 'inevitable' mistreatment of the projection copy: when a film becomes unusable, all that is needed is to copy another one from the master. For a preliminary orientation to the vast but uneven scientific literature on the subject, see Read and Meyer [6]. Much of the damage to copies occurs during projection and shipping, but because they are deemed to be ephemeral by default, there is little or no real commitment to establishing stricter rules for their correct curatorial treatment. Recent attempts to implement procedures and protocols derived from standard museum practice in other areas

have generally been unsuccessful. An exception is George Eastman House, which has adopted an open-source 'facility condition report' to be submitted by borrowing institutions before the loan of an archival print [7]. For a broader discussion on the subject, see Cherchi Usai [8].

THE IMPACT OF DIGITAL TECHNOLOGY

The advent of digital technology has brought a further twist to this issue by giving film museums and archives the illusion that the problem is over, in the sense that the conversion of the analog photographic image into a digital file would bypass the 'integrity' dilemma altogether: no more wear and tear on the print, and no more necessity to worry about its material condition. This, too, is an illusion, as digital files can easily be corrupted. What changes is only the 'object' of decay – digital data instead of a semi-transparent base or a gelatin emulsion. Given that, allegedly, film is an art of reproduction, the audience does not care how it is exhibited as long as it 'looks good' on the screen, and as a digital carrier is reportedly easier to keep intact, why bother insisting on its permanent availability on its original medium? This attitude towards the conservation of the moving image has engendered a great deal of confusion over what digital techniques can and cannot achieve. 'Digitization' has become a catchword encompassing three very different processes, goals and objectives. Not all of them can be achieved through the same means. It is worth describing what they are.

Digital restoration is the overall set of technical and curatorial procedures aimed at making the moving image appear (by means of digital image manipulation or processing) as close as possible to what it presumably was at the time of its original release, or according to the intentions of its maker. The tools available to film preservation professionals in the digital domain have enabled them to achieve what would have seemed impossible with traditional photographic chemical methods: color, contrast and image stability can be greatly improved (more faithfully to the original or, problematically, even beyond) with techniques previously unimaginable in the 'analog' laboratory. This is one of the great advantages of digital techniques; a responsible use of this resource can successfully complement the 'analog' restoration process, whose prerogatives are also unique and distinct from their digital counterparts.

Digitization is the process of converting analog photographic material into digital files for the purposes of public access. This is the great promise of digital technology: in theory, hundreds of thousands of films produced by traditional photographic means can be made accessible to a much wider audience in a variety of formats. Digitization does not equal digital restoration, in the sense that 'analog' moving images are turned into digital files, regardless of their original condition. A 'digitized' moving image is not necessarily 'restored'.

Digital preservation entails a technological infrastructure capable of making the 'digitized' and 'digitally restored' moving image permanently available for viewing. According to many specialists in the industry and in collecting institutions, there is no such infrastructure at the present time, in the sense that there is no known technique for ensuring that the restored or digitized moving images will remain intact for an indefinite future. The two main obstacles facing moving image archivists and curators are the need to periodically migrate the digital files, and the rapid obsolescence of the equipment used for storing them. A groundbreaking report titled *The Digital Dilemma* declares that:

> in the motion picture industry, there is a major difference between an archive and a library. The archive holds master-level content in preservation conditions with long-term access capability. A library is a temporary storage site, circulating its duplicated holdings on demand. An archive that stores digital materials has long-term objectives. By current practice and definition, digital storage is short-term ... more than 100 years after its introduction, 35 mm film is the shining example of a standardized and sustainable format that is widely adopted, globally interoperable, stable, and well understood ... If we allow the historical phenomenon of technological obsolescence to repeat itself, we are tied either to continuously increasing costs – or worse – the failure to save important assets [9: 1, 56].

The problem with this terminology is that the distinction it suggests is too subtle to be understood or appreciated by a non-specialized audience and by the funding bodies of collecting institutions. For both constituencies, 'digitization' means everything: conservation (safeguarding forever), restoration (making vintage films look new), immediate and unlimited access (here, now, at any time). The confusion is compounded by the fact that there is no consensus on the very definition of preservation, restoration and conservation among moving image specialists; see, for instance, Gracey [10]. At a purely theoretical level, the act of digital migration fulfills at the same time the goal of protecting

'content' *and* enabling its widest dissemination in a form as pristine as it was originally made. However, this reductionist approach fails to account for the inherently ephemeral nature of the digital formats, their vulnerability to data corruption, and the impossibility of exercising full intellectual control over an almost infinite body of works in constant, exponential growth.

The terminology suggested above also assumes that 'digital' is the only way in which the cinematic heritage will be preserved in the immediate future. There are plenty of indicators supporting this view, beginning with the fact that cinema itself is taking the digital route. In May 2010, the Norsk Filminstitutt (Norwegian Film Institute) announced that Norway's cinema network (85 theaters) would switch in its entirety to digital projection, stating that Norway is the first country in the world to take this measure; 35 mm projection equipment is to be maintained in selected venues and in cinemas where there is also enough room for analog machines in the projection booth. On the other hand, the imminent demise of analog film projection on a global scale has been predicted for more than a decade, but it has not yet fully happened. It will eventually, although there are convincing signs pointing in directions other than 'digital'. The film industry has recognized that conservation on analog, silver halide-based photographic materials is still the most reliable way of making sure that moving images produced today will still be available in the foreseeable future, and it is common practice among mainstream production and distribution companies to keep 'analog' masters of films originally produced or released in digital form. Their prudence in managing the digital revolution they have themselves promoted should be treated as a cautionary tale for collecting institutions.

There will be a time – soon enough to make curators predictably anxious – when *all* moving images will be born digital, and their long-term conservation will be the object of yet another challenge for preservation professionals. Meanwhile, film museums and archives will be facing two major questions. Will there be a role for them as caretakers of the world's (digital) audiovisual heritage? And, what will they do with the finite but huge corpus of moving images produced in analog form? The two agendas are different, but complementary in their essence. It is generally accepted, albeit reluctantly – even within the film industry community – that the best way to protect the integrity of a 35 mm film is to duplicate it onto another 35 mm carrier or group of carriers, and to keep the masters under strictly monitored environmental conditions, involving cold storage and controlled humidity. It has been stated that:

> Preservation planning should now emphasize a balanced approach which combines duplication and improved storage. In the long term, improved storage is by far the most cost effective and satisfactory solution ... The most important new element in preservation planning is the realization that safety films are more sensitive to poor storage than previously thought, requiring better conditions, careful monitoring and active collection management [11].

Although the Hollywood majors are doing it, even with digital-born films, non-profit collecting institutions cannot necessarily afford such a luxury and in most cases have given up all hope of preserving systematically their entire cinematic legacy in analog form. The most they can do is keep the films intact as much as they can, follow best practice for a limited number of key items and 'digitize' (in the broadest sense of the term) all the rest. In doing so, they have to cope with an endemic lack of funding and with the political pressure to embrace the digital route: from the point of view of a government, 'digital' equals public consensus, and therefore improved chances of re-election of the ruling party or coalition.

'Digitizing' everything, properly preserving the masterworks and keeping the analog films in warehouses at temperatures below freezing point is the threefold strategy that has emerged in moving image archives and museums at the dawn of this century. It is a flawed, contradictory and dangerous route, but it is better than having no strategy at all. However, when it comes to digital-born moving images, another dilemma emerges. Safeguarding everything? How? And if 'everything' (whatever that means in the digital domain) can actually be protected, what kind of intellectual framework will enable archives and museums to distinguish themselves from the many other 'content providers' proliferating on the internet? It may well be that the solution adopted by *force majeure* for the traditional analog collections (that is, selecting the most representative or outstanding works on the basis of curatorial judgment) will need to be applied – with the required amendments – to the digital collections as well.

THE WAY FORWARD

No matter what, the time of reckoning has come for what used to be called 'film archives' and 'museums'. Under the present circumstances, there is no guarantee that these institutions will be allowed to continue their mission within the remit they created for themselves in

the twentieth century. If they wish to have a future, they will need to provide clear answers to a number of key questions which they have evaded so far, either because of an inevitable fear of the unknown, or because of a perceived risk of alienating their internal and external stakeholders. For the sake of further discussion, it is worth trying to formulate these points as clearly as possible.

First, governments and funding agencies should be made aware that the systematic and comprehensive digital restoration of all analog moving images in a major collecting institution is simply not possible in practical terms. The amount of money and personnel required for such a daunting task goes way beyond the most optimistic forecast of the financial resources available to the cultural sector. While there is a remote possibility that this could successfully happen with digital-born images, the costs of creating (and maintaining) a dedicated infrastructure for the purpose are not proportionate to the likely outcome, and it is a mistake to pretend otherwise. The public will not have unlimited access to a national audiovisual collection in the same way it does to a national library. Any financial effort aimed at conveying this feeling of omnipotence is a waste of public support which would be better channeled toward a responsible and selective curatorial management of the collections. As far as the analog motion picture heritage is concerned, a national film archive will never be able to compete with the private sector on a quantitative basis. It is in qualitative terms that a difference can be made, both by providing a more thorough understanding of the collections and by promoting the collecting institution as a cultural authority. If it makes sense for a collecting institution to be the last place on earth where moving images are kept and shown in the way they used to be, a state-of-the-art film preservation laboratory (analog and digital) and a regular exhibition program of superior quality for cinema (analog and digital) will be as important as a well-considered and responsibly maintained digital network.

Second, it is imperative for everyone – audiences, curators, funding agencies – to be aware of the archive's philosophical position on the material status of the pre-digital portion of the collection. Why are we preserving it at all? There are legitimate arguments for protecting it just because an 'analog' print is the most reliable physical evidence of a film, or because its survival represents the historical pathway of a past technology to be studied by future generations. A print in 35 mm format may just be a convenient source for duplication onto other media, but it could also be the carrier of a distinctive visual phenomenon, different (not better or worse – just different) from the experience conveyed through the electronic image. Are we committed to protect this uniqueness as an aesthetic principle, or as part of a business plan, or merely as a matter of nostalgia? Do we want people to care about the revival of a 35 mm projection as a curatorial performance, as an archaeological trace, or as an object of curiosity similar, say, to the prototype of a steam engine or to the tools used for a fourteenth-century woodcut? Any of these ways are fine, as long as we say so clearly, unequivocally and with a solid, persuasive rationale. For further discussion of this topic, see Cherchi Usai et al. [12].

Third, it makes sense to say, publicly and unambiguously, whether moving images are being preserved for their 'content', or for the overall cultural context they represent. In the former case, the way in which these images are preserved and made accessible is irrelevant, and there is no need to keep a print on photographic motion picture film stock for reasons other than its proven longevity under adequate storage conditions. In the latter case, curators must accept the responsibility to ensure that the audience in the late twenty-first century will be able to view moving images in the same way as they were seen at the time of their creation. It is important to note that this concern is pertinent well beyond the cinema, video and television programs made in the pre-digital era. A collecting institution specializing in moving images should be as committed to the presentation of a 35 mm print on a Kinetoscope made in 1894 as to showing how moving image files were seen on an iPod manufactured in 2001. (A useful survey of the history of motion picture apparatus can be found in Kattelle [13]. The origins of the Kinetoscope are discussed by Musser [14] and Spehr [15].) Neither apparatus will be commercially available in 3010, but this is not a good enough reason to discount the significance of being able to exhibit them long after the technologies they represent are defunct.

Last, moving image repositories ought to be more adamant in declaring what they want to be called. The terms 'archive' and 'museum' have been used interchangeably; this has made them much weaker from a political perspective, to the point that both terms have now become extremely unfashionable. For a number of years (1999–2004) the National Film and Sound Archive of Australia was renamed ScreenSound Australia, with the presumption that the new name would attract more public attention. Two respected European institutions, the Royal Film Archive of Belgium and the Nederlands Filmmuseum in Amsterdam, were rebranded, respectively,

as Cinematek (2009) and *eye* Film Instituut Nederland (2010). The semantic ambiguity endorsed by adopting the terms 'archive' and 'museum' for film repositories is the indicator of a chronic uncertainty in regard to the principles informing their activities. Terminology varies also in relation to different linguistic contexts. In Spanish, 'filmoteca' and 'cinemateca' are basically synonyms, but the second term is used only in Latin America; in Russian, 'filmoteka' is far more common than 'kinoarchiv' and the obsolete 'cinemateka', but none of these words appear in the official names of the two major moving image collecting institutions in the Russian Federation; in German, the distinction between 'kinemathek' and 'filmarchiv' reflects the dichotomy in the English-speaking community; similarly, the French language emphasizes the predominance of exhibition (in 'cinémathèque') as opposed to conservation (in 'archives du film'). The introduction of the non-'photochemical' moving image carrier has further complicated the vocabulary, introducing the more accurate but awkward formulation 'moving image archive', which is used throughout this text.

In another telling contradiction, film preservation professionals have argued for the distinctive nature of the moving image as opposed to other forms of aesthetic and cultural expression, and tried at the same time to assert their legitimacy by presenting themselves as worthy of acceptance in the art conservation world, without being able or willing to take the full consequences of their ambition. Not surprisingly, neither the 'fine arts' community nor the 'arts and crafts' world have really treated the cinema or electronic image constituencies as their peers, except occasionally for the sheer convenience of hosting audiovisual works in gallery installations. One of the great conundrums in the moving image curatorial field is that in order to be admitted to a museum gallery, cinema was forced – to put it mildly – to reinvent itself in electronic or digital form in order to be taken seriously; in other words, a mode of expression had to adapt itself to the exhibition space rather than vice versa.

The effects of this mutual uneasiness in the field of conservation are paradoxical, to say the least. Curators of the fine arts exhibit videos reproducing films of the early twentieth century as ancillary evidence of a painting style, but they also acquire (often for large sums of money) digital works which they regard as unique, even though their permanence will be dependent upon the ongoing migration of the data on other carriers; a duty they delegate happily to their Information Technology departments. Conversely, moving image archivists and curators are keen to flirt with museum practice without truly engaging with it beyond some perfunctory statements of intent. As the unspoken mantra goes: it is a good idea to treat 35 mm film prints very carefully, but never mind if they are shipped in cardboard containers; ensure that the best image quality is achieved during the conservation process, but don't worry if the print gets scratched or otherwise damaged by an untrained projectionist.

As this self-defeating attitude is so engrained in curators' minds, the advent of digital technology gives them the perfect excuse to bypass the issue of conservation and museum practice altogether, without having engaged with it at all: a digital file doesn't get scratched, therefore there is no longer any need to worry about it as an object, which amounts to a *de facto* abdication of responsibility. There is something ironic in this unconscious and yet pervasive attitude toward the moving image artifact: the more it loses its status of 'material' (or, worse, it is treated as a costly liability because of the effort needed to keep it in a refrigerated vault), the more enthusiastically it is legitimized as a cultural phenomenon. On the one hand, recent literature in film preservation prides itself on repeatedly using the term 'ethics', and has grown accustomed to quoting the works of Cesare Brandi as a source of inspiration [16]; on the other hand, not only is film virtually absent from specialist publications on the conservation of the cultural heritage, but film preservation professionals have yet to demonstrate much interest in hosting specialized research from experts in other domains within their conferences and periodicals.

This mutual indifference was never justifiable on the grounds of academic integrity – even at a time when cinema was a second-class citizen as far as academic curricula were concerned – and it is indefensible on pragmatic grounds, given the currently increasing cross-pollination between the arts. Moving-image curators and conservation professionals have no good reason for discounting what is happening in the other curatorial areas, and no longer deserve to be ignored by them. Both have failed to explain to each other – let alone to non-specialists – why they share the same concerns. It is time to reverse the trend and open the doors to a rigorous, constructive and non-antagonistic dialogue between the parties. Whether the parties are willing and able to do so is, of course, another matter.

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Résumé *— D'une façon générale, la préservation d'images de cinéma s'est développée de façon relativement isolée par rapport aux autres disciplines en rapport avec la conservation du patrimoine culturel. Ceci est dû principalement à l'histoire encore récente de ce média et au fait que la préservation des films a été essentiellement considérée, au cours des quatre dernières décennies, comme une étude purement scientifique. Cependant, il existe d'autres raisons à ce phénomène, allant de la perception populaire du cinéma et de la vidéo comme expression de l'industrie des loisirs, à la croyance que les images de cinéma représentent un « art de reproduction », et par conséquent ne possèdent pas l'unité identitaire qui serait requise pour garantir un traitement de conservation dont bénéficient les autres œuvres. La transition de l'image analogique à l'image numérique a à la fois exacerbé et contrarié cette perception : alors que les images numériques peuvent en apparence être dupliquées à l'infini, les éléments physiques produits avant l'ère numérique acquièrent aujourd'hui le statut d'objets uniques, qui leur était refusé antérieurement. Cet article présente un casd'intégration de la conservation d'un film dans le contexte général de la conservation des biens culturels, par le biais d'une collaboration améliorée entre restaurateurs d'images et spécialistes d'autres domaines.*

Zusammenfassung *— Allgemein hat sich die Konservierung bewegter Bilder in relativer Isolation von anderen Disziplinen der Konservierung von Kulturgütern entwickelt. Dies ist hauptsächlich durch die kurze Geschichte des Mediums bedingt und durch die Tatsache, dass die Konservierung von Filmen erst seit einigen Dekaden Gegenstand wissenschaftlicher Studien ist. Indessen gibt es gibt es für dieses Phänomen noch andere Gründe, beginnend mit der allgemeinen Wahrnehmung von Kino und Video als Ausdruck der Unterhaltungsindustrie, bis hin zu der Annahme, dass das bewegte Bild eine „reproduzierbare Kunst" ist und daher nicht die „Einzigartigkeit" besitzt, die Voraussetzung für den Konservierungsansatz bei anderen Kulturgütern ist. Der Übergang von einem analogen, photographischen Film zum digitalen Medium hat die Situation sowohl verschlimmert als auch die Voraussetzung verändert: Während digitale Filme augenscheinlich unendlich reproduzierbar sind, bekommen die vor der digitalen Ära produzierten physikalischen Elemente nun den Status einzigartiger Objekte, der ihnen vorher abgesprochen wurde. In dieser Arbeit wird eine Lanze für die Eingliederung der Filmkonservierung in den generellen Kontext der Konservierung von Kulturgütern gebrochen, die durch eine verstärkte Zusammenarbeit zwischen den Konservatoren Bewegter Bilder und Spezialisten andere Gebieten gewährleistet werden wird.*

Resumen *— Hablando de una manera general, la preservación de imágenes móviles se ha desarrollado en un relativo aislamiento con relación a otras disciplinas vinculadas con la conservación del patrimonio cultural. Esto es debido principalmente a la corta historia de este tipo de material y al hecho de que la preservación de películas ha llegado a ser un objeto de estudio científico solo a partir de las últimas décadas. Sin embargo, hay otras razones para este fenómeno: desde la percepción popular de que el cine y el video son expresiones de la industria del entretenimiento, a la creencia de que los soportes de imagen móvil representan un "arte de la reproducción" y, por tanto, no poseen la característica de ser "únicos" requerida para garantizar los tratamientos de conservación dados a otros objetos. La transición de película móvil de fotografía analógica a medio digital ha exacerbado y contradicho esta percepción: mientras que las imágenes digitales móviles pueden ser, aparentemente, duplicadas indefinidamente, los elementos físicos producidos antes de la era digital están ahora adquiriendo el estatus de objetos únicos que previamente les fue negado. Este artículo presenta la conservación de película en el contexto de la preservación del patrimonio cultural a través de la colaboración entre restauradores de imágenes móviles y especialistas en otras áreas y campos.*