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Old Media Become New Media: The Metamorphoses of Historical Films in the Age of Their Digital Dissemination

We have entered the age of digital. Given that computers have been around for decades, digital moving image media have been a long time coming, but they are also still in their infancy. As an evolving technology, digital moving image production, distribution, and exhibition is still very immature and experimental, lacking any of the standardization of technical norms that will have to be in place for the industry to mature.

Digital is at least theoretically the great unifier. Taking diverse forms of media – whether paper and word based, celluloid and image based, or vinyl and sound based – digital turns them all into little plus and minus electronic impulses. The digital visionaries foresee a time when all human knowledge will be stored digitally, where books, record albums, movies, maps, posters, photographs, graphics, and other material objects *qua* vessels of information will have disappeared, except for a few precious examples in museums. I am convinced that this vision of a digital future *sans* materiality is essentially correct, that is, unless we manage to kill each other through one form of nuclear, ecological disaster or another first.

There is a paradigm shift of enormous proportions going on in the real world, and in the archive world. We are moving away from a culture of objects to one of electronic bytes. The very materiality of traditional media will become obsolete. Now, some of us may see this as an advantage; others will perceive the loss of that materiality as a fact to be mourned. How many theories of art, of photography, of cinema are in fact grounded in the specific physical characteristics of the media? How will these media change when they no longer exist in any form other than as free-floating information in cyberspace? Archivists are by nature conservatives – at least in the sphere of art, culture and technology. This is true, because as archivists it has traditionally been our job to conserve cultural artifacts in their original state. While commercial enterprises are constantly improving technology in the interest of efficiency and cost, in order to produce higher profits, archivists are usually not governed by profit and loss (unless, of course, they work for a private sector company), but rather by the notion that moving image media have had an intrinsic value, whether aesthetic or perceptual, apart from their informational content.

I gave a paper at a conference at the Cinémathèque Suisse a little over ten years ago, in which I said that it was the goal of moving image archivists to preserve film on film and video on video, thus maintaining the original integrity of the object. Reading those lines now, I'm shocked by my lack of vision.¹ Even if we wanted to uphold these tradi-

¹ Jan-Christopher Horak, "CDS, HDTV and the Issue of Historical Veracity in Film Preservation," unpublished manuscript read at the Symposium Sur la Conversation et la mise en valeur du patrimoine cinématographique et audiovisuel en Suisse, Lausanne, Switzerland, 21 Nov. 1991.

tions, we couldn't, because soon the manufacturers producing the tools of our craft will have moved on to newer technologies. Even now it is becoming increasingly difficult to find manufacturers of certain film formats, e.g. black & white 16mm film, 8mm b&w, to say nothing of 28mm, etc.

Of course, the ideals of film/video preservation have always fallen short of the realities of archiving. The fact is that obsolete technologies die as quickly as an AgfaKodakFuji sales manager waves his hand. No longer is it possible to preserve nitrate film on nitrate stock. No longer is it possible to preserve 28mm or 22mm or 9.5mm film in their original gauges. The same is true for Gaumont Chronochromes, Kodak's lenticular color, Technicolor imbibition print technology, Cinerama, Vistavision, four track magnetic stereo, hand-colored 35mm film prints, two inch quad master videotapes, Sony port-a-pak reel to reel video, Polavision, Fisher-Price High 8 video, etc. For a long time, we believed the manufacturers who told us we would be preserving our images in newer, superior technologies. Now these unique technologies of film and video history are in the process of being transferred to less obsolete media; whether superior or not is no longer a relevant question. Do we even have a choice? But until recently we have at least still been dealing with celluloid-based materials and photochemical images on them. Now we are doomed to go digital.

Just imagine this science fiction scenario. A nuclear explosion of enormous proportions on the sun's surface, due to a meteor hitting it, causes an electro-magnetic wave of unimaginable power and force crashing over the earth's surface, wiping out every hard disc on the planet. Or a computer hacker unwittingly creates a super virus that destroys the world's computers. With it, all human knowledge, now stored exclusively digitally, disappears. In another scenario much of the earth's population is wiped out by a nuclear holocaust, the kind that obliterates living tissue but leaves computers intact. How do you retrieve information, when no one remembers how to turn on the machines? Books, photographs, even movies can be looked at, because they remain physical manifestations, immediately perceptible to the human eye. In the age of digital, we need machines to read the code. Without them we are lost. Even if it is unavoidable, we should indeed mourn the passing of paper, pencil and celluloid.

As we speak, there is already more information being stored digitally than on all other surviving information carriers together. The technologies of computer storage capacity are developing at a breath-taking speed. According to Jim Wheeler, a member of the archival standards committee for the hard disk drive manufacturers, we are entering a "brave new world" of digital storage. One manufacturer, Western Digital, has announced a one terabyte hard disk for 2003. Two hours of uncompressed PAL Video takes up about 310 gigabytes.² One terabyte is equal to 1000 gigabytes, which is equal to 1000 megabytes. So we are talking about 1 million megabytes of data on your hard drive by next year. Remember when about ten years ago you had a 10 megabyte hard drive on your PC? In a nutshell: all the printed material in the Library of Congress can now be placed on a single disk in your laptop computer. At the same time, another statistic puts moving images in perspective: a feature film of two hours' length in high

2 Jim Wheeler, "Archives at a fork in the road take it!" [sic], AMIA-L@LSV.UKY.EDU, 30 November 2002 <http://lsv.uky.edu/archives/amia-l.html>.

definition requires one terabyte of storage space if it is uncompressed, 6-80 gigabytes if it compressed. In other words, even the newest HDDs would not be able to store a significant number of films in their uncompressed state. Downloading an uncompressed feature film from the net would, at present transfer rates, take approximately 110 hours.³

However, this is all subject to rapid change and probably improvement. I was recently at a digital conference at the Getty Museum in Los Angeles, where the Getty's Senior Advisor to the President for Education, Ken Robinson, gave a talk.⁴ He compared the historical moment we are now in to the first scientific conferences on electricity in London in the 1860s. Those scientists saw sparks and flashes cross from one metal ball to another. They learned that this force of nature, which so long had been thought of as magic from the gods, that this visible, auditory, and tactile phenomena could be harnessed by man for the good of all humanity. But what did it really mean? Even after the electrical light bulb was invented and one understood that human activity was now for the first time freed from the tyranny of daylight hours, no one could have foreseen the many uses to which electricity would be put. They didn't have their computers, their refrigerators, their VCRs, their automobiles, their telephones, their nuclear generators waiting for someone to invent electricity. They didn't have their X-ray machines, their airplanes, their toaster ovens, their microwaves, their electronic telescopes, their transistor radios sitting around, unworkable and unusable. At best, we have had about fifty years of experience with digital, that is, if we take the invention of binary computer models as the birth of digital technology. So we are probably a bit further on with digital than those first scientists in London looking at and hearing the buzzing of electricity, but I am convinced that there are countless forms of digital technology that no one has even imagined. Will we be able to create completely virtual, holographic environments in real space, thanks to digital? Will each of us have a palm pilot or similarly handy device to plug into cyberspace via satellite and instantly retrieve any and all human information? Perhaps. But what does it really mean?

Personally, the inevitable death of materially based moving image media in general and projected films in particular causes me great pain. Although I do love my computer, I hate the thought that in my lifetime film has become a totally obsolete medium. I have spent a good portion of the last thirty years of my life preserving film, and my whole professional career as a film historian. I am passionate about the film projector, the carbon arc lamps that used to create a warm light, the chemically-based shades of black and white and color, the darkened space of the cinema, the audience in a communal activity, defining themselves collectively and individually through the subjectivity of the viewing experience. All that may be lost with digital, although one can hope that digital cinemas may survive capital's ever-greater push towards the atomization of social life. If we are lucky, film may be remembered in its third century of existence, but only as a dead medium, as archaic as carrier pigeons.

3 Gibboney Huske, and Rick Vallières, *Digital Cinema: Episode II*, Report Credit Suisse/First Boston Equity Research, 4 June 2002, PDF File <http://www.sabucat.com/digital.pdf> 7-8.

4 Art, Technology, and Intellectual Property: Stakeholders and Technological Impacts, Symposium at The Getty Center, Los Angeles, 28 June 2002.

As I said before, we are in the middle of a paradigm shift of momentous proportions, one that will not only determine every day life, but will especially impact the archive world of which I am a part. I have only recently come to grips with the fact that any preservation we do as archivists in the medium of celluloid is strictly temporal. We are working in an archaic medium. Are we not like Don Quixote fighting windmills, or the members of certain religious sects who have chosen to ignore the invention of electricity in order to live in a slower, anti-modern world of horse-drawn buggies and ice-boxes? The digital futurists would of course argue that we are. I think not. At least not yet.

Digital technology is far from perfect. Firstly, there is the unresolved matter of standards. There are several competing systems for digital projection. Texas Instruments' DLP technology competes with Kodak's JVC D-ILA system. Even DVD technology is evolving so quickly that standards have yet to be agreed upon. In particular modes of compression, which are vital to any DVD technology are far from standardized. We presently have MPEG-1, MPEG-2, layered MPEG, and wavelet technology. Once the digital files are compressed, they need to be encrypted. We know that the DVD manufacturers are encoding DVDs by geographical area, making it impossible to play a DVD purchased in Europe in the United States, or an American DVD in Asia. This is of course done to control markets, where licenses are sold to individual distributors, but it also represents a challenge for users, who may not find a given DVD in the market they are supposedly damned to do their shopping in.

This fact tells us something very important, namely that while digital technologies move extremely rapidly (and will continue to do so), manufacturers driving technological development will only make those technologies available that they can exploit economically. To speak of technological advancement without considering marketplace realities is to indulge in digital utopianism.

There are a number of organizations that have been created to develop digital standards, including the Society for Motion Picture and Television Engineers (SMPTE). The Motion Picture Association of America (MPAA) has formulated ten requirements for digital cinema.⁵ The Moving Picture Experts Group (MPEG) is a working group of ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) in charge of the development of international standards for compression, decompression, processing, and coded representation of moving pictures, audio and their combination.⁶

Digital technology's greatest deficit is that it cannot yet reproduce the visual effects of film imaging, even if it is good enough for a large part of the viewing public. Film resolution is 5K (4,850 pixels per frame) versus 2K (or 1,920 pixels per frame) for digital cinema. The color gamut is also significantly higher for film than for digital projection. While these deficits may be acceptable for most mainstream Hollywood feature films, experimental films suffer significantly, due to the technical imperfections of digital cinema. Pip Chodorov, an avant-garde film distributor in France, for

⁵ Huske and Vallières 7.

⁶ MPEG has its own website with many documents of their research at: http://mpeg.telecomitalia.com/who_we_are.htm.

example, recently noted the difficulties involved in distributing some experimental films in DVD formats:

"Voir has released over 40 VHS cassettes of experimental films [...], but have no plans to release DVD due to poor quality. The problem with MPEG compression, designed for natural and predictable imagery, is that you end up with less than the 24 frames per second from the original film. Usually you get 2 or 4. The inbetween frames are vectorized and calculated. Also, the throughput (8.5 Mb/sec at best) is too slow to handle full speed video [...]. Jonas Mekas's frame by frame work, Stan Brakhage's hand-painted films, Len Lye's scratched leader, Paul Sharits' and Tony Conrad's flickering, and most other experimental film practices that are as much about form as content, cannot be compressed. [...]"⁷

Yet for most Hollywood-orientated consumers, 2K projection will suffice.⁸ I learned that lesson two or three years ago, when I went to see George Lucas's STAR WARS film, THE PHANTOM MENACE. I'm not really a STAR WARS fan, but I went to Burbank to see the film projected digitally, using Texas Instruments' DLP system. Leaving the theater, I knew that I had seen the future, and the future was now. The digital projection was much better than I expected, though for the 5% of the audience that is either professionally-trained or cinephile, it will not be nearly good enough. As for the other 95%, they are perfectly happy. So I'm surprised that not every theater in the world is already wired for digital now. As I said, technology still moves faster than the rest of the world, which is governed by hard economic realities. In this case, it is the exhibitors and the producers who are in a clinch over who will finance the conversion from film to digital. The exhibitors rightly argue that it is the distributors and the producers who have everything to gain from a wired world, while the exhibitors, whose customers will come no matter what, are left to finance the operation. At present there are exactly two digital cinemas in Germany and forty-three in the United States.⁹ Secretly, I hope they won't resolve their dispute for decades!

So why are we preserving film on celluloid if all our efforts are for naught? I believe that even if film preservation is only a passing phase, a transition period, it is also a necessary stage. Our film history must be preserved in its best possible state, so that digital masters can and will eventually be created. At present, digital technology would entail a loss of image information, even if subsequent reproductions would not suffer from generational loss. Digital restoration is for both financial and technical reasons still a last resort, at least in public archives, although in the major film studios digital steps are increasingly integrated into the preservation and restoration process. Digital preservation is also still a cost factor, since it requires much more substantial investments than film preservation.

⁷ Pip Chodorov, "No Experimental Films on DVD?", Screen-L listserv, 29 Oct. 2002 <http://bama.ua.edu/archives/screen-l.html>.

⁸ *Ibid.*

⁹ For a complete list, see Technicolor's website: <http://www.technicolor.com/whydigital/list.asp>. For an industry point of view, see also Steven A. Morley, "Making Digital Cinema Actually Happen: What it Takes and Who's Going to Do It," PDF File on same site.

But now let me turn my attention to DVDs in particular, the topic of this conference. First let me say that I think it is an indication of things to come that the Deutsche Forschungsgemeinschaft (German Research Association) is willing to fund a conference on DVDs. Everyone seems to be jumping on the DVD bandwagon. University administrations increasingly see DVDs as a panacea for their media studies departments, because of their relatively lower cost, ease of use, and the misconception that they are robust. Unlike 16mm film, or any other film format for that matter, which is usually rented rather than purchased, DVDs are a one-time acquisition expense. Furthermore, DVDs and DVD machines can be operated by anyone, thus saving the cost of a trained, professional film projectionist, who not only needs to project the film, but also inspect it, rewind it, and oftentimes ship it back to the distributor. The university is not immune to capitalism's drive towards the use of ever-larger pools of unskilled labor. In the United States in particular, university administrations are forcing film and media studies professors to give up film projection for fiscal reasons, but also because they fail to see any difference in the viewing experience of DVDs versus films. These administrators have accepted industry assurances that there are only advantages to modernizing equipment and formats. As I will demonstrate, though, there are negatives to consider.

For one, we have no guarantees that DVD technology will last as a format. Given the fact that the commercial media industry has burned through no less than about twenty different video formats in the past thirty years, and even now is developing ever smaller disks and/or chips to store information, the DVDs you purchase today could be obsolete within a few years. Secondly, DVDs are far from a robust medium. Just take a pen and put a nice little dent on a CD-ROM or DVD you don't need anymore. It will no longer play at all. The machine, rather than just skipping or making a scratch visible, will in fact give you an error message, telling you that this DVD is now officially trash. So much for cost effectiveness, especially when students and professors are repeatedly borrowing them and pushing them into their machines, thus greatly increasing the likelihood of damage.

In the past twenty years, with the advent of VCR tape technology and now DVDs, we have also seen a sea change in the viewing habits of consumers. Indeed, computers, televisions, VCRs, cable, and satellite distribution systems have all fundamentally changed the way we think about cinema and the way we use cinema. Now, the object itself is ephemeral, not just the viewing experience. DVDs and VHS videotapes are borrowed from friends, bought and sold on eBay, lent to teachers and students, or traded with other collectors. They have become household objects, which are in a sense disposable after use.

As a result, for most students today, movies are no longer a communal experience in a darkened cinema, but rather objects which sit at home, in plastic cases on their shelves. That has completely changed their attitude to the viewing experience. As Haidee Wasson, a film professor remarked about the viewing habits of her students: "Compact, digital, and user-friendly, digital films are watched day or night, partially or wholly, from favorite scene to favorite scene, or while talking on the phone, eating

junk food, or visiting with friends."¹⁰ The viewing experience itself is no longer the reverent activity it once was, but an option in a day's entertainment, a passing diversion, a menu of options. Movies are happening all the time and at no time – unlike for the previous generation, for whom the film viewing experience was something you planned for, got dressed to go out for, showed up on time.

In the past, films were watched in the theater once, at best a couple of times if it was a really great film. Then it faded from memory, supplanted by the next movie-going experience. What remained were a few images, a scene or two, the look of a favorite actor or actress. After the advent of television, films could sometimes be seen again on a little screen, but they were basically inaccessible to all, except for a few professionals or those students and professors willing to make a trek into the archive. Now, at least theoretically, films are available any time, any place.

What gets lost in this brave new world of DVDs is in fact the cinema as a social space. Home theaters, rather than neighborhood theaters, dominate film consumption. As a matter of time shifting, audiences are increasingly atomized, their experience of media fragmented, without the ability to participate in the creation of a public film culture. The movie theater was a site of gathering, annoyance, flamboyance, introspection, and pleasure. Like the film medium itself, the cinema experience was grounded in the materiality of a constructed social space.

Individuals still attending cinemas, usually participate in a mega-blockbuster, which is playing in thousands of cinemas at the same time. These saturation releases are appropriately organized as media events at a world-wide level by multi-national corporations who have the ability to propagandistically prepare audiences (or markets in the parlance of Hollywood) through newspaper, radio, and television campaigns.

The study of film in universities has also completely changed with the advent of tapes and DVDs. While students used to see films in their entirety, they are now often presented with a menu of clips from various films, supplemented with other audiovisual documentaries on the history of cinema. Films are now studied in painstaking detail, often analyzed scene by scene or even frame by frame. This is now possible with relative ease, whereas in the days of film such analyses were only possible with a special film analyzer. Certainly there are times when such a study can be of benefit to students, but increasingly students are treated to such analyses to the exclusion of other methodologies which may privilege larger social and political concerns.

This phenomenon has had a detrimental effect on research and publishing in the academic field of film studies. Looking over the articles published in *Cinema Journal*, the official journal of the Society of Cinema Studies, it becomes abundantly clear that the vast majority of contributions are readings of single films, with a little feminist, psychoanalytic, or queer theory thrown in for good measure. Rare are the projects that require visiting an archive to see unknown or little seen films, gone the overriding political or social explications of cinema. In the publish-or-perish atmosphere of American universities, analysis of an individual film (also available on DVD) takes a minimum of research effort, offering quick turn around and the opportunity for multiple

10 Haidee Wasson, *Moving Pictures Into Art* (Berkeley: U of California P, forthcoming).

publications in a brief period of time. No need to go into one or more archives on costly research trips, no more years of tracking down seemingly lost films in foreign archives, just pop a DVD into the machine in the comfort of your living room.

Such close readings of individual films are easy, because you have a DVD to work with, but they are also politically safe, which is increasingly a consideration in American academic circles. This DVD centered methodology is indeed supported by the academic and commercial presses, since they are less and less interested in publishing books about films which are not available in the DVD market, and thus not useful as classroom texts.¹¹

Now if the digital future were a reality today, then all this would not really be a major problem, because we would believe that digital technology will indeed open up the whole archive to researchers. But in point of fact, while DVD technology offers unlimited technical possibilities of information retrieval, films made available through DVD technology are at present solely a function of the market place. The number of films that are commercially accessible keeps shrinking rather than expanding. Of all the films made in history, only 50% actually survive and of those only a small percentage were transferred to analog video technology. Luckily, given the relatively low cost of analog VHS tape, not just the major multi-national media companies, but also smaller companies have been able to afford putting older historical films into the market.¹² However, the initial cost of digitization has upped the stakes considerably. The result is that both the quantity and quality of films available on DVD has been drastically reduced. The latest blockbusters and a few of the classics are hawked by the film companies, who of course are only interested in generating substantial profits from titles with wide audience appeal and recognition. The American Film Institute has perhaps most shamelessly promoted this mentality of market viability by publishing their lists of greatest films, based on pre-screened selections of titles available on VHS and now DVD.

Every other type of cinema is forced into the margins of the market or eliminated altogether. What remains is a reified Hollywood canon, which excludes box-office failures, silent films, documentaries, independent films, politically hot topics, etc., etc. For example, of thousands and thousands of films produced worldwide between 1920 and 1928, a little more than one hundred titles are presently available on DVD (in Winter 2002). If we break down this informal list by year, we see that the year 1925 takes the prize with twenty titles available, while 1923 offers a mere five titles. Of those twenty titles from 1925, three-fourths are American, i.e. Hollywood films, the rest a smattering of German, Russian, and French. Now, if you think the situation improves in the sound era, you are mistaken. These are the rough figures I came up with for DVDs available commercially in October 2002 in the United States through one of the largest

11 If there are any doubts about the agendas of university presses, one need look no further than the case of University of California Press. They recently fired their much respected film literature editor, Eric Smoodin, because his projects had failed to produce large sales.

12 One of the best of these is Milestone Film & Video, which has put out numerous interesting, non-mainstream films, including many silent films, rare documentaries, foreign titles, and experimental films. See <http://www.milestonefilms.com>.

internet distributors of 'specialty films,' in other words, a distributor who actually specializes in historical films: 1931 (22 titles), 1935 (15), 1940 (26), 1945 (29), 1950 (26), 1955 (46), 1960 (59) 1965 (28), 1970 (82).¹³

The transnational media corporations who control moving image media distribution worldwide have no interest in distributing silent (or documentary, avant-garde, Third World, etc.) films, because: a) the perceived market of consumers interested in such films is too small, making the amortization of digital technology and transfer a difficult proposition; b) many of these films are in public domain so that companies are not interested because they can't protect their investment. The Hollywood majors have in fact virtually no interest in exploiting their historical catalogs, because the income generated is hardly worth their trouble. This became clear to me when I was working at Universal Studios. At the time, I was trying to get the company interested in re-releasing some of their older titles, which I thought had a limited but robust market. All my suggestions fell on deaf ears, because the biggest media companies are only interested in one hundred million dollar blockbusters, not in the \$50-100,000 they could potentially earn from a DVD release of a classic title. As one lawyer for Universal told me confidentially, the contracts and lawyers necessary to legally clear the distribution of such releases would eat up any and all potential profits. In other words, while the digital world promises unlimited access to film history (certainly a technological possibility), the economic reality is that the number of films available in the marketplace through digital technology will continue to shrink rather than expand, at least in relation to the total number of films that have been produced historically or are being produced.

This, in turn, effects the construction of film courses, since universities, as I said earlier, increasingly force professors to teach with DVDs. If only a limited canon is available for such classroom use, then only the canon according to Blockbuster will indeed be taught and shown to students. How do you teach a course on Third World Cinema, on American independent documentary, on classic documentaries from the thirties, on avant-garde films from any period, when at present virtually no one is willing to finance their digitization? Given these restrictions, students are confronted with a fragmented, incomplete, and distorted view of film history, based on what commercial distributors deem to be viable in the market place, rather than what academic discourse has ascertained as important. Will we raise nothing but a generation of docile moving image consumers?

I'm reminded of the early days of the Internet, when this new medium was considered the great democratic leveler. The free exchange of information, communication, and ideas was promised for this uncontrollable, even anarchistic net of individuals wired together in cyberspace and not beholden to censorship, government intervention or social control. The reality fifteen years later is that the Internet is increasingly controlled by a few major multi-national corporations, who filter, censor, and require

13 Admittedly, this is a completely unscientific survey, conducted by looking at one of the largest distributors in the United States of non-mainstream videos and DVDs: Facets Video. See <http://www.facets.org/asticat>. A more scientific survey might produce slightly more titles, but I suspect the ratios for individual years would be roughly the same.

payment for content. Certainly, anyone can build a website, but the portals and search engines are controlled by the likes of AOL, which only allows sanctioned content through internet blocking. How much film history will be sacrificed to economic imperatives, before digital technology will be cheap enough for public institutions to get into the act of preservation?

I realize that a lot of what I have said here today has been contradictory, expressing my ambivalent feelings towards the new technologies confronting us. I certainly don't want to sound unnecessarily negative; all I want is to take the opportunity as the first speaker of this conference to suggest that our embrace of DVD technology should be cautious. Given both the technology and economics of DVD technology, I have to perceive the introduction of DVDs as a decidedly mixed bag. While I'm convinced that our moving image future will be exclusively determined by digital media, given the incredibly rapid development of all digital technologies, whether related to projection or storage systems, I am not an enthusiastic disciple. Certainly, many of the presently existing deficits of DVDs in particular and digital technology in general will be resolved technologically. Whether lower costs for digital technology will ultimately lead to a more democratic policy regarding our collective moving image archive is another matter. It is unlikely that the major players in the marketplace will be willing to give up their control. In fact the trend seems to be in the opposite direction, so that economics will continue to hinder progress. Finally, the loss of materiality, which all media experience through their digitization, should be mourned, if only because we will lose specific perceptual and aesthetic experiences connected to those media. I, for one, still feel a deep nostalgia for the films we have lost.

David Shepard

Silent Film in the Digital Age

I'm here because of a particular, some might say bizarre, enthusiasm which I have for films made before 1930 in cinema's silent, or more accurately, speechless era. I have been a silent cinema 'accessibility activist' for thirty years, since moving from archive work to Blackhawk Films in the era of 8mm movies. I've produced more than one hundred DVD editions of silent films, where the clarity and beauty of the images can be well appreciated, and I would like to share some of the lessons I've learned along the way. Although I'll speak in general terms, these brief remarks will probably suggest most major issues related to this work.

The best silent films possess as much intellectual, emotional and artistic validity as the best dramatic and visual works of any other sort; but exhibiting them on DVD requires acts of creative interpretation by the DVD production team. As D. W. Griffith once wrote, "the projectionist is compelled in large measure to re-direct the photoplay." I will argue that the transformation of a silent film to DVD is not a pouring of old wine into new bottles, but a transformation of the old film to accommodate a new medium with new audience expectations.

Please consider as a first example the DVD of Robert Flaherty's *NANOOK OF THE NORTH* (see Figs. 1-9, CD-ROM). The first problem was to obtain an authentic text; for decades, *NANOOK* was distributed primarily in a sound reissue version with intertitles replaced by narration, some scenes added from out-takes and stock footage, and other scenes removed. Only worn prints of the original version survived, and I conflated dupe negatives made from four of these to create an integral version without missing scenes or obvious jump cuts.

There was no standard projection speed in the silent era; unless the film was timed to a through-composed original score, running speed was at the discretion of each individual exhibitor, as it is for the DVD producer. I found *NANOOK*'S 1922 duration in *Variety*'s original review of the New York premiere, and used it as a guide in selecting a telecine speed of 21.5 frames per second to achieve approximately the same running time. The timing of the intertitles was adjusted to modern reading speed.

Flaherty processed his negative in the arctic using water brought to him by the Eskimos which had deer hair and other foreign matter floating in it. Thus the images combined the snow on the ground with snow from embedded negative dirt, to which was added the dirt and abrasion endemic to the worn print sources. Adding to the benefits of wet gate film duplication, the digital version substantially reduced both negative and positive blemishes using the Swedish process 'Digital Vision Noise Reduction.'

Flaherty's cranking speed with his Akeley 'pancake' camera was not particularly smooth, so the original film also contained much flicker due to uneven exposure of successive frames. These too were digitally balanced so the original flicker is almost completely eliminated.