History and Ethics of Film Restoration

by

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ABSTRACT

Film restoration and its products have been subjects of scrutiny and debate since the dawn of the practice. The process inherently bears an innumerable quantity of unresolvable uncertainties, a characteristic which has sparked discussions amongst archivists, restorers, scholars, critics, and audiences alike about the ethical implications of restoring motion pictures. This thesis contends that it would be both impractical and unproductive to impose a rigid set of ethical principles on a practice which so inevitably relies on subjectivity. Instead, it devises a more holistic understanding of film restoration practice and ethics to work towards a conceptual framework for film restoration ethics. Drawing from theoretical discourse and real-world case studies, this thesis examines the ways in which restorers have confronted and mitigated uncertainties in their work, and explores the ethical implications of their decisions. As an understanding of the philosophical and economic motivations behind film restoration provides essential foundational knowledge for understanding the evolution of its ethical discourse, the thesis begins by charting a contextual history of the practice before exploring the discourse and its core ethical concerns.

TABLE OF CONTENTS

ACKNOWLEDGMENTS

INTRODUCTION

"Projects of this kind can tell us more about the people who contrived them than about the films they are supposed to resurrect."

Paolo Cherchi Usai, *Silent Cinema: An Introduction*, 2000

In 2018, Christopher Nolan and Warner Bros. collaborated on an effort which brought *2001: A Space Odyssey* (1968, dir. Stanley Kubrick) back to cinema screens in a 70mm "unrestored" version. Deviating from the digital norm of contemporary film restoration and exhibition, this new version used near-obsolete photochemical restoration methods in an attempt to return Kubrick's epic more faithfully to its originally intended aesthetic than any previous digital restoration had achieved.[1] To call the product of such efforts an "unrestored" version is problematic; the term itself presents a double-negative of sorts, the very act of un-restoring actually constituting another restoration in itself, a return to some past state of being. Regardless, its billing as such indicates that digital film restoration has, at present, become so controversial a practice that resistance has been incited in the name of an analog ideal.

Restoration has, since its inception, been a contentious practice. As our collective knowledge of film history remains rife with inconsistencies and lacunae, and is in a constant state of flux, any attempts to return a film to its originally intended state of being inherently relies on conjecture. As restored versions of motion pictures often become the only mode of

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[1] Keith Phipps. "The Unrestored Version of *2001: A Space Odyssey* Is Christopher Nolan's Ultimate Demo Reel for an Analog Future." *The Verge*, May 22, 2018.

widespread access to those titles, the practice, if not grounded in substantial historical reference, holds the potential to permanently alter our perceptions of film history. It should be no surprise that the practice has generated a slew of debates from within and without the audiovisual archival world over the ethical implications of its process and product. There has, since the 1980s, been a consistent stream of discourse addressing the ethical concerns of various aspects of film restoration. Such literature reveals both the depth and the limitations of devising a set of ethical principles for the practice, limitations which extend to this thesis. For one, much of the literature reveals that debates over the ethics of the practice can easily become ideological, each individual philosophy representing merely one of numerous ways in which a film restorer might conceptualize and understand their work. Added to this, it would be impossible, in a single endeavor, to address every potential ethical implication for every decision in the restoration process. As such, much of the discourse tends to address a single issue, or a single restoration, rather than aim for a more comprehensive and holistic understanding of the practice.

This thesis contends that it would be both impractical and unproductive to try to impose a rigid set of ethical principles on film restoration. Instead, this approach compiles numerous philosophies, theories, and case studies from the discourse of film restoration to work towards a conceptual framework for understanding its ethical implications. Such an effort is limited in a number of ways. As most of the discourse comes from North American and European contexts, and as language restrictions prohibited substantial consideration of non-English references, this thesis is inevitably Western in perspective. Added to this, its limited scope prevents an entirely comprehensive study of film restoration ethics. As such, this thesis works *towards* a framework for film restoration ethics rather than achieving one in full.

To understand the ethical implications of film restoration, one should have a basic understanding of the contextual factors which spawned the movement and motivate its continued practice and progress. Chapter one charts the contextual history of the practice. This history begins with the establishment of the first film archives in the 1930s, which soon thereafter began programs to duplicate nitrate-based and deteriorating films for preservation. In the 1970s, these efforts led naturally to a movement to restore films back to an original ideal both narratively and aesthetically, a movement which thrived in times of new and immediately-booming consumer markets for home video rereleases. Finally, the 1990s saw the introduction of digital intermediate technologies which have shifted film restoration practice almost entirely to the digital realm at present.

With each of these contextual and technological shifts came new and reconsidered ethical debates. Chapter two charts the birth and evolution of a discourse of film restoration ethics from the 1980s to the present. This chapter ultimately comprises a literature review of film restoration ethics, from which a core set of ethical concerns for film restoration can be derived. In chapter three, a number of these core concerns are elaborated through a focused exploration of their key ethical implications. These discussions will be illustrated and analyzed through theory and case studies to work towards a conceptual framework for film restoration ethics.

Terms

Throughout each of these chapters, a number of key terms will be employed. This thesis assumes the following definitions:

1. *Film Restoration:* The practice of remastering motion picture film by methods which go beyond mere duplication to remedy signs of wear and deterioration,

with an aim to return a film's technical, narrative, and aesthetic characteristics as close as possible to some past state of being, known or not.

2. *Film Restorer:* Individuals and/or institutions who fund, supervise, and carry out the technical work of film restoration.

3. *Version:* An edition of a film whose content and/or structure is distinct from other editions, whether by censorship, improper care, reissue, restoration, etc.

Each of these definitions is intended to be flexible and interpretive, allowing for a more expansive approach to understanding the film restoration ethics.

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CONTEXTUAL HISTORY OF FILM RESTORATION PRACTICE

Since the practice rooted itself in the film archival world in the 1970s, film restoration has grown from a prohibitively expensive, boutique archival practice to a relatively affordable, large-scale commercial and archival endeavor which, to a certain degree, holds the potential for financial self-sufficiency.[2] A natural sequitur from the photochemical duplication efforts that had been employed in film preservation programs since the 1930s, film restoration practice has continued to adapt to technological and methodological shifts which have ushered film production, preservation, and exhibition towards digital exclusivity. As subsequent chapters will illustrate, these shifts have brought with them an ever-expanding set of philosophies and debates regarding the ethical implications of film restoration practice.

Much has been written about film restoration methodology. Paul Read and Mark-Paul Meyer's *Restoration of Motion Picture Film* (2000, Butterworth-Heinemann) offers an in-depth explanation of the photochemical film restoration process (as well as a number of nods to new digital restoration technologies). Leo Enticknap's *Film Restoration: The Culture and Science of Audiovisual Heritage* (2013, Palgrave Macmillan) and Giovanna Fossati's *From Grain to Pixel: The Archival Life of Film in Transition* (2018, Eye Filmmuseum and Amsterdam University Press) provide similar explanations of digital restoration practice. Rather than repeat those efforts, this chapter charts a contextual history of film restoration as it has transitioned from

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[2] See, for instance, companies like The Criterion Collection, which is able to fund restoration projects through distribution revenues.

analog to digital methodology. In that respect, this chapter concerns those factors which

contributed to the birth of the film restoration movement, and those factors which have continued

to change the ways in which it is practiced in various for- and non-profit institutions. This history

is divided into three broad timeframes. First is the era of photochemical duplication, which

comprises the one-to-one preservation reformatting practiced in film archives starting in the

1930s, ending with the start of the film restoration movement at the outset of the 1970s. Second

is the era of photochemical film restoration, from the 1970s through the 2000s. And third is the

era of digital film restoration, starting with the introduction of digital intermediate workflows in

the 1990s and continuing to the present. The overlap between the latter two timeframes is

intentional: photochemical methods did not disappear right when digital was introduced in the

1990s, and digital methods were not immediately adopted on a wide scale. Rather than imply

rigid boundaries, these divisions are meant to point to the broader shifts that have developed and

molded film restoration practice since its inception.

Before Restoration: Era of Photochemical Duplication (1930s – 1970s)

Little was done on the part of motion picture studios to preserve their products before the

formation of the first film archives in the 1930s. Films in the earliest decades of the medium

were far more ephemeral than present, and there was little perceived need on the part of

producers to reissue past titles, thus little incentive to invest in their salvation. Those preservation

efforts which were taken did more to prevent intentional destruction than to fully understand and

curb the effects of celluloid decomposition.[3] As a result, the vast majority of films from the silent

era are irredeemably lost. Even as the dangers of cellulose nitrate film became more widely

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[3] Leo Enticknap. *Film Restoration: The Culture and Science of Audiovisual Heritage*. Palgrave Macmillan, 2013: 47.

known in the 1930s and 40s, the absence of a viable market for rereleases precluded the

possibility of launching preservation and reissue programs. Preservation and reissue value are in

many ways inextricable concerns. In fact, inadvertent preservation was known to result from

those producers which did engage in reissuing titles throughout the era. The American Biograph

Company, for instance, was known to reedit past productions for rerelease, or to resurrect shorts

featuring stars who eventually achieved fame. As Slide notes: "It is perhaps exactly because

these American Biograph productions had reissue value that they were cared for and survived,

almost in their entirety, with the majority preserved today at the Museum of Modern Art."[4] In

this way, the commercial potential of past productions has, and continues to be, a driving force

of film preservation and restoration.

      While film restoration as we know it today would not come into practice until the 1970s,

efforts to copy and reformat film for preservation and access has long been a staple of

audiovisual archiving. Starting with the introduction of far safer cellulose acetate film stocks in

the 1930s and 40s, and ramping up following the abandonment of nitrate altogether in the 50s,

photochemical duplication and preservation programs became far more commonplace (an often

and unfortunate consequence being the subsequent destruction of nitrate originals.)[5] Among the

first calls to reformat motion pictures which showed signs of deterioration came in the 1930s

from Ernest Lindgren and the British Kinematograph Society, whose in-depth guidelines for film

storage included a recommendation to duplicate degrading films and replace original elements

entirely.[6] In the United States in the 1940s, discovery of a collection of paper print copies of

early motion pictures which had been submitted to the Library of Congress for copyright

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[4] Anthony Slide. *Nitrate Won't Wait: A History of Film Preservation in the United States*. Jefferson, NC: McFarland
& Company, 1992: 17-18.
[5] Ray Edmondson. *Audiovisual Archiving: Philosophy and Principles*. 3rd ed. Paris, France: UNESCO, 2016: 55.
[6] Enticknap. *Film Restoration*. 55-56.

registration between 1897 and 1912 initiated a project to copy the films back to celluloid by way of optical reduction to 16mm film.[7] While this arguably constitutes one of the first film restoration efforts, it is only nominally so, and much of the duplication work of the era has come to be regarded as wildly inadequate by contemporary quality standards. In fact, dissatisfaction with inferior 16mm copies ultimately led the Library of Congress to recopy the paper prints to 35mm film throughout the 1990s. As a result of constant and rapid technological and methodological advancement, archives have long been involved in redoing past preservation efforts, and those not awarded re-duplication remain preserved only in inferior manifestations.[8]

It wasn't until the introduction of consumer home video markets in the 1970s that producers (namely Hollywood studios) made a more concerted and invested effort to preserve, restore, and rerelease titles from their catalogs. Throughout the previous fifty years of audiovisual archival practice, studios had considered the commodity value of their products to be exhausted following initial theatrical runs.[9] In the pre-restoration period, when films were not outright destroyed by their producers, care for and rights to the collections of major studios were often transferred to public archives, partly as a means of tax alleviation and entirely without anticipation of the upcoming boom of secondary consumer markets for motion pictures. Throughout the 1960s and 70s, studios such as Paramount, 20th Century-Fox, and Warner Bros. began depositing prints and related assets in institutions like the UCLA Film and Television Archive.[10] Preservation programs in archives of the sort both in the United States and abroad were well underway by this time. The introduction of 35mm triacetate safety stocks in 1948

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[7] Slide. *Nitrate Won't Wait*. 38.
[8] United States. Library of Congress. *A Study of the Current State of American Film Preservation*. By Annette Melville and Scott Simmon. Vol. 1. Library of Congress, 1993.
[9] *Ibid.*
[10] Slide. *Nitrate Won't Wait*. 69-70.

helped launch large-scale efforts to copy at-risk nitrate films for preservation,[11] and in the lead-up to the 1960s Kodak had introduced new fine-grain duplicating film stocks, boasting dupes of far superior quality for both production and preservation.[12]

Moreover, U.S. film preservation programs began to receive significantly more attention and recognition during this time, both from within and without the motion picture industry. Combined with a push in the 1960s and 70s to regard moving images as a legitimate art form worthy of academic study, the practice became both more conspicuous and well-funded. In 1955, Kemp Niver received an Honorary Academy Award for his Renovate Process, which had allowed for the aforementioned copying of paper prints to celluloid film and which would go on to serve in duplication efforts at Ohio State University in 1967 and UCLA in 1982.[13] By the late 1960s, the American Film Institute and the National Endowment for the Arts had established a Film Preservation Program; the program subsidized photochemical duplication for preservation in archives throughout the United States, and included funds to install duplication facilities at the Library of Congress in the 70s.[14] The importance of the AFI-NEA program is highlighted in the Library's report on film preservation:

> The AFI-NEA program provides a preservation safety net for lesser-known American films of
> cultural and historic value. The overwhelming number of titles copied with grant funds are silent,
> factual, avant-garde, or dance films—film types less likely to receive asset protection in the
> industry or to attract preservation donations to public archives. The program has consistently
> worked to preserve America's oldest motion pictures. Over 50% of the titles copied between 1979

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[11] Edmondson. *Audiovisual Archiving.* 55.

[12] H. Mario Raimondo-Souto. *Motion Picture Photography: A History, 1891-1960*. Jefferson, NC: McFarland & Company, 2007: 225.

[13] Slide. *Nitrate Won't Wait*. 66-68.

[14] Sarah Ziebell Mann. "The Evolution of American Moving Image Preservation: Defining the Preservation Landscape (1967-1977)." *The Moving Image* 1, no. 2 (Fall 2001): 4.

and 1992 were made before 1929, the year that "talkies" became common. Without the AFI-NEA

program many American silent films would not survive today.[15]

The federal government of the United States was also involved in funding transfer of nitrate

films to safety stock in the 1970s through the Library of Congress and the National Archives and

Records Administration, the latter of which completed transfer of its nitrate holdings by the mid-

80s.[16] Concerted efforts to preserve independent, experimental, and generally non-canonical

films could be found at the Pacific Film Archive in Berkeley, established in 1971 by Sheldan

Renan to support preservation of west coast films of the sort; and Anthology Film Archives,

established by Jonas Mekas in New York City in 1974. The year of its founding, Anthology

began copying hundreds of underappreciated avant-garde works for preservation.[17] Abroad, the

British Film Institute was copying an estimated 1,000 reels of nitrate per year through the 70s,

and began experimenting with various methods of color film preservation in tandem.[18]

Despite a marked increase in film preservation funding in the 1960s and 70s, the cost of

such efforts was too prohibitive for most archives to adequately copy and preserve all of the

films in their custody. As a result, a significant amount of preservation work leading up to the

1980s was carried out by optical reduction to 16mm film, a process which was far cheaper than

35mm duplication but which, as noted previously, eventually came to be considered inadequate

in terms of image fidelity.[19] Added to this, the 1970s began to see a decrease in funding from

those sources which had made investments in the preceding decade, as well as a decrease in the

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[15] United States. Library of Congress. *A Study of the Current State of American Film Preservation.*
[16] *Ibid.*
[17] Slide. *Nitrate Won't Wait.* 89-91.
[18] Ralph N. Sargent. *Preserving the Moving Image*. Edited by Glen Fleck. Corporation for Public Broadcasting and the National Endowment for the Arts, 1974: 55.
[19] *Ibid.*, 104.

number of labs capable of handling and copying archival films.[20] Though photochemical duplication for preservation was a well-established practice by the end of the 70s, the cost of fully restoring a film would have been entirely too high to be undertaken widely at the time. It wasn't until new knowledge, technology, and secondary consumer markets for motion pictures were introduced in the latter half of the 70s that film restoration set its roots in the film archival practices of both public and private institutions.

Era of Photochemical Film Restoration (1970s – 2000s)

Until the 1970s, there was little economic incentive to invest in extensive efforts to restore and rerelease archival films. In that decade, a number of shifts occurred which both drew attention to the importance of film preservation and introduced new avenues for re-monetizing motion pictures. The dire effects of color fading were brought to the attention of Kodak and various Hollywood studios by Martin Scorsese and other likeminded artists throughout the 1970s and 80s, drawing industry and public attention to the need for film preservation programs.[21] At the same time, new secondary consumer markets for motion pictures were forged by the introduction of Betamax and VHS, creating viable economic potential through rerelease of studio titles in home video editions.[22] Though certainly not the only contributing factors, these shifts helped form a context in which film restoration practice would ultimately thrive.

By the 1970s, the instability of color dyes in prominent color film stocks such as Kodak's Eastmancolor (introduced in 1950) had made itself apparent to filmmakers and archivists as the films' colors began to fade irreversibly. Throughout the decade, filmmakers like Scorsese began

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[20] United States. Library of Congress. *A Study of the Current State of American Film Preservation.*
[21] Slide. *Nitrate Won't Wait.* 106-7.
[22] Enticknap. *Film Restoration.* 129.

to observe color fading in their own films and the films of their peers. By 1980, a number of such artists had banded together to petition Eastman Kodak to develop low-fade stocks for industry use. At the same time, archivists were beginning to advocate much more actively for grants and research to be devoted to color film preservation.[23] On the heels of decades of work devoted to nitrate film preservation and duplication, color film preservation gained critical support from studios and archives who found ways to capitalize on the deterioration by launching high-profile color film restoration projects. One of the first of such efforts began in 1970 when the British Film Institute worked at the behest of star Douglas Fairbanks to restore his two-color Technicolor feature *The Black Pirate* (1926, dir. Albert Parker). The restoration process lasted two years and produced a new safety negative and print, but was ultimately regarded as a rather imperfect reproduction of color.[24] Beginning in the 1970s and culminating in a 1984 premiere, Robert Gitt, working with UCLA, restored the Technicolor feature *Becky Sharp* (1935, dir. Rouben Mamoulian) back to its full, three-color version, which had not been seen for decades.[25] Such efforts were highly regarded upon their rereleases, bringing significant industry and public attention to the work of film preservation and restoration.

Yet the film restoration movement began in earnest in 1969 when Kevin Brownlow, in collaboration with the British Film Institute and the Cinémathèque Française, began his reconstruction of *Napoléon* (1927, dir. Abel Gance). Meticulously rebuilding the film to its original runtime over the course of a decade, Brownlow's first reconstruction premiered at Telluride, Colorado, in 1979 with Gance himself in attendance, and served as a model example of the historical importance and rejuvenating potential of film restoration.[26] By the mid-70s,

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[23] Slide. *Nitrate Won't Wait.* 107-8.
[24] *Ibid.*, 105.
[25] Robert Gitt and Richard Dayton. "Restoring Becky Sharp." *American Cinematographer*, November 1984, 106.
[26] P. Cuff. "The Man of Destiny." *Sight and Sound*, December 2016, 29.

Robert Gitt and Lawrence F. Karr, working with the American Film Institute, began their restoration of *Lost Horizon* (1937, dir. Frank Capra), marking one of the first major restoration efforts in the United States. The film, which had been cut down for screening to U.S. armed forces during the Second World War and whose camera negatives had decomposed in the previous decade, was restored to near-original runtime over the course of thirteen years and received critical acclaim upon its 1986 premiere.[27]

As restoration projects throughout the 1970s and 80s began to popularize the practice, the introduction of consumer home video formats was rapidly increasing the monetary value of archival films, which could now be rereleased, sold, and watched at home and on-demand. Among the first companies to offer studio titles on consumer video formats was the Michigan-based Magnetic Video, which began distributing the titles of a number of prominent Hollywood studios in 1977 on Betamax and VHS (introduced in 1975 and 1976 respectively). The market proved so viable that by 1979 Magnetic Video had been purchased by 20th Century Fox, and studios such as CBS, Warner Bros., and Paramount had launched their own home video divisions. The introduction of the laserdisc format in 1978, which boasted superior audio and video fidelity (a characteristic capitalized on rather early by home video distributors like The Criterion Collection) undoubtedly contributed to the creation of a collecting culture for motion pictures that still exists at present, however niche. The home video market boomed so immediately that it had grossed billions by the 1980s, giving studios a much-needed financial incentive to preserve, restore, and rerelease the films in their archives.[28] The inherent commercial motivations behind film restoration undoubtedly comprise an essential ethical concern with regards to the practice, a concern which is too large to fit the scope of this thesis and which is in

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[27] Dave Kehr. "Restoration Revives Lost 'Lost Horizon'." *Chicago Tribune*, August 21, 1986.
[28] Richard W. Haines. *The Moviegoing Experience, 1968-2001*. Jefferson, NC: McFarland & Company, 2003: 133.

need of further study. Important for the historico-contextual perspective is that this newfound philosophical and economic value in archival films allowed for the creation of relatively well-funded film preservation and restoration programs within both studio and public archives.[29]

A significant, though widely-condemned, contributor to film restoration's increased notoriety throughout the 1980s was the relatively short-lived movement to colorize black-and-white archival films for home video and television broadcast. Video and computer technology by the 1980s had allowed for the development of a process by which black-and-white film prints could be transferred to videotape and electronically hand-colored, shot-by-shot. At the time, the process cost around $300,000 for a 100-minute film. Beginning in 1981, companies such as Colorization, Inc. in Toronto, Color Systems Technology in Marina Del Rey, and American Film Technologies in San Diego added color to public domain features, licensed titles of major Hollywood studios and distributors, and films to which they had purchased the rights.[30] The practice retained powerful advocates in the industry, most notably Ted Turner, founder of Turner Broadcasting System, Inc. and owner of a substantial collection of MGM, Warner Bros., and RKO titles. Turner insisted that his interest in film colorization was purely financial, citing the higher advertising rates for color television broadcast, and argued that the practice was no more harmful to a film's integrity than cutting it down to a shorter television runtime.[31] Still, the practice was mostly controversial. Arguments against came from filmmakers and archivists throughout the decade, who contended that such efforts represented an inauthentic representation of the films in question both historically and aesthetically, and violated the rights of artists by

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[29] United States. Library of Congress. *A Study of the Current State of American Film Preservation.*
[30] U.S. Copyright Office. "Technological Alterations to Motion Pictures and Other Audiovisual Works: Implications for Creators, Copyright Owners, and Consumers—Report of the Register of Copyrights." *Loyola of Los Angeles Entertainment Law Review* 10, no. 1 (March 1989): 43-4.
[31] John Voland. "Turner Defends Move to Colorize Films." *Los Angeles Times*, October 23, 1986.

manipulating their work without permission.[32] Though the film archival world would be hesitant

to regard such products as "restorations," there seems to be a significant degree of conflation on

the part of the general public between the two practices, and they undoubtedly contributed to a

culture of increased appreciation for rereleased versions of archival films.

By the 1990s, it had become more widely accepted that mere photographic duplication

was insufficient, and archives and studios adopted philosophies by which film's aesthetic

characteristics were regarded as deserving of rejuvenation and preservation.[33] With this in mind,

most of the restoration work leading up to the millennium used existing and adapted

photochemical technologies and methodologies to reverse the effects of deterioration,

manipulation, and obsolescence. Methods such as liquid-gate optical printing, which had been in

use in the preceding decades, were adapted to serve restorative aims by concealing physical

abrasions on the film surface.[34] New methods, such as Noël Desmet's process of optically

recreating tint and tone, were designed to be used with existing film printers and provided the

most viable means to date of recreating early film color.[35] The decade also introduced digital

intermediate methods to film production and archival work, a process by which film could be

scanned, its images digitally cleaned and manipulated, and printed back to film. Such tools were

quickly appropriated for film restoration work within studios that could afford the initial

expense. Indeed, the cost of such methods prohibited most studios and archives from engaging in

extensive digital restoration work throughout the 90s. Though in limited use at the time, digital

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[32] Gary Burns. "Colorization." Museum of Broadcast Communications.

[33] Paul Read and Mark-Paul Meyer. *Restoration of Motion Picture Film*. Woburn, MA: Butterworth-Heinemann, 2000: 4.

[34] Peter Eaves. "Traditional Film Restoration Techniques in a Digital World." *SMPTE Journal* 107, no. 4 (April 1998): 224.

[35] Bregt Lameris. "On the Restoration History of Colored Silent Films in Germany: An Interview with Martin Koerber." *Moving Image* 15, no. 1 (Spring 2015): 104.

intermediate restoration methodology would go on to drastically change the field of film restoration, and has almost entirely supplanted photochemical restoration in the present.

Era of Digital Film Restoration (1990s – Present)

The era of digital film restoration begins in earnest in 1993. Following the development and introduction of Kodak's Cineon system—a film scanner, computer workstation, and film recorder for production purposes—Disney employed the new digital intermediate method to restore and rerelease *Snow White and the Seven Dwarfs* (1937, dir. David Hand). Disney scanned the film (a process which, at the time, took around ten seconds per frame) and performed dust, dirt, and scratch mitigation operations on the digital images before recording back to 35mm film.[36] Even in this earliest of digital intermediate projects, the restoration process closely resembles that of the present day:

> Snow White contained 700 scenes, which amounted to 119,550 frames of 35mm film […] As many as 40 workstations working in 3 shifts were employed to detect flaws in the original film, which were replaced electronically by 'cloning' information from adjacent frames […] Dirt from the original Technicolor separation negatives also showed up as a minute yellow, cyan or magenta spots. Operators had been trained to eliminate these flaws using sophisticated software supplied by Kodak. They also had to 'paint out' scratches and other physical damage, as well as apply colour correction.[37]

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[36] Matt Rothman. "Disney, Kodak Bow Restored 'Snow'." *Variety*, June 28, 1993.
[37] John Aldred. "Disney's Snow White: The Story Behind the Picture." *The Association of Motion Picture Sound*, Winter 1997.

Yet the early success of digital intermediate restoration should not suggest that the methodology was immediately adopted in archival practice. As noted previously, digital restoration throughout the 1990s and much of the 2000s was prohibitively expensive for most studios (let alone underfunded nonprofit archives) to incorporate into their workflows. In 1998, the estimated cost of restoring an entire motion picture digitally was between $1 and 5 million, a cost that only the most affluent of studios could bear.[38] Disney, in that respect, was an outlier: aside from merely being financially solvent enough to afford the work, the studio's practice of rereleasing its films every seven years meant that its investment in digital restoration was far more likely to return a profit through both theatrical rerun and home video release.

In public and/or nonprofit archives, the adoption of digital technology for film restoration and preservation was much more gradual, taking place over the course of nearly twenty years. Throughout the 1990s, digital restoration technology was used only sparingly in these environments, often to mitigate damage and deterioration that could not be adequately fixed by photochemical means. The 1996 restoration of *Faust* (1926, dir. F.W. Murnau) by the Filmoteca Española, for instance, opted to digitally restore a number of the film's intertitles whose physical state was too poor to effectively recreate in the analog realm.[39] The 2002 restoration of *Der var engang* (1922, dir. Carl Th. Dreyer) by the Danish Film Institute used a digital intermediate workflow to reconstruct the film, printing the reconstruction back to 35mm film without further digital remediation.[40] Digital sound restoration—more affordable than digital image restoration—was adopted much quicker; a 2006 report on the use of digital technology in

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[38] Andrew Pollack. "Digital Film Restoration Raises Questions About Fixing Flaws." *The New York Times*, March 16, 1998.

[39] Luciano Barriatúa. "The Restoration of 'Faust'." In *Cinegrafie* No. 9, 215. Transeuropa-Cineteca Di Bologna, 1996.

[40] Casper Tybjerg and Thomas C. Christensen. "The Restoration of Dreyer's *Der Var Engang*." *Journal of Film Preservation* 67 (2004): 35-6.

European film archives noted that digital audio restoration had been in practice in numerous institutions for some years.[41]

It was around the mid-2000s that digital restoration tools began to reach a level of affordability suitable for nonprofit contexts, though still "restricted to prestigious projects or work for which photochemical methods were judged to be a significantly inferior option."[42] The U.S. film industry had, by 2000, employed digital intermediate workflows in numerous productions and were by mid-decade beginning a steadfast transition to digital exclusivity for production and exhibition. As film preservation and restoration have long depended on technology manufactured by and for producers of motion pictures, the rapid advancement and adoption of digital methodology by Hollywood studios spread worry that essential photochemical tools would fall to obsolescence and no longer be available for archival use.[43]

At the time, almost all of the analog and digital tools used in film preservation and restoration had been developed for the feature film industry, and were only adopted for and adapted to archival contexts.[44] By mid-decade, however, an ever-increasing demand for digital tools for such purposes led to the introduction of various products designed for and marketed to film archives. New film scanners such as the ARRISCAN (2003, ARRI Group) and the Director (2005, Lasergraphics) boasted the ability to suit multiple film gauges, featured options for pin-less perforation registration for careful handling of shrunken and damaged films, and incorporated low-heat, high color fidelity light sources into their optical systems for both safety and optimal digital reproduction. Software such as the DIAMANT-Film Restoration Software

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[41] Arianna Turci. "The Use of Digital Restoration Within European Film Archives: A Case Study." *Moving Image* 6, no. 1 (2006): 121.
[42] Enticknap. *Film Restoration*. 79-80.
[43] Read and Meyer. *Restoration of Motion Picture Film*. 227.
[44] Paul Read. "Digital Restoration of Archive Film Images." *Image Technology* 78, no. 8 (1996): 6.

(2001, HS-ART) and Phoenix (2007, Digital Vision) provided automated tools for digitally mitigating dirt, dust, and scratches, along with numerous tools for image manipulation during the restoration process. These tools played an essential role in making digital film restoration affordable and practical for public, nonprofit environments, and continue to be improved today.[45]

By the start of the 2010s it was becoming ever-more apparent that film industries worldwide were approaching digital exclusivity. The inaugural years of the decade saw announcements from major Hollywood studios that 35mm theatrical print distribution would be discontinued in favor of DCPs (Digital Cinema Packages), pushing theaters across the globe to invest in digital projection technology.[46] By 2017, 98% of the world's cinema screens were exclusively digital.[47] In the wake of this transition, photochemical technology and methodology for film preservation and restoration continue to inch towards obsolescence. At the same time, continued technological progress has meant that digital film restoration continues to grow more affordable; at present, most feature films cost between $10,000 and $200,000 to restore by digital means.[48] Though the digital turn has generated significant lamentation from the film archival world, the possibilities of its technology have generally been embraced, even if only from lack of choice. From one perspective, digital technology "provides an alternative way of copying and presenting film, and it offers improvements in extracting the inherent information in analogue originals. Rather than being a challenge, it is a solution which offers film archives the ability to keep their films alive in a world where viewing habits are rapidly changing."[49]

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[45] See, for instance, ARRI Group's 2018 release of its ARRISCAN XT archival film scanner.
[46] Enticknap. *Film Restoration*. 80.
[47] Motion Picture Association of America. *THEME Report*. 2017. 9.
[48] "Institutional Practice Survey, Film Remastering/Restoration." Survey by author. January 14, 2019.
[49] David Walsh. "There Is No Such Thing as Digital Restoration." In *Works in Progress: Digital Film Restoration Within Archives*, edited by Kerstin Parth, Oliver Hanley, and Thomas Ballhausen, 42. Vienna: SYNEMA, 2013.

In the past five years, digital film restoration has become practical, affordable, and visible enough to be undertaken widely and frequently. In 2018, Giovanna Fossati contended that digital restoration had passed its experimental phase, and has come to be an accepted practice of the audiovisual archival field.[50] By 2015, L'Immagine Ritrovata, a prominent film restoration lab based in Bologna, Italy, had opened satellite labs in Paris and Hong Kong in response to increasing global demand for film restoration services.[51] In the public realm, the practice has become so popularized that repertory cinemas across the country frequently boast "New 4K Restoration!" for numerous titles on their slates. Entire festivals have come to be devoted to film restoration, such as Il Cinema Ritrovato (1986 – present, Cineteca di Bologna, Bologna, Italy) and Cinema Revival (2015 – present, Wexner Center for the Arts, Ohio State University). Between them, these festivals screen hundreds of newly-restored titles every year, many of which are world premieres and most of which have been restored in the past five to ten years. In contrast to previous years, the 2018 edition of Il Cinema Ritrovato screened nearly all of its titles digitally, a response to industry changes and an acknowledgement of the viability of contemporary digital technology for restoring and presenting analog-born motion pictures. In lieu of substantial indication of a counter-shift in methodology, it seems more than likely that entirely-digital workflows will continue to be the de facto mode of film restoration into the indefinite future.

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[50] Giovanna Fossati. *From Grain to Pixel: The Archival Life of Film in Transition*. 3rd ed. Amsterdam: Eye Filmmuseum/Amsterdam University Press, 2018: 99.
[51] "Italian Film Restoration Company Builds Foothold in Asia." Hong Kong Government News, June 12, 2015.

Conclusion

Whether or not the recent resurgence of film photography in both industry and independent contexts will lead to a similar resurgence in photochemical film restoration methods remains to be seen. For the foreseeable future, the field will have to contend with the digital tools available to and affordable for their institutions' contexts. As subsequent chapters will reveal, the shift to digital restoration methodology—as well as the hyper-restorative abilities of current technology—continues to spark new philosophies and debates over the ethical implications of film restoration practice.

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ETHICAL DISCOURSE OF FILM RESTORATION
HISTORY AND EVOLUTION, 1980s – 2010s

A discourse on the ethics of film restoration spawned soon after the practice established itself in the audiovisual archival profession in the 1970s. Comprised of academic and professional literature, professional conference presentations, and film journalism, the body of thought on the ethical implications of film preservation and restoration work continues to expand, evolve, and adapt in the present. Discussions in the early-1980s regarding the ethics of exhibiting silent films to contemporary audiences paved the way for similar concerns to be addressed with regards to film restoration. How to restore a film which exists only in fragmentary material form, or whose original elements are deteriorated beyond repair? How to reconstruct a film which exists in differing and/or disputed versions, or which is incomplete? How to determine the aesthetic characteristics of tinting and toning when no record indicating such information exists? These foundational quandaries conceived at the dawn of film restoration practice remain core components of contemporary discourse. The introduction of digital intermediate technology and workflows to restoration practice in the 1990s fomented heightened anxiety over the dramatically-increasing power in the hands of the restorer. This shift spurred new dimensions to the ethical debates and demanded that the concerns of the past decade be re-contextualized to suit the technological reality of the present. The seemingly boundless possibilities offered by digital restoration tools as they improved through the 2000s and 2010s have made ever-more essential the question of how much restoration is too much.

This chapter charts the evolution of discourse on film restoration ethics from its origins in the 1980s to the time of this writing, at the tail end of the 2010s. In outlining this history, some goals are achieved. For one, examining a discourse that is largely found in print results in what is functionally a literature review of film restoration theory and ethics. Understanding the core concerns on the minds of archivists, restorers, scholars, critics, and moviegoers is essential to thorough analysis of the practice, and in effect works towards a conceptual framework from which to understand its ethical implications. Added to this, a chronological account of this discourse indicates the ways in which technological and methodological shifts have evolved, adapted, and expanded the ways in which film restoration is conceptualized. In light of rapid and continued technological innovation, this approach provides the opportunity to assess the present state of film restoration and its ethical discourse through a historical lens.

Apparent in an exploration of the sort is the fact that the foundational ethical concerns of film restoration laid in the 1980s have remained relevant into the present. As such, specific ethical issues will be discussed more frequently and with more depth as they are introduced in the first half of this chapter. The following chapter will expand on these foundational concerns and analyze the broader discourse to formulate a conceptual framework from which to understand the ethical implications of film restoration.

Early Influences and Foundational Ethical Concerns

Discourse on the ethics of film restoration within both professional and public spheres began in earnest in the 1980s. This decade saw new methodologies for photochemical duplication and restoration cementing their presence in audiovisual archival practice, as well as a number of high-profile studio- and archive-led restoration efforts which drew critical attention to the field.

Even before the advent of digital restoration tools, archivists and restorers acknowledged the risk of misrepresenting film history, despite otherwise possessing a general confidence in the rejuvenating potential of the practice. Still, literature on film restoration is relatively scarce throughout much of the 1980s. What does exist centers largely on technique and technology, from within the professional sphere; as well as presentation, from the broader public.

In the midst of an ever-increasing interest in studio rereleases, writings on the methods and ethics of presenting archival films to a contemporary public made their inevitable way to the fore. Analyses of the moral and historical dimensions of presentation, such as those posed by John B. Kuiper in 1982, are analogous and relevant to those of film restoration that began to appear in succeeding years. Following the notion that no restoration is complete without presentation, the ethical contentions of both are inextricably linked, and Kuiper's ideas represent foundational concerns that remain at the crux of restoration theory today. First appearing in *Image*, Kuiper's article "Silent Films for Contemporary Audiences" addresses an assortment of technical and theoretical issues involved in the screening of silent films to contemporary audiences at the George Eastman House. For one, Kuiper draws attention to the risk of historical inaccuracy when screening preservation copies in lieu of earlier-generation prints, which are often nonexistent for early cinema. Being in many cases incomplete and without intended tinting and toning, preservation copies have the potential to detract and distract from the intended narrative and intrinsic aesthetic characteristics that would have been experienced during initial theatrical runs.[52] Uncertainties of the sort foreshadow similar concerns that would emerge in the following years with regards to restoration. Acknowledgement that exhibiting restored films bears the risk of communicating a false sense of historical accuracy—especially when the

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[52] John B. Kuiper. "Silent Films for Contemporary Audiences." *Image* 25 (March 1982): 1.

"restored" film may in fact be an entirely unintended rendition—is a fundamental feature of theory on and ethics of audiovisual archiving.

Kuiper expands his discussion to address those silent films which exist either in fragmentary form or in multiple versions. Citing the importance of determining a film's provenance and production history, he suggests: "Attempts must be made to ascertain the initial release length, and the length of the surviving copies must be compared to this figure. When discrepancies in these lengths are noted, the surviving prints must be checked for continuity."[53] These ideas and methods are synonymous with those of film restoration practice in its earliest stages of development. How to choose which version of a film to present to an audience when multiple exist? How to reconstruct and exhibit a film for which entire segments are missing? How to communicate narrative gaps to audiences when screening incomplete films? These quandaries are omnipresent in film restoration discourse.

Given the intensified worry over color film deterioration and the booming markets for home video releases at the time, it is no surprise that film heritage professionals like Kuiper were beginning to express worry over the ways in which archival films were presented to a contemporary public. The unresolvable doubts on which Kuiper sheds insightful light represent some of the core questions posed in discourse on the audiovisual archival and restoration ethics that followed soon after.

1980s: Film Restoration Ethics Take the Stage

Four years after Kuiper made known his worries and suggestions regarding archival presentation, a number of discussions cropped up that specifically addressed the ethical dimension of film

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[53] *Ibid.,* 4.

restoration. Perhaps the first substantial publication on the subject, Raymond Borde's article

"Film Restoration: Ethical Problems" (1986) is representative of the ways in which thought on

film restoration began to meld with that of archival presentation. Borde draws attention to the

practical limitations of both institutions and individuals involved in film restoration, and calls for

a critical framework by which to understand the ethical implications of the practice.[54] The same

year, the International Federation of Film Archives (FIAF) held its annual congress at the

National Film and Sound Archive (NFSA) in Canberra, Australia; one of the core themes of the

conference was *Technical and Ethical Problems of Film Restoration*. This occasion marks the

first of such congregations to devote a major portion of its program to film restoration, no less its

ethical elements. Based on a publication from the NFSA detailing the congress, the topics at

hand seemed to build on questions of accurate versions, reconstruction, and aesthetic

representation, framed now within the context of archival film restoration. The NFSA

publication describes the program as follows:

> The purpose of this seminar is to give members of FIAF an opportunity to see a selection of
>
> restored films, to share their expertise with colleagues and to discuss problems encountered during
>
> the work. Hopefully, through such discussions, it might be possible to create some guidelines for
>
> restoration work and to try to find answers to questions such as how much license is considered
>
> reasonable for the archive to take when
>
> - combining footage from various versions when part of each version is missing,
> - using stills as a substitute for missing footage,
> - selecting tinting and toning,
> - deciding on style of intertitles,
> - deciding whether stretch printing should be undertaken,
> - selecting musical accompaniment,
> - etc.[55]

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[54] Andreas Busche. "Just Another Form of Ideology? Ethical and Methodological Principles in Film Restoration." *Moving Image* 6, no. 2 (Fall 2006): 5-6.
[55] The National Film and Sound Archive of Australia. "[Untitled 1986 FIAF Congress Report]." 1986. https://www.nfsa.gov.au/collection/curated/1986-fiaf-congress.

These issues seem to represent the foremost ethical and practical concerns on the minds of audiovisual archivists throughout the 1980s, all of which remain relevant in the present.

Building from the ideas presented in Canberra, FIAF's 1987 Joint Technical Symposium (JTS) in West Berlin featured presentations on such topics as selection of films for restoration and sound restoration, as well as a panel on the ethics of restoration. This latter panel, as outlined in the JTS proceedings, cited the "increased knowledge, the progressive technology and the strong commercial interest of production companies and license holders" as leading indicators of a need for discourse on and codes of ethics for film restoration. The aim of the panel was to assess the responsibility of the archivist during the restoration process, and the issues discussed closely resemble those of the Canberra Congress noted above. Panelist Raymond Borde noted a generally agreed upon moral principle of respect amongst archival film restorers (i.e. respect for the filmmaker's intention, respect for the artistic product itself, and respect for the historical and cultural context of the work) and proposed an outright rejection of the "modernization" occurring in commercial film restoration at the time, namely colorization and flaw-fixing. Still, despite calling for a "moral restoration codex," Borde seems to admit that many of the ethical elements of restoration are not easily codified. In one such instance, he posits that selecting which version of a film to restore has a number of potentially ethical avenues (e.g. restoring the first-screened version, the filmmaker's intended vision, the longest un-cut edition, etc.).[56]

Taken in sum, these meditations point to the mid-1980s as a pivotal moment in archival-professional theory on film restoration. The 1987 JTS proceedings reveal that by this time, archivists were beginning to realize that improving technologies and methodologies were putting

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[56] Ulrich Gregor et al. "Ethics of Restoration." In *Archiving the Audio-Visual Heritage*, 139-50. Proceedings of 1987 FIAF Joint Technical Symposium, Stiftung Deutsche Kinemathek, West Berlin. FIAF, 1988.

ever-more power in the hands of film restorers, power in danger of misuse without a guiding set

of ethical principles. The numerous discussions surrounding inconsistent versions, high-level

concepts of "original" cultural objects, incomplete works, etc. reveal that film heritage

practitioners were continuing to be confounded by and confronted with numerous uncertainties

in their efforts to restore motion picture history.

Though public discourse on film restoration does appear in the form of newspaper and

magazine articles in the latter half of the 1980s, much of it is unsubstantial and tends to glorify

new restorations without offering critique. Writings on newly-released restorations in regional

news publications such as the *Houston Chronicle*[57] (1986, on Frank Capra's 1937 *Lost Horizon*),

Tulsa World[58] (1990, on Howard Hawks' 1948 *Red River*), and the *Long Beach Press-*

Telegram[59] (1990, on Stanley Kubrick's 1960 *Spartacus*) all detail more than one aspect of the

restoration process and imply a "definitive" nature in their rereleased versions, but lack

discussions on the ethical dimensions of such work. One such article, in *The Oklahoman*[60] (1989,

on Victor Fleming's 1939 *Gone with the Wind*), made a passing hint at ethical concerns when

one of its subjects was asked about potential negative responses to the restored film, but

otherwise follows a similar model. It would be unreasonable to expect regional journalism to

offer its readers an in-depth account of the technical and theoretical aspects of film restoration.

Still, examining the ways in which the broader public talks and writes about restoration is an

important consideration in restoration ethics and is in need of further study.

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[57] Bob Grace. "Tale of 'Lost' and Found Surrounds Film." *Houston Chronicle*, July 18, 1986.
[58] Scott Eyman. "'Red River' Latest Film Restoration." *Tulsa World*, June 13, 1990.
[59] Desmond Ryan. "On Film: Restoration Ahead for Epic 'Spartacus.'" *Long Beach Press-Telegram*, October 8, 1990.
[60] Chuck Davis. "Film Restoration Keeps Sooner Native Busy." *The Oklahoman*, April 21, 1989.

For a number of cinema-focused publications, discussions of the sort were more substantial and complex. Two articles from 1989 are relevant. The first is a short piece which appeared in *Film Comment* titled "The New Face of Film Restoration," whose subject was film mogul Avi Timmel and his efforts to rerelease new versions of archival films for home video. The article is rightfully cautious in its employment of the term "restoration;" Timmel's rather crude explanation of his process is quoted as follows:

> 'See, when I heard there was enough leftover footage from *Ishtar, Apocalypse Now, Reds*, and
> Goldie Hawn's long shots from *Swing Shift* not just to wrap around the world 200 times but to tie
> the entire universe together, I knew there was something there, profit-wise. As much as people like
> to re-view a movie they've already seen, think how they'll appreciate a new look at an old movie.
> Why see the exact same film twice?'[61]

This philosophy his guiding light, Timmel generated new, purposefully inaccurate versions of various films, including a version of *Z* (1969, dir. Costa-Gavras) for which Timmel dubbed an entirely new dialogue track, effectively transforming the narrative into a string of "lots o' 'Greek culture' jokes." Though it mostly avoids editorializing, the article hints at the contentious nature of such work: "Timmel considers his releases 'restored' versions; most, however, are slightly unauthorized re-edits in provocative packages. The eclectic Klassix lineup is a window on the future of restoration."[62] A semantic issue is revealed here which remains a staple of theoretical musings on restoration in the present. How to reconcile a face-value definition of the term "restore" with a practice that cannot by nature exactly recreate a past version or experience of a

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[61] Morton Feintisch-Ng. "The New Face of Film Restoration." *Film Comment*, May/June 1989, 4.
[62] *Ibid.*

film? Whether Timmel and his films hold any position of significance in the scheme of film and film archival history, this article affirms that the term "restoration" has been contentious since the earliest decades of the practice. It exposes the ways in which public conceptions of film restoration conflated the term and practice with those of manipulating and enhancing films for commercial rerelease, a matter which remains problematic in the present (for a contemporary example, see one *Variety* review of Peter Jackson's *They Shall Not Grow Old* (2018), which was both billed and discussed as a "restoration" in numerous instances: "So dazzlingly transformative is the restoration of this footage that it may as well be the product of a movie shoot").[63]

The second article, from the Winter 1989 issue of *Sight and Sound*, takes a much more critical approach. Reflecting on some of the preeminent restoration projects of the decade, Alan Stanbrook lambasts film restorers for presenting a false notion of film history to moviegoers. Stanbrook posits that Kevin Brownlow's reconstruction of *Napoléon* has actually set a dangerous precedent in the film archival world:

> It has encouraged others not to put films back to their pristine state but to a state that no one ever intended. The notion that everything should be made complete, no matter what its condition, has led on more than one occasion to the production of hybrid prints—part motion picture, part still, part colour, part black and white—that are really mutations and in some respects less satisfactory than the commercially cut versions with which, over the years, we have become familiar.[64]

Citing a number of instances in which questionable decisions had been made in restorations throughout the decade—including *Lost Horizon*, *A Star is Born* (1954, dir. George Cukor), *Becky*

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[63] Guy Lodge. "Film Review: 'They Shall Not Grow Old.'" *Variety*, October 16, 2018.
[64] Alan Stanbrook. "As It Was in the Beginning." *Sight and Sound*, Winter 1989, 29.

Sharp (1935, dir. Rouben Mamoulian), and *Alexander Nevsky* (1938, dir. Sergei M.

Eisenstein)—Stanbrook urged readers to consider whether a stringent focus on completeness

(e.g. employing still frames, blank frames, or production stills to compensate for lacunae) may

actually devalue the films in question. His discussion of *Lost Horizon*, for instance, indicates

dissatisfaction with the restoration's use of still frames to fill material gaps, which distracts

viewers and stalls the pace of the narrative. Added to this, Stanbrook makes an important call-to-

action in his discussion of versions. Noting that the restorations of *Lost Horizon, A Star Is Born,*

and *Becky Sharp* all featured footage that had never been seen by audiences during initial release,

he calls into question the authenticity of these new renditions and warns readers to be critical of

claims of definitiveness: "We ought to ask ourselves, each time a fully 'restored' or 'improved'

copy is unveiled, whether it is in fact the real thing or some malformed curio whose rightful

place is in a museum rather than a cinema."[65]

Revealed in these writings is the fact that moral uncertainty with regards to film

restoration was not a phenomenon exclusive to the professional field. Journalism of the sort—

along with other public-facing communications—plays an essential role in bridging knowledge

and concerns between professionals and spectators even when the audience is relatively niche, as

is the case for the *Film Comment* and *Sight and Sound* articles noted above. Paired with the

professional discourse that materialized in the preceding years, the body of thought generated in

the 1980s established a foundation for theory on film restoration, and most of the concerns

addressed throughout the decade remain relevant today. These ideas would continue to be

deliberated and elaborated in the following years, and the introduction of new digital

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[65] *Ibid.*

technologies and methodologies in film restoration practice would usher in new dimensions to its ethical debates.

1990s: Ethics and the Introduction of Digital Restoration Technology

The introduction of digital intermediate technology and method to film restoration practice around 1993 had a somewhat paradoxical effect. Despite a general acknowledgement that digital tools offered some important advantages over photochemical, the growing prominence of those tools in restoration work seems to have heightened ethical anxieties. Yet with more powerful tools than ever before in the hands of film restorers, it is no surprise that caution was warned. Both technological advantages and ethical dangers were foreseen by some even before digital intermediate workflows were widely adopted in restoration practice. Writing in 1996, Mark-Paul Meyer acknowledges that digital tools have the potential to overcome some of the limitations of a purely photochemical duplication. Yet Meyer cautioned that the prominence of these tools would ultimately "create all kinds of technical, inter-archival and legal problems, as well as problems of ethics in selection, preservation, and restoration."[66]

If throughout the 1980s efforts to comprehend the ethical dimension of restoration focused primarily on making historically-informed decisions, the 1990s saw archivists and restorers beginning to consider whether digital tools put too much power in the hands of the restorer. With technological advancements through the 1990s and 2000s offering seemingly boundless tools for improving film images, the question inevitably arose: how much restoration is too much? As Meyer notes:

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[66] Mark-Paul Meyer. "Ethics of Archive Film Restoration Using New Technology." *Image Technology* 78, no. 8 (1996): 10.

> To know what to aim for, the concept of the original has to become very concrete, because with the new technologies for the first time a film can really be repaired in its smallest elements, image and sound. If we consider 'original' in its strict sense, image and sound quality could become 'as new.' But then one should ask whether it is desirable to strive for a perfect rejuvenation of image and sound.[67]

Meyer's musings have roots in the concept of authenticity. Digital possibilities for film preservation at large sparked apprehension over whether a digital rendering of celluloid-born moving images represents an authentic reproduction of those images, both technically and philosophically. Moreover, the expanded capabilities of digital tools relative to photochemical meant that filmmakers, archivists, and restorers could generate near-pristine images to an extent that had never been achievable in film practice (a concern that would be amplified with the near-total abandonment of film-out workflows in production and restoration at the start of the 2010s). To that end, Meyer proves to be one of the earliest to address materiality as it pertained to digital film duplication and restoration during the dawn of digital restoration. The relevance of his ideas in the present is underscored by extensive studies predicated on concerns of materiality in a mostly-digital film-archival world (notably Giovanna Fossati's *From Grain to Pixel: The Archival Life of Film in Transition*,[68] which first appeared in 2009 and has a third revised edition as of 2018). Another article appeared in 1996 which addressed concerns similar to those of Meyer but with regards to the digital restoration of optical soundtracks; its discussion of ethics is mostly unsubstantial in comparison and concedes to the fact that opinions vary.[69]

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[67] *Ibid.,* 11.

[68] Giovanna Fossati. *From Grain to Pixel: The Archival Life of Film in Transition*. 3rd ed. Amsterdam: Eye Filmmuseum/Amsterdam University Press, 2018.

[69] Claude Lerouge and Richard Billeaud. "Steps, Techniques and Ethics of Sound Restoration: From Optical Sound Track to Digital Restoration." *Image Technology* 78, no. 10 (1996): 10-13.

The late-1990s saw public-facing media outlets engaging with ethical discourse on film restoration in a more substantial way. A 1998 *New York Times* article, for instance, centers on the question of whether digital restoration represents an alteration of film history. Framed around a discussion of *Gone with the Wind* on the eve of its restoration, the article questions whether relatively trivial optical-effects flaws of the original film should be digitally "fixed" during restoration. Citing the "powerful new technology" of digital film restoration, reporter Andrew Pollack brings public attention to a budding concern in audiovisual archiving: "Digital technology is adding yet another element to the passionate debate over what is appropriate in film restoration. Are old movies artworks, to be preserved in their original state, or products, to be upgraded to retain their consumer appeal?"[70] Though the art/product dichotomy he presents represents a rather limited theorization of film heritage by contemporary standards, Pollack implies an important distinction between commercially-driven "restoration" (citing George Lucas's digital manipulations of his *Star Wars* films and Disney's mitigation of original animation flaws in its rerelease of *Fantasia*) and archival concerns, namely whether a film should be restored to its originally-experienced achievement or to the intent of its maker, presumed or known.

The 1998 FIAF Congress in Prague once again found the professional field exploring these issues, now under the theme "Digitisation of Archive Materials." Born in part from the developing theories and fermenting anxieties of recent years, it was at the 1998 Congress that FIAF ratified its Code of Ethics. Though it takes a necessarily broad stroke, the Code's "Rights of Collections" outlines some points indicative of the association's drive to codify the uncertainties of digital film restoration. With priority awarded to the preservation of original

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[70] Andrew Pollack. "Digital Film Restoration Raises Questions About Fixing Flaws." *The New York Times*, March 16, 1998.

materials, the code requires that film archivists strive to exhibit films in a manner that is reflective of initial viewing experiences, refrain from enhancing films during restoration, and document all potentially-contentious decisions throughout restoration and preservation.[71] These concerns, as illustrated above, bear direct relation to those of the preceding decades. Yet despite the progress towards a theory and ethics of film restoration that had been developing, the FIAF Code of Ethics indicates the challenge of developing concrete principles of film preservation and restoration. Within the confines of a process which inherently relies on unique, situation-specific decision-making, the ability of any one code to encompass the entire ethical dimension of restoration is entirely limited. In a similar vein, the Code of Ethics of the Association of Moving Image Archivists (AMIA)—adopted in 2010—features only one goal directly pertaining to restoration, noting that archivists should restore and preserve original materials without altering them and document their work.[72] While it would be unreasonable to expect any ethical code to address, with granularity, every aspect of the process, the vagueness with which the FIAF and AMIA codes discuss restoration stands in stark contrast to the rather complex debates that had been circulating within the field. Perhaps more than anything, these codes reveal the uneasiness with which archivists have attempted to codify film restoration.

The latter half of the 1990s, then, marks a renewed drive on the part of film heritage professionals towards an academic and theoretical understanding of their work and its ethical implications. Effective or not, the FIAF Code of Ethics marks a substantial effort to codify the ambiguous work of audiovisual preservation and restoration. Still, considered alongside the broader discourse on digital intermediate restoration methodology, these codes revealed the limited extent to which a concrete set of principles could be applied to such a unique and varying

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[71] "FIAF Code of Ethics." International Federation of Film Archives. 1998.
[72] "AMIA Code of Ethics." Association of Moving Image Archivists. 2010.

practice. Whether or not film restorers had, by this time, become familiar with the ethical

dimension of their work, voices like Meyer advocated for a more robust theoretical framework

from which to understand such work. Digital restoration technology on the rise, Meyer calls

attention to the fact that the absence of a solid theory of film restoration is especially problematic

in times of rapid technological innovation and shift, with discussions of the sort more often

overshadowed by those of technical matters.[73] Meyer's advocacy was met with what remains an

ever-growing and -evolving body of theory. The new millennium would see the publication of

what remain some of the preeminent works on audiovisual archival practice, revealing a field

increasingly driven to cement its practice.

2000s: Towards a Theory and Practice of Film Restoration

At the outset of the 2000s, a number of milestone publications in film preservation and

restoration came to the fore. Paolo Cherchi Usai's book *Silent Cinema: An Introduction* (2000,

British Film Institute) offers an in-depth overview of film production, technology, and aesthetics

in the earliest years of film history. In addition to engaging in broader discussions on issues

related to the preservation and historiography of silent cinema, the book dedicates a chapter to an

exploration of the ethics of film preservation. Exploring with technical and theoretical depth

many of the questions that had been on the minds of film archivists and restorers since the 1980s,

Cherchi Usai considers the ethical quandaries involved in determining which version of a film to

restore, reproducing deteriorated color with aesthetic accuracy, and mitigating incomplete or

severely-damaged film elements. While his deliberations mostly avoid acknowledgment of the

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[73] Meyer. "Ethics of Archive Film Restoration Using New Technology." 11.

digital tools that had been gaining prominence in preceding years, they nonetheless shed light on some of the crucial issues involved in the preservation and exhibition of early cinema.[74]

Paul Read and Mark-Paul Meyer's *Restoration of Motion Picture Film* (2000, Butterworth-Heinemann) was and remains a definitive text on film restoration methodology. Though its focus is almost entirely technical, Read and Meyer take into account the various digital tools and techniques on the rise at the time, and broach ethical implications of those methods in the process. Drawing from similar issues Meyer had posited a few years prior, the book situates brief philosophical and ethical asides within a comprehensive examination of film restoration practice.[75] Similarly, Leo Enticknap's chapter on archival preservation and restoration in his book *Moving Image Technology: From Zoetrope to Digital* (2005, Wallflower Press) includes a succinct nod to the ways in which restoration technology poses ethical challenges when striving for accurate reconstruction and aesthetic representation. Enticknap underscores the heightened stakes of restoration relative to basic preservation, seeming to highlight the greater public visibility of restoration work.[76]

While these books remain essential works within the field, they did more to cement audiovisual archiving as a professional discipline than to generate the "moral restoration codex" that Borde had called for in the 1980s. By the mid-2000s, digital intermediate workflows became much more widely adopted for film production, preservation, and restoration.[77] As a result, the past fifteen years have seen an ever-expanding body of theory on the ethics and practice of digital film restoration. Gartenberg, writing in 2002, addresses the ethical and technical

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[74] Paolo Cherchi Usai. "The Ethics of Film Preservation." In *Silent Cinema: An Introduction*, 44-76. London: British Film Institute, 2000.

[75] Paul Read and Mark-Paul Meyer. *Restoration of Motion Picture Film*. Woburn, MA: Butterworth-Heinemann, 2000.

[76] Leo Enticknap. "Archival Preservation and Restoration." In *Moving Image Technology: From Zoetrope to Digital*, 187-201. London: Wallflower Press, 2005.

[77] Fossati. *From Grain to Pixel*. 66.

challenges specific to the preservation and restoration of experimental films, such as the

precarious process of restoring images which contain both intentional and unintentional damage.

As a supplement to these discussions, he makes a number of practical suggestions for assuaging

uncertainties through documentation, collaboration and communication with artists, and

historical research.[78] Three years later, Busche published one of the most comprehensive

examinations of film restoration ethics for its time. Analogizing film restoration with the more

established philosophies and methodologies of fine art restoration, Busche takes a deeper look at

some of the many moral concerns of the past couple decades, covering concepts of originality,

determination of version, historically-accurate reconstruction, authentic reproducibility of

deteriorated images, and even audience experience.[79] Wallmüller, writing in 2007, generated the

first in-depth exploration of restoration ethics from an entirely digital perspective. Considering

various issues related to authenticity, aesthetics, reversibility, documentation, and transparency,

her article represents an early manifesto on digital film restoration ethics.[80]

Discourse around the mid-2000s represents a crucial body of practical and theoretical

work on film restoration, and many of the sources noted above are core components of the

conceptual framework proposed in the following chapter. These new publications more often

than not took a deeper look at issues that had been key components of ethical discourse since the

1980s, expanding and evolving those foundational ideas and adapting them to fit present

technological and methodological contexts. Still, the increased prominence of digital restoration

and a growing consumer market for restored films on home-video formats around mid-decade

introduced new dimensions to the discussion. Carroll, for instance, makes an important argument

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[78] Jon Gartenberg. "The Fragile Emulsion." *Moving Image* 2, no. 2 (2002): 142-53.
[79] Busche. "Just Another Form of Ideology?" 1-29.
[80] Julia Wallmüller. "Criteria for the Use of Digital Technology in Moving Image Restoration." *Moving Image* 7, no. 1 (Spring 2007): 78-91.

regarding the marketing of restorations as authentic historical and artistic versions. By way of a study of the restoration demonstration videos that had become popular supplements on DVD versions of restored films around the same time, Carroll argues that digital restoration and its branding represent more of a "plastic surgery" than a true-to-definition restoration, a cleansing and purifying of a film's material and aesthetic history. Demonstrations of these restorations by companies such as The Criterion Collection, Walt Disney, and Fox Studio Classics imbue in viewers a false sense of definitive authenticity by concealing the historical loss that occurs during the restoration process. Digital restoration offers the ability to "digitally scrub an image to hyperreal ends," and the fact that distributors of restored films promote a primitive conceptualization of analog film elements instills in the public an expectation of ultra-clean images. In Carroll's words:

> However, the real work of restoration is arguably done on historical memory, convincing viewers *this* is the way a film was *intended* to be seen and this is *how* it *should* be situated within historical context. Showing before/after comparisons and the decision-making process, demonstrations prompt viewers to see analog aesthetic criteria as inadequate and digital restoration as an improved archival standard.[81]

In this way, the modes with which these digitally-restored films are marketed and presented to the public risks creating the impression that the "true" version of a film is its completed digital restoration, potentially undermining the authenticity of the film's original elements, distinct versions, and material history.[82]

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[81] Nathan Carroll. "Unwrapping Archives: DVD Restoration Demonstrations and the Marketing of Authenticity." *The Velvet Light Trap: A Critical Journal of Film and Television* 56 (Fall 2005): 23.
[82] *Ibid.*, 27.

Carroll's ideas are undoubtedly kindred with those posed by Kuiper in the early-1980s with regards to the presentation of silent archival films. Now, with digital technology assuming power, questions regarding the transparency of the restoration process and presentation were facing renewed scrutiny. How to communicate the contentious decisions of a restoration to its viewers? How to properly contextualize the material, production, and preservation histories of a film for audiences of restored films? How to ensure that the public is made aware of the historical implications of film restoration work? With digital tools pushing restored films further from their analog origination than ever before, these concerns remain essential to discussions of both the ethics of restoration and the ontological changes film experiences in its transition to digital.

Increasingly certain of the imminence of digital exclusivity within the film industry, archivists made greater strides towards a theory and ethics of film preservation and restoration in the digital age. By the end of the 2000s, Lipman had introduced a more appropriately flexible mode of conceptualizing the work of film restoration. Writing at a time when "On a daily basis methods are being devised—and just as quickly revised—to facilitate the transition of images into binary units," Lipman sees film restoration as an ethical "gray zone" with no definitive answers to its moral concerns. Citing numerous instances related to identifying original film elements, selecting versions, and achieving faithful aesthetic characteristics, Lipman charts this gray zone by pointing to ways in which these decisions and processes are easily muddled and complicated by specific restoration cases. Analogizing the film restorer with the titular role in Andrei Tarkovsky's *Stalker* (1979), Lipman envisions a theory of restoration by which the expertise and experiential knowledge of the restorer play an essential role as navigator through the various ethically-murky steps of the process. In this way, the film restorer becomes the expert

guide through uncertain territory, and takes on a collaborative, interdisciplinary approach with

the sciences and the arts to ensure the greatest degree of historical accuracy. Lipman's ideas

reveal a field coming to accept the limitations of its work. Rather than write off the subjective

restorer, however, he argues that the experiential knowledge of the restorer is as essential a

foundation to the work as any.[83]

Fossati formulates a similar argument in early editions of *From Grain to Pixel*. Taking

Lipman's ideas one step further, Fossati argues that the mediation and guidance of the restorer

plays an essential role in bridging the authenticity of a film from its original elements to its

restoration. As such, whether by photochemical or digital means: "Restoring a film implies

making a copy of an authentic film artifact: the authenticity of the new restored copy depends

completely on how this copy is made, and the way the copy is made depends, in turn, on how the

restorer instructs the process, whatever that process."[84] In this way, film heritage professionals

acknowledged that the inevitable subjectivity of the restorer was an uncertainty that would not,

for the foreseeable future of restoration, be assuaged. Rather, as Lipman and Fossati imply, a

framework from which to understand the ethical dimension of the practice should remain flexible

enough to account for the experiential knowledge brought to each unique restoration by its

restorer.

Growing certainty around the start of the 2010s that digital methodology would soon

supplant photochemical restoration to near-total ends revealed an arguably greater need than ever

before to generate a theory of film preservation and restoration. Fossati responded to this

urgency with what remains the most comprehensive theory of archival film in a digital age. With

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[83] Ross Lipman. "The Gray Zone: A Restorationist's Travel Guide." *Moving Image* 9, no. 2 (Fall 2009): 1-29.
[84] Giovanna Fossati. *From Grain to Pixel: The Archival Life of Film in Transition*. 2nd ed. Amsterdam: Eye Film Institute/Amsterdam University Press, 2011: 120.

first and second editions appearing in 2009 and 2011 respectively (and a third, revised edition in 2018), Fossati combines practical and theoretical approaches to work towards a more profound understanding of film's ontological nature during its transition from analog to digital. To achieve this, Fossati generates highly-detailed examinations of film production, preservation, and restoration methodology and technology to reveal the philosophical and ethical stakes of such work during an era of technological upheaval. Through various case studies, Fossati takes a more microscopic look at film heritage institutions and their restorations and devises four "frames" from which to conceptualize the work of film preservation: film as original, film as art, film as *dispositif*, and film as state of the art (the third edition of the book introduces a fifth frame, film as performance). These modes of theorization represent a much more expansive and flexible approach to devising a set of ethical principles for film restoration. Rather than impose strictly-codified guidelines, these frames provide broader academic and philosophical constructs within which the goals and decisions of a preservation or restoration project can be situated. Buttressed by Fossati's theoretical frames, the decisions of a restoration project can be more effectively made, analyzed, and understood.[85] Written in the midst of significant technological and methodological shift in the film production and heritage professions, Fossati's book remains a fundamental text on film archival theory in the digital age—its ideas will be explored further in the following chapter.

2010s: Ethics and the Digital Takeover

Discourse on film restoration ethics in the 2010s proves that the moral quandaries of the practice remain hot-button issues amongst archivists, restorers, scholars, and viewers. The first half of the

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[85] Fossati. *From Grain to Pixel*. 2011.

decade saw the near-total replacement of analog film production, exhibition, and restoration with digital. In its midst were renewed calls for a more substantial ethical framework: "stronger ethical guidelines must be developed and enforced […] As technology presents new opportunities to manipulate and recreate records, archivists must be held to higher standards to ensure the authenticity and reliability of the record."[86] Accepting a digital fate, film heritage professionals have spent much of the past decade working to develop the most effective digital tools and techniques for preserving and restoring motion pictures.

Theoretical precedence having been set by theory of the past forty years, contemporary discourse—even the more technically-focused—more often than not address the ethical implications of its subjects. Leo Enticknap's 2013 book on film restoration, for instance, marks one of the first efforts to educate a broader public on the practice. Though much of the book is focused on illustrating the cultural-historical importance of film restoration and breaking down its practical steps, Enticknap dedicates the concluding chapter to its ethical implications. In this chapter, Enticknap draws attention to some of the ways in which restoration practice is challenged by contentious notions of a film's "original" aesthetic and/or narrative nature.[87] A product of a 2011 symposium on digital restoration in archives at the Austrian Film Gallery, the essay collection *Works in Progress: Digital Film Restoration Within Archives* takes a more holistic approach than most of its predecessors. Arranging a series of essays on the latest digital tools and techniques, theories and ethics of digital restoration, archival theory, and film

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[86] Lindsay Kistler Mattock. "From Film Restoration to Digital Emulation: The Archival Code of Ethics in the Age of Digital Reproduction." *Journal of Information Ethics* 19, no. 1 (Spring 2010): 83.
[87] Leo Enticknap. "Conclusion: The Ethics and Study of Film Restoration." In *Film Restoration: The Culture and Science of Audiovisual Heritage*, 151-61. Palgrave Macmillan, 2013.

historiography, as well as a number of restoration case studies, the collection sheds lights on the complexity of film preservation and restoration theory.[88]

These books are essential works of film restoration theory and practice. Though they accomplish the important task of re-contextualizing long-held ethical quandaries within the technological and methodological present, they seldom introduced entirely new concerns to the larger discourse on restoration ethics. By the 2010s the core ethical concerns of film restoration had been well-cemented in the thought and practice of film archivists and restorers.

Still, the subject continues to be examined in industry and academy literature. Prince, for instance, critiques Warner Bros.' 2005 restoration and rerelease of *Pat Garrett & Billy the Kid* (1973, dir. Sam Peckinpah) for its apparent disregard of the film's history. Left unfinished by Peckinpah and seen in various studio cuts (none of which had the blessing of Peckinpah), the film exists in no complete nor definitive version. The closest to the author's original intent, Prince argues, would have been the preview version left by Peckinpah when he refused to keep working on the film. Yet restorer Paul Seydor and Warner Bros. opted to restore a tighter studio cut. Moreover, the rereleased version was advertised as the "definitive" version, in disregard of Peckinpah's preview cut. Similar to Carroll's reservations regarding DVD restoration demos, Prince sees a cloudy ethical dimension and continues the crucial work of bridging restoration theory with film history and historiography. In his words:

> But the new version is being presented as a truer incarnation of what Peckinpah wanted and would
>
> have done with the film had it been finished. Herein lies the rub. Now there is a 'ghost' version of
>
> the film in circulation, one that is being promoted, viewed, and potentially understood by new

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[88] Kerstin Parth et al, eds. *Works in Progress: Digital Film Restoration Within Archives*. Vienna: SYNEMA, 2013.

generations of viewers as more authentic than the extant versions that Peckinpah and his editors actually worked on.[89]

Analyzing film restoration from a theoretical and/or historiographical perspective as Prince does remains an unfortunately rare practice. Stoddard noted in 2013 that despite an ever-increasing interest in restoration, there remains a lack of scholarly analysis of the process and its products outside of the audiovisual archival field.[90] In his article, Stoddard heeds his own advice and generates an in-depth theoretical analysis of the restoration of *Metropolis* following discovery of its missing segments in 2008. His analysis—which includes an examination of the experiential effects of the heavily-damaged, improperly-cropped 16mm footage when seen in sequence with cleanly-restored 35mm elements—reveals the ways in which the decisions and limitations of restoration impact theoretical analyses of the film itself. In the process, he formulates a new mode of conceptualizing restored films: as simulacrum, an object which functionally exists as a copy but whose core resemblance to the original lies in a shared capacity for difference, an inherent dissimilitude and fluid identity.[91] Discussions of the sort shed light on the ethical implications of various decisions made in the restoration process and move both archival and academic fields towards a more holistic understanding of film restoration.

Within the profession, discourse on restoration theory and ethics throughout the past decade has tended to examine a single concept and/or case study with depth. Kilcoyne offers an effective discussion of the various challenges and decisions that went into James C. Katz and

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[89] Stephen Prince. "The Recutting of *Pat Garrett and Billy the Kid*: Ethical Problems in Film Restoration." In *Peckinpah Today: New Essays on the Films of Sam Peckinpah*, edited by Michael Bliss, 87. Southern Illinois University Press, 2012.

[90] Matthew Stoddard. "The Virtual *Metropolis*: Restoration as Simulacrum." *Canadian Journal of Film Studies / Revue Canadienne D'Études Cinématographiques* 22, no. 2 (Fall 2013): 3.

[91] *Ibid.*, 7.

Robert A. Harris' 1996 restoration of *Vertigo* (1958, dir. Alfred Hitchcock). Kilcoyne draws

attention to some of the particularly onerous obstacles and questionable choices of the

restoration. Most controversial is Katz and Harris' decision to enhance the soundtrack for

contemporary stereo sound systems and add foley effects where the original sound elements

couldn't be salvaged. With the literature of the past few decades as his frame, Kilcoyne analyzes

the 1996 version of *Vertigo* to assess whether its restorers took too many liberties by archival

standards. While undoubtedly questionable from an ethical perspective, Kilcoyne concludes that

an analysis of the restoration should take into account the context of the film's original

production. Arguing that a state of the art restoration is in line with Hitchcock's technologically-

innovative methods and with the commercially-driven context of the film's studio production,

Kilcoyne makes the case for Katz and Harris' *Vertigo* as an appropriate restoration.[92] Jamieson

invokes long-held contentions of what constitutes a film's "original" state, expounding the

mandate of the FIAF Code of Ethics to not "change or distort the nature of the original material

or the intentions of its creators" and drawing from Fossati's "film as original" framework.

Jamieson reveals the many faces of the term "original," including with regards to film artifacts,

filmic text, creator's intent, and exhibition. She concludes by revitalizing calls for greater

transparency from film restorers, as well as more substantial documentation and case studies to

facilitate a more comprehensive understanding of the intricacies of film restoration ethics.[93]

Film restoration and its ethical quandaries remain hot-button issues among film heritage

professionals, scholars, and enthusiasts. With almost every premiere of a newly-restored film one

can find an array of print and online reviews praising stunning aesthetic quality and renewed

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[92] Sean Patrick Kilcoyne. "You Shouldn't Have Been That Sentimental: Film Restoration Ethics in Hitchcock's *Vertigo*." *Journal of Information Ethics* 19, no. 1 (Spring 2010): 57-73.
[93] Krista Jamieson. "Ethical Film Restoration and Concepts of 'Original'." *Journal of Film Preservation* 93 (October 2015): 11-16.

appreciation. Many of these publications detail at least some of the technical specifications of the

restoration process (most commonly with regards to resolution and source materials), evidence

of an increased interest on the part of the broader public in the practice, not just the result. In

fact, the contentions of digital restoration have become understood by moviegoers to such an

extent that filmmaker Christopher Nolan found popularity and success in facilitating the

rerelease of *2001: A Space Odyssey* (1968, dir. Stanley Kubrick) in an "unrestored" version in

2018. Presented on 70mm film, Nolan's version is allegedly closer to what Kubrick would have

intended and what audiences would have seen in its initial theatrical runs. Though Nolan's

process included steps essential to film restoration such as color correction and a remastered

soundtrack, his implied gesture in "un-restoring" *2001* is one of defiance against the digital

technology and methods that have pushed restorations further than ever before from their

material sources, raising unending moral questions.[94]

Current digital technology and methodology continue to push the bounds of possibility

for archivists and restorers of motion picture film. By Fossati's assessment, digital restoration

has, by 2018, passed its "initial experimental phase" and has become an accepted facet of

audiovisual preservation. Still, she warns: "This new phase brings with it renewed discussions

and ethical dilemmas about the extent to which film should be restored or where to draw the line

between restoring and creating new 'improved' versions."[95] Contemporary technology has and

will continue to allow for what has been referred to as "hyper-restoration," the most recent and

discussed example being with regards to Peter Jackson's 2018 documentary *They Shall Not*

Grow Old. Combining digital restoration and effects work, Jackson's film features enhanced and

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[94] Keith Phipps. "The Unrestored Version of *2001: A Space Odyssey* Is Christopher Nolan's Ultimate Demo Reel for an Analog Future." *The Verge*, May 22, 2018.
[95] Fossati. *From Grain to Pixel*. 2018. 99.

colorized—and in some instances 3D—renditions of archival footage from World War I. Moreover, Jackson recorded an accompanying sound track featuring voice actors delivering approximated dialogue based on visual analysis of mouth movement in the footage. Though most in the professional sphere would be reluctant to consider the film a restoration, it has often been regarded as such by the media and its ethical implications seldom explored. Shepherd, as an exception, calls attention to the historical implications of such work: "As immersive and impressive as *They Shall Not Grow Old* may be, there's an argument to be made that this hyper-restoration represents a bastardisation of history."[96] Such efforts, Shepherd notes, disregard the material and aesthetic reality of films created so long ago, a hark back to the age-old concerns of originality and authenticity. Whether or not the core ethical concerns of film restoration remain consistent into the indefinite future, technological innovation will not likely subside. Cases like *They Shall Not Grow Old* point to a continuous need to re-contextualize the ethical principles of restoration to fit the ever-advancing technological and methodological present.

Conclusion

Fossati's third, revised edition of *From Grain to Pixel* represents the latest manifestation of this idea. Though it remains just as relevant as it was in its first and second editions a decade ago, Fossati demonstrates and answers the need to regularly update and expand the theoretical principles of film restoration practice, adapting them to fit the technological present. The earliest contributions to discourse on film restoration theory and ethics in the 1980s generated foundational concerns that remain so in the present. Unsolvable quandaries related to incomplete or severely-damaged film elements, differing versions, recreation of tinting and toning, and

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[96] Jack Shepherd. "*They Shall Not Grow Old*: Is First World War Hyper-Restoration Historical Sacrilege?" *The Independent*. November 11, 2018.

musical accompaniment sparked an increasingly complex discourse on the stakes of decision-making under such ambiguous circumstances. Discourse in the 1990s ushered in new ethical dimensions, brought on by the introduction of digital intermediate technology and workflows to restoration practice, which put significantly greater power in the hands of the restorer. The discourse of the digital age has and continues to center on the confounding question of how much restoration is too much. As restoration practice shifted rapidly to digital-exclusivity throughout the 2000s and 2010s—and as new technology paves the way for "hyper-restoration"—archivists, restorers, scholars, critics, and moviegoers continue to explore and re-contextualize the ethics of film restoration. As the body of theory expands and evolves, the question remains: how does one make sense of it? The following chapter will expand these foundational concerns to work towards a conceptual framework for contemporary film restoration ethics.

three
TOWARDS A CONCEPTUAL FRAMEWORK
FOR FILM RESTORATION ETHICS

To impose a rigorous set of ethical principles on the practice of film restoration would be both

impractical and unproductive. The eternally equivocal nature of the process and the degree of

conjecture it often involves preclude the possibility of uncompromising order. Moreover, film

restoration is, despite significant developments in automated digital processes, unavoidably

carried out by humans who bear conflicting notions of film history and aesthetics. Failure to

acknowledge these uncertainties in devising an ethical framework for film restoration would

impede the ability of restorers to extend the bounds of the practice through philosophical and

technological experimentation.

Instead, this thesis assumes a flexible and expansive understanding of film restoration to

work towards a conceptual framework for its ethical implications. The approach, influenced by

Maxwell's notion of the conceptual framework for qualitative research, analogizes film

restoration with academic and scientific research projects. Maxwell, drawing on other scholars,

defines the conceptual framework as "The system of concepts, assumptions, expectations,

beliefs, and theories that supports and informs your research." Importantly, the framework is

considered a tentative theory of the research subject, one whose function is to "help you to assess

and refine your goals, develop realistic and relevant research questions, select appropriate

methods, and identify potential validity threats to your conclusions."[97] In this way, a conceptual

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[97] Joseph A. Maxwell. *Qualitative Research Design: An Interactive Approach.* 3rd ed. Thousand Oaks, CA: SAGE Publications, 2013: 39-40.

framework for film restoration ethics would comprise a diverse and critically-analyzed set of

theories and practical examples from which restorers can understand the ethical implications of

their work, develop concrete and justified goals, and make informed decisions. The importance

of these frameworks is illustrated in Maxwell's discussion of research paradigms: "It will be

important to your research design (and your proposal) to make explicit which paradigm(s) your

work will draw on, since a clear philosophical and methodological stance helps you explain and

justify your design decisions."[98]

Essential to this conceptualization is Busche, who, drawing from Brandi's philosophy of

fine art restoration, notes: "After all, a restoration is a critical interpretation, not an artistic

enhancement of the object."[99] That restoration represents a mere interpretation rather than a

definitive return to original condition is crucial to a versatile and transparent philosophy of the

practice. Further is Lipman's concept of the Gray Zone:

> The Gray Zone is that uncharted territory where a preservationist needs to make decisions when
>
> there is no definitive guide left by the filmmakers. The choices made may make the difference
>
> between an effort that is faithful to the spirit of the work and one that is not. And they very much
>
> determine the ultimate experience one undergoes when viewing it. If poor judgment is used, a film
>
> can, ironically, be lost in the very act of preservation.[100]

Lipman sees the restorer as akin to the titular role in Andrei Tarkovsky's *Stalker* (1979), both

interpretive guide and bridge between art and science. Maxwell's conceptual framework allows

for such notions. In what he refers to as the "experiential knowledge" of the researcher, Maxwell

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[98] *Ibid.*, 43.
[99] Andreas Busche. "Just Another Form of Ideology? Ethical and Methodological Principles in Film Restoration." *Moving Image* 6, no. 2 (Fall 2006): 8.
[100] Ross Lipman. "The Gray Zone: A Restorationist's Travel Guide." *Moving Image* 9, no. 2 (Fall 2009): 5.

contends that what by some assessments may be considered bias should be considered an essential part of the project's framework. As he surmises: "Separating your research from other aspects of your life cuts you off from a major source of insights, hypotheses, and validity checks."[101] Restorers of motion pictures bear distinct and invaluable sets of knowledges ranging from film history and theory, to film production, to archival science, all of which aid in the making of informed and ethically-conscious decisions in the restoration process.

As discourse on the ethics of film restoration can often tend towards ideology, no one perspective should be taken as absolute. Rather, an analytical compendium of varying theories and cases awards a more expansive, adaptable, and robust foundational perspective. While the limited nature of this thesis—not to mention the seemingly infinite nature of film restoration ethics—forbids a comprehensive undertaking as such, the following discussions highlight some of the core concerns and uncertainties present at various stages of the restoration process to work towards a conceptual framework for film restoration ethics.

Film Sources and Versions

Before the technical work of restoration can begin, a set of crucial decisions must be made to mitigate uncertainty and outline the objectives of the project. No restoration can commence, for instance, without first locating, identifying, and selecting source elements from amongst a film's extant physical materials. Though the prevailing practice is to privilege the earliest generation, i.e. in-camera elements, it is often the case that such materials no longer exist. Those which do exist govern which version of a film can be reconstructed, and how complete the restoration will ultimately be. Symbiotic with selecting source elements, then, is deciding which version of a

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[101] Maxwell. *Qualitative Research Design.* 45.

film to restore and present. That our understanding of film history is in constant flux is indisputable, and is revealed in those many titles which have been restored and re-restored over the years (one of the most notorious cases being *Metropolis* (1927, dir. Fritz Lang), restored with relative frequency throughout its life). Any definitive understanding of a film's intended state of being is compromised by the fact that so much of film history has been subject to censorship, studio cuts, reissues, and restorations. Being true, it is no great surprise that the issue of versions has been one of the most contentious and discussed in film restoration discourse.

Informing one another, these initial determinations lay the foundations of the restoration project, and illuminate its guiding objectives. Central to these decisions is the concept of originality. In audiovisual archiving at large, what constitutes an object's original physical and conceptual state of being is often entirely ambiguous. In film restoration, the term *original* is commonly used with reference to the earliest generation elements of a given film, those which were in-camera at the time of production. Yet one might also refer to an *original print* (i.e. first generation). Contemporary film restoration discourse expands the concept, revealing a more complex understanding of film originals that goes beyond the physical realm. Jamieson, for instance, points to four distinct but interrelated modes by which a film originals are conceptualized: *dispositif* (the technical, environmental, and performance aspects of each screening), film prints/artefacts, filmic text, and creator's intent.[102] Each of these concepts allows for varying interpretations of film originals. Where some restorers might contend that a film's original "text" is its first-run theatrical cut, others might argue it to be a later director's cut, aligned to the full intent of the filmmaker. A film's original *dispositif* might refer to its first theatrical screenings, but one might also consider each screening to be a unique occurrence,

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[102] Krista Jamieson. "Ethical Film Restoration and Concepts of 'Original'." *Journal of Film Preservation* 93 (October 2015): 12-13.

original in its own right. As will be illustrated below, arguments can and have been made to justify restorations by any number of possible interpretations.

In the age of digital restoration, the concept of film original is complicated even further. Fossati, discussing *Beyond the Rocks* (1922, dir. Sam Wood), illustrates the uncertainty by questioning which version of the film is its true original: "The nitrate film print kept at Eye Filmmuseum, too shrunken and fragile to run through a projector, or its analog restoration, projectable anytime on any screen equipped with a 35mm projector; or, a third option, when considering also the transition to digital, its digital restoration, projectable as such or after being printed back on film?"[103] Questions of the sort remain eternally unanswerable for most. Still, that they are asked at all represents the expanded view of film originals subscribed to by a number of archivists and restorers in the past decade. Enticknap sums it effectively, drawing attention to the inherently flexible nature of the term: "The definition of 'original' used as a default by the majority of restorers—on the medium it was made, and what the filmmaker wanted—is in reality just one of a vast array of potential definitions."[104]

Whether or not a more expansive conceptualization allows for a nuanced approach to restoration, the concept of a film's original state of being often remains ambiguous or entirely unknown. As such, discussions of film originals have in some cases been considered unproductive, and some have gone so far as to dismiss the notion entirely. The Austrian Film Museum, in its Digital Film Restoration Policy, asserts that no single original has ever existed in motion pictures, invoking their inherent mechanical reproducibility. In lieu of attempting to distinguish a single original, it suggests approaching film restoration in terms of sources and

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[103] Giovanna Fossati. *From Grain to Pixel: The Archival Life of Film in Transition*. 3rd ed. Amsterdam: Eye Filmmuseum/Amsterdam University Press, 2018: 181.
[104] Leo Enticknap. *Film Restoration: The Culture and Science of Audiovisual Heritage*. Palgrave Macmillan, 2013: 156.

versions. Moreover, it contends that each restoration is in itself a new version of the film, not a

recreation of some nonexistent and impossible original.[105] By this philosophy, an ethically-sound

restoration results not from attempts to achieve the unachievable, but from the process by which

decisions regarding specific source elements and versions sets the stage for a restoration as

faithful as possible to its stated intent, i.e. to which version of the film was ultimately selected.

In practice, these ambiguities and the divergent interpretations they incite have produced

various results and, in turn, fascinating ethical case studies. The following subsections highlight

some of the core ethical quandaries confronting restorers in their determinations of source

elements and versions, and reveal the ways in which restorers have mitigated those concerns in

practice.

Source Elements

Theoretically, the selection of source elements for restoration is rather straightforward. Most

restorers agree that the earliest viable generation elements should be used whenever possible, and

one of the dominant concerns is locating film materials in the first place. In practice, the decision

can often be much more complex, and can raise important ethical concerns. For films whose

camera negatives—or even first generation prints—are nonexistent, selection of source materials

involves a number of compromises specific to the goals of the restorer, the institution, and the

restoration.

Among the most basic concerns in the selection of source materials is generational

difference. Cherchi Usai notes that each duplication of a film introduces a 15% loss of image

information from the previous generation, shedding light on the fact that the aesthetic

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[105] Austrian Film Museum. "Digital Film Restoration Policy." September 20, 2011.

characteristics of an element may be wildly different from one of a different generation.[106] It is

with this in mind that most restorers consider the earliest viable generation to be the ideal starting

point for restoration. Even so, this aim is often unachievable as so many films throughout history

have seen their original manifestations lost, destroyed, or decayed beyond restoration. Thus,

restoration often involves a selection of source fragments, assembled from elements of different

formats, generations, and physical conditions.

Patchwork reconstruction of the sort bears a number of implications. Consider the case of

Metropolis: When long-missing segments of the film were discovered in 2008 at the Museo del

Cine Pablo Ducrós Hicken in Buenos Aires, the scenes were subsequently included in a new

restoration. Premiering in 2010, this new, "complete" *Metropolis* was the subject of discussion.

The elements found in Argentina comprised a 16mm screening copy that had been derived via

optical reduction from a 35mm distribution print. In addition to being improperly masked, the

16mm copy was severely subpar in terms of image fidelity.[107] In an analysis of the new

restoration, Stoddard contends that the juxtaposition of gritty 16mm reduction fragments with

cleanly-restored 35mm source materials in a single scene has the potential to alter audiences'

perception of the film's diegetic space, potentially affecting readings of the scene in question.

Moreover, he argues that the improper masking of the frame in the 16mm segments disrupts

what Deleuze refers to as the *out-of-field*, the space outside the edges of the frame but within the

diegetic world of the film. While few restorers would be willing to sacrifice completeness for the

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[106] Paolo Cherchi Usai. *Silent Cinema: An Introduction.* London: British Film Institute, 2000: 47.
[107] Anke Wilkening. "Metropolis 2010: A New Effort to Recapture the Lost Metropolis." In *Works in Progress: Digital Film Restoration Within Archives*, edited by Kerstin Parth, Oliver Hanley, and Thomas Ballhausen, 135. Vienna: SYNEMA, 2013.

sake of aesthetic uniformity, Stoddard's assessment is a reminder that the consequences of selecting source elements for restoration are often expansive and should not be ignored.[108]

As completeness does not guarantee intended experience, nor does the existence of original elements guarantee aesthetic authenticity. Discussing his 2007 restoration of *Killer of Sheep* (1977, dir. Charles Burnett) with the UCLA Film & Television Archive, Lipman explains that unresolved printing issues during the film's production left release prints with unsatisfactory aesthetic characteristics. Despite this, Lipman contends that the "real" *Killer of Sheep* is these vintage prints as they represent the only way audiences would have seen the film upon its initial release. Still, Lipman and UCLA elected to use the film's camera negatives as source and, under the guidance of Burnett, restored the images to their intended look. Though the supervision and approval of Burnett can certainly be argued to authenticate the restoration, such involvement on the part of filmmakers should not preclude consideration of the ethical implications of such decisions. As noted above, Lipman himself acknowledges the quandaries: whether or not achieved with the blessing of its maker, presenting *Killer of Sheep* with aesthetic properties never before seen by audiences presents the potential misrepresentation of film history, a decades-old concern of critics, historians, archivists, and restorers alike. This is not to suggest that the 2007 *Killer of Sheep* represents an inauthentic or unethical restoration; as Lipman argues: "In the case of *Killer of Sheep* […] our prints looked different than any previously seen. In a logical paradox, I feel our restoration was 'faithful' in that it better corresponded to the camera negative, and hence Charles's vision, than the old release copies had."[109]

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[108] Matthew Stoddard. "The Virtual *Metropolis*: Restoration as Simulacrum." *Canadian Journal of Film Studies / Revue Canadienne D'Études Cinématographiques* 22, no. 2 (Fall 2013): 9-12.
[109] Lipman. "The Gray Zone." 14-15.

More complex than considerations of generational difference and intended aesthetic

properties are those cases for which multiple "original" elements exist. It was not uncommon in

early film production for studios to require more than one negative for a given title for use in

various international markets. In some instances, this was achieved by employing parallel

cameras in production, allowing for simultaneous exposure of multiple negatives which, in

theory, exhibit only minor differences in shot composition. As Barriatúa explains:

> Since the very beginning, the film market obliged major film-makers to produce double negatives
>
> (the so-called 'reserve negatives'), which did not actually serve as reserve, but for the distribution
>
> in other countries. At that time, film duplicates were very rare or of very poor quality, so that
>
> instead of duplicating films in laboratory it was far more practical to do the shootings by using two
>
> or three movie-cameras at the same time.[110]

Practices of the sort render far more complicated and precarious the decision of which source

materials to use and, as will be illustrated below, which version of the film to restore. Examining

a rather extreme case proves enlightening. Examining the 1996 restoration of *Faust* (1926, dir.

F.W. Murnau) by the Filmoteca Española, Barriatúa notes the discovery of seven different

negatives, a number of which featured significant inconsistencies in content, staging, and

framing. Research uncovered that, along with parallel shooting, a number of negatives were

assembled for various international markets from segments that had likely been scrapped from

the German premiere version by Murnau. Though no complete negative exists for Murnau's

German version, the restorers made it their objective to restore said version from fragments of all

other extant materials. Working under the assumption that Murnau's preferred takes would have

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[110] Luciano Barriatúa. "The Restoration of 'Faust'." In *Cinegrafie* No. 9, 208. Cineteca Di Bologna, 1996.

been reserved for the more important markets, the restorers chose as primary source an American

negative that had been edited by Murnau himself at MGM in 1926 and returned to Berlin upon

U.S. distribution expiration). This manifestation, they surmised, was more than likely a duplicate

of Murnau's German-version negatives. Barriatúa illustrates the complexity of the

reconstruction:

> Restoration has been made by duplicating the American negative of Berlin, by changing its editing
>
> following the same one as the Danish copy, replacing the scenes containing texts in English with
>
> those in German taken from a Danish copy and from the Wiesbaden lavender, by replacing the
>
> scenes which had been eliminated by Murnau in America as well as those deteriorated in the
>
> American negative with others in turn taken from the Danish copy or sometimes from the Turner
>
> duplicate, which was rather complete although its quality is far from excellent. The work has been
>
> completed by replacing the American intertitles with the original German ones, since they almost
>
> always occupied the same space.[111]

No matter the relatively extreme nature of such an example, it is not uncommon for film

titles to exist in multiple, undefined versions as a result of antiquated production practices of the

sort.[112] Thus, despite a general consensus with regards to selecting source elements as close as

possible to camera originals, the identification and selection process is often rife with

uncertainty.

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[111] *Ibid.,* 214.
[112] *Ibid.,* 210.

Versions and Reconstruction

Equally precarious is the determination of which version of a film to reconstruct. Whether selection of version privileges initial theatrical versions or the ultimate intent of the filmmaker, the decision of version represents the overarching objectives of the project, and informs the restoration process. The case of *Killer of Sheep* noted above reveals that the ethical philosophies of reconstruction and restoration are often in conflict with one another. As Enticknap notes: "The accepted wisdom […] is that what should be restored is the 'original' film, original being defined in terms of the material characteristics of the production when it was initially made and shown, and the artistic intent of its principle creative force."[113] For *Killer of Sheep*, the characteristics of production and Burnett's artistic intent were opposing ideas.

Discussed with greater frequency is the case of *Touch of Evil* (1958, dir. Orson Welles). During its production, a dissatisfaction with Welles's unconventional cinematic style and technique on the part of producers at Universal Pictures resulted in Welles's expulsion from the editing process. For the next 40 years, Universal's cut of the film was the only one in existence and the only version seen by audiences.[114] As with *Killer of Sheep*, achieving a restoration of *Touch of Evil* which respects both its original production and its creator's intent is an impossibility. While both objectives in isolation represent ethically-sound approaches to film restoration, cases such as these resist the possibility of achieving a single definitive reconstruction.

When Universal began its 1998 restoration of *Touch of Evil*, its restorers were put in a position of rare advantage with regards to determining Welles's intent for the film more than a decade after his passing. Prior to restoration, a 58-page memo penned by Welles to Universal

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[113] Enticknap. *Film Restoration*. 155.
[114] Walter Murch. "Restoring the Touch of Genius to a Classic." *The New York Times*, September 6, 1998.

studio head Ed Muhl in the wake of his ousting was rediscovered. The document outlines, in great detail, both Welles's discontent with the studio cut and his intent for the film had he been given the opportunity to see it through post-production. Manifesto in hand, the restorers chose to reconstruct, to the highest possible degree, *Touch of Evil* as Welles intended it. No matter the extent of Welles's notes, the ethical implications of this decision should not be overlooked. Restorer Walter Murch himself is transparent with regards to such concerns, admitting that it would be impossible to know whether the restored version is by any means representative of how Welles would have finished the film. Still, this new version is rooted in and substantiated by rare and comprehensive insight into Welles's mind. As Murch defends: "This 'Touch of Evil' is simply a better version of the same film, which is to say, more in line with the director's vision, more self-consistent, more resonant, more confidently modulated, clearer. In other words, more as it should have been in the first place."[115] Lipman, in a later analysis, bolsters this claim: "The result cannot truly be deemed Welles's work, and its creators would not presume it to be—it was hardly an objective process. However, it demonstrably contains strong traces of Welles's vision and can certainly claim at least as much validity as the original studio release of 1958."[116]

When such extensive documentation of a filmmaker's intent is nonexistent, efforts to reconstruct and restore that intent are far more ethically-dubious. So it was for Warner Bros.' 2005 restoration of *Pat Garrett & Billy the Kid* (1973, dir. Sam Peckinpah). As highlighted in the previous chapter, *Pat Garrett* was never completed according to Peckinpah's intended vision; similar to Welles, Peckinpah was ousted from post-production by the studio, which took his first

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[115] *Ibid.*
[116] Lipman. "The Gray Zone." 8.

preview cut of the film and whittled it down to a tighter version for theatrical distribution.[117]

Peckinpah's preview cut, though never completed to his full intent nor publicly released, represents the only version of the film which he personally oversaw to completion. However, the studio cut represents the only version seen by audiences throughout most of the film's life. Moreover, Peckinpah's complete, intended version of the film exists only in theory and by conjecture. Thus, deciding which version of *Pat Garrett* to reconstruct involved a good deal of uncertainty.

Despite no extant record to indicate the film's intended state, lead restorer Paul Seydor chose to make an attempt at reconstructing *Pat Garrett* as Peckinpah would have completed it. This decision was later met with criticism. In a chapter on the restoration, Prince draws attention to the dubious amount of conjecture involved in Seydor's restoration process. By Prince's assessment, Seydor's decisions in reconstructing *Pat Garrett* were influenced by his own proclivity for conventional Hollywood continuity editing, and took numerous unsubstantiated liberties with regards to the film's structure. From Prince's perspective, the preview cut of the film should represent its most reliably complete manifestation in existence according to Peckinpah's artistic vision, and any attempt to recreate Peckinpah's ultimate intent remains entirely speculative.[118] Seydor, in defense, argues that preview cuts should not be awarded such a privileged position as they represent mere works in progress, versions which filmmakers would never have intended to be seen publicly. With this in mind, Seydor's objective became one of reworking the studio cut—which was, by Seydor's assessment, "better edited, shaped, and paced" than the preview, and the only version properly completed—to finish it as Peckinpah's

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[117] Stephen Prince. "The Recutting of *Pat Garrett and Billy the Kid*: Ethical Problems in Film Restoration." In *Peckinpah Today: New Essays on the Films of Sam Peckinpah*, edited by Michael Bliss, 82-100. Southern Illinois University Press, 2012.
[118] *Ibid.*, 94.

editors would have under ideal circumstances. Acknowledging the impossibility of knowing definitively how such a version would have played, Seydor assures that his restoration is meant to supplement the studio and preview cuts, not supplant them.[119]

Both *Touch of Evil* and *Pat Garrett* were restorations undertaken in-house by major Hollywood studios. Based solely on the fact that studios, in contrast to public and nonprofit archives, are motivated by commercialism, their restorations have far more to gain from appealing to young, contemporary audiences. Though certainly not true in all instances, one can find in studio-led restorations in general a more ethically-dubious set of decisions in comparison to those undertaken by archives. Indeed, archival restorations often display a more cautious and ethically-conscious approach.

The 2002 restoration of *Sodom and Gomorrah* (1922, dir. Michael Curtiz) by Filmarchiv Austria, for instance, presented ambiguities similar to those of *Touch of Evil* and *Pat Garrett*. The film was originally conceived of, and premiered as, a two-part, two-night affair. By the end of the 1920s, the film's producers had cut it down to a stand-alone feature length and rereleased it as such. No complete negatives nor prints exist for the complete, two-part version of the film save for a copy in Moscow which had been severely compromised by Soviet censors and editors. Those elements which do exist in archives the world over are replete with inconsistencies and missing segments. Thus, restorers faced two primary avenues of action: either attempt to reconstruct the complete, two-part version from various surviving fragments; or reconstruct the shorter cut which, despite not conforming to the creator's original intent, would have been seen

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[119] Paul Seydor. "The Authentic Life and Contentious Afterlife of *Pat Garrett and Billy the Kid*: The Several Versions of Peckinpah's Last Western." In *Peckinpah Today: New Essays on the Films of Sam Peckinpah*, edited by Michael Bliss, 102-03. Southern Illinois University Press, 2012.

by audiences as early as the complete film's release year. The restorers ultimately chose to

reconstruct the latter, justifying their decision as follows:

> Any attempt to reconstruct the original two-evening version therefore had to confront the fact that
>
> the resulting restoration would be a purely synthetic creation that no historical audience would
>
> ever have seen. In contrast, the reconstruction of the later one-evening version could be grounded
>
> in historical reality and would at least have been seen by a contemporary Austrian or German
>
> audience […] Given the fact that the surviving nitrate materials were from the short version, the
>
> reconstruction team ultimately decided to re-create a historically accurate one-evening version
>
> rather than an incomplete and artificial longer version, which would have been based largely on
>
> conjecture.[120]

Archives have also had to confront uncertainty resulting not from studio manipulation but

by the will of the filmmaker alone. Over the course of thirty years, Jacques Tati (re)released his

film *Monsieur Hulot's Holiday* (1953) in three distinct versions. The first was the film's

premiere version, released following production in 1951 and 1952. In 1962, Tati recut parts of

the film and made adjustments to its soundtrack, producing a revised version of sorts. Finally, in

1977 Tati shot new footage and incorporated it into the preceding cut.[121] Initiating a restoration

project for the film would necessarily involve consideration of a number of factors. For instance,

one might contend that the 1953 premiere version represents the "original" *Monsieur Hulot* and

restore by that philosophy. Alternately, one might elect to restore the 1977 version on the

grounds that it represents the ultimate intent of the filmmaker. As a third option, one might

restore all three versions and allow consumers to choose whichever suits them.

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[120] Nikolaus Wostry. "*Sodom and Gomorrah*: Notes on a Reconstruction, or Less Is More." *Moving Image* 3, no. 2 (2003): 35.
[121] Stephanie Argy. "Celebrating *Mr. Hulot's Holiday* Anew." *American Cinematographer*, September 2009, 82.

When the film was restored in 2009, its restorers chose to reconstruct the third and final version of the film since all of its alterations were made by the filmmaker himself.[122] While some may advocate the importance of the film's former two versions as equally deserving of restoration, it is not outside the realm of archival ethics to favor a version of a film which is definitive by the creator's final intent, whether it differs from its premiere version or not.

Incomplete Elements (Mitigating Lacunae)

Whether undertaken by studios or archives, the ability to reconstruct a chosen version of a film hinges on the completeness of its extant physical elements. Whether a single frame or an entire reel, films throughout history have lost parts of themselves to natural decay, improper care, and outright neglect. Lacunae of the sort often prohibits complete reconstruction. Busche draws attention to the challenge of addressing such issues in film restoration, contending that a heavy reliance on explanatory titles or still frames in instances of narrative gaps can easily compromise the film's proper montage.[123] Thus, a core concern of film restorers is how to achieve both narrative completeness and faithfulness to an uninterrupted experience of the film.

The use of photographic still frames to compensate for missing segments was practiced in the first decades of film restoration but is now rather antiquated. As noted in the previous chapter, some have lamented that employment of such stills distracts and detracts from the intended experience of the film.[124] Consider the 1989 restoration of *Intolerance* (1916, dir. D.W. Griffith) by the Museum of Modern Art (MoMA). In instances of missing segments, MoMA chose to include still frames taken from a print of the film which had been submitted for

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[122] *Ibid.*
[123] Busche. "Just Another Form of Ideology?" 22.
[124] Alan Stanbrook. "As It Was in the Beginning." *Sight and Sound*, Winter 1989, 28-32.

copyright registration upon the film's completion. (It is worth noting for ethical deliberation that MoMA made a concerted effort to only use copyright stills, which were at one point part of the film itself, rather than production stills, which were not). As Anderson reveals, however, a number of critics found the stills to distract from the "illusory reality" of the film, serving as a constant reminder of its incompleteness.[125]

Cherchi Usai echoes these concerns with regards to two restorations, both of which employed explanatory titles and/or still frames to fill lacunae: the 1993 restoration of *The River* (1929, dir. Frank Borzage) by the Cinémathèque Suisse and Cinémathèque Française, and the 1999 restoration of *Greed* (1924, dir. Erich von Stroheim) by Turner Entertainment Company. Cherchi Usai reflects:

> We now have a better understanding of its plots and themes (that's good news indeed, certainly enough to justify the efforts), but how much is this going to improve the aesthetic experience of the moving images which were left for us to see? How much are we willing to sacrifice to an unrestrained obsession for completeness?[126]

The use of still images in film reconstruction has mostly become an obsolete practice. In contrast, the use of explanatory titles has endured to a greater extent. The 2010 restoration of *Limite* (1931, dir. Mário Peixoto) by The Film Foundation and the Cineteca di Bologna includes an intertitle to address a narrative gap resulting from a long-lost segment of the film. Simply stated (the title reads: "This intertitle corresponds to a lost part of the film in which Man #1 helps Woman #2"), the title is clear and simple so as to provide information necessary to narrative

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[125] Gillian B. Anderson. "D.W. Griffith's *Intolerance*: Revisiting a Reconstructed Text." *Film History* 25, no. 3 (2013): 61.
[126] Cherchi Usai. *Silent Cinema*. 65.

continuity, and its design (intended to evoke the film's intended intertitles) foster a rather seamless viewing experience.[127]

In contrast, the restorers of *Sodom and Gomorrah* made a conscious decision to exclude any explanatory content, as had been done in previous reconstructions of the film. Wostry explains: "Given the intentions of the reconstruction team, these titles became superfluous, making a much smoother narrative/image flow possible."[128] The objective of this specific restoration was to recreate, to the highest degree possible, the originally intended experience of the film's narrative. By the restorers' interpretation, this meant constructing the most coherent and fluid narrative from the film's extant elements without introducing foreign content into the film nor interrupting narrative flow.

Illustrated through all of the above examples is that the ethical legitimacy of a restoration depends far more on clear objectives and transparency of process than on the nature of the restored film itself. These cases represent only a fraction of possible avenues for determining the technical and philosophical starting points for restoration, each of which is grounded in and validated by well-devised theoretical foundations. Having determined source elements and versions, the technical work of image and sound restoration can commence. As will be illustrated, this next phase of the restoration process bears its own unique and complex set of technical challenges and ethical quandaries.

Image and Sound Restoration

Wallmüller contends: "In this sense, restoration that aims to make a work spotless risks the loss of authenticity in favor of modern taste. However, a work […] cannot be reduced to being a

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[127] *Limite*. Directed by Mário Peixoto. USA: The Criterion Collection, 2017. DVD.
[128] Wostry. "*Sodom and Gomorrah*." 37.

historical document only. Its aesthetic value must be perceptible."[129] The aesthetic "value" of a

film, however, is often not easily determined, especially when none of the film's principle

creators exist to guide the restoration process. Moreover, as with determinations of source

elements and versions, the ethical goals of film restoration often come into conflict with one

another in practice. Wallmüller goes on to illustrate:

> Consider another case: what if flicker and image instability can be defined as defects in the
>
> original and should therefore be preserved, but are so dominant that the moving image has lost its
>
> readability? Here, ethical and aesthetic concepts contradict each other. The ethically inspired
>
> concept of restoration claims the preservation of such defects, while aesthetic considerations plead
>
> for their removal.[130]

In the age of digital film restoration, with more tools than ever before in the hands of restorers,

questions of the sort are essential. As early as 1996, Meyer had warned that digitally erasing all

signs of wear may not be desirable when striving for an authentic restoration.[131] Carroll went so

far as to assert that digital restoration represents an alteration of film history: "With restoration

technology we can digitally scrub an image to hyperreal ends, where it can seem like history

never happened."[132]

Image and sound restoration is, in many ways, the Wild West of film restoration practice.

It cannot be overstated that digital technology offers a seemingly boundless, ever-expanding set

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[129] Julia Wallmüller. "Criteria for the Use of Digital Technology in Moving Image Restoration." *Moving Image* 7, no. 1 (Spring 2007): 82.

[130] *Ibid.*

[131] Mark-Paul Meyer. "Ethics of Archive Film Restoration Using New Technology." *Image Technology* 78, no. 8 (1996): 10-12.

[132] Nathan Carroll. "Unwrapping Archives: DVD Restoration Demonstrations and the Marketing of Authenticity." *The Velvet Light Trap: A Critical Journal of Film and Television* 56 (Fall 2005): 18.

of tools for the manipulation moving images. However, examining every single digital

intervention would be both impractical and unproductive. Rather, film restoration discourse has

tended to address in broader strokes the ethical implications of restoring the visual and sonic

characteristics of motion picture film. For instance, Fossati's "film as art" and "film as state of

the art" frameworks represent expansive modes of conceptualizing the work of film preservation

with privilege awarded to creator's intent and the historical-technological characteristics of film

production at the time of the film's release, respectively.[133] These frames often intersect with and

inform one another in the restoration process. The Austrian Film Museum acknowledges the

uncertainty of image restoration, assuming an ethically-conscious philosophy in their practice.

As its Digital Film Restoration Policy states: "Our objective is to realize a new version of the

film, which will always represent a compromise between the unattainable (and always already

lost) 'original appearance' of the film and the layers which time has inscribed on the artifact—

including the newest layer, accrued during the digital restoration process."[134] Still, every

restoration requires a customized approach. The following subsections consider practical cases in

which restorers have had to mitigate uncertainties regarding defects and damage, color grading,

and sound restoration, and highlights the ethical implications of their decisions.

Defects vs. Damage

In digital image and sound restoration, it is common practice to preserve defects inherent to the

film's production, and remove damage and debris accrued over time. However, as for all

concerns herein, practice reveals exceptions. Though disproportionately dubious in many

respects, StudioCanal's 2012 reissue of *The Devil Rides Out* (1968, dir. Terence Fisher)

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[133] Fossati. *From Grain to Pixel,* 3rd ed. 170/175.
[134] Austrian Film Museum. "Digital Film Restoration Policy." 4.

illustrates the potential danger of excessive digital manipulation without substantial historical

reference.[135] Produced by Hammer Films, the film is characterized by a rather ostentatious use of

a limited budget. As a result, the film was shortchanged in post-production and a number of

intended special effects were left unfinished for most of the film's life thereafter. In 2012, the

film's restorers made the decision to essentially "finish" these effects using state-of-the-art

digital tools. Some of their alterations are relatively minor: a beam of light for dramatic effect, a

splash of water for reverse-shot continuity. Others are more daring. In one scene, the background

in a close-up of the skeleton-on-horseback Angel of Death features a brilliant display of blue

flames in place of what was, for over forty years, an un-rendered bluescreen. These decisions

were justified by the film's restorers on grounds that their version represents the film as Fisher

would have intended it had its financial circumstances not been compromised. To substantiate its

position, the 2012 StudioCanal DVD release features a short documentary highlighting various

aspects of the restoration process; one segment features an interview with the children of the

film's original effects supervisor, who contend that their father would have wanted the film

finished to the "highest degree."[136]

Though it is not uncommon for restorations to make minor enhancements for

contemporary exhibition, such major alterations as those in *The Devil Rides Out* represent a set

of decisions beyond what most archivists and restorers would consider ethically acceptable. In

this case, the objective of "finishing" the film was not adequately substantiated by evidence or

reference as to how the film's effects would have appeared had they been finished in 1968.

Moreover, the restorers imply definitiveness by asserting that their restoration represents the film

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[135] *The Devil Rides Out* and its restoration were compared and analyzed using a 2004 Anchor Bay DVD of the
original theatrical version and a 2012 StudioCanal DVD of the restored version.
[136] *The Power of Light: Restoring The Devil Rides Out*. Directed by Marcus Hearn. UK: StudioCanal, 2012. DVD.

as it was meant to exist, effectively devaluing the original version. Though it is not outside the bounds of ethical film restoration to create new versions of films catered to contemporary audience taste and expectation, such decisions need be transparent about the degree of conjecture they involve.

However extreme, the case of *The Devil Rides Out* is emblematic of the uncertainty involved in restoring a film's aesthetic characteristics without substantial historical reference. Even the more restrained and ethically-conscious restorations face such quandaries. Gartenberg, for instance, reveals the ways in which the preservation and restoration of experimental and/or medium-specific works is complicated by the difficulty of distinguishing intentional and unintentional damage: "Thus, filmmakers such as Stan Brakhage who etch scratches directly onto the film emulsion should not automatically have these particular scratches removed in the preservation process."[137] Indeed, what some may consider unappealing damage may actually represent intent on the part of the filmmaker. At the very least—especially considering medium-specific works—such defects might be considered important historical, technical, and aesthetic characteristics worthy of preservation. For its restoration of *American Dreams (Lost and Found)* (1984, dir. James Benning), the Austrian Film Museum chose not to remove certain defects, citing their importance to the independent, low-budget context of the film's production: "Defects inherent to the film's production, such as original splices and various camera defects (the first frame of each shot 'jumping,' mask irregularities, hairs in the gate, etc.) were deliberately not removed and only slightly obscured in the most severe cases."[138] Similarly, the 2011 restoration of *We Can't Go Home Again* (1973, dir. Nicholas Ray & his students) aimed to preserve the low-

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[137] Jon Gartenberg. "The Fragile Emulsion." *Moving Image* 2, no. 2 (2002): 143.
[138] Matteo Lepore. "Lost and Found. Restoring James Benning's *American Dreams (Lost and Found)*." In *Works in Progress: Digital Film Restoration Within Archives*, edited by Kerstin Parth, Oliver Hanley, and Thomas Ballhausen, 164. Vienna: SYNEMA, 2013.

budget, handcrafted look and feel of the film. Being a collaborative experiment between Ray and

his students, the circumstances of the production were not ideal:

> As a consequence, scratches, finger prints, bad splices, and other signs of defect were left on the
>
> footage used to make the negative of the Cannes version. These defects might have been
>
> unintentional at the time but have nonetheless become part of the film's history and aesthetics […]
>
> Rather than removing all those features that gave the film its 'handcrafted' look, the team agreed
>
> to tackle defects caused by wear only (such as scratches, tears, and blotches), while leaving traces
>
> of the students' production process untouched.[139]

Nonetheless, the vast majority of contemporary restorations aim to result in digital

images that are, save for inherent qualities such as grain, otherwise pristine. Though such an

objective does abide by the archival philosophy of preserving defects and removing accrued

signs of wear, its decisions invite scrutiny in practice. For its 2006 restoration of *Dr. Strangelove*

(1964, dir. Stanley Kubrick), Sony Pictures Entertainment chose to digitally remove as many

signs of damage and wear as possible in an effort to achieve clean images. Questionable in its

process, however, was a decision to carry out similar digital cleaning those segments of the film

that feature archival footage, which was inherently gritty and arguably intended to look so.

Despite insight and guidance from Kubrick's long-time assistant Leon Vitali during restoration,

Fossati contends that this represents a borderline decision, ethically speaking. In contrast,

restorers at Sony chose to preserve the appearance of prop wires visible in certain shots out of

respect for the technological context and limitations of the film's production.[140] Though a

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[139] Fossati. *From Grain to Pixel*, 3rd ed. 312.
[140] *Ibid.*, 284-85.

relatively simple example, the restoration of *Dr. Strangelove* is emblematic of the ways in which

restorations so often display an array of both ethically-sound and -questionable decisions.

The ability of a restorer to achieve clean images depends largely on the physical

condition of the source materials. In some instances, film images are degraded beyond feasible

repair. This particular brand of lacuna was far more challenging to mitigate by photochemical

restoration methods. State-of-the-art digital restoration technology has vastly improved the

ability to repair and clean moving image defects to the extent that restoration discourse has

shifted away from questions of what *can* be repaired to questions of how much *should* be

repaired. Enticknap's straightforward solution to irreparable damage illustrates an ideal: "In such

a situation, where the closest generation extant to the camera original […] has extensive and

irreparable (the image torn away) physical damage, a higher quality restoration master can be

obtained by using another element, even though this will be at least one generation removed."[141]

Yet it is often the case that no better element exists, requiring various decisions to be made

regarding reconstruction and digital intervention. In the process of its 1997 restoration of

Menschen am Sonntag [People on Sunday] (1930, dirs. Robert Siodmak, Edgar G. Ulmer, Curt

Siodmak, Fred Zinnemann), the Nederlands Filmmuseum found it impossible to remedy

deterioration for a number of segments by traditional methods and, as such, preserved their

decayed appearance in the final version: "Instead, we have transferred every single recoverable

frame of damaged film onto safe film using conventional printing methods so that in a few years

time [*sic*], with the help of digital technology, it will be possible to remove these defects."[142]

Even with vast improvements to digital restoration technology since the 1990s, certain films are

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[141] Enticknap. *Film Restoration*. 83.
[142] Martin Koerber. "On the Restoration of *Menschen am Sonntag*: Examination of a Specific Case." In *Cinegrafie* No. 11, 270. Cineteca di Bologna, 1998.

deteriorated to the point that digitally mitigating the damage would result in a superfluous

quantity of inauthentic digital images and/or significant digital artifacts. The 2010 restoration of

Limite, for example, features numerous segments in which degradation is preserved, in some

cases almost entirely obscuring image content.[143] While some may find the phenomena

distracting, such a decision represents an ethically-conscious effort on the part of the restorers to

maintain narrative completeness without generating numerous inauthentic digital images.

Color Grading

Similar concerns are present in the color grading and restoration process. Working with decayed

elements and a lack of verifiable reference, determining the intended aesthetic characteristics of a

film often involves a degree of conjecture. As in damage remediation, ideal results in color

restoration were much more difficult to achieve by photochemical means. Restorers Robert A.

Harris and James C. Katz note a number of instances in their 1996 restoration of *Vertigo* (1958,

dir. Alfred Hitchcock) for Universal in which color fading could not be adequately remedied. In

those instances, Harris and Katz chose to leave the color fading untouched, in some cases merely

preferring not to speculate how the color might have originally appeared.[144] Similar to the cases

of *Limite* and *Menschen am Sonntag* above, this represents a conscious decision on the part of

the restorers to limit intervention and conjecture. Moreover, those instances in which color was

restored are validated by Harris and Katz's creative reference points: "Failing adequate

information from the film elements, production materials and props were consulted. Two

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[143] *Limite*. The Criterion Collection. DVD.
[144] Herbert Coleman et al. "Feature Commentary." *Vertigo*, Collector's Ed. DVD. Directed by Alfred Hitchcock. USA: Universal Studios, 1999.

examples of this strategy involved utilization of paint chips from Kim Novak's green Jaguar and

wardrobe items from costume designer Edith Head's personal collection."[145]

Uncertainties also arise from the nature of low-budget and experimental works. The

source elements for *We Can't Go Home Again* featured—along with its prominent splices,

fingerprints, and scratches—a number of sequences with imbalanced color and exposure, likely a

result of the film's semi-amateur nature. Intentional or not, these characteristics represent

important visual manifestations of the film's original production and its physical state of being.

Restorers in this case elected to mitigate color fading, but to preserve color defects such as

imbalanced grading, a decision very much in line with the remove-damage, preserve-defects

philosophy of film restoration.[146]

More complex in many cases is the challenge of recreating tinting, toning, and other

applied color processes of silent films. Even when camera negatives exist, countless films from

the silent era have left behind no record of their intended color schemes. Cherchi Usai explains:

> But we don't know what kind of tinting or toning was individually applied to the original prints
>
> made from the negative. Even when some written sources (such as scripts) indicate the colours to
>
> be added, it is very difficult for us reliably to follow the instructions contained therein, as we have
>
> no exact idea what kind of blue had to be used for a scene indicated as such in the script. We are
>
> of course tempted to guess, and if the document in our hands seems accurate, archivists may do so;
>
> but they do it at the risk of superimposing their own imagination upon an entity whose actual
>
> original appearance is not known.[147]

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[145] Sean Patrick Kilcoyne. "You Shouldn't Have Been That Sentimental: Film Restoration Ethics in Hitchcock's *Vertigo*." *Journal of Information Ethics* 19, no. 1 (Spring 2010): 67.
[146] Fossati. *From Grain to Pixel*, 3rd ed. 313.
[147] Cherchi Usai. *Silent Cinema*. 56-57.

An understanding of a film's intended coloring may in fact be compromised by the existence of such references. When the Friedrich Wilhelm Murnau Foundation oversaw the 2012 restoration of *The Cabinet of Dr. Caligari* (1920, dir. Robert Wiene), its restorers used as color reference a tinted and toned print from a South American theatrical run. A later assessment of the restoration by film color expert Barbara Flueckiger shed light on the questionable nature of such a reference, citing a study which had previously revealed significant differences between South American and European distribution prints.[148] Wostry explains why this may be so: "Tinting, for example, […] was apparently handled in local foreign markets by regional or national distributors, and thus was very much more a product of tastes closer to local audiences than to those of the film's producers."[149] Claims to have restored tinting and toning as they would have appeared in the German premiere version, then, can be called to question.

A lack of definitive, verifiable reference makes decisions of the sort complex and ethically precarious. With limited reference to the tinting and toning schemes, the restorers of *Sodom and Gomorrah* elected to forgo color recreation altogether, restoring the film in its un-tinted, black-and-white version. Though indeed ethically-conscious by virtue of its limited conjecture, some found issue with the decision: "Unfortunately, this decision does have a negative impact on the film's visual look, particularly in the film's night scenes, which were of course shot in broad daylight and then tinted a deep blue or green. A purely black-and-white reproduction does nothing to hide the shadows of the midday sun, creating a visual disconnect between the narrative and the audience's perception."[150] Revealed here is that ethically-sound decision-making in the film restoration often involves compromise. In the case of *Dr. Caligari*, a

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[148] Barbara Flueckiger. "Color Analysis for the Digital Restoration of *Das Cabinet Des Dr. Caligari*." *Moving Image* 15, no. 1 (Spring 2015): 26.
[149] Wostry. "*Sodom and Gomorrah*." 21.
[150] Wostry. "*Sodom and Gomorrah*." 25.

potentially dubious reference point was used to recreate tinting and toning, its restorers

contending that the film was originally intended to be seen in color and should be restored as

such. For *Sodom*, a more cautious approach resulted in a restoration that was, by at least one

assessment, an inadequate representation of the film's intended visual appeal. Important in both

cases is that decisions were grounded in historical research, as well as a firm understanding of

the objectives of the restoration and the ethical implications they bear.

Sound Restoration

Sound restoration receives relatively little attention in film restoration discourse. Though in

many ways less involved than the process of image restoration, sound restoration bears a unique

dilemma for restorers. This is, at least in part, a result of contemporary audience taste and

expectation. There is a general acknowledgment that spectators of audiovisual content are far

more forgiving of visible defects than audible. Enticknap explains: "Market research has shown

consistently that many consumers who are not experts on audio technology regard the presence

of noise as a major defect, and are far more tolerant of a poor quality signal than they are of the

presence of noise."[151] However, excessive digital noise-reduction can very easily degrade the

intrinsic sonic characteristics of film sound. As such, restorers face decisions of whether and how

much to reduce the presence of sonic defects and damage in favor of assuring an undistracted

viewing experience for contemporary moviegoers.

The 1996 restoration of *Vertigo* proves pertinent for two reasons. For one, restorers

Harris and Katz elected to create a new version of the film's soundtrack that was separated and

optimized for the multi-track stereo systems common in commercial cinemas in the 1990s.[152]

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[151] Enticknap. *Film Restoration*. 123.
[152] Kilcoyne. "You Shouldn't Have Been That Sentimental." 66.

Sonic tailoring to contemporary screening spaces allowed Harris and Katz to make full use of the film's impressive and dynamic soundtrack. Yet *Vertigo*, constrained by the film sound technology of its era, would originally have been exhibited monaurally, and restoring the film to its premiere version would entail restoring the sound as such. Such decisions, however minor, bear the potential to obscure or permanently alter a film's technological history.

Much more contentious was a decision on the part of Harris and Katz to create new sound effects for their restoration in lieu of a viable extant Foley track. Aiming to making the film palatable for contemporary audiences, Harris and Katz referenced Hitchcock's original dubbing notes to recreate his intended effects. Though contemporary scores can be found as accompaniment to most silent film restorations, the addition of foreign diegetic sound to a restored film is at the very least a borderline decision. The validity of such decisions is further compromised by a number of instances in which Harris and Katz included sound effects not present in the original film but inserted to embellish and disguise the undesirable products of physical damage such as pops and hisses. In one scene, the sound of a foghorn was inserted as "camouflage," as Katz referred to it.[153] As Kilcoyne aptly puts it: "Such an incredibly candid rationalization makes for interesting ethical commentary…"[154] By the assessment of the majority in the field, this decision would undoubtedly exist outside the bounds of ethical acceptability. Yet Harris and Katz's openness and transparency regarding their objectives and decisions—as well as the historical references that validate them—evoke authenticity. Addressing a similarly questionable addition of new dialogue and effects for the 2002 restoration of *Zeemansvrouwen [Sailors' Wives]* (1931, dir. Henk Kleinman), Fossati makes a pertinent and reasonably assertive point:

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[153] *Ibid.*, 66-67.
[154] *Ibid.*, 67.

While some fellow archivists raised the question of whether a film archive should be the promoter

of such an experiment, most reactions were not against the creation of an alternative version of

Zeemansvrouwen […] But there should be no misunderstanding: this was a new version and not a

restoration […] In the end it was also a way to present the film to a larger audience.[155]

Mastering and Presentation

Archival philosophy stipulates that no preservation is complete without access. By this logic, no

restoration is complete without distribution and/or exhibition. Drawing from Enno Patalas's

notion that public "performance" (i.e. exhibition) is where the film truly and fully realizes itself,

Horwath concludes: "This is why the conditions and characteristics of film *presentation* deserve

as much attention as those of the film 'object' and its restoration."[156] As such, the ethical

implications of presenting restored moving images should be given the same consideration as

those of the restoration process itself. Presentation here refers to the entire spectrum of access to

moving images from cinema to cellphone, whether by 35mm print, DCP projection, DVD, or

online streaming. How a film is presented technically (format, framerate, aspect ratio, etc.) is of

equal importance to how it is presented contextually (how restoration versions and interventions

are communicated to viewers). As Fossati notes, and as most archivists and restorers would

undoubtedly agree, original screening experiences—or any past exhibition, for that matter—is

impossible to "restore," or recreate.[157] To scrutinize every granular detail of restoration

presentation as such would be unproductive. Instead, it is fruitful to examine some of the broader

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[155] Fossati. *From Grain to Pixel*, 3rd ed. 296.
[156] Alexander Horwath. "The Old Life. Reframing Film 'Restoration': Some Notes." *Journal of Film Preservation* 96 (April 2017): 30.
[157] Fossati. *From Grain to Pixel*, 3rd ed. 172.

ways in which restorers and distributors have addressed the technical and contextual

uncertainties of restoration presentation.

In its 2013 restoration of *On the Waterfront* (1954, dir. Elia Kazan), Sony and home

video distributor The Criterion Collection faced minor uncertainty regarding the film's proper

aspect ratio. As illustrated in a Criterion video essay, *On the Waterfront* was originally shot with

a 1.66:1 ratio, but was framed to accommodate both 1.85:1 widescreen theatrical exhibition and

1.33:1 television broadcast. Existing, and having been experienced by audiences, in all three

versions, there has, throughout the film's history, been dispute over the film's intended ratio.[158]

On the grounds that the 1.66:1 ratio represents the film's native theatrical framing, this represents

the restoration's default framing for both theatrical rerun and Criterion's DVD release. However,

in acknowledgment of its alternate versions, Criterion's home video releases included options to

watch the film in its 1.85:1 and 1.33:1 renditions, as well.[159] Moreover, its aforementioned video

essay promotes both film historical knowledge and transparency of the restoration process.

Taken in some, these decisions culminate in a restoration which refuses to subscribe to one

interpretation of a film's history and emphasizes the precariousness of restoring motion pictures

in the face of uncertainty.

Similar concerns arise with regards to frame rate, especially considering early cinema. By

the assessment of its 1989 restorers, *Intolerance* appeared to have been shot at varying speeds,

and evidence suggested that Griffith at times purposefully chose shooting speeds with the

knowledge that the film would be projected faster. Combined with inconsistent record of the

film's length, the restorers were presented with relatively few references in their determination of

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[158] *On the Waterfront - Aspect Ratio Visual Essay*. The Criterion Collection. February 19, 2013.
[159] *On the Waterfront.* Directed by Elia Kazan. USA: The Criterion Collection, 2013. DVD.

a frame rate for restoration and exhibition.[160] The 1996 restoration of *Faust* was met with similar

ambiguity. With evidence to suggest that the film would have been seen by audiences in a

variety of speeds between 18 and 24 frames per second, no definitive result was achievable. As

in all restorations, mitigating such uncertainties involved compromise:

> Showing a [silent] film at 24 frames a second would be a crime today, as people are not used to
>
> see accelerated motion pictures. It is not even possible to screen it at 18 frames per second because
>
> it would be excessively long and slow in comparison with accompanying music. Therefore the
>
> compromise which was achieved was showing the film by adjusting the accompaniment music at
>
> a speed of 20 frames a second.[161]

Analogous—though in many respects more complex—issues result from those films

which exist in various versions. Illustrated in the discussion of versions above is that film

restorers have long been in the practice of choosing one version of a film to restore from many,

whether based on availability of film elements, completeness, creator's intent, or any other

guiding objective. Also revealed is that decisions of the sort are often rife with uncertainty.

Discussing *La Roue* (1922, dir. Abel Gance), Cuff notes: "Virtually every analysis of *La Roue* is

based on differing versions. Time and again, different scenes are mentioned by different

commentators, overall structure and individual details are sometimes confusing or contradictory.

The current release [a Flicker Alley DVD release of the 2008 Lobster Films restoration] has been

touted as the most 'complete' reconstruction, but this claim can only confuse critical

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[160] Anderson. "D.W. Griffith's *Intolerance*." 67-68.
[161] Barriatúa. "The Restoration of 'Faust'." 216.

interpretation."[162] As such, the eternal questions remain: how to select which version of a film to restore, and how to communicate the implications of that decision to viewers?

Among the simplest solutions to this concern is to restore and present more than one version of a given film. While such a decision might be prohibitively expensive for most institutions to undertake for a single title, it is not entirely uncommon. Following its 2016 restoration of *The New World* (2005, dir. Terrence Malick), Criterion included three versions of the film on its DVD release: Malick's preferred, extended cut of the film, the first cut, and the theatrical cut. The compromise that allowed such an undertaking was that 4K digital restoration was exclusive to Malick's extended cut, while the previous two versions were given only high-definition digital transfers.[163]

In the same vein, but far more complex, is the release of the 2005 restoration of *Beyond the Rocks*. As Fossati illustrates, the Dutch version of the film (which represented the of the restoration) did not feature English intertitles nor an extant recorded soundtrack. Selecting a single version of the film to present, in this instance, would require compromise. Respecting the authenticity of the material source elements is certainly in line with archival ethical discourse, but a restoration restricted to such a philosophy would ignore the English intertitles that would have been present in the film's original U.S. release. While contemporary scoring of restored silent films has long been in practice (not to mention justified by the fact that silent films would have almost always been seen with musical accompaniment), such choices risk instilling in spectators a false sense of the film's history and/or intended nature. Facing such quandaries, EYE Filmmuseum elected to release the film in numerous versions: "As mentioned earlier, besides restoring the film to its original silent version, Eye Filmmuseum decided also to produce

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[162] Paul Cuff. "Interpretation and Restoration: Abel Gance's *La Roue* (1922)." *Film History* 23, no. 2 (2011): 226.

[163] *The New World*. Directed by Terrence Malick. USA: The Criterion Collection, 2016. DVD.

two distribution versions of *Beyond the Rocks* with a new soundtrack by Dutch composer Henny

Vrienten, one with the original Dutch title cards and one with the newly made English title cards,

based on the original continuity script."[164] Moreover, the museum's DVD release of the restored

film featured an additional version, which featured an alternate score (Vrienten's score had

originally included a number of sound effects timed to picture content, a decision that drew

criticism and prompted inclusion of a version in which the effects were minimized and well-

integrated into the sonic fabric of the film).[165]

Perhaps more important than any of these concerns, however, is that they are

communicated to audiences. Few would contend that the existence of new versions of old films

is in itself harmful. Indeed, for its 2011 DVD rerelease of *Metropolis*, Kino Classics deliberately

chose to present Giorgio Moroder's 1984 reinterpretation, and was transparent in its decision to

consider a rather contentious "restoration" as a reimagining worthy not only of preservation and

presentation, but also consideration within the scheme of *Metropolis*'s history.[166] As in all

restorations, which version of a film is presented is of far less import than how that decision is

made fully transparent to audiences. Jamieson puts it simply: "For restorations to be judged

fairly, it is important that concepts of restoration are clear to the audience, whether general

public or film scholar."[167]

Conclusion

Revealed in all cases examined throughout is that the nature of film restoration offers no

straightforward mode of judging whether its products are ethical by archival philosophy. Most

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[164] Fossati. *From Grain to Pixel*, 3rd ed. 304.
[165] *Ibid.*
[166] Enticknap. *Film Restoration*. 153.
[167] Jamieson. "Ethical Film Restoration and Concepts of 'Original'." 15.

restorations involve a medley of decisions simple and complex, any of which holds the potential

to be grounded in historical reference and transparent in process. In lieu of any adequate ability

or desire to impose a strict set of ethical principles on such a nebulous practice, a sturdy

theoretical foundation—or conceptual framework—from which to understand its ethical

implications can be shaped from continued discussion and analysis. Necessary in this objective is

that archivists, restorers, distributors, and presenters of restored archival films continue to

document and make transparent their thought and work. As the Austrian Film Museum

eloquently sums:

> What we produce is another point of view, a historical interpretation and, hopefully, a
> philologically sound edition of an art work or document. This means that restoration should
> always be conceived as a critical instrument to enlarge the debate around cinema and the archive's
> role in preserving and promoting it. Thus, the most crucial approach to digital restoration is
> twofold: experimentation (in order to understand its limits and discover the potentials for common
> practices in the future) and documentation (making the work transparent and opening it to further
> discussion). In order to share the results of our research and our experiences in an adequate
> manner with our colleagues and the public, and in order to improve our own practice and better
> understand its consequences, our work needs to be 'traceable.'[168]

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[168] Austrian Film Museum. "Digital Film Restoration Policy." 3.

CONCLUSION

At the time of this writing, it has come to be generally accepted that the work of film restoration is never finished. As new discoveries constantly alter our perceptions of film history, and as unrelenting technological progress continues to drive archivists and restorers to capture more digital information from celluloid images, films are bound to be restored and re-restored throughout time. Despite this inevitability, a number of facts emphasize the need for a more comprehensive and holistic understanding of the ethical implications of such projects. For one, restored versions of films often become the only mode of widespread access to those titles. Without proper transparency and communication of process, the subjective decisions inherent to the work run the risk of permanently altering public perceptions of film history. Moreover, restoration remains, despite continued improvement, an expensive endeavor. As such, there should be greater incentive to "get it right" the first time, allowing future sources of funding to be devoted to preserving and restoring underappreciated and underrepresented titles rather than continuing to re-restore films from the canon. To achieve this more holistic understanding of film restoration, and to bolster the conceptual framework for its ethical concerns, archivists, restorers, historians, and critics must continue to document, analyze, and critique the products of its endeavors.

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Film Restoration Within Archives, edited by Kerstin Parth, Oliver Hanley, and Thomas Ballhausen, 30-42. Vienna: SYNEMA, 2013.

Wilkening, Anke. "Metropolis 2010: A New Effort to Recapture the Lost Metropolis." In *Works in Progress: Digital Film Restoration Within Archives*, edited by Kerstin Parth, Oliver Hanley, and Thomas Ballhausen, 134-47. Vienna: SYNEMA, 2013.

Wostry, Nikolaus. "*Sodom and Gomorrah*: Notes on a Reconstruction, or Less Is More." *Moving Image* 3, no. 2 (2003): 19-39.

FILMOGRAPHY
RESTORATIONS REFERENCED
(Chronological per year of restoration)

Napoléon (1927, Abel Gance)
Restored in 1969* by Kevin Brownlow/Cinémathèque Française/British Film Institute
**Completed and premiered in 1979*

The Black Pirate (1926, Albert Parker)
Restored in 1972 by British Film Institute

Becky Sharp (1935, Rouben Mamoulian)
Restored in 1984 by UCLA Film & Television Archive

Metropolis (1927, Fritz Lang)
Restored in 1984 by Giorgio Moroder

Lost Horizon (1937, Frank Capra)
Restored in 1986 by American Film Institute

Intolerance (1916, D.W. Griffith)
Restored in 1989 by Museum of Modern Art

Gone with the Wind (1939, Victor Fleming)
Restored in 1989 by Turner Entertainment Company

Red River (1948, Howard Hawks)
Restored in 1990 by MGM/United Artists

Spartacus (1960, Stanley Kubrick)
Restored in 1990 by Universal Pictures

The Bridge on the River Kwai (1957, David Lean)
Restored in 1992 by Columbia Pictures

Snow White and the Seven Dwarfs (1937, David Hand)
Restored in 1993 by Disney

The River (1929, Frank Borzage)
Restored in 1993 by Cinémathèque Suisse/Cinémathèque Française

Faust (1926, F.W. Murnau)
Restored in 1996 by Filmoteca Española

Vertigo (1958, Alfred Hitchcock)

Restored in 1996 by Universal Pictures

Menschen am Sonntag [People on Sunday] (1930, Robert Siodmak, Edgar G. Ulmer, Curt Siodmak, Fred Zinnemann)
Restored in 1997 by Nederlands Filmmuseum

The Matinee Idol (1928, Frank Capra)
Restored in 1997 by Sony Pictures Entertainment/Academy of Motion Picture Arts and Sciences/Cinémathèque Française

Touch of Evil (1958, Orson Welles)
Restored in 1998 by Universal Pictures

Greed (1924, Erich von Stroheim)
Restored in 1999 by Turner Entertainment Company

Der var engang (1922, Carl Th. Dreyer)
Restored in 2002 by Danish Film Institute

Sodom and Gomorrah (1922, Michael Curtiz)
Restored in 2002 by Filmarchiv Austria

Mahagonny (1970/80, Harry Smith)
Restored in 2002 by Harry Smith Archives/Anthology Film Archives

Zeemansvrouwen [Sailor's Wives] (1931, Henk Kleinman)
Restored in 2002 by Eye Filmmuseum

Kif Tebbi (1928, Mario Camerini)
Restored in 2004 by Cineteca di Bologna/Eye Filmmuseum

Beyond the Rocks (1922, Sam Wood)
Restored in 2005 by Eye Filmmuseum

Pat Garrett & Billy the Kid (1973, Sam Peckinpah)
Restored in 2005 by Warner Bros.

Dr. Strangelove, or: How I Learned to Stop Worrying and Love the Bomb (1964, Stanley Kubrick)
Restored in 2006 by Sony Pictures Entertainment

Killer of Sheep (1977, Charles Burnett)
Restored in 2007 by UCLA Film & Television Archive

La Roue (1922, Abel Gance)
Restored in 2008 by Lobster Films

The Red Shoes (1948, Michael Powell & Emeric Pressburger)
 Restored in 2009 by The Film Foundation/UCLA Film & Television Archive

Monsieur Hulot's Holiday (1953, Jacques Tati)
Restored in 2009 by Thomson Foundation for Film and TV Heritage/Fondation Gan pour le Cinéma/Cinémathèque Française

Limite (1931, Mário Peixoto)
Restored in 2010 by The Film Foundation/Cineteca di Bologna

Metropolis (1927, Fritz Lang)
Restored in 2010 by Friedrich Wilhelm Murnau Foundation/Deutsche Kinemathek/Museo del Cine Pablo Ducrós Hicken

We Can't Go Home Again (1973, Nicholas Ray & Students)
Restored in 2011 by The Nicholas Ray Foundation/Academy Film Archive/Eye Filmmuseum

American Dreams (Lost and Found) (1984, James Benning)
Restored in 2011 by Austrian Film Museum

The Cabinet of Dr. Caligari (1920, Robert Wiene)
Restored in 2012 by Friedrich Wilhelm Murnau Foundation

The Daughter of Dawn (1920, Norbert A. Myles)
Restored in 2012 by Oklahoma Historical Society

The Living Corpse (1929, Feder Ocep)
Restored in 2012 by Deutsche Kinemathek/Austrian Film Museum

The Devil Rides Out (1968, Terence Fisher)
Restored in 2012 by StudioCanal

On the Waterfront (1954, Elia Kazan)
Restored in 2013 by Sony Pictures Entertainment

The New World (2005, Terrence Malick)
Restored in 2016 by The Criterion Collection

2001: A Space Odyssey (1968, Stanley Kubrick)
Restored in 2018 by Christopher Nolan/Warner Bros.