

2. 2,000 pixel resolution has become the standard for digital projection equipment in commercial cinemas.
3. E-mail from Rick Utley to Jan-Christopher Horak, October 3, 2005. See also email James J. Minno (Kodak) to Richard Utley (Protek), October 3, 2005, forwarded to J.C. Horak.
4. E-mail Allen D.I. Glass to FRAMEWORKS listserv, August 22, 2005. Other recent features shot on Super 16mm, then transferred to a digital interface: Rob Zombie's *The Devil's Rejects* (2005) and *Da Penguins* (2005).
5. Telephone interview with Walt Rose, Fotokem, October 5, 2005.
6. A film chain allowed for the transfer of films to electronic images for television broadcast by marrying a film projector to a video camera. The first film chains were probably constructed prior to 1930.
7. In 1974 the FBI raided the house of actor Roddy McDowell and confiscated his extremely large collection of bootlegged Hollywood movies. The actor cooperated with the FBI and was not charged. Soon after, the FBI, probably with the acquiescence of the Motion Picture Export Association and Jack Valenti, gave up actively investigating film collectors in order to concentrate on a much more serious threat to the industry's financial well-being, namely video piracy.
8. E-mail from Elena Rossi Snook to Jan-Christopher Horak, September 29, 2005. On the other hand, New York Public Library's administration may have little allegiance to 16mm collection in the face of declining circulation. For a good historical overview of 16mm collections in public libraries, see Elena Rossi-Snook: "Persistence of Vision: Public Library 16mm Film Collections in America," in *The Moving Image* 5, no. 2 (Spring 2005) 1-26.
9. Telephone Interview: Annette Melville, Executive Director, National Film Preservation Foundation with Jan-Christopher Horak, September 29, 2005.
10. E-mail from Ross Lippman to Jan-Christopher Horak, October 2, 2005.
11. E-mail from Kenneth Weissman to Jan-Christopher Horak, October 4, 2005.
12. Telephone interview: Mark Toscano, Academy Film Archive, with Jan-Christopher Horak, September 29, 2005.
13. E-mail from Dominic Angerame to *Frameworks* listserv, August 21, 2005.
14. Telephone interview: Dominic Angerame with Jan-Christopher Horak, October 4, 2005.
15. E-mail from Jacqueline Harlow to Heather Hendershot, November 15, 2005.

Film and Media Studies and the Law of the DVD



William Fisher and Jacqueline Harlow

The emergence of digital versatile discs (DVDs) in 1997 revolutionized the fields of film and media studies, providing teachers ready access to an enormous catalogue of major and minor movies in a format that facilitates both classroom presentations and scholarly commentary.¹ As a result, today 16mm film is disappearing from the classroom.

But while many faculty now regard DVDs as essential to their work both as teachers and as scholars, recent adjustments in copyright law, motivated by an

understandable desire to curtail film piracy, have complicated matters for them significantly. Many teachers, knowingly or not, regularly violate new legal restrictions on classroom use of DVDs. To date, the studios that own the copyrights have tolerated what are technically illegal activities. But this truce is unstable. Copyright scholars and lawmakers must work to devise some way of enabling teachers to continue to exploit this new digital technology lawfully, while simultaneously protecting the copyright owners' legitimate interests in preserving the noneducational markets for their works.

DVDs are powerful pedagogical instruments. Their most prominent use by film and media studies professors is as source material for preparing movie or television clips, which are then compiled and incorporated into classroom lectures. Professors frequently use multiple clips from each of several films or television programs in a single class period. In one introductory film course offered at a major film school, for example, as many as twenty-five individual clips were screened during a single four-hour session.² The ease of navigating DVD compilations enhances their usefulness as instructional tools. DVD compilations preserve valuable class time by permitting instantaneous movement between excerpts, in contrast to analog VHS tapes, which require manual rewind and advance, and 16mm film, a clumsy format for the presentation of short clips. Moreover, unlike videotape and 16mm film, which deteriorate with use and can be damaged by freeze-framing, DVD content maintains its quality with repeated and varied use.

In addition, professors occasionally distribute excerpts of works to students as part of the course curriculum—either by handing out physical copies, or by posting content on the Internet—often on password-protected Web sites accessible only to their own students. The most efficient way of preparing these compilations is to extract them from commercial DVDs. DVDs are faster to copy and less expensive to create than other media. They produce higher quality, more durable copies than other formats. Finally, DVD players are ubiquitous on college campuses, available on computers, in libraries, and in dormitories.

Professors who wish to distribute clips on the Internet prefer DVDs to other formats for similar reasons. Posting analog content to the Internet is costly and time-consuming, as it is necessary to digitize analog content before putting it online. Moreover, some resolution is typically lost during the process of digitization. Clips taken from DVDs, by contrast, are easily compiled and posted to the Internet with the use of software tools. Unsurprisingly, the majority of film and media studies professors who post content on the Internet derive that content from DVDs.

In addition to showing clips, professors often offer screenings of entire movies or television shows for students enrolled in large courses. Sixteen-millimeter and 35mm film remain the formats of choice for many professors who offer full-length screenings in their film classes, but institutional support for these formats has declined in recent years, and many if not most professors now use DVDs for all screenings. The affordability and durability of DVDs contributes to their increasing popularity. And as movies in film formats grow ever more scarce, DVD screenings are only likely to increase.

Film and media studies students also rely on DVDs in their own course work. Movie clips and stills taken from DVDs frequently find their way into student research assignments and presentations. Much like their professors, students turn to DVDs as source material because of the quality, versatility, and the availability of DVD content. In addition, student-run film societies often feature DVDs at their screenings. The widespread availability of works in DVD format, and the low cost of accessing such works contribute to their use by student film societies.

Unfortunately, most of the activities just described require bypassing the technological protection measures (TPMs) that today accompany virtually all commercially released DVDs. Chief among the TPMs is the Content Scrambling System (CSS). CSS limits reproduction of DVDs by encrypting DVD content and preventing playback on unlicensed DVD players. Region codes and navigation restrictions also limit access to DVDs. Region codes prevent DVDs manufactured for sale in one geographic region from playing in DVD players manufactured for another, while navigation restrictions prohibit DVD users from "fast forwarding" past certain DVD content, such as introductory sequences, trailers, and copyright notices.

TPMs of these sorts have various functions. Most importantly, they reduce the frequency of unauthorized reproduction and distribution of digital recordings and thus preserve the existing markets for the sale and rental of the DVDs themselves. The region-coding system also enables the film studios to make DVDs available at different prices and at different times in various parts of the world, thereby increasing the studios' capacity to engage in lucrative price discrimination. The restrictions on fast-forwarding increase the studios' ability to use DVDs to advertise future releases and to inform consumers concerning their obligations under the copyright laws.

Some of these functions are plainly meritorious, others less obviously so. In any event, their pursuit curtails the ability of teachers to use DVDs for educational purposes. Many faculty thus contrive ways of evading the TPMs, typically through the use of software, readily available on the Internet, that removes or disables the CSS encryption and the region and navigation restrictions from the copies they create.

Conceived to "promote the Progress of Science and useful Arts,"³ copyright law attempts to balance the legitimate interests of authors (broadly defined) in controlling and profiting from their creations against the equally legitimate interests of consumers in gaining access to those creations and in incorporating them into new works. Until quite recently, statutory exemptions authorizing specified educational uses of copyrighted materials helped to maintain this balance. Members of the Congressional committee that oversaw the enactment of those exemptions explained their rationale: "Throughout our history, the ability of individual members of the public to access and to use copyrighted materials has been vital factor in the advancement of America's economic dynamism, social development, and educational achievement."⁴ The adoption in 1998 of the Digital Millennium Copyright Act (DMCA) altered that balance sharply. Although exemptions to copyright liability still permit numerous educational uses of copyrighted works, the DMCA renders these exemptions largely moot.

Three provisions of the Copyright Act address educational uses of copyrighted materials, exempting an assortment of activities from infringement liability: the fair use doctrine, the classroom-use exemption, and the Technology, Education

and Copyright Harmonization Act (TEACH Act).⁵ Most, if not all, of the uses of DVDs by film and media studies professors described in the first section of this essay would be lawful under one or another of these provisions. These provisions do not tell the entire story, however. While the fair use doctrine, classroom-use exemption, and TEACH Act authorize certain uses of copyrighted material, as we will explain shortly, the DMCA limits the reach of these provisions by restricting access to digital materials.

The fair use doctrine provides more extensive exemptions from copyright infringement liability than any other provision in the Copyright Act. For many years, the federal courts have permitted defendants whose behavior appeared to violate copyright law to avoid liability if they could show that their conduct should be considered, on balance, "fair." When Congress in 1976 codified this long-standing practice, it made clear that one of its major goals was to provide "greater certainty and protection for teachers."⁶ Under the current version of the doctrine, the creation by film and media studies professors or students of compilations of discrete clips, which are then used exclusively to supplement educational activities, without any attendant financial gain, would clearly qualify as "fair uses." One court even cited "the preparation by a film studies professor of a [compilation] containing two scenes from different movies in order to illustrate a point in a lecture on cinematography" as an example of a use that likely qualifies as fair.⁷ Similarly, making copies of film and television excerpts and distributing them to students, either as physical media or electronically via the Internet, would likely qualify as lawful fair uses.

The classroom-use exemption and the TEACH Act supplement the general fair use doctrine by providing additional, concrete exemptions from legal liability for educational uses of copyrighted works. The classroom-use exemption authorizes performances and displays of copyrighted works during "face-to-face teaching activities." Classroom presentations of full-length movies, entire television programs, or clip compilations by either professors or students at nonprofit educational institutions would ordinarily qualify for this exemption. (DVD performances by student groups would *not*, however, since such performances are not classroom teaching activities.)

Notably, though, only performances of copies of copyrighted works that have been "lawfully made" fall within the classroom use exemption. Commercial DVDs meet this requirement, even those displaying warnings indicating that discs are for home use only. However, many professors present to their classes copies of excerpts they have extracted from commercial DVDs, not the commercial DVDs themselves. Nevertheless, because the making of those copies likely qualifies as a fair use, the classroom use of them would fall under the educational-use exemption.

The TEACH Act exempts film and media studies professors from copyright infringement liability for posting movie excerpts online, provided professors take measures to comply with the many technical requirements of that Act. University counsel are in the best position to advise professors regarding compliance with the TEACH Act's numerous and complex requirements. Although many college and university lawyers are wary of copyright infringement litigation and consequently discourage activities that a court could reasonably find non-infringing, these lawyers are still a valuable resource for professors interested in availing themselves of the

TEACH Act's safe harbor. Even if professors cannot comply with all of the requirements of the TEACH Act, they will still have a persuasive fair use claim, so long as they take steps to minimize the risk that the material they distribute to their students would corrode "potential markets" for the commercial DVDs.

Thus far, we have been considering the legal position of film and media studies faculty and students under the traditional Copyright statute. Unfortunately for them, in 1998 Congress added to the statute a large and intricate set of provisions known collectively as the DMCA. The new statute prohibits the circumvention of technological measures that control access to digital content, and outlaws technologies designed to enable such circumvention. While the DMCA affects all users of digital media, film and media studies professors who employ DVDs in their teaching are among those most seriously impacted by this law.

That professors are regularly violating the DMCA is clear. The central provision of the act provides that "No person shall circumvent a technological measure that effectively controls access to a work protected."⁸ The CSS encryption and authentication scheme used to prevent copying of DVDs definitely qualifies as an "access control" within the meaning of this ban. The data contained on CSS-protected DVDs is scrambled, and only licensed devices equipped with the keys necessary for unscrambling disc contents can access and perform the information stored on these discs. In the words of a recent federal court decision, "One cannot lawfully gain access to the keys except by entering into a license... or by purchasing a DVD player or drive containing the keys pursuant to such a license. In consequence, under the express terms of the statute, CSS 'effectively controls access' to copyrighted DVD movies."⁹ Consequently, film and media studies professors who circumvent CSS without permission from the owner of the copyrighted work accessed are subject to liability under the DMCA.

A professor who runs afoul of this rule cannot save herself by invoking any of the educational-use provisions. The DMCA made it illegal to circumvent technological measures that effectively control access to copyrighted works. Notably, liability under the DMCA is distinct from liability for copyright infringement. Accordingly, while the fair use doctrine, the classroom use exemption, and the TEACH Act exempt professors from ordinary copyright infringement liability, these provisions do not provide any defense against liability for circumvention. The courts are clear on this point: "If Congress had meant the fair use defense to apply to [actions under the DMCA's anti-circumvention provisions], it would have said so."¹⁰ One court even addressed the limitations placed on educational uses of DVDs by the DMCA, unsympathetically suggesting that one who wishes to make fair use of DVD content could record "portions of the video images and sounds on film or tape by pointing a camera, a camcorder, or a microphone at a monitor as it displays the DVD movie."¹¹ "The fact that the resulting copy will not be as perfect or as manipulable as a digital copy obtained by having direct access to the DVD movie in its digital form, provides no basis for a claim of unconstitutional limitation of fair use."¹²

Cognizant of the potential for the DMCA to inhibit fair use of copyrighted works, Congress included a "fail-safe" provision in the statute. Under this provision, the Librarian of Congress is empowered to waive the DMCA's anti-circumvention provision for three-year periods with regard to specific classes of works, for "adversely

affected" users who could not otherwise engage in non-infringing uses in light of the DMCA. However, the Librarian has previously rejected application for exemptions for circumvention of CSS in order to engage in fair uses of DVD content. Thus it is unlikely that professors will gain legal right to circumvent CSS for educational use through this provision.

In addition to forbidding individual acts of CSS circumvention, the DMCA also prohibits the manufacture and trafficking of software that primarily functions to circumvent TPMs. Indeed, the courts have already employed the DMCA to sanction parties engaged in the manufacture and trafficking of software that circumvents CSS. Continued litigation against those who supply circumvention software threatens the availability of these products, and thus the ability of film and media studies professors to make any use of DVDs, lawful or not. Even if Congress, the courts, or the Librarian of Congress were to establish an exception to the DMCA permitting circumvention of CSS for educational uses, the strictures of the trafficking provisions might eliminate the supply of circumvention software, rendering circumvention infeasible for all but the most technologically savvy faculty. Indeed, one court suggested that Congress intended "to leave technologically unsophisticated persons who wish to make fair use of encrypted copyrighted works without the technical means of doing so."¹³ While it is likely that some circumvention technologies will always be available "underground," such software may be harder to come by and more difficult to use than the products currently available on the market, further restricting DVD use by film and media studies professors.

Copyright law as currently configured renders unlawful many of the ways in which film and media studies faculty and students use DVDs. The law permits classroom exhibition of DVDs, but little else. Those who employ encryption circumvention software to copy any content from commercial DVDs—even brief excerpts—defy the law. As yet, none has been sued, most likely because litigation bent upon suppressing such educational activity would be unpopular. University administrators, for their part, seem to be turning a blind eye to the conduct of their film and media studies faculty. This uneasy equilibrium may not persist indefinitely. Intensified litigation against the companies that manufacture and distribute software programs for circumventing CSS may leave film and media studies professors without the tools necessary to gain access to DVD content. Alternatively, copyright owners could change course and begin pursuing professors who violate the DMCA, perhaps to send a message to students concerning the importance of abiding by copyright law. A reform of the copyright statute that would avoid either of these scenarios seems imperative. Amendment of the DMCA to create an exception permitting circumvention of TPMs for educational uses of copyrighted digital works would protect film and media studies scholars and help to restore the balance of interests sought by copyright law.

Notes

1. A longer version of this paper, examining the legal issues in more detail and considering various ways in which copyright law might be improved, is available at <http://cyber.law.harvard.edu/DVDStudy/>.

2. Author interview, Oct. 6, 2005.
3. U.S. Constitution, art. I, sec. 8.
4. *House of Representatives Report* No. 105-551, part. 2, page 35 (1998).
5. See *United States Code*, title 17, section 107; *United States Code*, title 17, section 110(1); TEACH Act, *United States Code*, title 17, sections 110(2) and 112(f).
6. *House of Representatives Report* No. 94-1476, pages 66-67 (1976), reprinted in 1976 *United States Code Congressional and Administrative News*, page 5680.
7. *Universal City Studios, Inc. v. Reimerdes*, 111 Federal Supplement (Second Series), page 322 (Southern District of New York, 2000), *subsequently affirmed under the name Universal City Studios, Inc. v. Corley*, 273 Federal Reporter (Third Series), pages 452-53 (Second Circuit, 2001).
8. *United States Code*, title 17, section 1201(a)(1)(A) (2000).
9. *Universal City Studios, Inc. v. Reimerdes*, 111 Federal Supplement (Second Series), pages 317-18 (Southern District of New York, 2000).
10. *Universal City Studios, Inc. v. Reimerdes*, 82 Federal Supplement (Second Series), pages 211, 219 (Southern District of New York, 2000). While the legislative history of the DMCA speaks to the importance of fair use, see *Congressional Record*, volume 144, pages H7093-94, the statute itself makes no mention of a fair use defense to actions under the DMCA, and the courts have refused to read such a defense into the text of the statute.
11. *Universal City Studios, Inc. v. Corley*, 273 Federal Reporter (Third Series), pages 452-53 (Second Circuit, 2001).
12. *Universal City Studios, Inc. v. Corley*, 273 Federal Reporter (Third Series), page 459 (Second Circuit, 2001).
13. *Universal City Studios, Inc. v. Reimerdes*, 111 Federal Supplement (Second Series), page 324 (Southern District of New York, 2000).

16mm: Reports of Its Death Are Greatly Exaggerated

Scott MacDonald



During recent decades, successive waves of new moving-image technologies have changed the film exhibition terrain, and it has seemed increasingly logical to assume that, before long, certain of the older production/exhibition film gauges will inevitably give way to newer, more convenient technologies. During the 1970s and early 1980s, it seemed to some that as video improved, it would replace 16mm (and 8mm/Super-8mm); and of course, it did, at least as a home-movie exhibition format. In more recent decades the development of DVD technology has increasingly replaced home video, and threatens to entirely replace 16mm exhibition in classrooms at every level. Almost no one maintains a capability of showing 16mm prints at home; and I have learned that when I am invited to a college or university to present films, my first questions need to be, "Can we show 16mm films?" and "Can we show them in a

room designed for film exhibition?" Most of the time, the answer is still yes (often a somewhat puzzled and/or grudging yes), but it is now normal to learn that this college or that university "hasn't shown a 16mm print in years." One does get the sense that, in the minds of many academics and those who provide their technical support, the moment of 16mm exhibition is virtually at an end, and that good sense and practicality dictate that we adjust to the changing times.

There are, of course, any number of obvious reasons why adjusting to the disappearance of 16mm seems to make perfect sense. As universities struggle through a difficult economic period, buying a DVD of a classic film seems far more cost effective than continuing to rent a 16mm print of that film, year after year. In most cases, a single rental of a 16mm print is more expensive, and sometimes considerably more expensive, than purchasing a new DVD (which may come with a variety of useful extras). Further, since most 16mm distributors have been struggling to stay afloat financially, fewer new 16mm prints are struck, and especially in the case of important classic films released originally in 35mm, a new DVD often provides a better viewing experience than is offered by a fading, scratched 16mm print. Arguing that 16mm is *film* and DVD is not seems increasingly pointless since DVD projection of classic 35mm films is often the visual equal of most 16mm projection of the same films and is usually far superior in terms of sound. Who would rent a silent, 16mm print of Vertov's *Man with a Movie Camera* [1929], when the new DVD, produced by David Shepard, with a soundtrack by the Alloy Orchestra, is easily available?—only someone unfamiliar with this and other DVD versions.

On the other hand, as many are finding out, there are problematic financial issues with DVD presentation. For one thing, while most academic institutions and many museums still have decent 16mm projection available at relatively low cost—basically the cost of maintaining projectors—good digital projection remains quite expensive. Admittedly, many of those who show moving-image media in academic contexts don't care about quality exhibition, but for those who do, 16mm remains a reasonable option in terms of quality. Further, when public exhibition is an issue, public exhibition rights, even for DVDs an institution owns, can be as expensive as renting a 16mm print.

Despite the arrival of DVD and the seeming precariousness of 16mm exhibition in most of academe, I continue to believe that 16mm will not disappear as an exhibition format anytime soon. In fact, I feel sure that before too long 16mm projection will undergo something of a revival. Sixteen millimeter cannot disappear simply because its long history as the primary film gauge for avant-garde and experimental filmmaking (I'm using these terms in the standard way, not because I particularly like the terms, but because they denote a particular dimension of film history). Avant-garde and experimental filmmakers have produced, and continue to produce, a considerable body of films made specifically for exhibition as 16mm prints. Because this history includes many major contributions to modern cinema, those who are committed to the full range of film accomplishment will continue to be forced to see that 16mm exhibition of these films remains available—if not everywhere, at least in the major film archives and museums and in those colleges and universities that take the formal study of film history seriously.