



ORGANIZATION FOR TRANSFORMATIVE WORKS
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July 10, 2009

Rob Kasunic
Principal Legal Advisor
Office of the General Counsel
United States Copyright Office

Re: Questions to DVD-Related Panelists and Documentarians

Dear Mr. Kasunic:

On behalf of the Organization for Transformative Works, we join in the response submitted by Peter Decherney on behalf of a number of the participants with regard to screen capture technology. We write separately to address some of the issues specific to amateur artists.

1. Like the other respondents, the OTW has not reverse engineered the commonly available software. However, it is not only possible but common for video artists to clip a particular chapter of a disc rather than the entirety of a disc. Video artists who prefer to work with clips of the highest possible quality want their video source files uncompressed; uncompressed video files are enormous (three minutes of video requires several gigabytes of hard drive space using generally available programs), and thus many artists will try to keep snippets as small as possible to conserve space on their hard drives, consistent with their practices of making remix video rather than using substantial portions of an original work.
2. As this common practice demonstrates, it is not necessary to make a copy of an entire motion picture as a first step in order to make use of the proposed exemptions. Simply breaking a DVD's encryption does not produce a copy on the computer; it merely enables the user to copy all *or* some portion of the files on the disc. It is a standard feature of decryption programs to allow users to select less than an entire motion picture for clipping.
3. With respect to the issue of image quality and screen capture technology, we cannot stress enough how important quality is for many amateur video artists. Currently available screen capture software is insufficient to allow artists to communicate their messages or achieve intended artistic effects.

Screen capture software, as demonstrated at the original hearings, presents two primary problems for a remix artist: reduced frame rate and increased pixellation.¹ Both problems result from the loss of visual information. Screen capture software is based on what is called lossy (as opposed to lossless) compression and decompression: the visual information that comes out of the program is inevitably not the same information that went in.²

NTSC television plays at 30 frames per second (fps) and film on DVD plays at 24 fps, but capture software typically captures at 15 frames per second: up to half the original source frames are lost. Though some programs claim to offer up to 30 fps, experiments with them indicate that frame rate is variable.³ This inaccuracy and loss of intermediate frames results in jerky playback, especially during scenes that feature motion, whether motion within the screen (a character running, a ball being thrown) or motion of the camera (a shot of landscape going by from the window of a moving vehicle). Jerky playback is distracting under the best of conditions, but it presents special problems for an artist manipulating the speed of clips: when sped up or slowed down, low-fps footage looks even worse than it does at its original speed. Because speed manipulation is one of the most commonly-used effects, this problem is hardly a minor one.

Pixellation represents another form of data loss: entirely separate from the frame rate problem, screen capture software (and other lossy data formats) reduce the total video data (and thus the size of the file to be downloaded or streamed) by converting color gradations into blocks of solid color: for example, 16 pixels of slightly different colors might become a 16-pixel block of a single color. Viewed at relatively small sizes, this problem may not be noticeable. At larger sizes, such as when viewed on a TV screen, it becomes significant. Loss of pixel data poses particular difficulties when transforming the source material: cropping the frame to re-focus a viewer's attention, zooming in on a visual element to emphasize it or to add visual interest

¹ The technologies specifically identified by the Copyright Office are not designed to capture the detail necessary to manipulate, analyze, or otherwise transform recorded video. For example, SnagIt is designed and optimized for capturing still images (a page of a website) or simple motion (the movement of a cursor to demonstrate something in an online tutorial). Snapz Pro X bills itself as suitable for “making training videos, producing product demos, creating tutorials, archiving streaming video”; it is not intended or optimized for capturing video in a format appropriate for editing. It claims to offer “precise control over video compression,” but the sample file types it lists (.bmp, .pict, .gif, .jpg, .png, .tiff, .pdf) are all for still rather than moving images.

² DVDs are not themselves lossless; they are encoded in MPEG-2, a lossy format. See <http://en.wikipedia.org/wiki/MPEG-2>. It is therefore especially important that a remix artist not lose any more of the already-compressed video through additional compression/decompression; each operation imposes quality costs. As Microsoft's site explains, “Lossy compression discards data in order to achieve a lower bit rate. ... [E]very time you save your file in a lossy file format, it discards more of the data—even if you're saving it in the same format. A good rule of thumb is to move to a lossy format only as the very final step in your project.”

<http://www.microsoft.com/windowsxp/using/moviemaker/expert/digitalvideo.mspx> (emphasis added).

³ For reports of persistent inability to reach advertised frame rates in screen capture-generated video, see, e.g., <http://machouse.mhvt.net/?p=833> (Screen Mimic 2.1), <http://machouse.mhvt.net/?p=1170> (Screenium 1.0), and <http://machouse.mhvt.net/?p=824> (SnapZ Pro X 2.1.0). It is possible that professional equipment may produce different results, but noncommercial videomakers rarely have access to such equipment.

(think of the many documentaries that zoom in on photographs to render dynamic a shot that would otherwise be static), altering the contrast or light balance of a clip, altering the color of a clip to contribute to a particular mood or to match the appearance of another clip, adding glow or other special effects.

Using pixellated source thus constrains creators' use of available tools and effects, which are often vital to the transformative message of a remix—cropping the frame to single out a particular character, drawing attention to the background, changing the tone of a clip through adjusting color, and so on. Examples of remix video that use these techniques to make their arguments include *How Much is that Geisha in the Window?*, discussed at the hearing as a critique of the Orientalism and simultaneous marginalization of Asian people in the television series *Firefly*, as well as the videos in the OTW's test suite, listed in our original comment and available at <http://transformativeworks.org/projects/vidtestsuite>.

As Tisha Turk pointed out in her oral testimony, screen capture may potentially provide a watchable first-generation copy of a clip, but transformative uses involve digital transformation as well as transformation of meaning and message, and therefore screen capture is vastly inadequate to such uses.⁴ Limiting footage extraction to screen capture technology would thus handicap artists without improving protection for rightsholders. Given the widespread availability of screen capture software, there is no plausible argument that an exemption for noncommercial fair uses of decryption software would threaten rightsholders' legitimate market.

4. Legal distinctions between screen capture technology and other methods of excerpting video only highlight the incomprehensibility of the law to most amateur artists. For amateur artists who do not have access to legal counsel, it is counterintuitive for one technology for clip extraction to be permissible but not another. Therefore, most would be unaware of any potential wrongdoing in choosing one technology over the other. This has two key consequences: First, the availability of screen capture, whatever its technical merits or demerits, will not protect fair users who find out too late—when they are attempting to assert their fair use rights in response to notice and takedown, as described in our testimony—that they have or may have chosen the wrong technology. Second, an exemption that would simply align with amateur artists' existing expectations and behaviors would not lead to any market harm for the rightsholders.

Confusion in the existing law is most harmful for those who actually want to comply with legal restrictions due to legal uncertainty. After all, if the rightsholders themselves as well as the Copyright Office are unclear as to whether screen capture

⁴ As Wikipedia's article on video compression notes, "[i]nterframe compression works well for programs that will simply be played back by the viewer, but can cause problems if the video sequence needs to be edited." http://en.wikipedia.org/wiki/Video_compression. See also http://en.wikipedia.org/wiki/Lossy_compression ("An important caveat about lossy compression is that converting (formally, transcoding) or editing lossily compressed files causes digital generation loss from the re-encoding.").

and DVD ripping are legally similar—a question that may not be answered for any particular piece of software without expensive litigation—then a layperson certainly could not be expected to grasp the difference. Currently, the majority of noncommercial artists, because they believe that they are not violating the law if they are making fair use of excerpted material, create their works first and then find out about the DMCA’s anticircumvention provisions only if they are unlucky enough to have their work noticed and taken down by rightsholders. The question then is whether they will assert their rights to fair use if challenged—and our experience shows that the DMCA serves as a powerful deterrent for them to do so. In sum, distinguishing between capture technologies only harms artists, while simplifying this issue with the proposed exemption would not harm the rightsholders.

5. It has been suggested that further limits should be placed on the proposed exemption such that eligibility for invoking them would require, for example, membership in a filmmakers’ organization or enrollment in an academic film-related program. We believe that the proposed exemption 11A itself contains appropriate limits that should not further be cabined by artificial membership tests.

Limiting eligibility discourages the production of art by amateurs; it professionalizes the art of video remix. Although there are many advantages to professional training and affiliation, the community of video remix artists is largely decentralized and proudly amateur. It is based on principles of experimenting, innovating, doing-it-yourself, and thinking outside the box rather than on professionalization.

Art has historically not been created solely by those who have had formal art training or who have been paid for their work. Even professional artists generally begin as amateurs, working in their medium in order to learn and grow; it is a rare filmmaker these days who makes his or her first film in film school. Creating a class with criteria such as schooling or specific memberships would be arbitrary and discriminatory: imagine only allowing those enrolled in art classes to own paintbrushes.

Furthermore, additional limitations based on credentialing are unnecessary, as the proposed exemption itself already contains significant limitations. The exemption applies only to artists who not only are making fair use of limited portions of the source material, but who are creating noncommercial work. Noncommercial use is a powerful limitation in and of itself, ensuring that the activities at issue are far from the piracy with which the DMCA’s anticircumvention provisions are concerned.

Respectfully submitted,



Rebecca Tushnet

Organization for Transformative Works