Issue 6, Winter 2000/2001

BUSTING THE CODE: THE ANTI-TRAFFICKING PROVISION OF THE DIGITAL MILLENIUM COPYRIGHT ACT AND FREE EXPRESSION IN DIGITAL MEDIA

by

Shaun Sparks *

A. Introduction

In August 2000, the United States District Court for the Southern District of New York ruled on a case that will influence the future of online expression.[1] There, the motion picture distributor Universal City Studios, Inc. (UCS), sought a permanent injunction against the web-site 2600.com[2] (2600) for making available, via online download, content proscribed by the Digital Millennium Copyright Act (DMCA). That content consisted of the computer program DeCSS, which is capable of decoding movies recorded in the digital versatile disc (DVD) format. 2600 encouraged website visitors to download DeCSS.

UCS obtained a permanent injunction against 2600's offering DeCSS to those persons visiting its site under the recently enacted DMCA.[3] Although the court granted the injunction based on the threat of irreparable harm DeCSS poses to copyright owners, the implication of the court's interpretation of the DMCA is not to restrict the sale or distribution of infringing copies of movies decoded from DVDs. Instead, the court's injunction, crafted under the language of the DCMA, speaks squarely to the manner in which individuals communicate information across the World Wide Web.[4]

The DMCA makes sweeping amendments to copyright law in the United States. This case note explores the DCMA's prohibition on trafficking the means to circumvent any technological measure employed to preserve copyright.[5] Note that the *UCS* court did not hold that 2600

---

* Dickinson School of Law of the Pennsylvania State University

1. *See generally* Universal City Studios, Inc. v. Reimerdes, 111 F.Supp.2d 294 (S.D.N.Y. 2000).

2. *See Reimerdes*, 111 F.Supp.2d at 308-9 (2600 is a well known "hacker" website where those interested in the inner workings of digital media may obtain information on computer hardware, software, etc.).

3. *See Reimerdes*, 111 F.Supp.2d at 346.

4. *See Reimerdes*, 111 F.Supp.2d at 332 n.214. There, the court stated that *[t]he critical point is that the combination of (a) the manner in which the ability to infringe is spread and (b) the lack of any practical means of controlling infringement at the point at which it occurs once the capability is broadly disseminated render control of infringement by controlling availability of the means of infringement far more critical in this context.*

5. *See* Circumvention of copyright protection systems, Title 17 U.S.C. § 1201(a)(2) (2000). That section pro-

participated in the violation of valid copyright agreements, but instead, held that 2600 violated the DCMA by allowing individuals to download DeCSS from that web site.[6]

The *UCS* court reasoned that although computer code may contain expressive content, it merely instructs the functioning of machines.[7] Thus, computer code such as DeCSS contains both expressive and functional components. In those instances where expressive and functional components coalesce, difficult constitutional questions arise concerning government regulation of the resulting expressive conduct. Those questions arise because of the exclusive nature of regulation schemes for expression and conduct; expression generally receives a higher degree of constitutional protection than conduct.[8] The question in hybrid expressive conduct cases: where should courts draw the line between rational basis review of conduct restrictions and substantial or compelling review of restrictions on pure expression?

The Supreme Court addressed the difficulty of drafting statutes to restrict expressive conduct in the case of *United States v. O'Brien*.[9] That case established the test through which modern courts examine restrictions on expressive conduct.[10] The *UCS* court examined the DMCA through the lens of that test. This case note will critically examine the *UCS* court's application of the *O'Brien* test to the facts and law of the *UCS* case.

Part II of this case note discusses the DMCA and explains the technical background of *UCS*. Part III examines the reasoning of the *UCS* court in awarding an injunction against the transmission of DeCSS to individuals visiting 2600.com. Part IV argues that although the DMCA is a pragmatic solution to current copyright infringement threats, its broad reach makes it an ultimately unworkable solution in the digital realm.

---

vides that "(2) No person shall manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof, that (A) is primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work protected under this title."

6. See *Reimerdes*, 111 F.Supp.2d at 346.

7. See *Reimerdes*, 111 F.Supp.2d at 326.

8. See United States v. O'Brien, 391 U.S. 367, 376-77 (1968).

9. *See O'Brien*, 391 U.S. at 384.

10. *See O'Brien*, 391 U.S. at 377. There the Court stated that *we think it clear that a government regulation is sufficiently justified if it is within the constitutional power of the Government; if it furthers an important or substantial governmental interest; if the governmental interest is unrelated to the suppression of free expression; and if the incidental restriction on alleged First Amendment freedoms is no greater than is essential to the furtherance of that interest.*

B. Background of the Act

I. The Digital Millennial Copyright Act

In October of 1998, Congress enacted the Digital Millennial Copyright Act (DMCA).[11] That Act amended the Copyright Act of 1976.[12] The revisions were sweeping; the DCMA now protects diverse intellectual creations, from boat hull design to mandating respect for the management of copyright information.[13] The DCMA is typical of legislation that awards rights to property owners while limiting the rights of users of that property. The DCMA is a congressional balancing of copyright-holder interests against the interests of a panoply of content users.[14] Copyright owners have begun to test that balance against content users with far reaching effects.[15]

Commentators note that the DCMA is one of the most important pieces of legislation considered by the 105th Congress.[16] That opinion stems from the scope of the DCMA. The DCMA extends beyond the commercial issues of intellectual property ownership. The DMCA reaches to the non-commercial conduct of individual content users.[17]

Many of the amendments attempt to address the technological developments of the intervening twenty-two years since the 1976 Copyright Act.[18] In particular, the DCMA attempts to "make digital networks safe places to disseminate and exploit copyrighted materials.[19] The DCMA attempts to create a legal platform through which content producers may create a global digital on-line marketplace for copyrighted works. Specifically, the goal of the DCMA is to "make available via the Internet the movies, music, software, and literary works that are the fruit of American creative genius."[20]

---

11. *See* David Nimmer, *A Riff on Fair Use in the Digital Millennium Copyright Act*, 148 U. PA. L. REV. 673, 675 (2000).

12. *See id*. at 674.

13. *See id*. at 675.

14. *See id*. at 681.

15. *See generally* Peter Maass, *The Supercool Top-Secret DVD-Decoder Song*, THE NEW YORKER, October 16 & 23, 2000 at 92. There, Maass relates that the Internet site MP3.com, which offers downloadable songs, removed a folk song titled *"Descramble"* because it contained several lines of DeCSS code as part of the lyrics. *See id*. Maass wrote that MP3.com removed *"Descramble"* because it feared litigation over the content of the song. *See id*.

16. *See* Nimmer, *supra* note 10 at 682.

17. *See id*.

18. *See id*. at 680.

19. *See id*. at 681.

20. *See id*.

Creating and marketing digital media content presents special problems for copyright owners. Copyright owners are not only concerned with the sale of infringing works, but also with the ease with which digital copies can be distributed over the Internet. This case note examines a narrow, but vitally important, aspect of the DCMA that copyright holders are using to control the dissemination of information on how to distribute such works. The anti-trafficking provision of the DMCA reaches the distribution of information on how to "unlock" copyright protected works. Note that under the DMCA anti-trafficking does not address the distribution of infringing works. The anti-trafficking provision of the DMCA prohibits the digital transfer of programming capable of defeating copyright access control measures placed a copyrighted work by the owner.[21]

II. The Technology at Issue

Motion picture producers distribute creative content via Digital Versatile Discs (DVD). The DVD format is rapidly replacing the VHS tape format through which motion picture studios retail movies to consumers.[22] The DVD format is popular with consumers because of the inherently superior visual and auditory qualities of the digital format.[23]

The playback data stream of a prerecorded DVD remains fixed over time, that is, the actual use of the DVD does not degrade the digital data contained on the DVD. That feature of the DVD format stands in stark contrast to the VHS tape and other non-digital formats. A videocassette recorder (VCR) mechanically passes magnetic tape over electric sensors (the "playback head.") The VCR converts the resulting analog signal into viewable programming.

The physical contact and movement of the videocassette tape across the playback head degenerates the quality of the signal contained on the tape. Copying one videocassette to another amplifies that degeneration.[24] Thus, successive generations of copies will suffer from increasingly significant degeneration. Degradation in the quality of a tape is readily apparent. Therefore, there is a physical limitation on the distribution of successive copies of illicitly copied videocassettes. The illicit copying of audio/visual content stored on DVDs, however, is not subject to degradation.

A DVD does not degrade as it is used. The data stream housed on a DVD is the same on the first playback as it is on the hundredth. Thus, each digital replica of a DVD is an exact copy of the original. There is no inherent physical distortion that simply occurs by copying the program data contained on a DVD.[25] Thus, digital content providers had to develop a solution to an apparently unlimited ability to pirate digital content. The content producers reasoned that if

---

21. Title 17 U.S.C. § 1201(a) – 1202(b) (2000).

22. *See Reimerdes*, 111 F.Supp.2d at 309.

23. *See id*. at 311.

24. *See id*. at 309.

25. *See id*.

original quality content were freely available without cost over the Internet, they would experience significant losses in revenue.

1. The Development, Function, and Effect of the Content Scrambling System

Movie production studios speculated that consumers would desire motion picture content in DVD format. Those studios were concerned, however, that the pirating of DVDs did not suffer the degradation problems associated with the illicit copying of videocassettes.[26] The studios appealed to electronic hardware manufacturers for a solution. In response, representatives of that industry focused on developing a technological solution to the studio's perceived piracy problem. In 1996, the studios and the hardware manufacturers developed and adopted the Content Scrambling System algorithm (CSS) to control the illegal distribution of copyrighted studio content.[27]

CSS is an encryption algorithm requiring the use of appropriately configured hardware to decrypt, unscramble, and play back movies contained on DVDs.[28] CSS does not allow a user to copy a DVD.[29] A DVD player can play a CSS protected DVD only after the DVD player decrypts the information on the DVD using a set of keys stored in the DVD player and on the DVD itself.[30] Therefore, only those DVDs and DVD drives containing the appropriate keys are able to play audio/video content stored on DVDs.[31]

The distribution of CSS technology is strictly controlled. The DVD Copy Control Association, an industry created entity, handles the licensing of CSS to movie studios and to hardware manufacturers.[32] That licensing is subject to strict security requirements; licensees cannot manufacture equipment capable of copying CSS protected DVDs.[33]

Once CSS technology was in place, studios introduced DVDs onto the consumer market with great success.[34] Currently, the motion picture industry releases over forty new titles per

---

26. *See Reimerdes*, 111 F.Supp.2d at 309.

27. *See id*. at 308. The court's definition of CSS is useful to understand the mechanism motion picture production studios employ to protect their copyrighted works. The court defined CCS as *an access control and copy prevention system for DVDs developed by the motion picture companies, including plaintiffs. It is an encryption-based system that requires the use of appropriately configured hardware such as a DVD player or a computer DVD drive to decrypt, unscramble and play back, but not copy, motion pictures on DVDs. The technology necessary to configure DVD players and drives to play CSS-protected DVDs has been licensed to hundreds of manufacturers in the United States and around the world.*

28. *See id*.

29. *See id*.

30. *See Reimerdes*, 111 F.Supp.2d at 310.

31. *See id*.

32. *See id*.

33. *See id*.

34. *See id* at 311.

month. Since the introduction of the DVD format in 1997, movie studios have released over 4,000 DVD format motion pictures.[35] In addition, industry experts estimate that ten percent of all United States households will possess a DVD player by the end of 2000.[36] DVDs are an increasingly important source of revenue for the motion picture industry. For example, DVD distribution represents thirty-five percent of Warner Brothers' total worldwide revenue in the home video market.[37]

2. The Development and Distribution of DeCSS

In September of 1999, fifteen year-old Norwegian Linux programmer Jon Johanson created and published DeCss, a program used to decrypt CSS.[38] Johansen "reverse engineered," or hacked, CSS specifically to allow Linux operated computers to play DVDs, which they could not do before that point.[39]

Users of the Linux operating system could not obtain CSS decryption programming to play DVDs because Linux is a free operating system.[40] That is to say, unlike the Windows operating system (owned by Microsoft Corporation), no one owns Linux. Since Linux has no owner, there is no person or entity through which to license the CSS algorithm for use within the community of Linux programmers.[41] Therefore, if a Linux user wished to view a validly purchased DVD on her Linux operated computer, she had to cause the DVD to play on her non-CSS compliant software by de-scrambling the CSS encryption algorithm. In addition to unlocking the CSS code, DeCSS permits the Linux user to copy the contents of the DVD to the hard drive of her computer like any other file.[42] Although Johansen created DeCSS to decrypt DVDs for use within a Linux operating system, the DeCSS program runs as a Windows file. Thus, computer users who operate on the Windows system may run DeCSS as well.[43]

After Mr. Johansen developed DeCSS, he placed the DeCSS code on his web page, and informed others that DeCSS was available for downloading. Within months, DeCSS became

---

35. *See Reimerdes*, 111 F.Supp.2d at 310.

36. *See id*. at 310.

37. *See id*. at 311.

38. *See The Great DeCSS Defeat*, COMPUTER WEEKLY, September 14, 2000.

39. *See Reimerdes*, 111 F.Supp.2d at 311.

40. See Nicholas Petreley, *What do the CCA and MPAA really want?; Linux is the future so start negotiating from a position of strength*, JAVAWORLD, October 3, 2000.

41. *See id*. The use of Linux as an operating platform for network servers is increasing rapidly, and some commentators believe that Linux will surpass Microsoft Windows as the dominant operating platform for those types of servers in the near future.

42. *See Reimerdes*, 111 F.Supp.2d at 311.

43. *See id*.

widely available on the Internet where hundreds of sites either offered the program for download, or linked to a website where DeCSS was available for download.[44]

3. The Motion Picture Industry Reaction to DeCSS

Upon learning of DeCSS in October of 1999, the Motion Picture Association of America (MPAA) took immediate steps to eliminate the availability of the software. The MPAA issued cease and desist letters to Internet sites offering DeCSS for download.[45] A number complied with the request, but 2600 did not. In fact, 2600 proceeded to expand its push to distribute DeCSS to all possible takers in protest of the MPAA action. In addition to offering DeCSS for download, 2600 also established hyperlinks to over five hundred other sites that offered DeCSS.[46] 2600 publicly encouraged other web sites to do the same.

In January 2000, UCS filed suit against the owners of 2600.com. UCS alleged that the DeCSS related activities of 2600 violated the anti-trafficking provisions of the DCMA. UCS sought a permanent injunction under the DCMA against 2600's trafficking of DeCSS in violation of that Act. UCS sought to prevent 2600 from offering DeCSS itself, and from linking to other sites that offered DeCSS for download.[47]

C. Restricting the Medium to Kill the Message – The Digital Millennium Copyright Act and the First Amendment

This case note will address two of 2600's First Amendment arguments against the injunction.[48] First, 2600 argued that under the First Amendment, computer code is protected speech, and the DMCA's prohibition against the trafficking of DeCSS is an impermissible intrusion on the First Amendment rights of 2600.[49] Second, 2600 argued that the DMCA was unconstitutionally overbroad.[50]

---

44. *See id*. at 312.

45. *See id*.

46. *See id*.

47. *See Reimerdes*, 111 F.Supp.2d at 312.

48. 2600 also argued that the anti-trafficking provision of the DMCA was unconstitutionally vague, and that prohibitions on hyperlinks are unconstitutionally overbroad. The court dismissed 2600's arguments that section 1201(a)(2) was vague. *See Reimerdes*, 111 F.Supp.2d at 339. The court agreed that a flat prohibition against hyper-linking would be an unconstitutional restriction. Therefore, the court limited the injunction to only those hyperlinks that serve to download DeCSS directly from the 2600 website. *See id.* Thus, 2600 may link to other sites that offer DeCSS, but only those sites that offer more content than the DeCSS program, or where DeCSS will not automatically dowload upon arrival at the site. *See id*.

49. *See id*. at 325-26.

50. *See id*.

The *UCS* court rejected both of 2600's arguments. In summary, the court arrived at the conclusion that, under the First Amendment, (1) DeCSS is not subject to constitutional protection sufficient to exempt it from regulation under the DCMA,[51] and (2) the DMCA is not overbroad, but is sufficiently narrow in relation to the harm it seeks to prevent.[52]

Although it did not specifically state that *O'Brien* controlled, the *UCS* court examined the DMCA under the lens of *O'Brien*'s four-part approach to regulations governing expressive conduct. The *O'Brien* test asks (1) is the restriction within the constitutional power of government (2) does that restriction further a important or substantial governmental interest, (3) is the governmental interest unrelated to the suppression of free expression, and (4) is the incidental restriction on alleged First Amendment freedom no greater than is essential to the furtherance of that interest.[53]

Before applying the *O'Brien* test, the UCS court had to consider whether DeCSS was speech at all. The *UCS* Court noted that courts generally examine restrictions on computer code in light of First Amendment principles because computer code, although functional, contains expressive content.[54] The court arrived at that conclusion by reasoning that even the abstract language of machine programming contains expressive content capable of conveying ideas between individuals who understand machine programming.[55]

I. Is it Within the Constitutional Power of Government to Prevent the Trafficking of DeCSS?

The right to free expression, even the expression of "pure speech" is not absolute. The determination that DeCSS contains expressive elements does not shield it from all regulation, or even require that a court employ a compelling standard of review when evaluating regulations that effect it.[56] When dealing with computer code, the weight of functional aspects of that programming are of paramount importance; where substantial functional elements are present, they

---

51. *See Reimerdes*, 111 F.Supp.2d at 331-32. *See also* Robert Post, *Encryption Source Code and the First Amendment*, 15 BERKELEY TECH. L.J. 713, 714 (2000). There, professor Post writes that the regulation of "protected" speech is unconstitutional. Speech that is "covered" by the First Amendment, however, may be regulated by reference to First Amendment doctrine and analysis. *See id*.

52. *See id*. at 339.

53. *See O'Brien*, 391 U.S. at 376-77.

54. *See Reimerdes*, 111 F.Supp.2d at 327.

55. *See id*.

56. *See* Post, *supra* note 48 at 719. There, Professor Post comments on the impact of computer code's functional aspect. Professor Post wrote: *[i]n Bernstein [an encryption export challenge], the federal government contended that source code in electronic form is a form of software "used to control directly the operation of a computer without conveying information to the user. In the government's view, by targeting this unique functional aspect of source code, rather than the content of the ideas that may be expressed therein, the export regulations manage to skirt entirely the concerns of the First Amendment.*

provide a basis for courts to justify a rational basis standard of review of that expressive conduct.[57]

By definition, a program instructs a computer running it to perform certain functions. This is especially true in the case of programs like DeCSS, which arguably "do" just as much as they "say" in the hands of the user. Thus, under *O'Brien*, expressive conduct such as the trafficking of DeCSS, is subject to government regulation.

When challenged, regulations on functional expressive conduct come to this question: what is the nature of the governmental restriction, and what level of scrutiny shall apply?[58] Here, the *UCS* court looked to the nature of both the regulation and DeCSS to establish the level of scrutiny it would apply. The *UCS* court reasoned that the anti-trafficking provision did not focus on the message of the regulated programming, but only on its function.[59] Thus, that court determined that the DMCA was a content neutral regulation.[60] Further, that court reasoned that DeCSS had distinctly functional, non-speech aspects in addition to the expression it conveyed to computer programmers.[61] Thus, the *UCS* court determined that regulation of the trafficking of DeCSS was within the sphere of expressive conduct that government may regulate. Thus, the court determined that the government may regulate that expressive conduct given a showing of a substantial government interest that does not restrict associated First Amendment freedoms more than necessary.[62]

It is important to note, however, that the court's reasoning focuses on the uninitiated end-user, and not students of computer programming or the program author. Clearly, the injunction reaches all those individuals. Functional and expressive content are not two sides of the same coin. Those interested in programming will use DeCSS as a learning tool, focusing on its content as intellectual endeavor. An appropriate metaphor would be the use of a book as a doorstop. If the government wished to outlaw the stopping of doors, the prohibition of books to reach that goal is far beyond reasonable.

---

57. *See O'Brien*, 391 U.S. at 376. There, the *O'Brien* Court stated that ". . .when 'speech' and 'nonspeech' elements are combined in the same course of conduct, a sufficiently important governmental interest in regulating the nonspeech element can justify incidental limitations on First Amendment freedoms." *Id.*

58. *See Reimerdes*, 111 F.Supp.2d at 326-27.

59. *See id*. at 329.

60. *Id.*

61. *Id.*

62. *Id.* at 328-29.

II. Does Regulation of the Trafficking of DeCSS Further a Substantial Governmental Interest?

One cannot seriously question whether there is a governmental interest in dealing with potential hazards associated with expressive conduct.[63] Therefore, 2600 did not take issue with the validity of government's interest in protecting against copyright infringement.

At issue here, however, is not copyright infringement itself. Rather, the *UCS* court focuses on the ability to transmit expressive and functional technology that, if employed in an illegal fashion, may violate copyright law. What then is the governmental interest in preventing the dissemination of a functional and expressive program designed for legal purposes, but with possible illegal applications?

Under section 1201(a)(2) persons may not provide the public with technology designed to do little more than circumvent a technological access controlling measure employed to protect a copyrighted work.[64] An "access controlling measure" is any technology designed to control access to a copyrighted work.[65] The literal effectiveness of the measure employed is not at issue.

The *UCS* court reasoned that the anti-trafficking provision of the DMCA furthers the government's interest in protecting copyright owners in the face of vastly expanded piracy risks.[66] Those risks, the court reasoned, result from the exponential, rather than linear, distribution model that operates on the Internet. That is, programs such as DeCSS may spread across the Internet like a nuclear chain-reaction, as opposed to one irreproducible copy moving from individual to individual. In fact, the court compares the dissemination of DeCSS to the outbreak of an epidemic disease.[67] The court stated that "[g]iven the virtually instantaneous and world-

---

63. *See generally* United States v. O'Brien, 391 U.S. 367 (1968)(draft card burning as political protest); Spence v. Washington, 418 U.S. 405 (1974)(flag misuse as political protest); Texas v. Johnson, 491 U.S. 397 (1989)(flag burning as political protest).

64. *See Reimerdes*, 111 F.Supp.2d at 316-17. That court's excerpt from the Act is as follows:

Section 1201(a)(2) of the Copyright Act, part of the DMCA, provides that:

"No person shall ... offer to the public, provide or otherwise traffic in any technology ... that--

"(A) is primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work protected under [the Copyright Act];

"(B) has only limited commercially significant purpose or use other than to circumvent a technological measure that effectively controls access to a work protected under [the Copyright Act]; or

"(C) is marketed by that person or another acting in concert with that person with that person's knowledge for use in circumventing a technological measure that effectively controls access to a work protected under [the Copyright Act]."

Id.

65. *See id*. at 317.

66. *See id*. at 330.

67. *See Reimerdes*, 111 F.Supp.2d at 331. The adoption of that doomsday logic renders the position of 2600 tenuous at best. Few regulations will fall, even when reviewed against a compelling standard, where the court

wide dissemination widely available via the Internet, the only rational assumption is that once a computer program capable of bypassing such an access control system is disseminated, it will be used."[68] In its discussion of the appropriate standard of review of the DMCA, The court stated that

> *[h]ere, dissemination itself carries very substantial risk of imminent harm because the mechanism is so unusual by which dissemination of means of circumventing access controls to copyrighted works threatens to produce virtually unstoppable infringement of copyright. In consequence, the causal link between the dissemination of circumvention computer programs and their improper use is more than sufficiently close to warrant selection of a level of constitutional scrutiny based on the programs' functionality.*[69]

Thus, where a new communications technology poses a threat to some access controlling measure, and that technology may achieve distribution via the Internet, the court establishes a strong presumption in favor of the holders of susceptible copyrights, and against those interested in exploring the new technology. The greater the economic harm that the technology may inflict, the greater the likelihood of suppression. The court supported that reasoning by pointing to the differences in the economic model of "traditional" copyright infringement and online infringement. The court stated that

> *[t]here was a time when copyright infringement could be dealt with quite adequately by focusing on the infringing act. If someone wished to make and sell high quality but unauthorized copies of a copyrighted book, for example, the infringer needed a printing press. The copyright holder, once aware of the appearance of infringing copies, usually was able to trace the copies up the chain of distribution, find and prosecute the infringer, and shut off the infringement at the source.*[70]

The possession of DeCSS, the court reasoned, is akin to the possession of burglary tools – the ends of both aim squarely at illegal conduct, regardless of the interests of persons wishing to possess such tools.[71]

To describe DeCSS as a tool designed solely for breaking into a locked room to steal a book is to miss the point. That characterization of DeCSS is an all too facile balancing of the interests at play in suppressing the ability to freely exchange information. Of course, the VCR may be used to evil ends, as may the cassette deck, the fax machine, or the recordable CD-ROM. The counter-argument may be that those devices have substantial uses other than copy-

---

adopts the belief that infringement is total, absolute, and unstoppable. Under those circumstances, the government's interest is irrefutable.

68. *Id.* at 331.

69. *Id.*

70. *Id.*

71. *See Reimerdes*, 111 F.Supp.2d at 329. After dismissing the Linux argument, the court easily reaches the conclusion that DeCSS has no useful or appropriate application. *See id.*

right infringement.[72] Of course, to the users of Linux, DeCSS provides a substantial non-infringing use as well. To those users, the ability to participate and enjoy emerging digital video technology has arguably no less use than the ability to photocopy a business receipt. To those individuals interested in computer encryption, DeCSS conveys specific ideas about encryption and decryption, and in fact may help advance the state of those technologies.

Of course, because the DMCA focuses on digital media, it leads to an absurd result if taken to its logical conclusion. Under the DMCA, it is illegal to traffic a digital copy of a decryption program, but perfectly legal to traffic in a hard-copy printout of that same program.[73] If a computer expert were wiling to invest over twenty hours in the download and synchronization process required to view a CSS encrypted motion picture, it is doubtful that a brief bit of typing will halt that expert's infringement.

The DMCA does help alleviate copyright infringement. It does so, however, not by granting copyright holders a means to address actual infringement, but by suppressing the flow of information on how infringement might occur. Although there is a substantial governmental interest in protecting copyrights, that interest should not serve to limit the intellectual exchange surrounding CSS and similar technologies. Copyright holders should enforce their rights against infringers, not against those wishing to make legal use of a specific technology.

III. Is the Governmental Interest in Prohibiting the Trafficking of DeCSS to Protect Copyright Unrelated to the Suppression of Free Expression?

2600 argued that the issuance of an injunction under the Anti-trafficking provision of the DMCA operated as a prior restraint in violation of the prior restraint doctrine.[74] The court stated that other courts have applied that doctrine beyond the political sphere but that "[i]n each case… the government sought to suppress speech at the very heart of First Amendment concern -- expression about public issues of the sort that is indispensable to self government."[75] The court reasoned that the expressive content of the DeCSS code did not rise to the level of information indispensable to self-government.[76] In addition, the court reasoned that the First Amendment interests served by the dissemination of DeCSS were minimal, and were severely out of balance with the risks that the transmission of DeCSS imposed.[77]

---

72. *See* Sony Corporation of America v. Universal City Studios, 464 U.S. 417 (1984). There, Universal City Studios failed to shut-down the nascent VCR industry on the basis that VCRs have substantial non-infringing uses. *See id*.

73. *See* Post, *supra* note 64 at 719.

74. *See Reimerdes*, 111 F.Supp.2d at 333.

75. *Id.* at 334-35.

76. *See id*. at 335.

77. *See id.* To reach that conclusion the court looked to the legislative history of the Act. There, it found evidence of software piracy, job losses, and cyber-squatting on trade names – all of which may occur because of Internet piracy. *See id*. at 335 n.230.

To justify that reasoning, the court relied on the assumption that if DeCSS were widely available, it would be widely used.[78] The court stated that that factor added an important nuance to the case. The increased risk of piracy, and the incalculable damages that the court reasoned would result, where enough for the court to override the First Amendment issues at stake.

The court arrived at that conclusion on scant evidence. First, UCS stipulated that they could not point to a single instance where an Internet user downloaded a DeCSS decoded movie.[79] That fact clearly points to the speculative nature of this application of the DMCA's anti-trafficking provision. Here we see First Amendment interests quashed in favor of what might occur under the most, as discussed below, attenuated of circumstances.

Second, UCS produced evidence on how the download, decode, and playback process could occur. The amount of data available on the average DVD is extremely large; films may range from approximately 4.3 to 6 gigabytes in size.[80] The Plaintiff's expert was able to download a motion picture file of that size in about six hours.[81] After the download, a file of that size is extremely cumbersome to handle on traditional storage media.[82] To make the file more amenable to storage and download, the UCS expert compressed it using compression software available on the Internet.[83] After compression, it was necessary to synchronize the sound and video files of the movie, a tedious process that took the UCS expert ten to twenty hours to accomplish.[84] Thus, the Decryption and processing of the movie file through DeCSS would take an expert computer user approximately sixteen to twenty-six hours barring additional problems. That evidence clearly does not jibe with the wholesale destruction of the DVD movie industry that UCS and the court portend. It appears that digital infringement is subject to technical barriers too, albeit of a different sort than analog infringement. Given those facts, the anti-trafficking provisions of the DMCA are far too restrictive when applied to the exchange of DeCSS technology.

---

78. *See Reimerdes*, 111 F.Supp.2d at 331.

79. *See id*. at 314. In fact, the court reasoned (sarcastically) that that fact was unpersuasive. The court stated "*At trial, defendants repeated, as if it were a mantra, the refrain that plaintiffs, as they stipulated, have no direct evidence of a specific occasion on which any person decrypted a copyrighted motion picture with DeCSS and transmitted it over the Internet. But that is unpersuasive." Id.*

80. *See Reimerdes*, 111 F.Supp.2d at 313.

81. *See id*. at 315. Most homes in the United States have a 56K modem connection, the type readily available over standard telephone lines. *See id*. at 314. 2600 testified that using such a modem to download the massive quantity of data on a DVD would require in excess of 200 hours. Defendant's reply brief 7, *available at* http://www.eff.org/pub/Intellectual_property/Video/MPAA_DVD_Cases/20000503_ny_def_linking_reply.html (November 4, 2000).

82. *See Reimerdes*, 111 F.Supp.2d at 313.

83. *See id*.

84. *See id*. Note that if a 56K modem user were to attempt that process it could take in excess of 220 hours to complete the process – the equivalent of five and one-half weeks of work to obtain a fifteen-dollar movie.

Finally, the court provides its ultimate justification for restraining the trafficking of DeCSS – the obsolescence of DVD hardware. The court compares the availability of DeCSS to the publishing of a bank-vault combination in a newspaper.[85] The court stated that even if the combination is not used, the publication has the effect of rendering the bank's security system obsolete.[86] Thus, the court reasoned, trafficking in DeCSS may cause the industry to have to develop better security measures – a costly and difficult process. In addition, the court speculates that the availability of DeCSS "may carry with it the added problem of rendering the existing installed base of compliant DVD players obsolete."[87]

Granted, the ideas concerning decryption contained in the DeCSS code are not public issues of the sort indispensable to self-government. They are, however, issues of growing public concern in an age of rapidly developing communications and data-transfer technology. The court's acknowledgement of that importance is clear.

In addition, although the injunction against trafficking in DeCSS serves the current technology scheme of the DVD industry, the greater effect of that injunction is far more serious. The DMCA's prohibition on trafficking restrains technological advancement. The injunction in this case is a more than a Luddite clog; it is a firewall to the free discussion and transfer of important ideas and technology across one of the world's most important mediums.

Given the true state of DeCSS technology, the DCMA's anti-trafficking provision is premature. The string of inferences establishing the obliteration of copyright via DeCSS and the Internet is too tenuous. Though it did not present the same factual question, the case of *United States* v. *Progressive* employed the same inferential risk analysis found in *UCS*.[88] There, *The Progressive* magazine wished to publish an article concerning the construction of nuclear weapons.[89] The United States sought to prevent the publication of that material, arguing that the possibility of great harm justified the prior restraint.[90] Under the reasoning of *Progressive*, as the risk of great harm increases, so to does the government's ability to prevent that harm. Here, as in the *Progressive* case, we see no evidence of actual harm, just attenuated speculation. In *Progressive*, at least, the subject matter was human life – not the economic well-being of a small number of corporations.

---

85. *See id*. at 315.

86. *See id*.

87. *See Reimerdes*, 111 F.Supp.2d at 315.

88. *See* United States v. The Progressive, Inc., 467 F.Supp. 990, 1000 (W.D. Wis. 1979). Unfortunately, the *Progressive* case never made it to the Supreme Court. The United States suffered no apparent ill effect because of the publication of *The Progressive's* information on how to construct a nuclear device.

89. *See id*.

90. *See id*.

For "American creative genius" to realize its potential in the digital age, technology must advance. To think that adequate copyright protection can occur by halting the advance of technology is a grave strategic error on the part of the DVD industry and the courts.[91]

IV. Are the Restrictions on the Expressive Component of DeCSS No Greater Than Necessary to Further the Governmental Interest in Protecting Copyright?

Section 1201(a)(2) of the DMCA restricts the trafficking of technology designed to circumvent access controlling measures whether infringement occurs or not.[92] In addition, the motive for the use of such technology is irrelevant save for certain statutory exceptions.[93] The UCS court stated of 2600's posting of DeCSS that

> *[w]hether defendants did so in order to infringe, or to permit or encourage others to infringe, copyrighted works in violation of other provisions of the Copyright Act simply does not matter for purposes of Section 1201(a)(2). The offering or provision of the program is the prohibited conduct -- and it is prohibited irrespective of why the program was written, except to whatever extent motive may be germane to determining whether their conduct falls within one of the statutory exceptions.*[94]

Those statutory exceptions bear brief examination.

First, persons may "reverse engineer" access controlling measures in order to achieve interoperability with another computer program, provided that use does not constitute infringement.[95] In addition, one may make that programming available to others provided the purpose of the transfer is to enable interoperability and not to infringe.[96]

Although 2600's distribution of DeCSS would appear to fall under that exception, the court deemed it did not. The court points to the fact that 2600 did not author DeCSS as a bar to

---

91. *See* R. Polk Wagner, *The Medium is the Mistake: The Law of Software for the First Amendment*, 51 STAN. L. REV. 387, 403 (January, 1999). There, the author argues that media based restrictions inherently limit new technologies. There the author wrote: *[t]he First Amendment is not about the canonization -- via constitutional status -- of what can be printed out on paper, but about preventing the government from proscribing expression -- regardless of form -- because of disapproval of the ideas expressed. Focusing on formalistic categories such as the written and spoken word is not only inconsistent with the core values of the First Amendment, but may also result in the limiting of other forms of expression, especially new media technologies.*

92. *See Reimerdes*, 111 F.Supp.2d at 323.

93. *See id*. at 319.

94. *Id.*

95. Title 17 U.S.C. § 1201(f) (2000). That section provides: *(f) Reverse engineering.(1) Notwithstanding the provisions of subsection (a)(1)(A), a person who has lawfully obtained the right to use a copy of a computer program may circumvent a technological measure that effectively controls access to a particular portion of that program for the sole purpose of identifying and analyzing those elements of the program that are necessary to achieve interoperability of an independently created computer program with other programs, and that have not previously been readily available to the person engaging in the circumvention, to the extent any such acts of identification and analysis do not constitute infringement under this title.*

96. *See Reimerdes*, 111 F.Supp.2d at 320.

the application of that exception.[97] Further, the court points to the fact that DeCSS will run on the windows platform as sufficient evidence that DeCSS was not created for the purpose of interoperability.[98] Regardless of the lawful applications of DeCSS, the *UCS* court deems that the possibility of infringement is sufficient reason to restrict the online exchange of DeCSS. In addition, the court looks to the fact that the creator of DeCSS has the moniker of "hacker" to divine the purpose of DeCSS's creation -- to decrypt CSS as an end in itself. Thus, the court deems that 2600 cannot avail itself of the reverse engineering exception, regardless of the usefulness or actual reverse engineering applications to which persons put DeCSS.

Second, persons doing good faith encryption research may exchange circumvention programming with collaborators for the purpose of conducting the research or verifying results.[99] To determine if individuals involved are engaging in good faith research courts must examine the factors discussed below.[100]

The court also focused its attention on the fact that 2600 posted DeCSS in a manner where the public could gain access, and did not direct the transfer of DeCSS to specific individuals. The restriction on public availability raises serious First Amendment concerns not addressed by the court. Here, section 1201(a)(2) limits the audience to which programmers may direct the expressive nature of the programs they create. Between programmers, that exchange

---

97. *See id*.

98. *See id*.

99. Title 17 U.S.C. § 1201(g)(4) (2000). That section provides:

(4) Use of technological means for research activities. Notwithstanding the provisions of subsection (a)(2), it is not a violation of that subsection for a person to --

(A) develop and employ technological means to circumvent a technological measure for the sole purpose of that person performing the acts of good faith encryption research described in paragraph (2); and

(B) provide the technological means to another person with whom he or she is working collaboratively for the purpose of conducting the acts of good faith encryption research described in paragraph (2) or for the purpose of having that other person verify his or her acts of good faith encryption research described in paragraph (2).

100. Title 17 U.S.C. § 1201(g)(3) (2000). Those factors are:

(3) Factors in determining exemption. -- In determining whether a person qualifies for the exemption under paragraph (2), the factors to be considered shall include

(A) whether the information derived from the encryption research was disseminated, and if so, whether it was disseminated in a manner reasonably calculated to advance the state of knowledge or development of encryption technology, versus whether it was disseminated in a manner that facilitates infringement under this title or a violation of applicable law other than this section, including a violation of privacy or breach of security;

(B) whether the person is engaged in a legitimate course of study, is employed, or is appropriately trained or experienced, in the field of encryption technology; and

(C) whether the person provides the copyright owner of the work to which the technological measure is applied with notice of the findings and documentation of the research, and the time when such notice is provided.

can be characterized as an exchange of "pure expression," since issues of functionality do not comprise the bulk of the exchange.[101] Where then is the compelling governmental interest at issue in that restriction? Section 1201(a)(2) places the burden on the speaker to prove that the speaker is acting in good faith. If the speaker does not make that showing then the full restriction applies. Under that exception[102], the court asks 2600 to justify its First Amendment rights as a condition of free expression. The implication is that persons cannot exchange decryption programs over the Internet without first justifying their ability to do so. The reason being is that if one "non-target" were to gain access, the formerly valid sender or recipient would find himself or herself in violation of the Act. As discussed above, persons could exchange the same information in a book without issue. If that restriction on the Internet medium itself is a valid "manner" restriction, the court does not address a justification for it.[103]

D. Larger Issues Effected by the DeCSS Decision

The DMCA's anti-trafficking provisions strike to heart of the Internet paradigm; on the Internet, content distribution models are both non-linear[104] and in historical terms, cost free[105]. In short, individuals may share ideas and content across the web with unparalleled ease. The benefit to established content producers is obvious. Reduced distribution costs equals greater profitability. The downside is equally obvious. Reduced, or even eliminated, distribution costs remove the traditional barriers that limit copyright infringement.[106] In the infinitely scalable online world, one can distribute ten, or a million, copies of a work for the same small fixed investment in Internet access and server resources.

The anti-trafficking provisions of the DCMA address that very benefit of the Internet medium. Under section 1201(a)(2) of the DCMA, it is illegal to transfer technology that may

---

101. Some commentators agree with the *UCS* court in that persons who supply "functional" copies of software to the public do not engage in speech either protected or covered by the First Amendment. *See* Post, *supra* note 48 at 720. *But see* Lee Tien, *Publishing Software as a Speech Act*, 15 BERKELEY TECH. L.J. 629, 662-63 (Spring, 2000). There, Tien wrote that the precise nature of programming languages argues for their constitutional protection. Tien stated that "programming languages express procedures and ideas about procedures without the ambiguity plaguing natural languages." *Id.* Tien added that "[w]hen speakers express ideas, the First Amendment principle of "speaker autonomy" protects the form or means of expression." *Id.* Tien did note that a lack of communicative intent would place a "speech act" outside First Amendment coverage.

102. Calling the exchange of pure expression an "exception" to the DMCA is, in reality, a misnomer. Persons may engage in pure speech under the First Amendment without justifying their right to do so. It is the burden of the government to justify its restrictions on that right. Surely the risks that apply to "functional only" users do not apply to researchers in the same manner.

104. See *Reimerdes*, 111 F.Supp.2d at 331.

105. *See id*.

106. *See generally id* (there are no start-up costs such as printing presses, paper, photocopiers, blank CDs, etc.).

circumvent any technological measure designed to control access to copyrighted work.[107] The *UCS* court interpreted that section of the DCMA in very broad terms.[108] That court's interpretation is so broad that it prohibits programming with substantial non-infringing uses and purely academic exchanges on encryption/decryption that do not actually infringe on protected copyrights.[109]

Examples shed light on how the DCMA's anti-trafficking provision operates. The quantum of information available via the Internet has increased at an exponential rate. It is quite conceivable that in the near future, authors will make exclusive use of that medium because of cost and distribution benefits. The DMCA puts a twist on certain treatments of public domain works, works that in the past, were freely available for public use.

Public domain works, assembled into a collection, may receive a copyright.[110] If a publisher were to fix that collection in a digital medium with access-limiting technology, the DCMA would limit access to that work.[111] Thus, through the DCMA, publishers may lock-up public domain information with perpetual copyright protection. Though the full scope of what is, or should be, in the public domain is beyond the scope of this case note, that effect of the DMCA raises several interesting issues.

What of political discussion intended for wide and unlimited distribution? Can large Internet service providers, such as America Online or Earthlink, create "collections" of political expression and require consideration for access to that material? Could those entities do so regardless of the wishes of the author? Under the DMCA, the answer appears to be yes.[112] Where there is a virtual oligopoly on Internet access points, how would individuals circumvent the control of those few access portals? Under section 1201(a)(2) of the DMCA, the mere exchange of programs that could provide access to those materials is illegal.

What of the major distribution nodes of Internet content such as Yahoo or Excite? Although those search engines currently operate on an advertising revenue model, there is no guarantee that that model will remain economically viable. Under that model, an entity seeking to attract viewers or customers will pay search engines a commission for the referral of an individual (or "hit") to the entity's Internet site. In addition, those search engines attempt to catalog

---

107. See *Reimerdes*, 111 F.Supp.2d at 316.

108. *See id*.

109. See *Reimerdes*, 111 F.Supp.2d at 319. *See also Reimerdes*, 111 F.Supp.2d at 323. There the court stated that "[b]y prohibiting the provision of circumvention technology, the DMCA fundamentally altered the landscape. A given device or piece of technology might have "a substantial noninfringing use, and hence be immune from attack under Sony 's construction of the Copyright Act--but nonetheless still be subject to suppression under Section 1201." *Id.*

110. *See* Nimmer, *supra* note 10 at 727.

111. *See id*. at 727-31. There, Professor Nimmer lists various examples of how individuals seeking to access "collection-copyright" public domain information could be blocked by the DMCA. *See id*.

112. *See generally id*. at 710 (examining the interaction between pay-per-use access and online browsing activity).

as much content as possible to make their search capabilities appealing to consumers. For the present, that model favors the balance of free access to consumers. What if those access nodes were to adopt the Westlaw or Lexis distribution model – subscription rather than free access? Under that model, distributors of Internet content would fervently collect and restrict access to information.

Subscription model content providers make that model work because of the demand within the community of users. There, if one were to search for information on say, gun control, the search engine would charge a fee, regardless of the source of the information. Under that model, the free exchange of information online would rapidly collapse. Admittedly, that theory is subject to criticism on the grounds of being speculative. Note, however, one need only look to the development of broadcast and cable television program distribution to see that very paradigm in action today. For example, look to the important and influential sources of news (important in terms of audience, at least). Despite its ubiquitous character, there is only limited free access to the Cable News Network. Though television programming started out as a free access service, its distribution, on a content volume basis, now occurs through a largely subscription-based model, and the business itself is a hybrid of the subscription/advertising models.

Second, take the example of an encryption researcher. An online scholarly document concerning copyrighted email privacy encryption would be subject to suppression if it also contained a decryption program. To escape suppression, an academic author must demonstrate the following. She must show that she (1) obtained any copyrighted material with the permission of the owner, (2) released the document only to others with whom she is working on a good faith basis, (3) made a good faith effort to obtain authorization before circumvention, and (4) that the circumvention does not constitute infringement under the DCMA.[113] Under the DCMA, a reviewing court must also examine several factors. The court must determine if (1) the scholar released the information to advance the state of knowledge or to infringe copyright, (2) the defendant is engaged in the legitimate study of decryption, and (3) did the researcher timely communicate the results of the research to the copyright owner.[114] Clearly, the DCMA limits encryption/decryption research to the most sophisticated computer scientists. That "literati-only" approach is arguably a de facto content-based limitation on the exchange of expressive information contained in encryption and decryption programming.

Aside from the intended effect of limiting copyright infringement, the DMCA may have the unintended effect of limiting the availability of the means of protected free expression. That is true because the right of free expression includes not only the right to speak, but also the right to listen. In the digital environ, the ability to download data is analogous to the right to listen. The question should be one of harmful effects, and not one of prospective restrictions aimed at preventing harm.[115] Regulations affecting the exchange of information, especially expressive

---

113. See *Reimerdes*, 111 F.Supp.2d at 320-21.

114. *See id*. at 321.

115. In fact, the ability of copyright holders to track and find persons transmitting such infringing programs may be at an end. A new system of file transfer – Freenet – may have the ability to send files from one place to

information, on the Internet should encourage the democratizing effect of that medium, not act to discourage it.

E. Conclusion

The anti-trafficking provision of the DMCA will serve its purpose to limit digital copyright infringement. In addition, it will seriously interfere with the ability of individuals to exchange and obtain information. If the Internet moves to a pay-per-use model, copyright owners may use the DMCA to impose outright suppression.

Applied to the extreme, the facts presented in *UCS* provide for a legitimate exercise of the Government's ability to regulate expressive conduct under the *O'Brien* test. The adoption of that extremist approach, however, glosses over serious issues of technological development. The development and use of effective encryption techniques arguably have more societal value than do current DVD encryption technologies. Technologically advanced encryption techniques are vitally important to DVD content producers. The DMCA stands in the way of advancing that technology. In fact, there is no guarantee that current DVD technology will not go the way of the eight-track. Digital delivery of movies via phone, cable, or satellite service is not a far-off reality.

Under those considerations, copyright holders should enforce infringement as it occurs. Congress and the courts should not apply the DMCA to chip at the edges of intellectual freedom to preserve the integrity of intellectual property.

another without any means of determining how they got there or who sent them. Thus, if a copyright were violated, the owner simply could not find out whom to sue. Chris Marloe, *Free Agent*, HOLLYWOOD REPORTER, October 3, 2000.