What the Digital Millennium Copyright Act Can Learn from Medical Marijuana:

Fixing the Antitrafficking Provisions by Basing Liability on the Likelihood of Harm

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ABSTRACT

This Paper addresses the contradiction posed by a law that expressly allows decrypting a DVD to make certain types of fair uses while also banning the software necessary for decryption. Section 1201 of the Digital Millennium Copyright Act allows users to circumvent the digital locks protecting copyrighted works in some circumstances, but prohibits manufacturing and distributing the tools required to do so in all circumstances. In effect, § 1201 grants rights while banning the means necessary to take advantage of those rights. Circumvention tools are indeed capable of causing harm—by unlocking digital works for the purpose of infringement. But circumvention tools are also necessary for valuable uses—making digitally locked works available for purposes of free speech, research, education and privacy. In essence, regulating circumvention tools is the problem of regulating a tool with both fair and foul uses. This is not a new problem. As in legal regulations of similarly dual purpose tools, from medical marijuana to locksmith tools, liability for manufacturing and distributing circumvention tools should be based on the likelihood that such activity actually leads to harm. The example of medical marijuana illustrates how legislative reform allowing limited access would be superior to the current comprehensive ban. Finally, given the improbability of immediate legislative reform, the author proposes a short term, partial solution in the form of a judicial reinterpretation of § 1201.

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INTRODUCTION

In July 2010, the Copyright Office issued several eagerly awaited exemptions to the anticircumvention provision in § 1201 of the Digital Millennium Copyright Act ("DMCA").[1] For many commentators, these new exemptions were triumphs for fair use, free speech and open competition.[2] One exemption, for example, allowed documentary filmmakers to circumvent the encryption on DVDs in order to incorporate small portions into new works for purposes of criticism and comment.[3] Thus, a documentary filmmaker making a film about stereotypes of Hispanics could include clips from movies to show representations of Hispanics in popular media without being liable under § 1201. Generally lost in the celebrations, however, was the fact that all the actions allowed through the exemptions are still effectively illegal. The paradox of § 1201 is that its antitrafficking provisions prohibit individuals from taking advantage of these exemptions and almost every other anticircumvention exception.[4]

The antitrafficking provisions in § 1201 state that no person shall "manufacture, import, offer to the public, provide, or otherwise traffic" tools for circumventing the technological protections on copyrighted works.[5] To return to our documentary filmmaker, the prohibition on "provid[ing], or otherwise traffic[king]" in circumvention tools prohibits anyone from providing her with the decryption technology to circumvent the encryption on a DVD. If our documentary filmmaker were especially technologically savvy, perhaps she could write the decryption software herself. But this too is prohibited by the antitrafficking provisions because the antitrafficking provisions prohibit "manufactur[ing]" circumvention tools.[6] Our documentary filmmaker is thus caught in a bind. She cannot legally make circumvention tools, and no one can legally give them to her. The provisions of § 1201 contradict each other; the rights that the statute grants with one hand are withdrawn by the other hand.

A great deal of ink has been spilled on the subject of the anticircumvention provisions and the effect on fair use, free speech, education, research and other concerns. Much less attention has been paid to the antitrafficking provisions. Nevertheless, the antitrafficking provisions not only set a much higher legal barrier to noninfringing use, they contradict and render meaningless the concessions given

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1. Exemption to Prohibition Against Circumvention, 37 C.F.R. § 201.40 (2011).

2. *See, e.g.*, Mike Masnick, *Surprising New DMCA Exceptions: Jailbreaking Smartphones, Noncommercial Videos Somewhat Allowed*, WIRED (July 26, 2010), http://www.techdirt.com/articles/20100726/09564610361.shtml; Declan McCullagh, *Feds Say Mobile-Phone Jailbreaking is OK*, CNET (July 26, 2010), http://news.cnet.com/8301-13578_3-20011661-38.html; Rebecca Tushnet, *It's Fun to Get Away from the DMCA* (July 26, 2010) [hereinafter Tushnet, *It's Fun to Get Away*], tushnet.blogspot.com/2010_07_01_archive.html.

3. Exemption to Prohibition Against Circumvention, 37 C.F.R. § 201.40(b)(1)(ii).

4. As discussed *infra* notes 27–32 and accompanying text, several of the exceptions to the anticircumvention provision also grant exceptions to the antitrafficking provisions. But these partial exceptions do not allow full exploitation of the exceptions to the anticircumvention provision.

5. *See* 17 U.S.C. §§ 1201(a)(2), (b)(1) (2006).

6. *See id.*

to these interests through the anticircumvention exceptions.

Commentators have tended to dismiss any conflict between the antitrafficking provisions and the rest of the statute as reconcilable and, as in any case, not a hurdle in practice.[7] This Paper counters that the complete ban on manufacturing and distributing circumvention tools renders § 1201 fundamentally flawed in several ways. First, it is nonsensical because its provisions contradict each other. Second, it fails to adequately address the problem posed by circumvention tools. The problem of circumvention tools is at heart neither a complex nor unique problem. It is the problem of controlling access to a tool that has both socially desirable and socially undesirable uses. In the case of circumvention tools, these tools can be used harmfully, to infringe the rights of copyright holders, and can be used beneficially, for noninfringing uses that enhance free speech and the public domain, among other benefits.

The central irony in § 1201 is that the statute itself recognizes that circumvention must be allowed in some circumstances to accomplish these socially desirable goals. The exceptions to the anticircumvention provision are designed to serve a variety of interests, including free speech and privacy. But even under these exceptions, the statute makes it impossible to circumvent because of the ban on tools required for circumvention.

Many other areas of law also address the problem of controlling access to items with fair and foul uses: medical marijuana, alcohol, tobacco, guns, locksmith tools, and prescription drugs, to name a few. In these areas, however, the law is carefully structured to allow access for socially beneficial uses while obstructing access for harmful uses. Instead of equating manufacturing and distribution with harm, the law recognizes that not all forms of manufacturing and distribution lead with equal likelihood to harmful uses. As a result, rather than banning manufacturing and liability entirely, liability for manufacturing and distribution is based on the likelihood that manufacturing and distribution actually lead to harm.

I argue that § 1201 should be legislatively reformed to provide limited legal access to circumvention tools for beneficial noninfringing use, while prohibiting access for infringing use. Legalization of the manufacture and distribution of circumvention tools in some form would almost certainly be an improvement over the incoherent and nonsensical approach taken by § 1201. In addition, because a complete ban on manufacturing and distribution of circumvention tools disproportionately obstructs legitimate uses, such as the use of a clip by our would-be documentary filmmaker, limited legalization of manufacturing and distribution would likely increase the net benefit by disproportionately benefiting such legitimate uses. Finally, effective regulations have been crafted to achieve acceptably controlled availability of items as diverse as guns and medical marijuana. Marijuana, in particular, is quite similar to circumvention tools in that both are easy to reproduce and hard to control. Nevertheless, an increasing number of states have legalized marijuana in some form. I illustrate how many of the

7. *See* discussion *infra* notes 76–78.

strategies used to regulate marijuana might also work to regulate circumvention tools.

If legislation amending § 1201 to allow some manufacturing and distribution of circumvention tools is not likely to be enacted soon, there is still a short term partial solution: courts should interpret § 1201 to allow limited creation and transfer of circumvention tools for noninfringing purposes.[8] Although a comprehensive legislative solution would be better, providing some legal access to circumvention tools via court interpretation would reduce the conflicts in § 1201 and serve interests otherwise suppressed by the statute, including free speech and privacy.

Part I describes the scope of the problem created by the antitrafficking provisions. Part II argues that crafting laws or regulations to legalize limited manufacturing and distribution of circumvention tools is highly likely to increase net utility and, therefore, that legislative reform should be undertaken using the path-dependent cost-benefit approach above. Given the improbability of legislative reform in the immediate future, however, in Part III, I propose a broader interpretation of the antitrafficking provisions as a partial, short term solution. Based on statutory analysis, I argue that courts should interpret the antitrafficking provisions to allow creation and transfer of circumvention tools to the extent neither creation nor transfer likely leads to infringement.

I. SCOPE OF THE PROBLEM CREATED BY THE ANTI-TRAFFICKING PROVISIONS

Not only do the antitrafficking provisions contradict much of the rest of § 1201, they frustrate the basic goals of copyright law. Section 1201 has been widely criticized for obstructing a number of important interests, including free speech and privacy. Less attention, however, has focused on how the antitrafficking provisions exacerbate § 1201's effect by blocking even the limited concessions to these interests offered by other provisions in the statute.

A. THE CONTRADICTORY STRUCTURE OF § 1201

Congress enacted the DMCA in 1998, at the dawn of the Internet era, to give copyright holders stronger protections against digital infringement.[9] Even then, it was already clear that the Internet had the potential to facilitate mass infringement of digital files. Copyright holders created technological protections such as encryption to protect copyrighted works but wanted legal recourse against

8. This Paper does not offer a comprehensive regulatory solution to the problem because determining the right regulatory solution will require findings, compromises among stakeholders and fine-tuning over time that is better conducted at the legislative or regulatory level.

9. As the House Report states, the DMCA was created to "protect the interests of copyright owners in the digital environment . . . ." H.R. REP. NO. 105-551, pt. 2, at 25 (1998).

circumvention of those protections.[10] In response, Congress passed the DMCA.[11] Section 1201 contains the central anticircumvention and antitrafficking provisions, while §§ 1203 and 1204 provide criminal penalties and a civil cause of action for violations of § 1201.[12]

Section 1201 uses a two-pronged approach to protecting digitally locked copyrighted works. It targets the act of circumvention itself by prohibiting circumvention directly, and it targets the availability of devices used to circumvent by prohibiting trafficking in those devices.[13] The anticircumvention provision states: "No person shall circumvent a technological measure that effectively controls access to a work protected under this title."[14] The statute defines "circumvent[ing] a technological measure" as decrypting an encrypted work or otherwise bypassing or impairing a technological measure without the authority of the copyright owner.[15] Analogized to the brick and mortar world, a technological measure controlling access to a copyrighted work would be the equivalent of putting a copyrighted book in a locked room for safekeeping.[16] Figuratively speaking, picking the lock to enter that room without permission would violate the anticircumvention provision.

The language of the antitrafficking provisions—"[n]o person shall manufacture, import, offer to the public, provide, or otherwise traffic . . ."—is quite broad. In fact, it is surprising that these provisions are generally referred to as the "anti*trafficking*" provisions since the language not only prohibits trafficking in the sense of transfer or distribution, but also prohibits "manufactur[ing]."[17] As a result,

10. *See* U.S. PATENT AND TRADEMARK OFFICE, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE: THE REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS 177–78 (1995), *available at* http://www.uspto.gov/web/offices/com/doc/ipnii; Pamela Samuelson, *The U.S. Digital Agenda at WIPO*, 37 VA. J. INT'L L. 369, 409–10 (1997).

11. Codified at §§ 1201–05 of Title 17 of the U.S. Code. The DMCA was ostensibly enacted in order to implement the two World Intellectual Property Organization ("WIPO") treaties adopted in Geneva on December 20, 1996, the WIPO Copyright Treaty ("WCT") and the WIPO Performances and Phonograms Treaty ("WPPT"), but legislative proposals to legally protect technological protection measures for copyrighted works had been circulating in the U.S. long before the WIPO treaties. *See* Richard Li-Dar Wang, *DMCA Anti-Circumvention Provisions in a Different Light: Perspectives from Transnational Observation of Five Jurisdictions*, 34 AIPLA Q.J. 217, 223 (2006). In fact, the provisions in the WIPO treaties relating to protection of technological protection measures had their origins in part in U.S. proposals to WIPO in 1994–1995. *See* Samuelson, *supra* note 10, at 377–80.

12. This Paper uses "§ 1201" as shorthand to describe the legal provisions regarding circumvention of measures protecting copyrighted works and trafficking in such circumvention tools.

13. 17 U.S.C. § 1201 (2006).

14. *Id.* § 1201(a)(1)(A).

15. *Id.* § 1201(a)(3)(A).

16. H.R. REP. NO. 105-551, pt. 1, at 17–18 (1998).

17. *See* 17 U.S.C. § 1201(a)(2). Commentators generally refer to the provisions as the "anti-trafficking provisions." *See, e.g.*, June M. Besek, *Anti-Circumvention Laws and Copyright: A Report from the Kernochan Center for Law, Media and the Arts*, 27 COLUM. J.L. & ARTS 385, 396 (2004); Robert C. Denicola, *Access Controls, Rights Protection, and Circumvention: Interpreting the Digital Millennium Copyright Act to Preserve Noninfringing Use*, 31 COLUM. J.L. & ARTS 209, 211 (2008); Alfred C. Yen, *What Federal Gun Control Can Teach Us About the DMCA's Anti-Trafficking Provisions*, 2003 WIS. L. REV. 649, 653 (2003).

the antitrafficking provisions might be more accurately termed the "prohibition on manufacturing and distribution."[18]

To extend the analogy of the locked room, the antitrafficking provisions prohibit manufacturing and distributing skeleton keys to the lock on that room. However, the antitrafficking provisions effectively prohibit many types of direct circumvention otherwise allowed by the statute. The antitrafficking provisions are broader than the anticircumvention provision in that, for example, the former forbid the manufacturing and distribution of tools that circumvent both access control and rights control technological measures, whereas the latter only forbids circumventing access control measures.[19]

To explain, the two antitrafficking provisions are identical word for word, except that one prohibits trafficking in tools that circumvent technological measures that "effectively control[] access"[20] to a copyrighted work ("access control"), while the other prohibits trafficking in tools that circumvent technological measures which "effectively protect[] a right of a copyright owner" in the copyrighted work ("rights control").[21] An example of a rights control technological measure would be a digital lock that prevents the copying of a sound recording saved as a digital file, such as an MP3 file. An access control technological measure, on the other hand, might prevent someone from listening to the song.[22] Simply accessing a work does not necessarily implicate a right of the copyright owner because access is not one of the copyright owner's exclusive rights in the work.[23]

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18. Because commentators' discussion of § 1201 generally refers to these provisions as the "antitrafficking provisions," this Paper uses the same term for the sake of uniformity. *See supra* note 17. But, as I will discuss in Part III, the antitrafficking provisions should not be interpreted to prohibit every form of creation and transfer of circumvention tools.

19. *See* 17 U.S.C. § 1201(a)(1)–(2), (b)(1).

20. *Id.* § 1201(a)(2).

21. *Id.* § 1201(b)(1)(A). The rights at issue in rights control technological measures are the six exclusive rights granted to owners of copyrighted works in 17 U.S.C. § 106: the right (1) to copy, (2) to prepare derivative works, (3) to distribute, (4)–(5) to perform and display publicly, and (6) to digitally perform the work. *See id.* § 106.

22. Listening to the song, however, does not necessarily infringe the copyright because it may not involve publicly performing the work or one of the other exclusive rights of the copyright owner. *See id.* I use a simplistic description of "access" for purposes of this Paper, but it is not entirely clear what "access" means. The statute does not define the term. *See id.* § 1201. The Federal Circuit has found that access must implicate one of the copyright owner's exclusive rights. *See* Chamberlain Grp., Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1202 (Fed. Cir. 2004) (concluding that § 1201 prohibits "only forms of access that bear a reasonable relationship to the protections that the Copyright Act otherwise affords copyright owners"). *But see* Jane C. Ginsburg, *Legal Protection of Technological Measures Protecting Works of Authorship: International Obligations and the U.S. Experience*, 29 COLUM. J.L. & ARTS 11, 26 (2005) ("But there is considerable evidence from the text and from the legislative history that Congress did intend to create an additional copyright regime, based on the control over access to digitally distributed works of authorship.").

23. *See* 17 U.S.C. §§ 106, 501; *see also* MDY Indus., LLC v. Blizzard Entm't, 629 F.3d 928, 944 (9th Cir. 2010), *amended by* MDY Indus., LLC v. Blizzard Entm't, Nos. 09-15932, 09-16044, 2011 WL 538748 (9th Cir. Feb. 17, 2011) ("Historically speaking, preventing 'access' to a protected work in itself has not been a right of a copyright owner arising from the Copyright Act."). *Compare id.* at 946–47

The upshot of the difference between the antitrafficking and anticircumvention provisions is that the antitrafficking provisions target a broader array of circumvention. For example, imagine a music fan circumvented the copy-control technological measure on an MP3 in order to copy a small piece of the song that was already in the public domain. Because the anticircumvention provision only prohibits circumventing access control, not rights control measures, she would not have violated the anticircumvention provision.[24] She also would not have infringed the copyright because she is copying a part of the song that is in the public domain and therefore not protected by copyright. In short, her actions would be perfectly legal. But the rights control antitrafficking provision bans the tool she used to circumvent the rights control technological measure. This is one of the ways in which the antitrafficking provisions prevent activities that are otherwise legal.

The antitrafficking provisions also stymie the exceptions to the anticircumvention provision. There are seven statutory exceptions in § 1201 to the anticircumvention provision.[25] These statutory exceptions include: (1) libraries, (2) law enforcement, (3) reverse engineering for purposes of creating interoperable products, (4) encryption research, (5) the protection of minors, (6) the prevention of the gathering of personally identifiable information and (7) security testing.[26] Of these seven exceptions, only the law enforcement and reverse engineering exceptions also include a complete exception to the antitrafficking provisions.[27]

The encryption research and security testing exceptions include partial exceptions to the antitrafficking provisions, but these partial exceptions have been heavily criticized as inadequate.[28] Those conducting encryption research and security testing may create a limited set of circumvention tools,[29] but may not, except in very limited circumstances, provide those tools to others.[30] Research, particularly scientific research, is heavily dependent on the exchange of ideas and

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(holding that § 1201 creates two distinct rights: in (a)(2), an anticircumvention right independent of traditional copyright infringement, and in (b)(1), a new weapon designed to protect the traditional copyright rights of the right holder), *with Chamberlain*, 381 F.3d at 1200–01 (holding that the Congress could not have created a new right in § 1201 solely by implication).

24. The tricky issue here is that often access control technological measures and rights control technological measures overlap. For example, the same encryption on an MP3 that prevents the MP3 from being copied may also prevent the MP3 from being accessed without authority. Thus, circumventing a rights control technological measure often means that an access control technological measure has also been circumvented, which violates § 1201's anticircumvention provision. *See generally* R. Anthony Reese, *Will Merging Access Controls and Rights Controls Undermine the Structure of Anticircumvention Law?*, 18 BERKELEY TECH. L.J. 619 (2003).

25. 17 U.S.C. § 1201(d)–(j).

26. *Id.*

27. *Id.* § 1201(e), (f).

28. *Id.* § 1201(f)(2), (f)(3), (g)(4), (j)(4); Gwen Hinze, *Brave New World, Ten Years Later: Reviewing the Impact of Policy Choices in the Implementation of the WIPO Internet Treaties' Technological Protection Measure Provisions*, 57 CASE W. RES. L. REV. 779, 799 (2007) (arguing that the provisions intended to protect fair and noninfringing uses have been meaningless in practice because the DMCA bans the circumvention tools that the users need to make noninfringing uses).

29. *See* 17 U.S.C. § 1201(g)(4), (j)(4).

30. *See, e.g.*, *id.* § 1201(g)(4)(B).

collaborative effort.[31] Thus, the ban on sharing information, such as by publishing results in scientific journals, severely hinders that work.[32]

The other statutory exceptions to the anticircumvention provision lack even partial corresponding exceptions to the antitrafficking provisions.[33] For example, the exception regarding personally identifiable information allows circumvention to prevent a device from collecting or disseminating information that might be used to identify the user.[34] However, this exception is effectively useless to the victim since the antitrafficking provisions make it illegal for the victim to make circumvention tools to combat the technology and illegal for anyone to share circumvention tools with the victim.[35]

In addition, § 1201 sets forth an exemptions process through which the Librarian of Congress, upon recommendation of the Copyright Office, may issue regulations on a triennial basis creating additional exceptions.[36] The conflict between antitrafficking provisions and exceptions to the anticircumvention provision seems especially absurd in the context of the exemption process. Section 1201 requires the Copyright Office to conduct a proceeding every three years to decide on exemptions "for users . . . who are likely to be . . . adversely affected" by the anticircumvention provisions.[37] In the four rule-making proceedings conducted

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31. *See, e.g.*, P. Arzberger et al., *Promoting Access to Public Research Data for Scientific, Economic, and Social Development*, 3 DATA SCIENCE J. 135 (2004) (discussing the need for access to research data); Joseph P. Liu, *The DMCA and the Regulation of Scientific Research*, 18 BERKELEY TECH. L.J. 501, 511 (2003) (noting that an essential part of publishing the results of encryption research consists of providing others with the tools to verify and comment upon the results).

32. Hinze, *supra* note 28, at 806; Liu, *supra* note 31, at 503 (discussing the DMCA's "non-trivial" impact on the conditions under which academics may conduct encryption research).

33. In fact, language in the exception for libraries specifically states that these exceptions do not include any exception to the antitrafficking provisions. 17 U.S.C. § 1201(d)(4) ("This subsection may not be used as a defense to a claim under subsection (a)(2) or (b) . . . ."). The language in the exceptions for protecting personally identifying information and minors implies the same. *See id.* § 1201(i)(2)(C) ("[T]he act of circumvention has the sole effect of identifying and disabling the capability described in subparagraph (A), and has no other effect on the ability of any person to gain access to any work"); *id.* § 1201(h)(1) ("In applying subsection (a) to a component or part, the court may consider the necessity for its intended and actual incorporation in a technology, product, service, or device, which does not itself violate the provisions of this title").

34. *Id.* § 1201(i).

35. *Id.* § 1201(i)(2)(C). For example, in 2005, Sony sold CDs to consumers protected with software to prevent consumers from copying the music on the CDs. Megan M. LaBelle, *The "Rootkit Debacle": The Latest Chapter in the Story of the Recording Industry and the War on Music Piracy*, 84 DENV. U. L. REV. 79, 80 (2006). This software installed a rootkit on the users' computers, which inadvertently exposed users' computer to hackers who could collect personally identifiable information from users' computers. *See id.* at 81. The specialists who discovered and researched this problem hesitated to share the fix to this problem for the tens of thousands of affected consumers because of concern for liability under the antitrafficking provisions of the Digital Millennium Copyright Act. *See* Mark Ward, *Sony's Music Arm Has Been Accused of Using the Tactics of Virus Writers to Stop Its CDs Being Illegally Copied*, BBC.COM (Nov. 3, 2005), http://news.bbc.co.uk/2/hi/technology/4400148.stm; *see also* LaBelle, *supra*, at 128–30.

36. 17 U.S.C. § 1201(a)(1)(A)–(E).

37. *Id.* § 1201(a)(1). The statute requires the Library of Congress to conduct this proceeding with recommendations from the Register of Copyrights; but in practice, the Copyright Office runs this

thus far, the Copyright Office has taken several rounds of comments, conducted hearings over several days, and published new exemptions, in addition to a detailed account of its findings.[38] Yet, again, for the same reasons, discussed, it is impossible to take advantage of these exemptions without violating the antitrafficking provisions. In the last hearings, even the panel of Copyright Office attorneys questioned the point of the process. For example, Rob Kasunich, the Principal Legal Advisor in the Office of the General Counsel of the Copyright Office, asked:

> I pose this to everyone. To what extent do you think that . . . it's relevant that there is perhaps a problem within section 1201, a practical problem that exists in that if an exemption is created, in most cases, the vast majority of individuals do not have the technological ability to circumvent in order to accomplish the non-infringing use? . . . How do we reconcile these seemingly inherently contradictory messages that Congress sent us?[39]

There was no good answer to this and other similar questions.[40]

To conclude, the antitrafficking exceptions pose, in the most part, an impassible legal hurdle to taking advantage of the exceptions to the anticircumvention provision. On its face, therefore, the statute seems nonsensical. The legislature arduously crafted detailed exceptions to the circumvention provision in § 1201. It then delegated the responsibility for creating more exceptions to the Copyright Office, which, after four hearings, has led to the creation of hundreds, perhaps thousands of pages, of commentary, transcripts, federal rulings and federal regulations. But all this effort is stymied by the antitrafficking provisions in the same statute. In short, much of § 1201 is simply irreconcilable.

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process. *See* Aaron Perzanowski, *Evolving Standards and the Future of the DMCA Anticircumvention Rulemaking*, 10 J. INTERNET L. 1, 20–21 (Apr. 2007); 17 U.S.C. § 1201(a)(1)(C); Electronic Frontier Foundation, *DMCA Triennial Rulemaking: Failing the Digital Consumer* 3 (2005), https://www.eff.org/sites/default/files/filenode/DMCA_rulemaking_broken.pdf. [hereinafter EFF on Rulemaking].

38. *See* Exemption to Prohibition Against Circumvention, 37 C.F.R. § 201.40 (2011); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 75 Fed. Reg. 43,825 (July 27, 2010) (to be codified at 37 C.F.R. pt. 201); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. 68,472 (Nov. 27, 2006) (to be codified at 37 C.F.R. pt. 201); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 68 Fed. Reg. 62,011 (Oct. 31, 2003) (to be codified at 37 C.F.R. pt. 201); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 65 Fed. Reg. 64,556 (Oct. 27, 2000) (to be codified at 37 C.F.R. pt. 201); Perzanowski, *supra* note 37, at 20–21; EFF on Rulemaking, *supra* note 37, at 5.

39. Transcript of § 1201 Rulemaking Hearing Before the Copyright Office Panel, Washington, D.C. (May 8, 2009), ll. 0197:20–0198:16 [hereinafter § 1201 Rulemaking Transcript].

40. David Carson, General Counsel of the Copyright Office, while discussing whether to give an exemption for circumventing controls on cellular telephones, asked an even more bemused question:

> To be clear about what you're saying, you're saying that when an individual essentially creates these circumvention tools solely for his own use—he never gives it to anyone else; creates might even be an overstatement—gets some help in the software; when he loads it, it does it—that's a violation of 1201(b).

§ 1201 Rulemaking Transcript, *supra* note 39, ll. 0302:10–:15.

B. SECTION 1201 IN THE CONTEXT OF COPYRIGHT LAW

The antitrafficking provisions not only contradict a considerable part of § 1201, they compound § 1201's negative impact on a number of important interests that significantly free speech and privacy. Copyright law balances protection for copyright owners in their works against the benefits to the public in access to those works. By prohibiting the public from overcoming technological protections for copyrighted works, § 1201 shifts the balance of interests at the heart of copyright law.

This balance is part of a constitutional scheme that authorizes Congress to grant limited rights to authors in their works in order "[t]o promote the [p]rogress of [s]cience and useful [a]rts."[41] Section 8, clause 8 of Article I of the Constitution sets forth what is essentially a bargain: Congress may grant rights to authors in order to give them an incentive to create more works for the benefit of society at large.[42] Without legal rights in their works, potential creators are not secure that others will not free ride off the labor the creator invested in creating that work.[43] For example, if potential authors have no prospect of a return on their investment in their work, they would have less incentive to write the novel in the first place.

Optimizing economic incentives for copyright owners to create works requires a careful balance between according rights to copyright owners and granting access to the public. On the one hand, granting too few rights to copyright owners gives potential authors inadequate incentive to create new works. On the other hand, granting too many rights to copyright owners prevents others from building on older works.[44] Because many works build on others, optimizing the output of new creative works depends heavily on maintaining a rich public domain.[45] For example, a long line of new works—from plays to movies to art to books—build on

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41. U.S. CONST. art. I, § 8, cl. 8.

42. Under this scheme, although rights are granted to the authors, these rights are intended to benefit the authors only incidentally—the ultimate intended beneficiary is the public. As the Supreme Court stated:

> The monopoly privileges that Congress may authorize are neither unlimited nor primarily designed to provide special private benefit. Rather, the limited grant is a means by which an important public purpose may be achieved. It is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired. The copyright law, like the patent statutes, makes reward to the owner a secondary consideration.

Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984).

43. For example, if freeriders could legally make and sell copies of an author's novel, they could undercut the author's price. The cost of copying is almost always much less than the cost invested by the creator in creating the work.

44. Of course, there will always be authors who create works even without the economic incentive of copyright, but on balance, economic incentives increase the production of creative works.

45. William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 332 (1989) ("[c]reating a new work typically involves borrowing or building on material from a prior body of works, as well as adding original expression to it"); *see also* Stanley M. Besen & Leo J. Raskind, *An Introduction to the Law and Economics of Intellectual Property*, 5 J. ECON. PERSP. 3, 5 (1991).

or incorporate elements of Jane Austen's classic novel *Pride and Prejudice*, a work in the public domain.[46] If Jane Austen's estate could block the creation of these works, society would be the poorer for it.[47]

Copyright law not only involves balancing the rights of copyright owners against public access to maximize the creation of new works, but also balances the rights of copyright owners against other societal interests. Of particular concern in considering the effect of § 1201 are the interests in free speech and privacy. With regard to free speech, rights for copyright owners must not unconstitutionally burden the public's First Amendment right of free speech.[48] In many cases, it is difficult to adequately discuss an issue without copying a copyrighted work. For example, an opposing candidate could not effectively criticize the ideas in President Obama's books without quoting from them. Similarly, an artist would find it hard to ironically reference another work without using part of that work.[49]

Copyright law must also be balanced against concerns with privacy. Increasingly, individuals store private information on computerized networks.[50] However, this private information is vulnerable to hackers when stored on networks with security vulnerabilities.[51] Users must be able to manipulate the software on the networks, which may involve copying and reverse engineering, to protect themselves.[52] And researchers must be able to study the effectiveness of digital locks protecting private information by hacking encryption and studying their results.[53]

Traditionally, copyright law maintained this balance through a number of limiting doctrines. Limitations on copyright duration ensure that copyrighted

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46. Movies, *see, e.g.*, PRIDE & PREJUDICE (Universal Studios 2005); PRIDE AND PREJUDICE (Warner Bros. 1980); plays, *see, e.g.*, Mary Keith, PRIDE AND PREJUDICE: A PLAY (2009); Anne Russell, THE WEDDING AT PEMBERLEY: A FOOTNOTE TO PRIDE AND PREJUDICE, A PLAY IN ONE ACT (1949); books, *see, e.g.*, JANE AUSTEN & SETH GRAHAME-SMITH, PRIDE AND PREJUDICE AND ZOMBIES: THE CLASSIC REGENCY ROMANCE - NOW WITH ULTRAVIOLENT ZOMBIE MAYHEM! (2009); LINDA BERDOLL, MR. DARCY TAKES A WIFE: PRIDE AND PREJUDICE CONTINUES (2004); ARIELLE ECKSTUT & DENNIS ASHTON, PRIDE AND PROMISCUITY: THE LOST SEX SCENES OF JANE AUSTEN (2008).

47. Even if Jane Austen's estate licensed rights to those who wanted to make derivative works, the transaction costs and royalties presumably would discourage the creation of at least some of these works.

48. *See* Eldred v. Ashcroft, 537 U.S. 186, 217–22 (2003) (rejecting the lower court's statement that copyright is "categorically immune" from First Amendment scrutiny); Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 560 (1985) (noting how copyright doctrines such as fair use keep copyright from conflicting with the First Amendment).

49. For example, the Supreme Court has found that copyright protections give way in cases of parody, as long as the use survives the balancing of the fair use factors. Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 581 (1994).

50. *See* 17 U.S.C. §1201(f)(2), (f)(3), (g)(4), (j)(4) (2006).

51. *Id.*

52. *Id.*

53. *Id.* Copyright must also be balanced against the consumer's interest in open competition in products and services. *See, e.g.*, Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 604, 608 (9th Cir. 2000); Sega Enter. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1518 (9th Cir. 1992); Atari Games Corp. v. Nintendo of Am., 975 F.2d 832, 843 (Fed. Cir. 1992).

works eventually enter the public domain.[54] Copyright does not protect ideas, facts and processes, even when they are incorporated into a work protected by copyright.[55] Most important of all, many uses that would otherwise infringe upon the exclusive rights of copyright holders are permitted as fair use, especially when the purpose is criticism, comment, news reporting, teaching, scholarship or research.[56] As the next sections explain, § 1201 affects this balance by strengthening copyright owners' rights in their works and by diminishing public access not only to copyrighted works, but also to the public domain. As a result, § 1201 encumbers the many interests—free speech, privacy, criticism, comment, news reporting, teaching, scholarship and research—all of which copyright law traditionally protects.

C. BENEFITS OF § 1201

Section 1201 strengthens copyright owner's rights to address a nontrivial problem. Two key developments in the past two decades have made the infringement of copyrighted works vastly easier, cheaper and more widespread. First, the digital evolution made copying many times more accurate.[57] In the analog world, a copyrighted work cannot be perfectly reproduced because the process of reproduction always loses some information.[58] But in the digital world, a copyrighted work can be reduced to binary digits, a series of ones and zeroes, and transmitted as an electromagnetic signal.[59] It is effectively transformed into data. This data can be stored and reproduced verbatim. For example, an MP3, a digital version of a song, can be copied ad infinitum without any loss in quality.

Second, the Internet revolution made it possible for billions of people to directly exchange digital information almost instantaneously. Not only can an MP3 file be copied, but it can be sent to millions of others. Each recipient can make copies and distribute those to other potential copiers and distributors. Thus, copying and distribution can occur at exponential rates.[60] To draw an analogy to older

54. *See* 17 U.S.C. § 302; Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984) (stating that the copyright monopoly "is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired").

55. 17 U.S.C. § 102(b).

56. *Id.* § 107 (codifying the fair use doctrine); *see also* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 594 (1994) (recognizing the fair use defense for parody); *Sony*, 464 U.S. at 449 n.32 (establishing fair use for home recording of television programs for later viewing).

57. *See, e.g.*, Nicholas E. Sciorra, *Self-Help & Contributory Infringement: The Law and Legal Thought Behind the Little Black Box*, 11 CARDOZO ARTS & ENT. L.J. 905, 912 nn.40–41 (1993).

58. *See, e.g.*, I. Trotter Hardy, *Property (and Copyright) in Cyberspace*, 1996 U. CHI. LEGAL F. 217, 224–25 (discussing "state of the art" limitations on unauthorized copying and exploitation).

59. Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 270–71 (2002).

60. *See* DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998, S. REP. NO. 105-190, at 8 (1998), *available at* http://www.gpo.gov/fdsys/pkg/CRPT-105srpt190/pdf/CRPT-105srpt190.pdf ("Due to the ease with which digital works can be copied and distributed worldwide virtually instantaneously, copyright owners will hesitate to make their works readily available on the Internet without reasonable

technology, every computer attached to the Internet acts like a separate printing press, capable of churning out identical copies and distributing them to thousands, even millions, of other similar printing presses at immense speed.

Both developments made it more costly to enforce rights because, although copyright owners' legal right to sue for infringement remained unchanged, the structure of infringement had changed dramatically. In the past, one or two point sources might be responsible for making most of the unauthorized copies of a copyrighted work.[61] As a result, copyright owners could stop most infringement by pursuing just a few individuals.[62] Now, however, anybody with a computer and an Internet connection is capable of producing high quality unauthorized copies on a massive scale. The effort and cost of pursuing separate infringement suits against each of these infringers becomes overwhelming. In terms of the balance of incentives, a decrease in the value of a copyright means that the incentive to invest in creating copyrightable works decreases. In the long run, this means that fewer works are created, which is a loss to the public.

Naturally, copyright holders sought to protect the value of their copyrighted works by protecting them with digital locks, such as encryption. These digital locks are also vulnerable, however, to the risks of the digital, online world. With the new ease of communication, people could not only ask for help in circumventing digital locks from fellow users all over the world, but they could collaborate on finding ways to circumvent them and then share the information and tools for circumvention with the same ease and speed.

By creating a cause of action against direct circumvention, § 1201 allowed copyright owners to sue the person who made an unprotected copy of the copyrighted work available to others, even if that person had not infringed the copyright by doing so.[63] This made it possible for the copyright holder to pursue the "leaks," the individuals who broke the digital locks on copyright works, thereby allowing thousands of copies of the unprotected version to be disseminated. Under the antitrafficking provisions, the copyright holders could also sue the sources of the circumvention tools. Although large scale infringement has continued, § 1201 gave copyright holders more cost-effective tools to combat the infringement.[64]

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assurance that they will be protected against massive piracy.").

61. *See, e.g., Motion Picture Anti-Piracy Act: Hearings on S. 1096 Before the Senate Subcommittee on Patents, Copyrights and Trademarks*, 102d Cong. 162 (1991) (testimony of Timothy A. Boggs, Vice President, Time Warner Inc.) ("On May 2, 1991 . . . the Manhattan D.A. raided a pirate wholesale distributor and two pirate labs, resulting in the largest seizure of pirated tapes ever—over 89,000 copies."); Peter M. Nichols, *Home Video*, N.Y. TIMES, May 16, 1991, at C22 ("[W]e're seeing the factory operation working out of apartment complexes or commercial buildings where you have anywhere from 50 to 5,000 VCR's wired together.").

62. *See* Tim Wu, *When Code Isn't Law*, 89 VA. L. REV. 679, 713 (2003) (noting that in the past copyright holders were reluctant to sue consumers and instead sued "gatekeepers" who infringed on a large scale).

63. The DMCA also includes criminal penalties for circumvention and trafficking. 17 U.S.C. § 1204 (2006).

64. The Recording Industry Association of America, for example, sued about 35,000 end users for infringement from 2003 to 2009. William Henslee, *Money for Nothing and Music for Free? Why*

D. COSTS OF § 1201

1. The Legal Prohibitions in the Antitrafficking Provisions

The anticircumvention provisions and antitrafficking provisions came at considerable cost. By forbidding the circumvention of controls blocking mere access, the anticircumvention provision effectively prohibits noninfringing uses. Access is not one of the exclusive rights in a copyrighted work.[65] Although precisely what "access" means under § 1201 is subject to debate,[66] it seems that access alone would often not involve infringement. For example, "access" might be interpreted as merely viewing a copyrighted movie. Although publicly displaying that movie or copying that movie without authorization would infringe the copyright,[67] prior to the DMCA, copyright law has never granted an exclusive right to view a work.

The anticircumvention provision also blocks use of works that have fallen into the public domain. One way that this occurs is through bundling. For example, an ebook might combine commentary with selections of Renaissance poetry. Although the commentary would likely be protected by copyright, the poetry would have fallen into the public domain. As a result, circumventing a digital lock on that ebook to access the uncopyrighted poetry would violate the anticircumvention provision because the lock also protects the copyrighted commentary.

In addition, many otherwise infringing uses are protected by fair use.[68] Fair use is a flexible doctrine that depends on balancing a number of factors. In general, however, a use with little impact on the market for the copyrighted work and that serves other important goals, such as free speech, is likely to be considered a fair use.[69] For example, it is likely fair use for a professor to make a short clip from a copyrighted movie to show in class.[70] But § 1201 bars any circumvention of a technological measure that controls access to a copyrighted work,[71] unless one of the limited statutory exceptions applies, regardless of whether the purpose for circumventing is fair use.[72]

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the RIAA Should Continue to Sue Illegal File-Sharers, 9 J. MARSHALL REV. INTELL. PROP. L. 1, 1 (2009).

65. 17 U.S.C. § 106.

66. *See supra* note 22.

67. *See* 17 U.S.C. § 106.

68. *Id.* § 107.

69. *See id.* § 107 (codifying fair use); *see also* Harper & Row Publishers, Inc. v. Nation Enterprises, 471 U.S. 539, 555-60 (1985) (stating that concerns for free speech must be weighed with the other fair use factors to determine whether copying is fair); Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 449 & n.32 (1984) (establishing fair use for home recording of television programs for later viewing). A non-exclusive list of purposes in the statute includes criticism, comment, news reporting, scholarship and research. 17 U.S.C. § 107.

70. *See* Recommendation of the Register of Copyrights in RM 2008-8, 49-52 (June 11, 2010), *available at* http://www.copyright.gov/1201/2010/initialed-registers-recommendation-june-11-2010.pdf.

71. As long as the digital lock "effectively" protects the work. 17 U.S.C. § 1201(a)(1)(A).

72. Not all courts have taken the view that circumvention of an access control violates § 1201 when the act of circumvention does not lead to infringement. *See* Chamberlain Grp., Inc. v. Skylink

One might object that circumvention is legal with the permission of the copyright owner.[73] However, this limitation on the circumvention prohibitions makes little practical difference. The statute does not put any onus on the copyright owner to permit a user to gain access to works in the public domain. And the copyright owner has no incentive to give permission, because he or she can otherwise charge for access.[74] Even if a copyright owner were willing to give permission, the transactional costs in locating and obtaining permission from the copyright owner would suppress at least some level of noninfringing use. Finally, even if the copyright owner were located and gave permission, the antitrafficking provision still prohibits the manufacture and distribution of the tools necessary to circumvent.

The exceptions to the anticircumvention provision, both statutory and those added by regulation through the exemptions process, provide some leeway for noninfringing use. The exceptions, however, cover only a fraction of noninfringing uses otherwise prohibited by the anticircumvention provisions. For example, instead of providing a broad exception for fair use, the regulations issued by the Librarian of Congress through the exemptions process allow only a few narrow exceptions to the anticircumvention provision for fair uses.[75] This is not to belittle the exceptions and loopholes to the anticircumvention provision. Given the extent to which the anticircumvention provision forbids noninfringing uses, the limited exceptions are all the more valuable in restoring some balance to copyright law.

Techs., Inc., 381 F.3d 1178, 1202 (Fed. Cir. 2004) (holding that circumvention must bear a "reasonable relationship" to infringement); *see also* Storage Tech. Corp. v. Custom Hardware Eng'g Consulting, Inc., 421 F.3d 1307, 1319 (Fed. Cir. 2005) (restating its circumvention holding from *Chamberlain*). Section 1201, however, certainly makes no express exception to the anticircumvention provision for fair use. *See* 17 U.S.C. § 1201(a)(1)(A), (c). Other courts have found that the only exception for fair use, aside from the express exceptions included in the statute, is the exception mentioned in one of the House Reports, specifically H.R. REP. NO. 105-551, pt. 1, at 18 (1998) (stating that § 1201(a)(1) does not apply to the subsequent actions of a person once he has obtained authorized access, so that an individual is allowed to circumvent in order to make fair use of a work that he lawfully acquired). *See, e.g.*, Realnetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp. 2d 913, 942 (N.D. Cal. 2009) (discussing the user exemption implicitly recognized in § 1201(b) and stating that Congress didn't intend to regulate the conduct of individual users with authorized access to copyrighted works); U.S. v. Elcom Ltd., 203 F. Supp. 2d 1111, 1120 (N.D. Cal. 2002) (noting that unlike § 1201(a), § 1201(b) does not prohibit the act of circumventing the use restrictions because Congress sought to preserve the fair use rights of persons who had lawfully acquired a work). For discussion of the limited fair use exception discussed in H.R. REP. NO. 105-551 pt. 1, at 18, see *infra* note 178.

73. Circumvention is defined as bypassing "a technological measure without the authority of the copyright owner." 17 U.S.C. § 1201(a)(3)(A).

74. Another objection frequently voiced by advocates of the DMCA is that there are alternative means to access works protected by technological measures. For example, a digital movie can be copied by training a video camera at your television screen as it plays. *See* Universal City Studios, Inc. v. Corley, 273 F.3d 429, 459 (2d Cir. 2001). In this example, as in many others, the subsequent product is far inferior to the digital version and so this "solution" is far from equivalent. Yen, *supra* note 17, at 678–79. Furthermore, increasingly, there is no way to access some copyrighted works, with the exception of the digitally locked versions. *See, e.g.*, Rebecca Tushnet, *I Put You There: User-Generated Content and Anticircumvention*, 12 VAND. J. ENT. & TECH. L. 889, 918 (2010) [hereinafter Tushnet, *I Put You There*].

75. *See* Exemption to Prohibition Against Circumvention, 37 C.F.R. § 201.40 (2011).

But, as discussed in Part II.A, almost all exceptions are legally impossible to exploit due to the antitrafficking provisions. Thus, the legal effect of § 1201 is to prohibit a great many uses that are otherwise allowable under copyright law and serve valuable purposes. The antitrafficking provisions compound the problem by contradicting even the limited exceptions in the anticircumvention provision.

2. The Practical Effects of the Antitrafficking Provisions

A number of commentators point out that while the legal effect of the antitrafficking provisions is to ban almost all noninfringing uses of digitally locked works, their practical effect on noninfringing uses is not so draconian.[76] These commentators argue that § 1201 has little real impact on the "darknet," the term for the online distribution network for illicit material.[77] For example, Rebecca Tushnet argues that "everyone has ready access to circumvention technology" because of its "widespread availability."[78] Assuming circumvention tools are indeed widely available, Tushnet argues that § 1201 provides a legal route to make noninfringing use of digitally locked works because it does not prohibit receipt or possession—only manufacture and distribution—of circumvention tools.[79] For example, our hypothetical documentary filmmaker would not violate § 1201 by downloading decryption software from the Internet because she has not manufactured or distributed by doing so. Others would necessarily have violated the manufacturing and distribution prohibitions by making the tools available to her on the Internet. But the documentary filmmaker herself would not have violated the antitrafficking provisions.

It is nonsensical, however, to argue that allowing possession while prohibiting manufacture and distribution creates a legal path to circumvention tools. First, this structure effectively encourages illegal activity. Possession cannot be divorced from manufacture and distribution because possession necessarily implies that at least one or the other has occurred. Therefore, by making possession legal, the law

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76. *See, e.g.*, Tushnet, *I Put You There*, *supra* note 74, at 930 n. 170; Fred von Lohmann, *Measuring the Digital Millennium Copyright Act Against the Darknet: Implications for the Regulation of Technological Protection Measures*, 24 LOY. L.A. ENT. L. REV. 635, 641 (2004).

77. *See, e.g.*, Lohmann, *supra* note 76, at 640 (discussing the darknet). These commentators point out that, due to the ease of reproduction on the Internet, one leak is all it takes for an item to become widespread—and there is always a leak. *See, e.g., id.* at 641; *see also* Peter Biddle, Paul England, Marcus Peinado & Bryan Willman, The Darknet and the Future of Content Distribution (Nov. 18, 2002) (unpublished manuscript), *available at* http:// www.crypto.stanford.edu/DRM2002/darknet5.doc.

78. Tushnet, *I Put You There*, *supra* note 74, at 930 n. 170. Others, however, disagree. For example, Gwen Hinze of the Electronic Frontier Foundation states: "Unfortunately, for the vast majority of non-technologically sophisticated users who cannot create their own circumvention tools, [the mechanism that allows the Librarian of Congress to grant three yearly exemptions to the anti-circumvention provisions] makes the exemption process meaningless." Hinze, *supra* note 28, at 799; *see also* Yen, *supra* note 17, at 676 ("[T]he DMCA's anti-trafficking provisions make it practically impossible for a person to exercise her legal rights."). The truth, as described in this section, no doubt falls somewhere in between.

79. Tushnet, *I Put You There*, *supra* note 74, at 930 n. 170.

effectively invites violation of the bans on manufacture and distribution.

Tushnet points out that, although the distinction between possession and manufacturing/distribution might seem contradictory, laws in other areas allow similar gaps in enforcement. She points to laws regarding obscenity,[80] in which the Supreme Court has held that the government may not prohibit the private possession of obscene material, but can prohibit their sale, distribution and exhibition even to willing recipients.[81] Obscenity law, however, is an imperfect analogy to § 1201. Possession in the context of obscenity laws does not necessitate violating the law because the Supreme Court has never clearly ruled that a state could ban the creation of obscene material.[82] In addition, the contradictions in obscenity law reflect the conflicts of federalism. In the case of obscenity, the conflict is between constitutional rights and the states' "right . . . to maintain a decent society."[83] Section 1201 does not reflect the tensions inherent in the federal system. It is a conflict within the same statute.

Furthermore, by setting out the reasons for circumventing digital locks, § 1201 seems to encourage violations of the prohibitions on manufacturing and distribution. The exemption process takes matters to an extreme. Pursuant to § 1201(a)(1), the Librarian of Congress is required to conduct a lengthy proceeding every three years to decide on exemptions for "users . . . who are likely to be . . . adversely affected" by the anticircumvention provisions.[84] This level of consideration and effort would seem to suggest that the exemptions are provided for socially valuable purposes that the public should be encouraged to pursue. Yet taking advantage of these exemptions requires violating the antitrafficking provisions.

Passing laws that encourage lawlessness undermines the rationales for enacting laws in the first place. In addition, the antitrafficking provisions promote disrespect for the law precisely in an area of the law where there is already considerable public disrespect for the law. For example, despite the fact that sharing songs over the Internet without permission violates copyright law, the majority of Internet users do not find such sharing reprehensible.[85] In part, the

80. *Id.*

81. *See, e.g.*, Paris Adult Theatre I v. Slaton, 413 U.S. 49, 69 (1973); Stanley v. Georgia, 394 U.S. 557, 559 (1969) (holding that the mere private possession of obscene matter cannot constitutionally be made a crime).

82. In *Paris Adult Theatre I*, the Court ruled that a state could regulate "commerce" in obscene material, but this does not expressly prohibit the making of obscene material, especially if the pornography had been made for a noncommercial purpose. 413 U.S. at 69. It is hard to imagine how it could since the line between sexual play and obscene material would be a faint one at best and the Court has expressed reluctance to enter the bedroom. *See* Lawrence v. Texas, 539 U.S. 558, 559 (2003) ("[L]iberty gives substantial protection to adult persons in deciding how to conduct their private lives in matters pertaining to sex.").

83. *Paris Adult Theatre I*, 413 U.S. at 69 (Warren, C.J., dissenting) (quoting Jacobellis v. Ohio, 378 U.S. 184, 199 (1964)) (internal quotation marks omitted).

84. 17 U.S.C. § 1201(a)(1)(C) (2006); *see also supra* notes 36–38.

85. *See, e.g.*, Amanda Lenhart & Susannah Fox, *Downloading Free Music*, THE PEW INTERNET & AM. LIFE PROJECT (Sept. 28, 2000), http://www.pewinternet.org/reports/2000/Downloading-Free-Music

public does not respect copyright because the system seems cumbersome and often unworkable.[86] Barring the legal means to take advantage of a right to circumvent makes the law even less comprehensible and out of touch with public perceptions.

In any case, the argument that tolerance for possession provides a legal path to circumvention depends on the assumption that effective circumvention tools are widely available. To the contrary, because the trafficking provisions create all the problems of a black market, effective circumvention tools are not widely available.[87] And the lack of a legal market for circumvention tools disproportionately encumbers noninfringing uses of digitally locked works.

Because offering circumvention tools is illegal, consumers of circumvention tools lack legal recourse against the makers and sellers of such tools.[88] Contracts for the sale of illegal goods are unenforceable,[89] and purchasers cannot sue for product liability.[90] As a result, tools may not work for their intended purpose, may break or can become obsolete quickly. They may be unsafe, for example, by containing bugs, viruses or security vulnerabilities. Consumers face the additional risk that the tools are designed maliciously to collect private information or to otherwise harm the consumer.

(finding that Internet users who download music do not think downloading music amounts to stealing).

86. *See, e.g.*, Joyce E. Cutler, *On Copyright's 300th Anniversary, Scholars Question Effectiveness of Current Formulation*, 15 BNA ELECTRONIC COM. & L. REP. 641 (2010) ("Register of Copyrights Marybeth Peters said . . . '[W]e have lost the respect of the public in many ways. . . . Copyright law should be understandable so that people will obey and respect it . . . .'"); *see also* JESSICA LITMAN, DIGITAL COPYRIGHT 113 (2006) ("The reason people don't believe in the copyright law, I would argue, is that people persist in believing that laws make sense, and the copyright laws don't seem to them to make sense, because they don't make sense, especially from the vantage point of the individual end user.").

87. The term "black market" refers to markets in illegal goods and services. WEBSTER'S II NEW COLLEGE DICTIONARY 116 (3d ed. 2005). Black markets create costs such as "punishment costs, poor information, and lack of enforceable warranties." RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 156 (Aspen Publishers 6th ed. 2003).

88. Providers in black markets have less incentive than legal providers to provide safe products because their buyers cannot hold them legally accountable and because they are less likely to develop a long term relationship with buyers due to turnover as a result of prosecution. *See* Jeffrey A. Miron, *Violence, Guns, and Drugs: A Cross-Country Analysis*, 44 J.L. & ECON. 615, 618–20 (2001).

89. *See* 8 SAMUEL WILLISTON & RICHARD A. LORD, A TREATISE ON THE LAW OF CONTRACTS § 19:70 (4th ed. 2010). Historically, courts have "den[ied] all legal effect" to these contracts on public policy grounds. Juliet P. Kostritsky, *Illegal Contracts and Efficient Deterrence: A Study in Modern Contract Law*, 74 IOWA L. REV. 115, 118–19 (1988) (explaining that courts have refused to enforce illegal contracts based on the rationale that refusing to enforce such bargains has a deterrent effect on the parties involved); *see also* E. Sabbath, *Denial of Restitution in Unlawful Transactions—A Study in Comparative Law*, 8 INT'L & COMP. L.Q. 486, 489–93 (1959) (discussing the modern application of the doctrine of *in pari delicto*, which denies recovery to parties who willingly enter into illegal agreements). However, this rule is not an inflexible one, and courts have, in many situations, partially enforced agreements where the buyer is unaware of the illegal nature of the goods or the seller fraudulently induced the buyer into purchasing the illegal goods. *See* WILLISTON & LORD, *supra*, § 19:80; John W. Wade, *Benefits Obtained Under Illegal Transactions—Reasons for and Against Allowing Restitution*, 25 TEX. L. REV. 31, 52–59 (1946) (explaining the various justifications courts have employed when partially enforcing, by way of restitution or rescission, illegal transactions).

90. Miron, *supra* note 88, at 618. More informally, sellers are less likely to develop a long term relationship with buyers due to turnover as a result of prosecution. *See id.* at 620.

Of course, vendors of circumvention tools still have a financial incentive to offer good products to consumers. But vendors benefit from providing quality products only if they succeed in building a good reputation among consumers and a good reputation may invite prosecution. Indeed, many providers of circumvention tools have been successfully sued and put out of business for violating § 1201.[91] In addition, the dampening of market incentives to build a good reputation also increases consumer search costs. At a minimum, providers are unlikely to advertise through well-publicized channels. In fact, vendors of circumvention tools are typically located outside of the United States or provide no contact information.[92] As a result, they are difficult to contact and unlikely to be responsive to consumers or to offer product support.

These black market problems would only be exacerbated by recently proposed legislation to target websites offering circumvention tools.[93] In particular, mechanisms to target these websites' financial support by cutting off advertisers and payment transaction providers would remove financial incentives to provide circumvention tools.[94]

Without financial incentives, some makers of these tools might still provide free versions. Makers of free tools, however, have less market incentive to make good products, especially products that keep up with the rapid development of technological protective measures.[95] Indeed, the makers of these digital locks are commonly described as engaged in an "arms race" with hackers in which both sides constantly innovate in order to outwit each other.[96] In fact, the free versions

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91. *See, e.g.*, TracFone Wireless, Inc. v. GSM Group, Inc., 555 F. Supp. 2d 1331 (S.D. Fla. 2008); 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085 (N.D. Cal. 2004); Katie Dean, *321 Studios Shuts Its Doors*, WIRED (Aug. 3, 2004), http://www.wired.com/entertainment/music/news/2004/08/64453.

92. For example, of the ten DVD-ripping software products—DVD Cloner, 123 Copy DVD Gold, 1 Click DVD Copy, DVDFab, CloneDVD, Aviosoft CloneDVD, ImTOO DVD Copy, Express Burn, DVD95Copy Pro and DVD Wizard Pro—only one provides a mailing address or other location information on their websites: NCH Software, the seller of Express Burn, lists Australia as its location. *2012 Best DVD Ripper Software Comparisons,* TOPTENREVIEWS, http://dvd-ripper-software-review.toptenreviews.com/http://dvd-ripper-software-review.toptenreviews.com/ (last visited Apr 15, 2012). Investigation of website registration databases shows that eight of these products are sold from websites which provided foreign contact information to the website domain name registrars, predominantly in China. The remaining product, Aviosoft CloneDVD, is sold on a website registered by Domains by Proxy, Ltd., a website which was clearly not written by native English speakers. Although this information is not conclusive, it suggests that the companies making these products are located overseas and would be difficult, if not impossible, to pursue legally.

93. Stop Online Piracy Act, H.R. 3261, 112th Cong. § 103(a)(1)(B)(i)(II) (2011); PROTECT IP Act of 2011, S. 968, 112th Cong. § 2(7)(A)(ii) (2011); Online Protection and Enforcement of Digital Trade Act, H.R. 3782, 112th Cong. § 337A(a)(4)(A) (2012).

94. Stop Online Piracy Act, H.R. 3261, 112th Cong. § 103(b)(1), (2) (2011); PROTECT IP Act of 2011, S. 968, 112th Cong. § 4(d)(2) (2011); Online Protection and Enforcement of Digital Trade Act, H.R. 3782, 112th Cong. § 337A(g)(2) (2012).

95. *See, e.g.*, Adam Pash, *Five Best DVD Ripping Tools*, LIFEHACKER (Apr. 17, 2008, 9:00AM), http://lifehacker.com/380702/five-best-dvd-ripping-tools ("Even those in-the-know find it difficult to keep up with the best tools for the job, especially in the face of increased copy protection.").

96. *See, e.g.*, Wendy Seltzer, *The Imperfect is the Enemy of the Good: Anticircumvention Versus*

available now tend to be ineffective and unfriendly to users.[97]

The shortcomings of the black market disproportionately affect legitimate, noninfringing users because legitimate users are more likely to be discouraged by unreliable circumvention tools. Of course, anyone who wants to circumvent a digital lock would prefer a reliable and effective tool to access the work. But those who simply want a free copy of, say, a movie are probably willing to settle for a grainy version as long as it is free. Reliability and effectiveness, however, are more likely to be important to users with legitimate reasons to circumvent a digital lock.

For most forms of fair use, a high-quality copy is crucial because the purposes typical of fair use—for example, criticism, teaching, news reporting, research, and scholarship—require accuracy. This is particularly true when fair use is employed for purposes of free speech. Speakers must be able to refer to the same true copy; otherwise they cannot share common reference points. A distorted copy fails to serve this purpose. A film professor, for example, needs to show a clip of a movie at a high level of quality in order to adequately show the cinematic techniques at play.[98] A news reporter needs a faithful reproduction of a portion of a song to discuss a controversial lyric. Quality may be even more important for those fair users going to the effort of creating a new work because there will be little demand for the work if it is of poor quality. For example, our documentary filmmaker may be discouraged from including a clip in her documentary about racial stereotypes if the clip is hard to view and distracting from the point she wishes to make.[99]

A need for quality also underlies the statutory exceptions to the anticircumvention provision. With regard to the exceptions for encryption and security research, researchers need tools from other researchers engaged in solving the same problems, not from anonymous hackers on the Internet.[100] But legitimate researchers with careers and their names at stake are reluctant to break the law by illegally distributing circumvention tools.[101] For parents who want to take advantage of the exception protecting minors from inappropriate material on the Internet, unreliable tools may be worse than no tools at all because they create a

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Open Innovation, 25 BERKELEY TECH. L.J. 909, 957 (2010) (noting that "closed software and hardware can engage in the arms race, appearing secure until a smarter hacker comes along").

97. Jason Mittel, *How to Rip DVD Clips*, CHRONICLE OF HIGHER EDUCATION (Aug. 12, 2010, 3:00PM), http://chronicle.com/blogs/profhacker/how-to-rip-dvd-clips/26090.

98. *See* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 71 Fed. Reg. 68,472, 68,474 (Nov. 27, 2006) (codified at 37 C.F.R. pt. 201), *available at* http://www.copyright.gov/fedreg/2006/71fr68472.html ("The professors demonstrated that the encrypted DVD versions of motion pictures often are of higher quality than copies in other available formats and contain attributes that are extremely important to teaching about film for a number of reasons.").

99. *See* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 75 Fed. Reg. 43,825, 43,827–28 (July 27, 2010) (codified at 37 C.F.R. pt. 201); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Comments of Kartemquin Educational Films, Inc. and The International Documentary Association, at 2, http://www.copyright.gov/ 1201/2008/comments/kartemquin-ida.pdf.

100. 17 U.S.C. § 1201(g), (j) (2006).

101. *See* Liu, *supra* note 31, at 514–16.

false sense of security. With regard to the exception for protecting personally identifying information,[102] an individual concerned about protecting personal information is unlikely to rely on illegal software from some unknown, unverifiable source. Such software might be developed by unscrupulous hackers precisely in order to collect personal information. Lack of access to reliable tools also hinders libraries in taking advantage of their exception to the anticircumvention provision, which allows libraries to access works for the purpose of determining whether to acquire them.[103] But the librarians cannot make a determination on the quality and value of a work if, due to ineffective circumvention tools, the only versions of works that they can view are blurred, distorted or missing sections.

The ban on manufacturing circumvention tools has an even stronger disproportionate impact on these would-be legitimate circumventers. Very few people have the skill to make their own circumvention tools. Technological measures designed to protect copyrighted works are typically complex. Circumventing them requires an intimate knowledge of electronics, computer programming and decryption techniques. To return to the example of the documentary filmmakers, few documentary filmmakers would have the skill to decrypt a DVD themselves.

Because creating circumvention tools is illegal, the types of organizations that will focus on acquiring the skills and talent for circumvention presumably will be organizations with illegitimate aims, for example, profiting from the sale of infringing copies both in the U.S. and abroad. Such an organization has little to lose because its activities are already illegal. Conversely, an organization desiring to make legitimate use of copyrighted works would be unlikely to pursue the illegal activity of violating the antitrafficking provision by creating circumvention tools. A legitimate organization has everything to lose: its reputation, business, profits, etc. As a result, using circumvention skills as a hurdle to prevent circumvention will generally select for the wrong type of circumvention.

In short, the practical effect of the antitrafficking provisions is unlikely to be merely hypothetical as some commentators have suggested.[104] Those desiring to circumvent access and rights controls for legitimate reasons are likely to be impeded in practice by both the manufacturing and distribution restrictions. In fact, the antitrafficking provisions most likely disproportionately suppress legitimate uses as opposed to infringing uses.

To conclude, the antitrafficking provisions suffer from two distinct flaws. First, they contradict other provisions of the same statute. Second, they disproportionately suppress noninfringing uses of copyrighted works. These flaws, however, only make the statute a bad solution to the problem of protecting copyrighted works in the digital era if there is no better solution. As described, the interests at stake—copyright owner incentives, freedom of speech, privacy,

102. 17 U.S.C. § 1201(i).
103. *Id.* § 1201(d).
104. Tushnet, *I Put You There*, supra note 74, at 929 n.170.

education and research—will always conflict to some extent. Even the best solution, therefore, can do no better than to balance these interests against each other.[105] Certainly, organizations representing copyright holders would probably argue that preventing mass infringement is well worth a few additional restrictions on public access to copyrighted works and even the public domain.

The question then is whether there is a better solution. The solution offered by § 1201, at least in its current interpretation, is to limit the availability of circumvention tools by banning all manufacture and distribution, while simultaneously creating exceptions that require manufacture and distribution. The contradictions in the statute alone suggest that § 1201 errs in banning all manufacture and distribution of circumvention tools because the statute itself allows circumvention in certain instances. And, as this Part shows, the costs of banning the manufacture and distribution of circumvention tools are not insignificant. The ban impedes noninfringing uses which serve interests long recognized in the law and by the Constitution. Any solution, therefore, which allows some limited level of manufacturing and distribution of circumvention tools to serve these purposes, while still discouraging infringement, would be better than the current solution.

II. FRAMEWORK FOR A SOLUTION: BASING LIABILITY ON THE LIKELIHOOD OF HARM

The key to coming up with a solution to the problem of regulating circumvention tools is recognizing the nature of the problem. In its simplest form, the problem is that circumvention tools are tools that have both socially desirable and socially undesirable uses. This is not a problem unique to the digital world or to copyright law. Many other items are double-edged swords, capable of both fair and foul uses. Examples of such items are medical marijuana, alcohol, prescription drugs, guns, locksmith tools and tobacco.[106] The laws in these areas also seek to limit availability by targeting the manufacture and distribution of those items. Instead of banning all manufacture and distribution, these laws seek to base liability on the likelihood that a given form of manufacture and distribution actually leads to harm.

The basic premise in these areas is that not all forms of manufacture and distribution lead with equal likelihood to harm. Some conduits that run from manufacturing through distribution carry these double-edged items only or primarily for socially desirable uses. Others carry them for socially undesirable

105. And the fact that § 1201 disrupts the previous balance achieved by copyright law does not in itself prove that the new balance achieved by § 1201 is the wrong balance. As Jessica Litman has persuasively argued, copyright law has been continually adjusted to reflect new compromises among interest groups each time new copyright laws and regulations are enacted. LITMAN, *supra* note 86, at 125–26, 135–36, 144–45; *see also* Jane C. Ginsburg, *Copyright Legislation for the "Digital Millennium,"* 23 COLUM. J.L. & ARTS 137, 154 (1999). In any case, the digital and Internet revolutions had already affected the balance of interests in copyright law before the DMCA was enacted.

106. I am indebted to Alfred Yen's article, *supra* note 17, for this line of reasoning.

uses. The regulatory structure in these areas, therefore, legitimizes and buttresses conduits that are likely to lead to socially desirable uses, and proscribes manufacture and distribution likely to lead to socially undesirable uses.

Perhaps the appropriate analogy is that of an oil well. An uncontrolled oil well spurts toxic substances into the air and ground. But since oil has many valuable uses, a better option than plugging the well is to allow a controlled flow of oil for these uses. Thus, the basic framework for regulating the availability of an item with fair and foul uses is straightforward. The law must regulate manufacturing and distribution by balancing the probability and extent of harm against the probability and extent of benefit in a given path to the consumer.

For example, to ensure that prescription drugs reach patients with a medical need for the drugs instead of those who would abuse them, a system of laws and regulations creates a conduit from manufacture through distribution to the patients. With regard to manufacture, the Food and Drug Administration regulates the production of prescription drugs through detailed standards and supervision.[107] Distribution is also closely controlled.[108] Members of the public can purchase prescription drugs only from a pharmacist and only if the drug is prescribed by a doctor.[109] Both pharmacists and doctors are regulated by a licensing and certification process that demands intensive training, ethical conduct and a high degree of skill. Pharmacists and doctors are prohibited by law from abusing their positions and also are monitored for ethical lapses by professional associations that have the power to take away their licenses to practice.[110]

Although prescription drugs and locksmith tools are very different, the outlines of the regulatory system controlling access to locksmith tools are similar. Locksmith tools can be used for legitimate purposes, such as regaining access to a home, and for illegitimate purposes, like burglary.[111] States regulate the production of locksmith tools by requiring the licensing of any person engaged in making the tools.[112] Abuse of these tools is discouraged by rules limiting use of locksmith tools to licensed professionals: many states prohibit the possession of the tools by

107. Charles J. Walsh & Alissa Pyrich, *Rationalizing the Regulation of Prescription Drugs and Medical Devices: Perspectives on Private Certification and Tort Reform*, 48 RUTGERS L. REV. 883, 917 (1996).

108. Under the Uniform Controlled Substances Act of 1970, a prescription for controlled substances can only be issued for a legitimate medical purpose. Eric M. Peterson, *Doctoring Prescriptions: Federal Barriers to Combating Prescription Drug Fraud Against On-Line Pharmacies in Washington*, 75 WASH. L. REV. 1331, 1338 (2000). It is the responsibility of the physician and the pharmacist to ensure the proper prescribing and dispensing of controlled substances. *See id.*

109. *Id.* at 1337–38.

110. *See* 21 U.S.C. § 829; *see also* Ann M. Martino, *In Search of a New Ethic for Treating Patients with Chronic Pain: What Can Medical Boards Do?*, 26 J.L. MED. & ETHICS 332, 342 (1998); Jessica D. Yoder, *Pharmacists' Right of Conscience: Strategies for Showing Respect for Pharmacists' Beliefs While Maintaining Adequate Care for Patients*, 41 VAL. U. L. REV. 975, 989–90 (2006).

111. The ambiguity is apparent in the name. For example, California defines "[l]ocksmith tool," in part, as "any burglar tool." CAL. BUS. & PROF. CODE § 6980(s) (West 2012).

112. *See, e.g.*, CAL. BUS. & PROF. CODE §§ 6980(j), 6980.10; 225 ILL. COMP. STAT. ANN. 447/5-10, 447/10-5 (West 2012).

anyone other than locksmiths and a few categories of users with legitimate purposes.[113] Locksmiths themselves must be licensed, which typically requires a criminal background check, the submission of fingerprints,[114] and other measures to prevent abuse of lock-picking knowledge and tools.[115] Knowingly allowing others to use the tools to commit crimes leads to the revocation of a locksmith's license.[116] Regulations on guns, alcohol and tobacco are structured similarly.[117]

A. EVALUATING THE LIKELIHOOD OF HARM

In contrast, the ban on manufacturing and distributing circumvention tools seems based on the premise that any availability of circumvention tools leads inevitably to the worst case scenario—that is, to unchecked infringement of copyrighted works. Whereas regulations on other double-edged items seem to treat these items as analogous to oil wells, § 1201 seems to approach access to circumvention tools as analogous to opening Pandora's Box. Once opened, the evil sprites contained in the box spring irretrievably into the world.[118] But the path to harmful use from manufacturing and distributing circumvention tools is not so inevitable. First, it is important to recognize that the manufacture and distribution of circumvention tools does not cause harm in itself. The harm at issue is infringement of copyrighted works.[119] Therefore, the manufacture and distribution of circumvention tools are only harmful to the extent that they lead to infringement.

In order to understand the likelihood of harm, we must analyze the routes by which digitally locked copyrighted works are infringed. Working backwards from an infringement of the work, the step leading to infringement of a digitally locked copyrighted work is the release of unprotected digital copies of the copyrighted work. This involves both removing the digital lock on the copyrighted work and making that work available to others. However, this step is not harmful in itself. It

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113. *See, e.g.*, ARIZ. REV. STAT. ANN. § 13-1505(B) (2012); 720 ILL. COMP. STAT. ANN. 5/19-2(a); N.Y. GEN. BUS. LAW § 396-j(1) (McKinney 2012); TENN. CODE ANN. § 62-11-104(g)-(i) (LexisNexis 2012). Other states make possession of such tools illegal if there is intent to use them to commit a crime. *See, e.g.*, ALA. CODE § 13A-7-8 (2012); ALASKA STAT. § 11.46.315 (2012); COLO. REV. STAT. § 18-4-205 (2011).

114. *See, e.g.*, MD. CODE ANN., BUS. REG., §§ 12.5-203, 12.5-204 (LexisNexis 2012); N.J. STAT. ANN. § 45:5A-26 (West 2012).

115. *See* N.C. GEN. STAT. § 74F-2 (2011).

116. *See, e.g.*, CAL. BUS. & PROF. CODE § 6980.74(a)(3); MD. CODE ANN., BUS. REG., § 12.5-211(a)(1)(x).

117. *See* Yen, *supra* note 17, at 683–86; *see also* John M. Faust, *Of Saloons and Social Control: Assessing the Impact of State Liquor Control on Individual Expression*, 80 VA. L. REV. 745, 748–49 (1994); Michael Whatley, *The FDA v. Joe Camel: An Analysis of the FDA's Attempt to Regulate Tobacco and Tobacco Products under the Federal Food, Drug and Cosmetic Act*, 22 J. LEGIS. 121, 125–27 (1996).

118. *See Pandora's Box Definition*, OXFORD ENGLISH DICTIONARY (Mar. 2012), *available at* http://www.oed.com/view/Entry/261413.

119. Taking a step back, we might observe that, in the larger scheme of copyright law, infringement is only socially harmful if it decreases the incentive to create new creative works. For the sake of simplicity, however, infringement itself might be considered a social harm.

is only harmful to the extent that the person who removed the technological protection measure or others then infringed the work. Not all uses of a copyrighted work are infringing.[120] Therefore, the extent to which removal of a digital lock leads to harm depends on the likelihood that the copyrighted work will be made available to those who would infringe the work. Availability only to those who both use the work for noninfringing purposes and do not make it available to others leads to no harm.

The antecedent step to circumventing and removing technological protection measures is the distribution of a circumvention tool. Distribution to those who will use the circumvention tool only for fair use does not increase the likelihood of infringement. However, to prevent further infringement, these fair users would not only have to prevent their unprotected copies from becoming available to would-be infringers, they would also have to prevent the circumvention tools from becoming available to potential infringers.

Finally, prior to distribution of a circumvention tool, the circumvention tool must be created. The chief point here is that not all circumvention tools prohibited by the DMCA are equally likely to lead to infringement. First, the DMCA prohibits circumvention of digital locks that control access, even if they do not protect a right of the copyright owner, such as the right to prevent copying.[121] Therefore, circumventing digital locks that control access does not necessarily increase the likelihood of infringement.[122] Second, some circumvention tools are designed to circumvent digital locks only for uses that are likely to be noninfringing uses. For example, copying only a small portion is likely to be considered a fair use.[123]

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120. The uses might be fair uses or uses not protected by copyright law at all, such as the mere viewing of a copyrighted work in a nonpublic forum. Most of the exceptions to the circumvention prohibitions in § 1201 cover uses that either don't infringe or would generally be protected as fair uses. *See* 17 U.S.C. § 1201(d)–(i), 106, 107 (2006).

121. As discussed *supra* note 24, this is a bit of a tricky distinction in that access controls often also effectively protect the rights of the copyright owner. But in some cases at least, the access controls do not protect against infringement. *See* Denicola, *supra* note 17, at 225–26.

122. A lesser point is that not all technological protection measures are equally effective at protecting against infringement. For example, a technological protection measure that prevents a video from playing after a certain time period has elapsed, say twenty-four hours, may not be designed to prevent copying of that video and therefore does not prevent a copy of that video from performing after the twenty-four hours has elapsed. In other words, the digital locks may not be very effective at protecting the performance right, the right it was apparently designed to protect. This point is not worth as much emphasis because the language of the DMCA already recognizes this by only regulating circumvention of technological protection measures that "*effectively*" control access or protect the copyright owner's rights. 17 U.S.C. § 1201(a)(1), (a)(2), (a)(3)(B), (b)(1). In addition, several courts have interpreted this language to find no violation of the DMCA where a digital lock is ineffective. *See, e.g.*, Lexmark Int'l, Inc. v. Static Control Components, Inc., 387 F.3d 522, 547 (6th Cir. 2004); Agfa Monotype Corp. v. Adobe Sys., Inc., 404 F. Supp. 2d 1030, 1036–37 (N.D. Ill. 2005). This point is worth mentioning only to emphasize that courts should be careful not to elide a consideration of the effectiveness of the digital lock because it is an important consideration in determining the likelihood that circumvention increases the harm to copyright owners.

123. Of course, more context would be needed to determine whether copying a small piece of a work was indeed fair use. Determining whether a use is fair depends on a number of factors, only one of

To summarize, as long as reliable means could be found to control manufacture and distribution of circumvention tools at each of these steps, some limited manufacture and distribution could take place without increasing the level of infringement. These controls would have to ensure that circumvention tools and unprotected works are only distributed to noninfringing users who will not further distribute either the tools or the unprotected works. Limiting the available circumvention tools to those unlikely to cause infringement—for example, tools that only copy small portions of a work—would also reduce the likelihood of infringement.

B. OBJECTIONS TO BASING LIABILITY ON HARM

An objection to the idea that circumvention tools should be regulated using the same approach as that used for other dual-potential items is that these areas are hardly models of effective regulation. The unfortunate truth is that items like prescription drugs, alcohol, tobacco, etc., are widely available for socially undesirable purposes and such abuse is rampant. The Internet is awash with offers to sell addictive drugs like Oxycontin without a prescription.[124] Underage drinking and tobacco use are epidemic.[125] Criminal gangs seem to acquire guns with little obstacle.[126] In 2009, 7.3% of American teenagers aged twelve to seventeen used marijuana.[127]

But these facts miss the point. The real question is whether a complete ban improves social utility as compared to limited availability. First, a complete ban would not necessarily be more effective and might create other problems. For example, Prohibition in the U.S. did little to stop alcohol consumption.[128] At the same time, it is blamed for creating new social ills, such as engendering the growth

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which is the size of the piece of the copyrighted work being used. *See* 17 U.S.C. § 107.

124. Erik Eckholm, *Abuses Are Found in Online Sales of Medication*, N.Y. TIMES, July 9, 2008, at A21.

125. *Alcohol and Public Health—Underage Drinking Fact Sheet*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/alcohol/fact-sheets/underage-drinking.htm (last visited Apr. 14, 2012); *Smoking and Tobacco Use—Youth and Tobacco Use*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/ index.htm (last visited Feb. 14, 2012).

126. *See, e.g.*, Don Terry, *How Criminals Get Guns: In Short, All Too Easily*, N.Y. TIMES, Mar. 11, 1992, at A1; Casey McNerthney, *For Teens, Illegal Guns Easy to Get on Streets: Stolen Weapons Often Come Cheap*, SEATTLE P.I. (Sept. 1, 2008, 10:00PM), http://www.seattlepi.com/local/article/For-teens-illegal-guns-easy-to-get-on-streets-1283875.php#page-1 ("'People can get stolen guns for 50, 100 bucks,' said Gabe Morales, a local gang expert who works with police and at-risk youths. 'It's easier to get a gun than it is to get a car.'").

127. *Marijuana Legalization*, THE WHITE HOUSE OFFICE OF NAT'L DRUG CONTROL POLICY, http://www.whitehouse.gov/ondcp/ondcp-fact-sheets/marijuana-legalization (last visited Apr. 14, 2012). Use by this age group is most likely harmful since research indicates that marijuana use at this age can cause developmental problems. *See* Peter J. Cohen, *Medical Marijuana: The Conflict Between Scientific Evidence and Political Ideology*, 2009 UTAH L. REV. 35, 53–54 (2009).

128. ANDREW SINCLAIR, PROHIBITION: THE ERA OF EXCESS 178–219 (1962).

of organized crime and reducing public respect for the law.[129]

Second, a complete ban reduces net social utility to the extent that it suppresses socially desirable uses. To achieve a rational balance of costs and benefits, the framework for regulation must weigh the likelihood and extent of harm against the likelihood and extent of benefit. In the case of circumvention tools, because a complete ban on manufacturing and distribution disproportionately affects legitimate uses, it seems likely that net social utility would be increased by allowing limited availability of circumvention tools for noninfringing uses. In other words, if limited manufacturing and distribution were allowed for those uses, beneficial use would probably increase more than infringing uses.

In addition, the better crafted the regulations, the less likely that the manufacturing and distribution of circumvention tools for legitimate uses would spill over to infringing uses. Detailed study must be conducted to weigh the costs and benefits of allowing limited availability for circumvention tools and to determine the effectiveness of regulations designed to create a conduit for noninfringing use. But the fact that allowing limited availability for other double-edged items has failed to entirely eliminate availability for harmful uses is not in itself an argument for completely banning the manufacture and distribution of circumvention tools. The question is whether limited access increases net utility by increasing benefit more than harm.

Another objection to using the regulations for prescription drugs, guns, locksmith tools and alcohol as models for regulating circumvention tools is that items in the digital context can be replicated far more easily than physical items. Replicating most prescription drugs, for example, requires expensive chemicals, equipment and a great deal of expertise.[130] In contrast, software can be replicated instantaneously with the stroke of a button on a laptop. As a result, circumvention tools are much harder to contain than physical items like guns or pills.

The ease with which digital circumvention tools may be manufactured and distributed as compared to physical items is really a matter of degree, not a difference in kind. None of these items can ever be completely suppressed.[131] It seems unlikely, for example, that a complete ban on guns would eradicate guns. Prohibition certainly did not eradicate alcohol.[132] Whereas the regulatory structure for prescription drugs and the like seems to analogize these items to oil wells and § 1201 seems to analogize circumvention tools to the evil sprites contained in Pandora's Box, the better analogy for all these items may be a river. It seems

129. MARK H. MOORE & DEAN R. GERSTEIN, ALCOHOL AND PUBLIC POLICY: BEYOND THE SHADOW OF PROHIBITION 62, 64, 189–90, 194, 208, 218–19 (1981).

130. *See* STEFAN BEHME, MANUFACTURING OF PHARMACEUTICAL PROTEINS: FROM TECHNOLOGY TO ECONOMY 3 (2009).

131. Even in Stalinist Russia, for example, armed criminal gangs posed a serious threat to the public despite the fact that it was one of the most repressive and controlling regimes in history in which civilians had no rights to guns. *See* David R. Shearer, *Crime and Social Disorder in Stalin's Russia: A Reassessment of the Great Retreat and the Origins of Mass Repression*, 39 CAHIERS DU MONDE RUSSE 119, 126–27 (1998).

132. SINCLAIR, *supra* note 128.

unlikely that the flow of these items into public access can ever be entirely stopped, but they can be diverted, controlled and used for social benefit.

In this regard, the legalization of medical marijuana offers a useful comparison to circumvention tools because marijuana is also practically impossible to eradicate. Just as circumvention tools are available anywhere there is Internet access, marijuana grows like a weed in every part of the country.[133] Marijuana can also be "copied" in the sense that, like any plant, it reproduces itself. In fact, since marijuana products often reach consumers still containing their seeds, consumers can grow and further distribute the product themselves, just as recipients of circumvention tools in the form of software can copy the software and distribute those copies.[134] Thus, distribution can occur at an exponential rate in a way that is not true for an item like a locksmith tool, which cannot replicate itself. Not surprisingly, in both the case of circumvention tools and marijuana, complete bans on manufacture and distribution have been highly ineffective. As discussed, circumvention tools are available to the public, even if not in very reliable or effective forms. Despite legal bans on all aspects of the production, distribution and use of marijuana for decades, marijuana use has continued to flourish in the United States.[135]

Also like circumvention tools, marijuana can be used for both socially valuable and socially harmful purposes. Heavy use of the drug over long periods appears to have long term detrimental effects on mental health, especially in children, and leads to addiction.[136] Some research shows that it functions as a "gateway drug," leading users to experiment with, and become addicted to, more harmful narcotics.[137] At the same time, marijuana has been shown to be an effective treatment for a number of medical conditions. For example, research shows that marijuana improves symptoms of AIDS and cancer, as well as neurologic and

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133. *See* Janet M. Hurley et al., *Tracing Retail Cannabis in the United States: Geographic Origin and Cultivation Patterns*, 21 INT'L J. DRUG POLICY 222, 224–25 (2010).

134. It is even possible to grow marijuana from cuttings from an existing plant. *See* Erica Meltzer, *Lafayette's Centennial Seed Produces Marijuana Seeds, Not Weed*, BOULDER DAILY CAMERA, Mar. 20, 2011, http://www.dailycamera.com/boulder-county-news/ci_17661108.

135. Beginning in the 1920s, states began prohibiting marijuana. Richard J. Bonnie & Charles H. Whitebread, II, *The Forbidden Fruit and the Tree of Knowledge: An Inquiry into the Legal History of American Marijuana Prohibition*, 56 VA. L. REV. 971, 1011–12, 1026 (1970). By the 1950s, the federal government had imposed strict prohibitions on marijuana use and production, treating it similarly to more dangerous narcotics. *See id.* at 1063–64, 1066–68; *see also* NAT'L DRUG INTELLIGENCE CTR., *Domestic Cannabis Cultivation Assessment 2009* (July 2009), http://www.justice.gov/ndic/pubs37/37035/demand.htm#Top ("Despite record-setting eradication efforts in the United States, the availability of marijuana remains relatively high, with limited disruption in supply or price."); U.S. GEN. ACCOUNTING OFFICE, GAO/GGD-97-42, DRUG CONTROL: OBSERVATIONS ON ELEMENTS OF THE FEDERAL DRUG CONTROL STRATEGY 4 (Mar. 1997), *available at* http://www.gao.gov/archive/1997/gg97042.pdf ("Despite some successes, United States and host countries' efforts have not materially reduced the availability of drugs in the United States . . . .").

136. Studies show that such use may lead to long term cognitive dysfunction and is associated with mental illness in the form of anxiety, depression and increased risk of psychotic symptoms. *See* Cohen, *supra* note 127, at 37 n.7, 53–54, 63–64, 73–76.

137. *Id.* at 67–68.

movement disorders.[138]

As is the case with circumvention tools, bans on the manufacture and distribution of marijuana disproportionately affect these socially valuable uses. An individual suffering from the types of illness that would make him a candidate for marijuana treatments is more vulnerable to the impurities in unregulated marijuana.[139] Sick people are also less likely than healthy people to brave the risks of obtaining marijuana from criminal drug dealers.[140] Finally, a sick person is more likely to be intimidated by the risks of criminal prosecution.[141] Just as for those who wish to make legitimate uses of circumvention tools, a high quality, safe product is more important for those who wish to use marijuana as a medical treatment than those who have less legitimate aims.

Despite concerns that allowing access to marijuana for medical treatment would increase abuse of the drug, sixteen states have passed laws legalizing medical marijuana.[142] Meanwhile, the federal government has effectively condoned these state laws by announcing that it will not prosecute the provision or use of medical marijuana, provided that it is done in compliance with state law.[143]

Given the similar challenges in regulating circumvention tools and medical marijuana, efforts across the states to regulate medical marijuana offer lessons for regulating circumvention tools. After an initial trial period, regulations for medical

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138. *See* Ruth C. Stern & J. Herbie DiFonzo, *The End of the Red Queen's Race: Medical Marijuana in the New Century*, 27 QUINNIPIAC L. REV. 673, 698 (2009). By helping patients to manage their pain and maintain their appetites, marijuana often improves outcomes. For example, use of marijuana increases the likelihood that patients will complete chemotherapy treatments. *See* Cohen, *supra* note 127, at 73–76, 82; Daniel J. Pfeifer, *Smoking Gun: The Moral and Legal Struggle for Medical Marijuana*, 27 TOURO L. REV. 339, 350–54 (2011).

139. For example, street marijuana can contain pool chlorine, ecstasy and morphine. *See* Allison M. Busby, *Seeking a Second Opinion: How to Cure Maryland's Medical Marijuana Law*, 40 U. BALT. L. REV. 139, 171 (2010). Unregulated marijuana plants themselves may also be contaminated by microorganisms and fungi, which can cause infections, especially in those with depressed immune systems. *See id.*

140. Illegal marijuana is often supplied by violent street gangs in dangerous neighborhoods. *See id.* at 169. An individual debilitated, for example, by the nausea, vomiting and pain of chemotherapy would have little confidence in her ability to safely navigate these risks.

141. She would not have the energy or likely the resources to fight a legal case. Job loss and the subsequent loss of health care benefits would be devastating. Given the poor medical care in penal institutions, a seriously ill person would be particularly concerned about the risk of incarceration. *See id.* at 173.

142. ALASKA STAT. §§ 17.37.010–.080 (2010); ARIZ. REV. STAT. ANN. §§ 36-2801–2819 (2010); CAL. HEALTH & SAFETY CODE §§ 11362.5–.9 (West 1996); COLO. REV. STAT. §§ 12-43.3-101–1001 (2010); DEL. CODE ANN. tit. 16, §§ 4901A–4926A (2011); D.C. CODE §§ 7-1671.01–.13 (2010); HAW. REV. STAT. §§ 329-121–128 (2010); ME. REV. STAT. ANN. tit. 22, §§ 2421–2430 (2010); MICH. COMP. LAWS §§ 333.26421–.26430 (2008); MONT. CODE ANN. §§ 50-46-301–344 (2011); NEV. REV. STAT. §§ 453A.010–.810 (2001); N.J. STAT. ANN. §§ 24:6I-1–16 (West 2010); N.M. STAT. ANN. §§ 26-2B-1–7 (2007); OR. REV. STAT. §§ 475.300–.375 (1999); R.I. GEN. LAWS §§ 21-28.6-1–12 (2007); VT. STAT. ANN. tit. 18, §§ 4472–4474I (2011); WASH. REV. CODE §§ 69.51A.005–.903 (2011); *see also* Cohen, *supra* note 127, at 93.

143. Tracy Russo, *Memorandum: Investigations and Prosecutions in States Authorizing the Medical Use of Marijuana*, U.S. DEP'T OF JUSTICE: THE JUSTICE BLOG, (Oct. 19, 2009), http://blogs.justice.gov/main/archives/192.

marijuana seem to be maturing. Several states now have strict, comprehensive regulations in place that provide ideas as to how regulations might work in the context of circumvention tools.[144]

Colorado, for example, recently enacted one of the strictest regulatory regimes for the production and distribution of medical marijuana.[145] The regulations bring manufacturing and distribution under regulatory control by requiring that all the major players identify themselves to the state. Thus, dispensaries are required to obtain licenses to operate legally and to make accurate records available for state inspection at any time during working hours.[146] Similarly, doctors who prescribe medical marijuana must make records of their prescriptions available for state and medical board review.[147] Patients prescribed medical marijuana must register with the state, which maintains a confidential registry.[148]

Second, the regulations impose a number of requirements on all parties to minimize spillover to illegitimate marijuana use. For example, the law attempts to ensure that medical marijuana is used only for medical purposes.[149] A dispensary can grow only the amount of marijuana needed for the number of patients who have designated that dispensary as their authorized dispensary.[150] To ensure that the demand for medical marijuana does not support criminal gangs, dispensaries must grow their own marijuana.[151] A number of safeguards additionally attempt to ensure that this marijuana is only distributed to patients with a medical need for the substance. No marijuana may be consumed on the premises of a dispensary.[152] Dispensary employees must not only have clean criminal records, but "good moral character."[153] To reduce ethical conflicts for doctors, doctors who prescribe medical marijuana to a patient must have an existing doctor-patient relationship with that patient and doctors may not have a financial interest in the dispensaries.[154]

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144. *See* Sean T. McAllister, *The New, More Regulated Frontier for Medical Marijuana*, 39 COLO. LAW. 29 (2010); Geoff Mulvihill, *New Jersey's Medical Pot Start-Up Companies Are Well-Connected*, THE PRESS OF ATLANTIC CITY, Apr. 4, 2011, http://www.pressofatlanticcity.com/news/press/new_jersey/new-jersey-s-medical-pot-start-up-companies-are-well/article_9c00b67a-180a-505b-95c6-fed4b6749340.html.

145. McAllister, *supra* note 144, at 29–31.

146. *Id.* at 33.

147. COLO. REV. STAT. § 25-1.5-106(5)(c) (2012).

148. *Id.* § 25-1.5-106(3)(a)(I), (9).

149. *Id.* § 25-1.5-106(1)(b).

150. *Id.* § 12-43.3-901(4)(e). Generally, a dispensary may cultivate no more than six plants per patient. *Id.*

151. *See* McAllister, *supra* note 144, at 29, 33. Dispensaries have to grow at least 70% of their marijuana and can only acquire the remaining marijuana from other licensed dispensaries. COLO. REV. STAT. § 12-43.3-103(2)(b).

152. COLO. REV. STAT. § 12-43.3-901(1)(a).

153. *Id.* § 12-43.3-307(1)(b), (e).

154. *Id.* § 12-43.3-103(2)(a). Prior to the passage of the 2010 regulations, a study by the Colorado Department of Public Health and Environment found that 73% of marijuana patients were recommended by fifteen doctors. Patrice Campbell, *Bill Tightening Medical Marijuana Use Passes Colorado Senate Committee*, EXAMINER, Jan. 27, 2010, http://www.examiner.com/women-s-issues-in-denver/bill-tightening-medical-marijuana-use-passes-colorado-senate-committee; *see also* COLO. REV. STAT. § 12-43.3-901(6).

It is too early to tell how successful these regulations will be in making marijuana available for medical use while preventing, or at least not increasing, its availability for harmful uses.[155] But clearly there have been benefits. Patients can buy high quality marijuana in safe, clean facilities from knowledgeable practitioners.[156] At the same time, producers and sellers of marijuana in Colorado have welcomed the opportunity to operate with legal certainty.[157] Meanwhile, other states are rushing to follow Colorado's model.[158] Over time, in the best tradition of states as laboratories of democracy, experimentation among the states may produce the best models of effective regulation.[159] In the meantime, however, the Colorado regulations include common sense principles that would also make sense in the context of regulating circumvention tools.

C. PROPOSALS FOR BASING LIABILITY ON HARM

To return to the general legal framework that should regulate the manufacture and distribution of double-edged items, manufacture and distribution should be regulated by balancing the probability and magnitude of harm and benefit along each path to the consumer. As discussed, there is no harm caused when a circumvention tool is manufactured and then distributed to a person who uses it for a noninfringing purpose. And there is no downstream harm if that person does not pass on the circumvention tool or the unprotected copyrighted work to someone else who might use either for infringing purposes. So how do we ensure that a circumvention tool is only manufactured for and distributed to such a person?

I offer a few of ideas here for creating a controlled, legal conduit from manufacturing through distribution to use of circumvention tools. First, in order to track the circumvention tools and to maintain accountability among the parties, the flow of the tools must be transparent. One idea that might be borrowed from the regulations for medical marijuana in Colorado is the requirement that all parties

155. W. Zachary Malinowski, *Colorado's Dispensary Explosion*, PROVIDENCE J. BULL., Mar. 13, 2011, *available at* 2011 WLNR 4980486 ("The police warn that the world of marijuana dispensaries is so new that it's difficult to study any trends or draw conclusions about their impact on crime.").

156. *See* Sam Kamin, *The Challenges of Marijuana Law Reform*, *in* THE IMPACT OF THE DECRIMINALIZATION AND LEGALIZATION OF MARIJUANA: AN IMMEDIATE LOOK AT THE CANNABIS REFORM MOVEMENT (ASPATORE SPECIAL REPORT) 22 (2010).

157. Debbie Kelly & Andrew Wineke, *Medical Marijuana Industry Struggles Amid Competition, Regulation*, THE GAZETTE (June 25, 2011, 3:23 PM), http://www.gazette.com/articles/competition-120408-medical-daylight.html (noting that the spokeswoman for the Colorado Department of Revenue's Medical Marijuana Enforcement Division observed that "most providers are bending over backward to work with the state and are eager to be fully recognized by state law").

158. Michigan is an example, *see* Bill Laitner, *Push to Fix Hazy Pot Law Grows*, DETROIT FREE PRESS, Apr. 3, 2011, http://www.ongo.com/v/675666/-1/427F220429E89E88/push-to-fix-hazy-pot-law-grows; as is Washington, *see* Jonathan Martin, *Pot Dispensaries Sprouting Statewide*, SEATTLE TIMES, Jan. 29, 2011, http://seattletimes.nwsource.com/html/localnews/2014078275_marijuana30m.html; and Rhode Island, *see* Tracy Breton, *Update: Chafee Puts Hold on RI Medical Pot-Centers*, PROVIDENCE JOURNAL, May 2, 2011, http://news.providencejournal.com/breaking-news/2011/05/chafee-announcement-expected-o.html.

159. New State Ice Co. v. Liebmann, 285 U.S. 262, 280 (1932).

involved in the manufacturing, distribution and use of circumvention tools identify themselves and make records of their dealings available for monitoring. Similar to the licensing and registration requirements in Colorado for medical marijuana,[160] the parties involved in manufacturing, distributing and using circumvention tools could be required to identify themselves through license and registration with the Copyright Office. The flow of circumvention tools could be monitored by requiring that the parties make records of their products and transactions available for review. For example, manufacturers could be required to maintain all versions of their software on file and to embed identifiers—the equivalent of serial numbers—in their products so that circumvention tools could be tracked to their source. Regulations might also require that manufacturers and distributors keep records of their transactions and customers by using circumvention tools.[161]

Additional regulations must be designed to ensure that manufacturing and distribution of circumvention tools for noninfringing use does not spill over to infringing use. Like patients with a medical need for marijuana, only those who can show a legitimate need for circumvention tools should be allowed access. An idea on this score might be borrowed from Europe. Germany and the United Kingdom include a mechanism allowing people with a legitimate reason to circumvent a digital lock to petition for access to circumvention tools from the copyright owner.[162] The government typically provides some form of review or recourse to determine whether the need is indeed legitimate.[163] Although these mechanisms are criticized as too limited and not providing enough recourse for those who feel their petitions have been unfairly denied,[164] the mechanism itself seems viable. Those who identify themselves and present a case for legitimate use are likely to use circumvention tools responsibly.

Working out the details of a legislative/regulatory solution will require the findings, compromises and fine-tuning best achieved through the legislative and regulatory process over time. Regulations should be crafted that take into account the types of uses, the characteristics of different classes of noninfringing users and the technology involved to craft effective regulatory and technological mechanisms. The tactics described above offer some ideas on what a solution might involve.

Again, the problem of regulating an item with fair and foul uses is far from a new problem. Many areas of law deal with similar problems. In fact, many

160. *See supra* notes 146–148 and accompanying text.

161. Critics might object arguing that those who use circumvention tools for legitimate purposes should be allowed anonymity. Otherwise, fear of repercussions from copyright owners might discourage legitimate use. Nevertheless, identification and monitoring may be necessary to ensure accountability. At the very least, such regulations might encourage more use than the current complete ban.

162. *See* Wang, *supra* note 11, at 240–43. European laws addressing circumvention of digital locks on copyrighted works are quite similar to American laws. Hinze, *supra* note 28, at 779.

163. Wang, *supra* note 11, at 240–43.

164. *See id.*

countries have passed laws dealing with the same problem.[165] Therefore, policymakers in this area would not be coming up with regulatory tactics in a vacuum. To the contrary, they would have a wide array of workable laws from which to model a solution. Or, as states are increasingly trying to do with medical marijuana, policymakers could simply try legalizing a limited legal conduit from manufacturing through distribution to use, study whether it is effective, and then fine-tune the system.[166]

In the end, it may be that either research or experience would show that legalizing manufacture and distribution does not increase net utility. That is, the harm caused by infringement might outweigh the benefit to society from noninfringing use. If that were the case, then perhaps the current ban on manufacture and distribution of circumvention tools is the best approach. But we should at least conduct a rational weighing of the costs and benefits of allowing limited manufacturing and distribution for noninfringing uses. What we have now is a system that simply ignores the need for some legal manufacture and distribution to allow beneficial noninfringing use to take place.

III. REINTERPRETING THE ANTITRAFFICKING PROVISIONS: A PARTIAL JUDICIAL SOLUTION

Any comprehensive regulatory solution will require new legislation either to enact the laws or to authorize the Copyright Office to write the regulations.[167] Unfortunately, the chances of a comprehensive legislative solution in the near future are not promising. Over the last decade, at least six bills of proposing only modest changes have been introduced in Congress to amend § 1201 and have never even made it to a vote.[168] This Part offers a partial judicial solution for the short term. It will demonstrate how the language of the antitrafficking provisions should be interpreted by the courts to allow limited creation and transfer of circumvention tools for noninfringing purposes.

The scope of actions prohibited by the antitrafficking provisions has received almost no attention from commentators or the courts.[169] Using the standard tools of statutory interpretation, however, this part shows that the antitrafficking provisions allow some creation and transfer of tools for circumvention. The structure and legislative history of the statute indicates that Congress intended that § 1201 be interpreted to allow some legal access to circumvention tools where that access does not lead to infringement. Moreover, the language of the antitrafficking provisions can be interpreted to allow such access. Recent case law and the

165. *Id.* at 217.

166. For examples from Rhode Island, Michigan, and Washington, see Breton, *supra* note 158; Laitner *supra* note 158; Martin, *supra* note 158.

167. Or another administrative agency.

168. Denicola, *supra* note 17, at 216–17.

169. *But see* Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 325 (S.D.N.Y. 2000); Reese, *supra* note 24, at 655 n. 121.

approaches used by analogous areas of law discussed in Part II offer ideas on how to allow some access to circumvention tools without encouraging infringement. This Part concludes with a few practical suggestions as to how the antitrafficking provisions could be interpreted to allow for the creation and transfer of circumvention tools for noninfringing purposes.

A. CONGRESSIONAL INTENT

The structure and legislative history of the DMCA support a reading of "manufacture" to imply large-scale dealings and "traffic" to reach only commercial or illicit activity. With regard to the structure of the statute, as often repeated by the courts:

> It is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme; a court must therefore interpret the statute as a symmetrical and coherent regulatory scheme, and fit, if possible, all parts into an harmonious whole.[170]

The common sense idea is that laws are passed to accomplish a unified purpose and should therefore work together in a logical fashion.

Here, interpreting the antitrafficking provisions to categorically ban every form of creation and transfer of circumvention tools can hardly be said to "harmonize" with the other provisions of § 1201. The antitrafficking provisions contradict the exceptions to the anticircumvention provision because it is impossible to take advantage of these exceptions without violating the antitrafficking provision's ban on manufacturing or distributing circumvention tools.[171] In order to obtain a circumvention tool, a would-be circumventer must either violate the manufacturing prohibition by creating one herself or someone else must violate the ban on "provid[ing]" by conveying the tool to her. Although in the latter circumstance, the would-be circumventer would not herself violate the antitrafficking provisions because there is no prohibition on receiving or possessing a circumvention tool, someone else would necessarily have violated the antitrafficking provision by giving it to her.[172]

A corollary of the principle that a statute should be interpreted as a harmonious whole is the notion that each clause of a statute be given effect.[173] One clause should not be interpreted to "emasculate an entire section."[174] Interpreting the antitrafficking provision to prohibit every form of creation and transfer of a circumvention tool, however, "emasculate[s]" the exceptions to the anticircumvention provision. In a world where a strict interpretation of the

170. Nielson v. Shinseki, 607 F.3d 802, 807 (Fed. Cir. 2010); *see also* Am. Bankers Ass'n. v. Gould, 412 F.3d 1081, 1086 (9th Cir. 2005); Greenbaum v. EPA, 370 F.3d 527, 53536 (6th Cir. 2004).
171. *See supra* Part I.D.2.
172. *See* 17 U.S.C. § 1201(a)(1)(A), (b)(1) (2006).
173. United States v. Menasche, 348 U.S. 528, 538–39 (1955); *see also* 2A NORMAN J. SINGER & SHAMBIE SINGER, SUTHERLAND STATUTORY CONSTRUCTION § 46:6 (7th ed. 2007).
174. *Menasche*, 348 U.S. at 539.

antitrafficking provisions would be fully enforced, no one would have access to circumvention tools because none would be created or transferred. It would be impossible to take advantage of the exceptions in § 1201 allowing circumvention. Conversely, enforcement of the antitrafficking provisions would be impossible if the exceptions to the anticircumvention provision were fully exploited because taking advantage of those exceptions necessitates the creation and transfer of circumvention tools. An interpretation of specific statutory language that makes it impossible to enforce the statute is clearly an interpretation that "emasculate[s]" the statute and leads to an absurd result.[175] In the words of the Supreme Court, "the act cannot be held to destroy itself."[176]

Given the structure of the statute, it does not make sense to interpret the antitrafficking provisions as forbidding all creation and transfer of circumvention tools. In that case, what kind of creation and transfer did Congress intend? Although the legislative history reveals a puzzling lack of awareness of the contradiction between the antitrafficking provisions and the exceptions to the anticircumvention provisions, some clues as to Congress' intent can be gleaned from the statute's history in Congress.

The first versions of § 1201's language introduced in both the Senate and the House in the summer and early fall of 1997 already contained both the anticircumvention provision and the antitrafficking provisions in essentially their final form.[177] The statute already included the exception for law enforcement and a provision protecting fair use, but the remaining exceptions came later. At this point, the statute did not contradict itself.[178]

The contradiction arose upon the addition of the other exceptions. After objections by a number of groups, the library, reverse engineering, protection for minors, security testing, encryption research, protection for personally identifying

175. Armstrong Paint & Varnish Works v. Nu-Enamel Corp., 305 U.S. 315, 333 (1938). ("[T]o construe statutes so as to avoid results glaringly absurd, has long been a judicial function."); *see also In re* Butcher, 125 F.3d 238, 242 (4th Cir. 1997) ("[L]egislature is presumed not to have enacted futile laws or laws which generate absurd results.").

176. *See* Am. Tel. and Tel. Co. v. Cent. Office Tele., Inc. 524 U.S. 214, 228 (1998) (citing Tex. & P. Ry. Co. v. Abilene Cotton Oil Co., 204 U.S. 426, 446 (1907)).

177. *See* WIPO Copyright and Performances and Phonograms Treaty Implementation Act of 1997, S. 1121, 105th Cong. (1997); Digital Millennium Copyright Act, H.R. 2281, 105th Cong. (1997).

178. First, because the law enforcement provision provided an exception for law enforcement to both the anticircumvention and antitrafficking provisions, it did not create any conflict between these provisions. Second, the fair use provision was and remains a puzzling non sequitur. The provision states: "Nothing in this section shall affect . . . defenses to copyright infringement . . . including fair use, under this title." Digital Millennium Copyright Act, H.R. 2281, 105th Cong., § 1201. Since this provision gives no explicit exception to the anticircumvention or antitrafficking provisions, it apparently means that fair use is not a defense to any of these provisions.

The House Report states that a user may circumvent a digital lock for purposes of fair use when "he or she has acquired [the work] lawfully." H.R. REP. NO. 105-551, pt. 1, at 18 (1998). The implication seems to be that the user has the authority of the copyright owner to access the work in the case of a work acquired lawfully. *See id.* In that case, perhaps the user does not need "the authority of the copyright owner" to circumvent. *See* 17 U.S.C. § 1201(a)(3)(A) (2006). In any case, there is no fair use exception to the antitrafficking provision.

information and exemptions-process exceptions were added in several rounds of revisions during 1998. Although the House and Senate reports discuss the value of these exceptions, at no point is there any discussion of the conflict between the antitrafficking provisions and these exceptions.[179]

A cynical explanation is that the legislators included these exceptions to pacify the bill's critics' knowing very well that they were irrelevant and that the powerful copyright holder lobbies wouldn't object. But another possibility—the possibility better supported by the evidence—is that the legislators saw no conflict. When the reports mention the antitrafficking provisions, both the House and Senate reports repeatedly reiterate that the antitrafficking provisions were "drafted carefully to target . . . black boxes."[180] Although this statement was no doubt intended to soothe the electronics industry, which was anxious that it would be penalized for producing products which might have the incidental function of circumventing digital locks, the statement indicates the risk Congress had in mind.[181] The term "black boxes" has its origin in the black set-top boxes sold in the 1980s to intercept cable channels for illicit viewing on home televisions.[182] Since the manufacture of black boxes was a relatively large-scale, commercial enterprise in the 1980s and 1990s, it appears that Congress envisioned trafficking as such an enterprise at the time of the DMCA's enactment.[183] It does not appear that Congress envisioned the creation of circumvention tools for personal use or the limited transfer for purely legitimate purposes. In other words, Congress was concerned with uncontrolled manufacture and distribution that would lead to widespread availability for all uses, including infringing uses. Congress did not seem to be concerned with controlled manufacturing and distribution, both of which would lead only to noninfringing uses.

Furthermore, it is hard to understand why Congress would go to such effort to

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179. *See, e.g.*, H.R. REP. NO. 105-551, pt. 2, at 23–26 (1998); H.R. REP. NO. 105-551, pt. 1, at 20; S. REP. NO. 105-90, at 67–69 (1998).

180. H.R. REP. NO. 105-551, pt. 2, at 38; H.R. REP. NO. 105-551, pt. 1, at 18; S. REP. NO. 105-190 at 28–29; *see also* H.R. REP. NO. 105-796, at 54 (1998) (Conf. Rep.) (calling § 1201 the "black box" provisions).

181. The antitrafficking provisions apply only to devices that are primarily devised for the purpose of circumventing access control or rights control digital locks. *See* 17 U.S.C. § 1201(a)(2), (b)(1). The device must be "primarily designed or produced to circumvent," have "only limited commercially significant purpose or use other than to circumvent" or be "marketed" for use in circumventing a technological protection measure. *Id.* Thus, in theory, there is no prohibition against trafficking in a device that only has the incidental function of circumventing technological protection measures. In practice, this device limitation does not further noninfringing use of locked copyrighted works. Technological protection measures are typically complex pieces of technology involving encryption and multiple layers of protection, which are not cracked "by accident." Even if a device designed for some other purpose was capable of circumventing a lock protecting a copyrighted work, using it to do so would probably require a great deal of expertise and the use of other tools. As a result, using such a device might effectively involve manufacturing and/or distributing circumvention tools in any case.

182. H.R. REP. NO. 98-934, at 4721 (1984).

183. The mention of prohibiting software "hacks" as well as "black boxes" was made *specifically* in relation to analog cassette players, but applies to other types of circumvention. H.R. REP. NO. 105-796, at 59.

create exceptions to the anticircumvention provision if it did not envision that some tools would be available to take advantage of these exceptions. The assumption must have been that the ban on manufacturing and distribution in the antitrafficking provisions did not render circumvention tools entirely unavailable.

Finally, the repeated assertion in the legislative history that § 1201 is intended to preserve fair use and balance supports the notion that legislators intended the exceptions to work. For example, the House Report explained its reasoning for including the triennial exemptions proceedings by stating: "The Committee considers it particularly important to ensure that the concept of fair use remains firmly established in the law."[184] But a documentary filmmaker cannot take advantage of the recent exemptions and make fair use of a digitally locked movie if she has no tools to circumvent the digital lock.

More broadly, Congress was determined to preserve the equilibrium of interests achieved in copyright law prior to the DMCA. As the House Report states, the bill "fully respects and extends into the digital environment the bedrock principle of 'balance' in American intellectual property law for the benefit of both copyright owners and users."[185] Again, this suggests that Congress did not intend to entirely ban circumvention tools. If so, copyright owners would only have to install digital locks on their works to maintain complete legal control over their works. The traditional balance of copyright never gave copyright owners an absolute monopoly over their works. The whole point of fair use is that a user may use the copyrighted work for socially beneficial purposes like free speech without the permission of the copyright owner.[186] Pursuant to the bedrock principle of "balance," a copyright owner's control over her work must be balanced against other interests.[187]

B. THE LANGUAGE OF THE ANTITRAFFICKING PROVISIONS

The language regarding what actions the antitrafficking provision prohibits is the following: "No person shall manufacture, import, offer to the public, provide, or otherwise traffic . . . ."[188] At first glance, the language seems very broad. The choice of these words, however, reinforces the conclusion that Congress intended to prohibit large scale, uncontrolled manufacturing and distribution, but not necessarily manufacturing and distribution leading to noninfringing uses.

None of these terms is defined in the statute. To interpret them, the language must be accorded its plain meaning—that is, the common or typical meaning to the public.[189] For this reason, courts often turn to dictionary definitions to ascertain the common understanding of a word.[190]

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184. H.R. REP. NO. 105-551, pt. 2, at 26.

185. *Id.*

186. *See supra* note 69 and accompanying text.

187. *See* H.R. REP. NO. 105-551, pt. 2, at 26.

188. *See* 17 U.S.C. § 1201(a)(2), (b)(1) (2006).

189. *See, e.g.*, Lamie v. U.S. Trustee, 540 U.S. 526, 536 (2004); U.S. v. Lehman, 225 F.3d 426, 428–29 (4th Cir. 2000).

190. *See, e.g.*, Bd. of Trustees of Leland Stanford Junior Univ. v. Roche Molecular Sys., 131 S.Ct.

Starting with "manufacture," "manufacture" has the connotation of large-scale production, not the creation of one tool for personal use.[191] Dictionaries support this interpretation. For example, the *American Heritage Dictionary of the English Language* defines "manufacture" as:

> To make or process (a raw material) into a finished product, especially by means of a large-scale industrial operation. To make or process (a product), especially with the use of industrial machines. To create, produce, or turn out in a mechanical manner . . . .[192]

Other dictionaries, however, give simpler, broader definitions, such as "to make goods by hand or by machinery."[193] If Congress had intended to ban all forms of creation, however, it could have used alternative terms with broader meanings. For example, Congress could have used the terms "make" or "create." The fact that it did not seems to imply that it meant to ban large-scale production and not necessarily limited, controlled production of these tools.

The choice of the word "traffic" also suggests that Congress intended to prohibit transfers *leading to infringement* rather than all transfers. Significantly, "trafficking" often has the connotation of illicit activity.[194] "Trafficking" would therefore apply to transfers leading to infringement, but not those leading to legitimate and lawful uses of circumvention tools.

Where "trafficking" is not defined as a shady or illegal activity, it almost always includes a commercial element. For example, *Black's Law Dictionary* defines "traffic" as: "1. *Commerce*; trade; the *sale* or exchange of such things as merchandise, bills, and money. 2. The passing or exchange of goods or commodities from one person to another for an equivalent in *goods or money*."[195]

2188, 2196 (2011); United States v. Alvarez-Sanchez, 511 U.S. 350, 357–58 (1994); Smith v. United States, 508 U.S. 223, 228–29 (1993).

191. Reese, *supra* note 24, at 655 n. 121 ("While 'manufacture' does mean to make a finished product, it typically means to do so in some quantity. I might build a bookshelf for my home, or sew several shirts to wear, or bake a loaf of bread every week, but it would be odd to say that I am 'manufacturing' bookshelves or shirts or bread.").

192. *Manufacture Definition*, THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1096 (Houghton Mifflin Company 1996). *Webster's New International Dictionary* gives the following definition: "To make (wares or other products) by hand, by machinery, or by other agency; as, to *manufacture* cloth, nails, glass, etc.; to produce by labor, esp., now, according to an organized plan and with division of labor, and usually with machinery." *Manufacture Definition*, WEBSTER'S NEW INTERNATIONAL DICTIONARY 1499 (unabr. 1945). Webster's includes two other related definitions, but those definitions do not seem to apply in this context. *See id.*

193. THE LAW DICTIONARY (Anderson Publ'g Co. 1997); *see also* BALLENTINE'S LAW DICTIONARY (Matthew Bender & Co. 2010) ("[T]o make and fabricate from raw materials or processed materials by the hand, by art, or by machinery, into a form fit and convenient for use.").

194. For example, *Webster's II New College Dictionary* includes an illicit element: "c: illegal or disreputable usually commercial activity <the drug traffic>." *Trafficking Definition*, WEBSTER'S II NEW COLLEGE DICTIONARY, *supra* note 87, at 1196. To give other examples, *Webster's New International Dictionary* contains the definition: "To engage in illicit sale or purchase; to trade in something not properly for sale; as, to traffic in benefices or in human beings." *Trafficking Definition*, WEBSTER'S NEW INTERNATIONAL DICTIONARY, *supra* note 192, at 2685.

195. *Traffic Definition*, BLACK'S LAW DICTIONARY 1534 (West Publ'g 2004) (emphasis added).

With regard to the commercial element, courts that have considered the question of what constitutes "trafficking" in the context of federal child pornography sentencing laws have found that "trafficking" must be commercial, or at least involve barter, in some form.[196] Like § 1201, the child pornography sentencing guidelines do not define "traffic."[197] As a result, courts in this area have looked to dictionary definitions to ascertain the definition and concluded that trafficking ordinarily means "both buying and selling commodities for money and exchanging commodities by barter."[198]

Even if "trafficking" does not necessarily refer only to illicit activities likely to lead to infringement, the commercial connotation suggests "trafficking" refers to the type of large-scale commercial activity involved in selling "black boxes" in the 1980s and 1990s—not transfers targeted to noninfringing uses. Any honest analysis must admit that "trafficking" seems likely to mean illicit, or at least untargeted, commercial uses.[199]

Furthermore, the statutory context of the words suggests that the limitations in the term "traffic" apply to the other enumerated terms: "manufacture, import, offer to the public, provide."[200] A number of opinions, including several Supreme Court

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Ballentine's Law Dictionary gives a similar definition: "Buying and selling; commercial intercourse. The passing of goods or commodities from one person to another for an equivalent in goods or money." *Traffic Definition*, BALLENTINE'S LAW DICTIONARY, *supra* note 193.

196. In child pornography, the definition of "traffic" matters because the law provides longer sentences for those who "traffic" in child pornography as opposed to those who merely possess it. *See* U.S. SENTENCING GUIDELINES MANUAL § 2G2.2 (2011).

197. U.S. v. Dyer, 589 F.3d 520, 525 (1st Cir. 2009).

198. United States v. Todd, 100 F. App'x 248, 250 (5th Cir. 2004). Other courts have come to similar conclusions. *See* United States v. Dyer, 589 F.3d 520, 525 (1st Cir. 2009); United States v. Parmelee, 319 F.3d 583, 594 (3d Cir. 2003); United States v. Paul, 274 F.3d 155, 163 (5th Cir. 2001); United States v. Horn, 187 F.3d 781, 791 (8th Cir. 1999).

In the context of § 1201, only one court has addressed the definition of "traffic." The Southern District of New York found that "traffic" means to "engage in dealings with it." Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 325 (S.D.N.Y. 2000). But this court's analysis is suspect due to its clumsy reasoning and the factual context of the case. Without comment, it relied on a thirty-year-old dictionary—and a compact edition at that—for its definition. *Id.* at 325 n.176. Given the facts of the case, it is unsurprising that this court would want to avoid a commercial connotation for "traffic": the defendant posted decryption code on the Internet for circumventing the protections on DVDs for ideological, not commercial, reasons. *Id.* at 312.

199. Another argument in favor of a commercial element is that statutes in the related area of counterfeiting expressly define "traffic" to involve commercial activity. The counterfeiting statutes refer to 18 U.S.C. § 2320(f)(5) (2006), which states: "the term "traffic" means to transport, transfer, or otherwise dispose of, to another, *for purposes of commercial advantage or private financial gain*, or to make, import, export, obtain control of, or possess, with intent to so transport, transfer, or otherwise dispose of . . . ." *Id.* (emphasis added). Similarly, the anticybersquatting statute defines "traffic" to include a commercial element: "the term 'traffics in' refers to transactions that include, but are not limited to, sales, purchases, loans, pledges, licenses, exchanges of currency, and any other transfer for consideration or receipt in exchange for consideration." 15 U.S.C.A. § 1125(d)(1)(E) (West 2012). Like § 1201, the counterfeiting and anticybersquatting statutes are concerned with preventing the infringement of intellectual property. It does not seem far-fetched to suppose that the drafters would have been aware of this definition of "traffic" when drafting the statute.

200. *See* 17 U.S.C. § 1201(a)(2), (b)(1) (2006). A principle of statutory interpretation called *ejusdem generis* sometimes applies when trying to interpret a general word at the end of a string of

opinions, have interpreted summary provisions to modify the enumerated terms.[201] For example, in *Federal Maritime Commission v. Seatrain Lines, Inc.*, the Supreme Court interpreted the language "or in any manner" in "(1) fixing or regulating transportation rates or fares; (2) giving or receiving special rates . . . ; (3) controlling . . . competition; . . . (7) or in any manner providing for an exclusive, preferential, or cooperative working arrangement," to mean that the enumerated categories preceding "working arrangement" were all "working arrangements."[202] As the Court stated, "[s]ince the summary provision is explicitly limited to 'working arrangement(s),' it is reasonable to conclude that Congress intended this limitation to apply to the specifically enumerated categories as well."[203]

The language in § 1201 uses a similar summary phrase, "or otherwise," as the statute in *Seatrain Lines* uses "or in any manner." It seems logical that Congress also intended the summary phrase in this provision to modify the enumerated terms. Why else would the drafters have included the word "otherwise?" Congress could have instead simply said "or trafficking," which would indicate clearly that trafficking was intended to be a separate and unrelated category. Certainly, the one court to address this issue in interpreting § 1201—again the Southern District of New York—concluded that "or otherwise traffic" means that "traffic" modifies the enumerated terms.[204]

If this interpretation is in fact what Congress intended, then the enumerated terms are all meant to be interpreted as forms of "traffic[king]." This suggests that the elements of the definition of "traffic" apply to all the preceding terms. As noted above, the common element of "trafficking" in the various dictionary definitions appears to a form of transfer or dealings.[205] The terms "import," "offer to the public" and "provide" already imply some form of dealing. On its face, "manufacture" does not require a dealing in the sense of exchange between multiple parties, but perhaps the interpretation of "manufacture" should be limited to manufacturing intended for exchange. In other words, perhaps creating a circumvention tool solely for personal use would not necessarily be prohibited by

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enumerated terms. At first glance, it might appear that this principle would help to narrow the meaning of "traffic" by reference to the string of enumerated terms it follows: "manufacture, import, offer to the public, provide . . . ." *See id.* The idea is that the legislature must have intended the general term at the end to belong to the same class as the enumerated terms. *See* 3B SINGER & SINGER, *supra* note 173, § 47:17. However, *ejusdem generis* typically applies where the enumerated terms are both more specific than the general term and clearly constitute a class. *See id.* Neither criterion seems to be met here. Several terms in the enumerated list, such as "manufacture" and "provide," seem to be at least as general as "traffic." *See* 17 U.S.C. § 1201(a)(2), (b)(1). In addition, the class that the enumerated terms would constitute is far from clear. Instead, there is a stronger argument that the term "traffic" qualifies the terms preceding it.

201. Fed. Mar. Comm'n v. Seatrain Lines, Inc., 411 U.S. 726, 734 (1973); United States v. Bass, 404 U.S. 336, 339 (1971); Strom v. Goldman Sachs & Co., 202 F.3d 138, 146–47 (2d Cir.1999).

202. *Seatrain Lines, Inc.*, 411 U.S. at 734.

203. *Id.*

204. Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 325 (S.D.N.Y. 2000).

205. *See supra* notes 194–195 and accompanying text; *see also* AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE, *supra* note 192, at 1898.

the statute. Furthermore, since "traffic" includes the connotation of illicit activity or untargeted commercial activity, the enumerated terms may only refer to activity within those limitations.

C. GUIDELINES FOR INTERPRETATION BY THE COURTS

Taking the language, structure and legislative history of § 1201 into account, § 1201 must be interpreted to allow some creation and transfer of circumvention tools. Based on the language of the statute, it seems that Congress clearly intended to prohibit large scale, commercial manufacture and distribution of circumvention tools. Where not commercial, Congress intended to ban manufacturing and distribution for an illicit purpose, namely infringement.[206] The concern with large scale, commercial manufacture and distribution is echoed in the legislative history, with legislators reiterating that the antitrafficking provisions are narrowly targeted to ban "black boxes."[207] This makes sense, for manufacture and distribution at that level would lead to broad availability and the problems of widespread infringement discussed in Part II. Yet interpreting the antitrafficking provisions to forbid all access to circumvention tools appears contrary to congressional intent as manifested by the statute's structure and legislative history.

Courts could take a narrow or broad approach with regard to noninfringing uses. Under a narrow interpretation, a court might find that the creation and transfer of circumvention tools is legal only when it leads to circumvention under one of the exceptions in the statute or approved through the exemptions process. A broad interpretation would allow any creation and transfer of circumvention tools that lead only to noninfringing uses generally. Although a broader interpretation would better balance the interests implicated in copyright law, either interpretation would be an improvement over a comprehensive ban on making or sharing circumvention tools.

The real challenge in using either interpretation is determining when creation and transfer would be likely to lead to legitimate use. However, the common sense framework a court should apply in making this determination is the same framework discussed in Part III. A court should weigh the probability and extent of legitimate use against the probability and extent of infringing use to which the creation and transfer of circumvention tools at issue might lead.

Using this approach would not push the law dramatically ahead of current case law. The Federal Circuit already takes the view that circumvention must have some reasonable relationship to infringement in order to be actionable.[208] In

206. Under this interpretation, a defendant like the defendant in *Universal City Studios, Inc. v. Reimerdes* should be liable for widely posting the key to circumvent the access controls on DVDs even though his intention was not to make money because his explicit goal was to facilitate infringement of copyrighted works. *See Reimerdes*, 111 F. Supp. 2d at 312.

207. *See supra* note 183.

208. Chamberlain Grp., Inc. v. Skylink Techs., Inc., 381 F.3d 1178 (Fed. Cir. 2004), *cert. denied*, 544 U.S. 923 (2005); *see also* Storage Tech. Corp. v. Custom Hardware Eng'g & Consulting, Inc., 421 F.3d 1307 (Fed. Cir. 2005).

Chamberlain, the Federal Circuit concluded that if the act of circumvention at issue could not increase the likelihood of infringement, the act of circumvention did not violate the anticircumvention provision.[209] The court reasoned that trafficking in a device incapable of leading to infringement should also not be actionable.[210] Courts could take this reasoning one step further and find that trafficking in a device capable of infringement in the hands of someone unlikely to use it to infringe does not violate § 1201.

D. A FEW SUGGESTIONS

Given the ease with which circumvention tools may be leaked to those who might use them for wholesale infringement, only very limited, controlled forms of creation and transfer should be found legal. Courts would have to analyze the issue on a case by case basis. Nevertheless, a few types of creation and transfer seem particularly harmless.

First, the creation of a circumvention tool should not in itself violate the antitrafficking provisions. Assuming our documentary filmmaker has the skills to do so, she should not be liable simply for making her own circumvention tool. Based on the plain meaning of the antitrafficking provisions alone, the act of creation does not appear to be prohibited if there is no intent or likelihood that the creator will make the tool available to others. Again, the language "or otherwise trafficking" indicates that the other terms are modified by the term "trafficking."[211] Because the definition of "traffic" always involves some form of transfer or exchange, creation of a tool that has no nexus to transfer or exchange would not appear to be covered by the statute.

Prohibiting creation does not make sense on policy grounds either. The concern underlying § 1201 is that circumvention tools will become widely available for infringing uses. But creation in itself does not automatically create this risk. Of course, if the documentary filmmaker uses the tool to make wholesale copies of movies and distributes them, she is liable for infringement. And if the documentary filmmaker posts her tool on the Internet for all to use, then she should be liable for trafficking. A court might even interpret "manufacture" broadly by finding the documentary filmmaker's act of creation illegal if she showed the intent to transfer for illicit purposes of commercial gain.[212] If the documentary filmmaker makes the tool, however, and uses it only to take advantage of the exemption allowing her to take a small clip for her documentary, she should not be liable under any law.

Second, providing circumvention services should not violate the antitrafficking provisions if such services do not lead to infringement.[213] The uses of

209. *See Chamberlain Grp., Inc.*, 381 F.3d at 1202.

210. *See id.* at 1204.

211. *See* 17 U.S.C. § 1201(a)(2), (b)(1) (2006).

212. For example, the court might find a violation if she also created a user guide with examples of how to use her tool to infringe.

213. *See* Denicola, *supra* note 17, at 232. The language of the antitrafficking provisions

circumvention services can be better controlled than the uses of a tool distributed to others.[214] As discussed in Part III, there is no danger of infringement if a circumvention tool is given to someone who will use it only for noninfringing uses and will not pass on the tool or unprotected copies of copyrighted works.

Third, creation and transfer of circumvention tools within the same legal "person" that uses the tools to circumvent should not violate the antitrafficking provisions.[215] The trafficking ban applies to "person[s]," not specifically to individuals.[216] A university, for example, is a legal person. Where the IT department of the university creates a circumvention tool only for internal use within the university, the university should not be liable under the antitrafficking provisions in the same way that an individual, such as the documentary filmmaker, should not be liable for creating a circumvention tool purely for her own use. Moreover, the university should not be liable when the IT department provides the circumvention tool to others within the university. Because the transfer occurs within a legal person, this transfer should not violate the antitrafficking provisions. In practice, this is already the case. IT departments at universities already provide circumvention tools and services to members of the university.[217] They should do so, however, with confidence that their activities are lawful. All legal entities should be able to go forward with this confidence, whether they are commercial corporations, nonprofits or universities. A legal entity should have the same freedom as an individual to circumvent as long as it also exercises its responsibility to police its employees.

These three situations only cover a few of the more obvious situations in which the trafficking prohibition should not apply. Courts should consider other types of creation and transfer on a case by case basis. Where the creation and transfer of

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specifically prohibits "services" as well as "devices": "No person shall manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, *service*, device, component, or part thereof . . . ." 17 U.S.C. §1201(a)(2), (b)(1) (emphasis added). Providing a service, however, which does not lead to infringement should not fall under the antitrafficking ban.

214. We can imagine, for example, a fictional provider of circumvention services—say, "Fair Use Services"—which provides circumvention services for those who want to take advantage of the exemptions issued by the Copyright Office. Our documentary filmmaker pays Fair Use Services to extract a small clip from a popular movie for her. Fair Use Services asks her for a statement explaining what she plans to do with the clip. After determining that the documentary filmmaker's proposed use meets the criteria for the Copyright Office's exemption, Fair Use Services copies and sends her the clip.

Fair Use Services's act of circumvention in making the clip is legal under the exemption. Moreover, Fair Use Services has not given the documentary filmmaker the circumvention tool, so there is no risk that she will then use it to illegally circumvent digital locks or infringe works herself or that she will pass it on to others who might do so. Finally, Fair Use Services has provided her with only a small clip. Even if the documentary filmmaker uses it for a different reason or passes it on to others, a small clip is unlikely to affect the market for the movie. *See* Yen, *supra* note 17, at 663 n. 51. One might imagine Fair Use Services providing circumvention services to a range of users for noninfringing purposes. A court might analyze the services the company provides, its policies and track record to determine whether it creates a risk of infringing use. If it created no risk of infringement, however, the company should not be subject to liability for trafficking.

215. Denicola, *supra* note 17, at 232.

216. 17 U.S.C. § 1201(a)(2), (b)(1).

217. Denicola, *supra* note 17, at 210.

circumvention tools are unlikely to lead to infringement, but likely to lead to beneficial uses, courts should find no liability under the antitrafficking provisions.

In practice, those involved in these types of creation and transfer are unlikely to be sued by copyright holders because their activities do little to threaten copyright holders' interests. A rational copyright holder will instead save its resources for lawsuits with a greater effect on infringement. For the same reason, however, these cases are unlikely to go to court where judges might provide some certainty as to which types of creation and transfer are legal. In the meantime, those who might be interested in providing circumvention tools or services for legitimate uses will be discouraged from entering the market. After all, if a provider is concerned about the legality of the end use, that provider probably also cares about staying on the right side of law in general for reasons of principle or reputation.[218] The result, as discussed in Part II, is a black market for circumvention tools, which disproportionately suppresses noninfringing uses of digitally locked works.

The goal in providing the arguments for the legality of certain types of creation and transfer of circumvention tools here is to encourage would-be providers of circumvention tools to provide tools or services at least in these limited circumstances. Even a small legal market for circumvention tools would have a large impact on beneficial use. Legitimate users would have access to reliable, safe and effective tools. Our documentary filmmaker could include the clips she needs to make her point effectively about ethnic stereotyping. Free speech and social awareness would be enhanced.

Nevertheless, a broader interpretation of the antitrafficking provisions is only a partial solution. A complete regulatory framework for the manufacture and distribution of circumvention tools is the better solution. Well-crafted laws and regulations would provide more certainty, set models for legal paths to acquire and use circumvention tools, make enforcement against illegitimate use straightforward, and generally optimize beneficial uses.

IV. CONCLUSION

Although the challenges engendered by the digital and Internet revolutions are new, the problem of how to regulate access to an item with fair and foul uses is not. Other areas of law have had to struggle with the problem of how to allow access to the same item for some uses and bar access for other uses. The challenge is to rationally align access with social goals. To do this requires identifying the precise harm and benefits at issue and then addressing the likelihood that different forms of access to the regulated item will lead to either harm or benefit. In contrast, the approach taken by the DMCA to encourage violation of its own provisions is deeply flawed. As in other areas of law, some forms of manufacture and distribution of circumvention tools are unlikely to lead to harm and may instead provide important social benefits. This Paper attempts to offer a framework for

218. *See, e.g.*, Liu, *supra* note 31, at 514–16.

thinking about the issue and a few suggestions on possible solutions. More research and study should be conducted to weigh the threat of infringement against the benefits of access in different forms of manufacturing and distributing circumvention tools in order to properly regulate circumvention tools. The question of how to best limit access to circumvention tools deserves a better solution than the current legal approach.