

SOFTWARE, SOVEREIGNTY AND THE INTERNET: CIRCUMVENTING  
CHAOS THROUGH TRIPs

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This article explores the applicability, enforceability and logic of anti-circumvention provisions under international copyright law. The author suggests that digital copyrights should be enforced internationally via anti-circumvention measures prohibiting international trafficking in circumvention technologies under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), which was put into effect by the World Trade Organization's Multilateral Trade Negotiations in 1994. Since the adoption of this proposal could arguably limit international access to digital content, the article sets forth a proposal for exactly how TRIPs could be amended without limiting such access. Further, the article establishes an economic rationale for implementing the proposed amendment to TRIPs. The article also discusses how the proposed amendment might be implemented and the broad policy debate arising from its implementation.

I. INTRODUCTION

The scope and direction of international copyright law has changed considerably over the past decade. The increasing popularity of digital transactions as well as the development of digital locks and lock-picking devices signal a new era in the exploitation of copyrighted digital content and its potential to create wealth. This article suggests how international copyright law can be amended in order to create more wealth across national boundaries. More specifically, digital copyrights should be enforced internationally via anti-circumvention measures under the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPs"),<sup>1</sup> which would

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<sup>1</sup> General Agreement On Tariffs and Trade – Multilateral Trade Negotiations (The Uruguay Round): Agreement On Trade-Related Aspects Of Intellectual Property Rights, Including Trade in Counterfeit Goods, Apr. 15, 1994, 33 I.L.M. 81 (1994).

prohibit trafficking in circumvention technologies. By only prohibiting trafficking in circumvention technology, the fair use of circumvention technology would still be allowed under TRIPs because a restriction on trafficking does not amount to a restriction on creation. Circumvention technology could be produced, but its use would be regulated and it would be prohibited from being posted on websites that are accessible to the general public. Given the current thrust of copyright scholarship, this is an unpopular proposition.<sup>2</sup> However, the proposition deserves exploration because anti-circumvention issues did not arise in the negotiations surrounding TRIPs. Put simply, the parties to TRIPs did not foresee the necessity of anti-circumvention provisions. According to one senior counselor of the U.S. Patent and Trademark office, “[t]he type of interactive reproduction taking place today . . . was not a major problem at the time. Consequently, the issue of anti-circumvention protection never arose.”<sup>3</sup> The World Intellectual Property Organization (“WIPO”) Copyright Treaty of 1996<sup>4</sup> included anti-circumvention provisions, as have the European Union’s Copyright Directive<sup>5</sup> and the United States’ Digital Millennium Copyright Act (“DMCA”).<sup>6</sup> Piecemeal protection of digital copyrights is inefficient given the global demand for digital content. Digital copyrights should be protected internationally under TRIPs because, unlike other international copyright treaties (e.g., WIPO and the Berne Convention<sup>7</sup>), TRIPs possesses the power to require enforcement. This power is rooted in the ability to levy trade sanctions against countries that do not comply with it.<sup>8</sup> These sanctions apply to all nations that are parties of the World Trade Organization (“WTO”).

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<sup>2</sup> See, e.g., Jessica Litman, *Copyright Legislation and Technological Change*, 68 Or. L. Rev. 275 (1989); Marci A. Hamilton, *The TRIPs Agreement: Imperialistic, Outdated, and Overprotective*, 29 Vand. J. Transnat’l L. 613 (1996).

<sup>3</sup> E-mail from Michael S. Keplinger, Senior Counselor, Office of Legislative and International Affairs, U.S. Patent and Trademark Office, to Manavinder S. Bains (Apr. 24, 2001 14:27:35 EST) (on file with author).

<sup>4</sup> WIPO Copyright Treaty (1996), Apr. 12, 1997, art. 11, S. Treaty Doc. No. 105–17, 1997 WL 447232.

<sup>5</sup> Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, 2001 O.J. (L 167) 10–19 [hereinafter ECD]; see also Copyright: Commission Approves Council’s Common Position, European Report (European Info. Serv., Brussels, Belgium) Nov. 4, 2000.

<sup>6</sup> Digital Millennium Copyright Act, 17 U.S.C. § 1201.

<sup>7</sup> Berne Convention for the Protection of Literary and Artistic Works of Sept. 9, 1886, 828 U.N.T.S. 221 (last revised at Paris, July 24, 1971) [hereinafter Berne Convention].

<sup>8</sup> See Jane C. Ginsburg, *International Copyright: From a “Bundle” of National Copyright Laws to a Supranational Code?*, 47 J. Copyright Soc’y U.S.A. 265 (2000) (illustrating the enforcement power of TRIPs by comparing TRIPs, arts. 41–61, with Berne Convention, *supra* note 7).

Since there is an urgent need for digital content and networks in developing and less-developed countries,<sup>9</sup> I suggest that the grant of rental rights to holders of copyrights in software and cinematic works under Article 11 of TRIPs be replaced with worldwide anti-circumvention measures prohibiting trafficking in circumvention technologies.<sup>10</sup> This would give developing and less-developed countries access to software while simultaneously protecting copyright holders in software. The rental rights granted under TRIPs address an outdated mode of copyright infringement and unnecessarily limit access to copyrightable digital content. This is most clearly understood by viewing TRIPs' Article 11 rental rights within the following example: under Article 11, copyright holders in cinematographic works and in computer programs may exercise exclusive rights over the commercial rental of their work. Thus, Hollywood studios can withhold the right of the Blockbusters of the world to rent movies. The United States is not obliged to enforce this right unless the studios are being sufficiently harmed by the widespread copying of their titles. With respect to computer programs, no member-country can take the rental right away. As we shall see, movies are not, nor are they likely to be, pirated by the Blockbusters of the world, thus rendering the rental rights obsolete with respect to cinematic works. The rental rights are concomitantly overbroad with respect to computer programs: such rights prevent member countries from forcing companies, such as Microsoft, to refrain from depriving certain countries of access to digital content.

This article begins with a brief history of international copyright law, highlighting a need for more precise international copyright law with respect to digital media (Section II). Following this history is a hypothetical that illustrates the difficulty in protecting digital copyrights internationally (Section III). The next section assesses the wealth-creating potential of heightened protection of digital media via anti-circumvention provisions (Section IV). Section V discusses the arguments for and against international anti-circumvention provisions. Since the implementation of anti-circumvention provisions under TRIPs raises unique issues with respect to developing and less-developed nations, a separate section is devoted to this topic (Section VI). Section VII offers a brief summation and discussion of how international anti-circumvention provisions might be implemented and the broad policy debate respecting the right of users of the Internet to be left alone. Viewed from these different angles, an argument is made for the adoption of anti-circumvention provisions prohibiting international trafficking in circumvention technologies.

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<sup>9</sup> See Peter K. Yu, *Terrorism and the Global Digital Divide: Why Bridging The Divide Is Even More Important After September 11*, Findlaw's Legal Commentary (Feb. 11, 2002), at [http://writ.news.findlaw.com/commentary/20020211\\_yu.html](http://writ.news.findlaw.com/commentary/20020211_yu.html) (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review). See also *End Digital Divide Says Kofi Annan*, BBC News (Mar. 17, 2001), available at [http://news.bbc.co.uk/1/hi/world/south\\_asia/1223626.stm](http://news.bbc.co.uk/1/hi/world/south_asia/1223626.stm) (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review).

<sup>10</sup> TRIPs, *supra* note 1, art. 11:

In respect of at least computer programs and cinematographic works, a Member shall provide authors and their successors in title the right to authorize or to prohibit the commercial rental to the public of originals or copies of their copyright works. A Member shall be excepted from this obligation in respect of cinematographic works unless such rental has led to widespread copying of such works which is materially impairing the exclusive right of reproduction conferred in that Member on authors and their successors in title. In respect of computer programs, this obligation does not apply to rentals where the program itself is not the essential object of the rental.

## II. A BRIEF HISTORY

Prior to the adoption of TRIPs, all of the parties to the WTO were parties to the Berne Convention.<sup>11</sup> The Berne Convention, originally concluded in 1886 and amended since, protects the rights of authors in their literary and artistic works.<sup>12</sup> When a foreign author's work is published in a country other than her country of origin, Article 5, Section 3 of the Convention grants her the "same rights as national authors."<sup>13</sup> The Convention also allows for member countries to enact greater standards of protection than those in the Convention itself.<sup>14</sup> The Convention does not, however, precisely define those works that fall within its protection, nor does it define the scope of this protection.<sup>15</sup> This ambiguity has given nations much room to wrangle over what is protected under the Convention.

Prior to the adoption in 1994 of TRIPs, which proclaims that "[c]omputer programs whether in source or object code shall be protected as literary works under the Berne Convention," protection of software under international copyright law was essentially an open question.<sup>16</sup> Although the adoption of TRIPs has reigned-in this discussion, the eligibility criteria that a member nation must apply remains vague, as do the policies underlying the enforcement of TRIPs.<sup>17</sup>

## III. HYPOTHETICAL

The problems arising in the international protection of digital copyrights are best illustrated by tweaking the facts of a case recently appealed in the Second Circuit, *Universal City*

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<sup>11</sup> TRIPs, *supra* note 1, art. 9; *see also* WTO, TRIPs: Copyright (1), available at [http://www.wto.org/english/thewto\\_e/whatis\\_e/eol/e/wto07/wto7\\_13.htm#note1](http://www.wto.org/english/thewto_e/whatis_e/eol/e/wto07/wto7_13.htm#note1) ("During the Uruguay Round negotiations, it was recognized that the Berne Convention already, for the most part, provided adequate basic standards of copyright protection. Thus it was agreed that the point of departure should be the existing level of protection under the latest Act, the Paris Act of 1971, of that Convention. The point of departure is expressed in Article 9.1 under which Members are obliged to comply with the substantive provisions of the Paris Act of 1971 of the Berne Convention, i.e., Articles 1 through 21 of the Berne Convention (1971) and the Appendix thereto.")

<sup>12</sup> Berne Convention, *supra* note 7.

<sup>13</sup> *Id.* art. 5(3).

<sup>14</sup> *Id.* art. 19.

<sup>15</sup> *See* Jane C. Ginsburg, *Surveying the Borders of Copyright*, 41 J. Copyright Soc'y U.S.A. 322, 327 (1994); *see also* Susan A. Mort, *The WTO, WIPO & the Internet: Confounding the Borders of Copyright and Neighboring Rights*, 8 Fordham Intell. Prop. Media & Ent. L.J. 173 (1997).

<sup>16</sup> *See* J.H. Reichman, *The Know-How Gap in the TRIPs Agreement: Why Software Fared Badly, and What are the Solutions*, 17 Hastings Comm. & Ent. L.J. 763 (1995).

<sup>17</sup> *Id.*; *see also* WIPO, *supra* note 4; ECD, *supra* note 5; DMCA, *supra* note 6.

*Studios, Inc. v. Reimerdes*.<sup>18</sup> The facts surrounding this case demonstrate how commonplace the infringement of copyrighted digital media has become.

A Norwegian adolescent named Jon Johansen and two of his Internet buddies wanted to use their computers to watch movies on digital versatile discs (“DVDs”).<sup>19</sup> The DVDs worked on special players or computers that used Windows as an operating system but not on systems that used Linux, a far less popular operating system, which the three friends used.<sup>20</sup> So the friends wrote software that circumvented the anti-piracy code that many producers, such as the makers of DVDs of motion pictures, place on DVDs; the friends thus enabled their Linux-based computers to play the DVDs.<sup>21</sup> They distributed their handiwork, a software utility called DeCSS, on the Internet, free for the taking. Various other parties distributed the software on their own respective websites.<sup>22</sup> These other parties were the defendants.

The plaintiffs, a combination of eight major motion picture studios (“Hollywood”), brought an action under the DMCA “to enjoin defendants from providing a computer program on their Internet Web sites that permits users to decrypt and copy plaintiffs’ copyrighted motion pictures from digital versatile disks. . . .”<sup>23</sup> Since the district court found both irreparable harm if the defendants continued to post the decryption code on the Internet and a likelihood of success on the merits of the case, a preliminary injunction was granted against the parties who posted DeCSS on the Internet.<sup>24</sup>

Although the defendants consented to the jurisdiction of the United States District Court for the Southern District of New York, assume *arguendo* that the defendants were Norwegians who did not consent to the jurisdiction of the court. How would Hollywood assert its copyright in the DVDs?

Since Norway is a party to the WTO, it is also a party to TRIPs.<sup>25</sup> While TRIPs does not create any rights that copyright owners may hold privately, it does enable copyright holders to petition their trade representatives to protect their rights abroad. Although TRIPs did not grant

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<sup>18</sup> 82 F. Supp. 2d 211 (S.D.N.Y. 2000).

<sup>19</sup> Frank James, *Information Owners vs. Information Users*, Chicago Tribune, May 28, 2000, at 1.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Universal City Studios, Inc. v. Reimerdes*, 82 F. Supp. 2d 211, 213 (S.D.N.Y. 2000); *see also* TRIPs, *supra* note 1, art. 9.

<sup>24</sup> *Reimerdes*, 82 F. Supp. 2d at 227.

<sup>25</sup> *See* WTO, UR TRIPs, at [http://www.wto.org/english/thewto\\_e/whatis\\_e/eol/e/wto01/wto1\\_41.htm#note1](http://www.wto.org/english/thewto_e/whatis_e/eol/e/wto01/wto1_41.htm#note1) (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review) (“The TRIPs Agreement extends the obligations of most-favoured-nation and national treatment to all aspects related to the protection of intellectual property rights in relation to nationals of Members of the WTO (IPRs).”).

Hollywood the right to sue the Norwegian defendants directly, it did create an international responsibility to protect copyrights throughout the world.

This responsibility is shared by all of the members of TRIPs.<sup>26</sup> These members, participants in the WTO and signatories of GATT, have all agreed to:

ensure that enforcement procedures . . . are available under their national laws so as to permit effective action against any act of infringement of intellectual property rights covered by . . . [TRIPs], including expeditious remedies to prevent infringements and remedies which constitute a deterrent to further infringements.<sup>27</sup>

Had Norway not possessed any “enforcement procedures” which required the defendants to account for their alleged infringement, Hollywood, which exerts considerable influence on Congress,<sup>28</sup> would most likely have succeeded in petitioning the U.S. trade representative to protect its rights in Norway.

Pursuant to TRIPs, a WTO Dispute Settlement Board would weigh the merits of Hollywood’s claim. These Dispute Settlement Boards are made up of representatives of all the member states, “with a separate chairman and secretariat, a standing Appellate Body . . . and dispute panels . . . .”<sup>29</sup> The dispute panel would likely be made up of academics and politicians, some of whom may have an intellectual property background and others who may not. This dispute would likely focus on whether the code that protected the DVDs was entitled to protection under the minimum standards set forth under TRIPs and the Berne Convention.<sup>30</sup>

Under TRIPs, “states are not compelled to grant more extensive intellectual property protection beyond . . . [a] minimum baseline.”<sup>31</sup> Since minimum standards embody the lowest common denominator under which intellectual property rights may be enforced, the dispute panel would assess whether minimum standards allow for copyright protection against circumvention technologies. Assume further that Norway did not enact a law similar to Section 1201 of the U.S. Copyright Act, which prohibits the circumvention of copyright protection systems in the United States.<sup>32</sup> The dispute panel would “balance . . . [the] rights and obligations” of the Norwegian users of the DVDs with Hollywood’s desire to protect its

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<sup>26</sup> TRIPs, *supra* note 1, art. 41(1).

<sup>27</sup> *Id.*

<sup>28</sup> See Bob Tourtellotte, *New Tax Credit Bill Aims to Keep Hollywood in U.S.*, Reuters Business Report, July 31, 2001. See also Carl Bromley, *What Hollywood Wants From Uncle Sam*, The Nation, Apr. 5, 1999; Dyan Machan, *Mr. Valenti Goes to Washington*, Forbes Magazine, Dec. 1, 1997.

<sup>29</sup> Rochelle Cooper Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPs and Dispute Settlement Together*, 37 Va. J. Int’l L. 275, 279 (1997).

<sup>30</sup> See Laurence R. Helfer, *Adjudicating Copyright Claims Under the TRIPs Agreement: The Case For a European Human Rights Analogy*, 39 Harv. Int’l L.J. 357, 360 (1998) (“TRIPs is at its core a ‘minimum standards’ agreement.”).

<sup>31</sup> *Id.*

<sup>32</sup> See 17 U.S.C. § 1201 (2002).

intellectual property.<sup>33</sup> Under Article 7 of TRIPs, this balance “should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare . . . .”<sup>34</sup> Given these objectives, the dispute panel would face a tough decision. Most significantly, the dispute panel would have to make a decision in the absence of settled doctrinal principles pertaining to circumvention technology in domestic copyright regimes.

The diverse goals of Article 7 appear to conflict with rulings both for and against copyright infringement in the instant case. First, suppose that the dispute panel’s reading of Article 10 of TRIPs, which protects source and object code as a literary work, encompassed the encryption code that protected the DVDs.<sup>35</sup> It is not clear if the protection of the DVDs encryption code “contribute[s] to the promotion of technological innovation and to the transfer and dissemination of technology.”<sup>36</sup> The protection of the DVDs requires the suppression of the decryption code. Both the encryption and decryption software are technology, but the decryption code arguably contributes to technological innovation. The expansion of Linux’ compatibility with DVDs is a good example of how DeCSS improved the utility of an operating system.<sup>37</sup> This sort of innovation might not have taken place but for the development of DeCSS. Were “the promotion of technological innovation and . . . the dissemination of technology” our only criteria, a finding of infringement might cut against Article 7 of TRIPs. On the other hand, since such innovation must inhere “to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare,” a finding of infringement might also be justifiable. The “balance of rights and obligations” contemplated

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<sup>33</sup> TRIPs, *supra* note 1, art. 7:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

<sup>34</sup> *Id.*

<sup>35</sup> TRIPs, *supra* note 1, art. 10 (Computer Programs and Compilations of Data):

1. Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971).
2. Compilations of data or other material, whether in machine readable or other form, which by reason of the selection or arrangement of their contents constitute intellectual creations shall be protected as such. Such protection, which shall not extend to the data or material itself, shall be without prejudice to any copyright subsisting in the data or material itself.

<sup>36</sup> See Helfer, *supra* note 30, at 380–81 (quoting TRIPs art. 7).

<sup>37</sup> See DVD Copy Control Association, Frequently Asked Questions (FAQ), at <http://www.dvdc.ca.org/faq.html> (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review) (“What is DeCSS? Despite legal ‘trade secret’ protection for CSS, the code for its algorithms and master keys—the main elements of its security—were stolen and posted on the Internet. A utility called ‘DeCSS’ was also posted. Using the stolen elements, it allows the illegal ‘decryption’ of CSS movies and copying to a computer disc drive. From there, perfect digital copies can be made.”).

under Article 7 requires that we measure how the incentives to create copyrightable digital content might be affected under a finding of infringement or non-infringement.

Articles 10 and 7 of TRIPs do not lead one to the unequivocal conclusion that the defendants infringed upon Hollywood's copyright. Moreover, an argument can be made that all the defendants did was remove the fence surrounding Hollywood's cattle. Yet the value of the cattle is lost once the cattle are allowed to roam freely. As the following section suggests, a virtual wild-west would not create as much wealth as one that is internationally protected by anti-circumvention provisions prohibiting trafficking in circumvention technologies under TRIPs.

#### IV. ECONOMIC CONSEQUENCES OF HEIGHTENED PROTECTION

The notion that heightened international copyright protection of digital content ultimately creates wealth is controversial. Some commentators argue that the digital economy will not flourish unless there is some potential for piracy under loose copyright protection regimes.<sup>38</sup> Their argument is premised upon the notion that greater accessibility renders greater value. This argument, however, fails to address the proposition that clearly defined property rights encourage people to transact and ultimately reduce transaction costs by assuring people of the validity of their transactions and facilitating the movement of property rights into the hands of those who value them the most.<sup>39</sup> Empirical evidence of this proposition lies in a study of software piracy conducted by Price Waterhouse in 1995, which concluded that a reduction in piracy could lead to new jobs and increased tax revenues.<sup>40</sup>

Although Price Waterhouse's findings in this study were limited to one country (West Germany), it is worth noting that there is a theoretical justification for such findings that is not limited in geographical scope. One such study, conducted by Professor Herschel I. Grossman for the National Bureau of Economic Research, has found that environments conducive to pirating experience a reduction in "the net value per capita of ideas created," which ultimately leads to a decline in economic welfare.<sup>41</sup> Professor Grossman's study demonstrates how the societal benefit of creative works outweighs the cost of guarding those works through encryption. Assuming that the value of copyrightable expression is independent of whether it is pirated and

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<sup>38</sup> See Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to Be Revised*, 14 Berkeley Tech. L.J. 519, 565 (1999) (citing Carl Shapiro and Hal Varian, Information Rules 102 (1998)).

<sup>39</sup> See Richard A. Posner, *Economic Analysis of Law* 36–39, 43–50 (5th ed. 1998).

<sup>40</sup> See Eric H. Smith, *Worldwide Copyright Protection Under the TRIPs Agreement*, 29 Vand. J. Transnat'l L. 559, 572 (1996) ("A recent Price Waterhouse study of software piracy in Western Europe noted that if piracy levels could be reduced . . . it would create 87,000 new jobs in Europe and create new tax revenues of \$2.3 billion." (citing Business Software Alliance, Contribution of the Packaged Business Software Industry to the European Economies (Sept. 1995)).

<sup>41</sup> Herschel I. Grossman, *Inventors and Pirates: Creative Activity and Intellectual Property Rights*, National Bureau of Economic Research, Sept. 2000, at 12–13, available at <http://www.nber.org/papers/w7898> (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review) (finding that "in equilibrium, the net value per capita of ideas created . . . equals the product of the fraction of people who are geniuses, the fraction of their time and effort that geniuses allocate to creating ideas, and [the value of ideas that geniuses create]").

that ordinary creative people have a comparative advantage as pirates, Professor Grossman concludes that “if geniuses are sufficiently talented relative to ordinary creative people,” the existence of geniuses, albeit a small fraction of the overall population, results in a “larger net value per capita of ideas being created” where copyrightable expression is subject to heightened protection.<sup>42</sup> Hence, the notion is that where there is less protection of copyrightable expression, less copyrightable expression will be created. If true, this “larger net value per capita of ideas being created” would have significant implications with regard to digital copyrights. If sufficiently protected under an international regime, compilations and/or compositions in source or object code would feed further technological innovation more quickly and with greater impact than under the current regime.

Professors Assaf Jacob and Danny Ben-Shahar arrive at similar conclusions respecting economic welfare, without making Professor Grossman’s assumption that creators of copyrightable expression need to be “sufficiently talented.”<sup>43</sup> The argument of Professors Jacob and Ben-Shahar is premised upon the notion that owners of copyrights in software enjoy monopolies and that by selectively electing not to enforce their copyrights, owners of copyrights in software enjoy heightened monopoly power by creating barriers to entry. According to Professors Jacob and Ben-Shahar, this sort of selective enforcement results in covert predatory pricing that does not catch the attention of antitrust regulators because barriers to entry in the software industry arise indirectly via copyright infringement. The heightened barriers to entry and furtherance in the monopoly power of copyright holders in software ultimately create inefficiencies that lead to a sharper decrease in social wealth than that caused by enforcing the monopoly intrinsic to copyright protection and call for the vigorous enforcement of copyrights against piracy.<sup>44</sup>

Under this model, heightened protection of digital media against copyright infringement would lower barriers to entry and eliminate inefficiencies caused by the presence of monopolies. Whether monopolists would necessarily acquiesce to the infringement of their copyrights is open to debate. The incentive to become a copyright owner is to gain a monopoly and the enforcement of copyrights enables owners of copyrights to engage in price discrimination. Given the choice of adopting the model proposed by Professors Jacob and Ben-Shahar or vigorously enforcing their copyrights, copyright owners would likely conduct a cost-benefit analysis in deciding how best to maximize their welfare. Regardless of how they maximize their welfare, the proposition that greater wealth is realized through the vigorous enforcement of copyrights remains intact.

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<sup>42</sup> *Id.* at 13. Since Professor Grossman does not use the word “ideas” as a legal term of art, the fact that “ideas” are not protectible under copyright law does not detract from Professor Grossman’s conclusion. Perhaps a more significant criticism of Professor Grossman’s study would be to ask to what extent geniuses must be “sufficiently talented.” *Id.*

<sup>43</sup> Assaf Jacob & Danny Ben-Shahar, *A Preach for a Breach: Selective Enforcement of Copyrights as an Optimal Monopolistic Behavior* (Aug. 2000), at [http://papers.ssrn.com/sol3/delivery.cfm/SSRN\\_ID240908\\_code000926510.pdf?abstractid=240908](http://papers.ssrn.com/sol3/delivery.cfm/SSRN_ID240908_code000926510.pdf?abstractid=240908) (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review). *See also* Grossman, *supra* note 41, at 13.

<sup>44</sup> Jacob & Ben-Shahar, *supra* note 43, at 2 (Professors Jacob and Ben-Shahar “show the conditions under which an exogenous intervention by way of intensive enforcement of copyrights increases social welfare.”).

Ultimately, protecting software via encryption technology leads to greater efficiency by instilling comfort and faith in Internet transactions.<sup>45</sup> Encryption technology protects “[a]ir traffic control centers, electric-power grids . . . financial services, oil and gas producers and suppliers, telecommunications networks and the stock market” and various other aspects of national and international economies.<sup>46</sup> Perhaps most importantly, the imposition of strict laws against the circumvention of software protection systems prevents against the following scenario:

A hacker breaks into the computer systems at Brigham & Women’s Hospital at four o’clock on a Monday morning. Before most of the doctors arrive to treat their patients for the day, the malicious computer intruder changes a number of patient files on the hospital’s central database system: surgeries slated to be performed on the right leg are now switched to the left leg; recorded blood types are altered from AB-negative to O-positive; warnings for known allergies to medicines such as penicillin are electronically erased from patients’ charts; and laboratory records on HIV blood results are insidiously switched from negative to positive just before patients are to receive their results.<sup>47</sup>

The defendants in our hypothetical did not necessarily commit a crime as egregious as the one described above, but by posting the decryption code on the Internet, they explained how to circumvent the machine-readable code that protected DVDs from every hacker or potential hacker in the world. By sharing this decryption code with the world, the defendants made it easier to access more than just DVDs and set the stage for gross economic and social inefficiencies.

By amending TRIPs to protect digital copyrights, the transaction costs arising from the Dispute Settlement Process described in the previous section will be reduced. A world in which digital copyrights are uniformly protected by anti-circumvention provisions will realize economies of scale in the protection of digital media, since all nations will seek to protect digital media under the same standard. This pragmatic approach is supported by economic theory and, if implemented, would redound to the benefit of all of the nations who are parties to TRIPs.

## V. THE CASE FOR AND AGAINST INTERNATIONAL ANTI-CIRCUMVENTION PROVISIONS

Proponents of holding hackers to international standards under Articles 7 and 10 of TRIPs, a group that Professor Hugh C. Hansen calls copyright’s “secular priesthood,” face

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<sup>45</sup> See Kenneth P. Weinberg, *Cryptography: “Key Recovery” Shaping Cyberspace (Pragmatism and Theory)*, 5 J. Intell. Prop. L. 667, 678 (1998) (“Without encryption technology, online information will become even more vulnerable and individuals will become even more reluctant to place information on the Internet. This reluctance threatens to damage the growth of electronic commerce.”).

<sup>46</sup> *Id.* at 679 (quoting Americans for Computer Privacy: Your Privacy is at Stake, at <http://www.computerprivacy.org/choice.cgi>) (dead link).

<sup>47</sup> *Id.* (quoting Marc D. Goodman, *Why Police Don’t Care About Computer Crime*, 10 Harv. J.L. & Tech. 465, 466 (1997)).

opposition from two distinct yet overlapping groups.<sup>48</sup> While Professor Hansen chooses to place these groups into the same category of “agnostics and atheists,”<sup>49</sup> the disparate goals and histories of these groups warrant a more specific classification. Both the “innovators” on the one hand,<sup>50</sup> and developing and less-developed nations on the other, seek similar low levels of protection for different reasons. The “innovators” posit that the social and economic benefits to be gained from deterring the circumvention of software protection systems do not tilt the scales in Article 7’s balancing test. The “innovators” thus prefer less protection of digital copyrights than an international copyright regime with anti-circumvention measures would provide. The developing and less-developed nations disagree with the notion of heightened copyright protection creating wealth; they argue that they cannot reap the benefits of software that is stringently protected by Article 10 or other international anti-circumvention provisions prohibiting trafficking in circumvention technologies.

The “innovators” declare themselves “naturally independent of the tyrann[y]” wrought by the enforcement of copyright law.<sup>51</sup> This idea of “natural independence” cuts against the Lockean notion of natural law inasmuch as it disaffirms the principle that property is a fundamental human right.<sup>52</sup> Central to the idea of “natural independence” is the argument that since digital technology “detach[es] information from the physical plane, where property law of all sorts has always found definition,” international copyright law, insofar as it is applied to

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<sup>48</sup> See Hugh C. Hansen, *International Copyright: An Unorthodox Analysis*, 29 Vand. J. Transnat’l L. 579, 582–83 (1996).

<sup>49</sup> *Id.* at 584.

<sup>50</sup> The term “innovators” is explained more below, in the text accompanying notes 51 & 56.

<sup>51</sup> Timothy S. Wu, Note, *Cyberspace Sovereignty?—The Internet and the International System*, 10 Harv. J.L. & Tech. 647, 649 (1997) (quoting John Perry Barlow, A Declaration of the Independence of Cyberspace, at <http://www.eff.org/~barlow/Declaration-Final.html>) (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review).

<sup>52</sup> See Hansen, *supra* note 48, at 583 n.9. According to Professor Hansen:

In John Locke’s view of natural law, a person’s individual effort or labor created an individual property interest. Natural law did not require balancing the laborer’s property right against anyone else’s needs as long as there was enough raw material for others:

The labor of his body and the work of his hands . . . are properly his. Whatsoever then he removes out of the state that nature has provided and left it in, he has mixed his labor with, and joined to it something that is his own, and thereby makes it his property . . . For this labor being the unquestionable property of the laborer, no [person] but he can have a right to what that is once joined to, at least where there is enough and as good left in common for others.

John Locke, *The Second Treatise of Government* 17 (Thomas P. Peardon ed., Bobbs-Merrill 1952) (1690). For analyses of John Locke’s natural-law theory in the context of intellectual property, see Wendy J. Gordon, *A Property Right In Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 Yale L.J. 1533 (1993); Alfred C. Yen, *Restoring the Natural Law: Copyright as Labor and Possession*, 51 Ohio St. L.J. 517 (1990).

digital technology, is an anachronism.<sup>53</sup> These “innovators” would rather be bound by Internet norms than by international copyright law.

One of the five principles set forth by the Clinton Administration’s early policy document, *The Framework for Global Electronic Commerce* (“Framework”), is that “[t]he private sector should lead” in setting the policy to govern the digital economy.<sup>54</sup> The Framework did not, however, set forth how the private sector should lead. While the Framework offered that “[g]overnments should avoid undue restriction on electronic commerce,” it did not imply that so-called “innovators” have carte blanche to promulgate cyberlaw.<sup>55</sup>

The “innovators” are the beneficiaries of well-defined intellectual property rights regimes who have the luxury of speculating about whether international copyright law should apply to digital content and infrastructures.<sup>56</sup> This speculation does not contemplate how Internet content should be protected.<sup>57</sup> A major problem in allowing Internet norms to govern how digital media is distributed is free-riding by “innovators” who do not observe Internet norms. Professor William M. Landes and Judge Richard A. Posner point out that free riding has a particularly deleterious effect on the incentive to create copyrightable expression because “the decision to create [copyrightable] work must be made before the demand for copies is known” and that free-riding leads to greater uncertainty with regard to the demand for copyrightable work.<sup>58</sup> Since the cost of creating copyrightable expression must compensate for the risk of failure, authors will be less willing to incur the cost of creating copyrightable expression as the uncertainty of whether their work will be purchased increases.<sup>59</sup> Copyright law reduces this uncertainty more effectively than Internet norms because it is better equipped to incubate a royalty system in a

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<sup>53</sup> Charles R. McManis, *Taking TRIPs on the Information Superhighway: International Intellectual Property Protection and Emerging Computer Technology*, 41 Vill. L. Rev. 207, 282 (1996) (quoting John P. Barlow, *The Economy of Ideas: A Framework for Rethinking Patents and Copyrights in the Digital Age* (Everything You Know about Intellectual Property is Wrong), *Wired*, Mar. 1994, at 84, 85). See also Raymond T. Nimmer and Patricia Ann Krauthaus, *Copyright on the Information Superhighway: Requiem for a Middleweight*, 6 Stan. L. & Pol’y Rev. 25, 26 (1994) (stating that the “focus of the copyright legal system is poorly fitted to the world of modern electronic information systems”).

<sup>54</sup> See Samuelson, *supra* note 38, at 526.

<sup>55</sup> *Id.*

<sup>56</sup> See Marc A. Lemley, *The Law and Economics of Internet Norms*, 73 Chi.-Kent L. Rev. 1257 (1998) (arguing that the differing needs and agendas of important players in the Internet community may discourage them from abiding by norms the community is poorly equipped to enforce).

<sup>57</sup> *Id.*

<sup>58</sup> William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. Leg. Stud. 325, 327 (1989).

<sup>59</sup> *Id.* at 328–29.

digital environment.<sup>60</sup> The free availability of decryption technology under Internet norms makes copyrightable expression more accessible without providing the creators of copyrightable expression with sufficient incentive to create.

Professor Mark A. Lemley astutely points out that “[n]orms develop most clearly and most easily in a static community.”<sup>61</sup> The dynamic nature of the Internet makes it poorly suited to adopting norms instead of law. Nonetheless, copyright law should be evenhanded in its application to both producers and users of Internet content. Perhaps the most important criticism of copyright’s “secular priesthood” is that copyright law favors producers of Internet content over its users.

The “innovators” argue that this favoritism is clearly exemplified by the anti-circumvention provisions of the DMCA and that enforcing anti-circumvention laws across the globe would expand Hollywood’s interests internationally.<sup>62</sup> This could be avoided, however, by only adopting part of the anti-circumvention provisions provided under the DMCA. Instead of adopting section 1201 in its entirety, TRIPs could adopt only section 1201(a)(2), which prohibits

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<sup>60</sup> *Copyright Arbitration Royalty Panel (CARP) Structure and Process: Hearing before the Subcommittee on Courts, the Internet and Intellectual Property of the House Comm. on the Judiciary*, 107th Cong., 2d Sess. (2002) (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review) (discussing the policy considerations leading to the adoption of this royalty structure), available at [http://commdocs.house.gov/committees/judiciary/hju80194.000/hju80194\\_0.htm#8](http://commdocs.house.gov/committees/judiciary/hju80194.000/hju80194_0.htm#8). See also Digital Performance Right in Sound Recordings and Ephemeral Recordings, Docket No. 99-6 CARP DTRA and No. 2000-3 CARP DTRA2, available at <http://www.loc.gov/copyright/carp/114schedule.html> (last visited Feb. 21, 2003) (on file with the Columbia Science and Technology Law Review) (exemplifying how this royalty structure is implemented with respect to digitally distributed sound recordings).

<sup>61</sup> Lemley, *supra* note 56, at 1267 (citing Douglas C. North, *Institutions, Institutional Change, and Economic Performance* 12 (1990); Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (1990); Robert C. Ellickson, *Property in Land*, 102 *Yale L.J.* 1315, 1320–21 (1993)).

<sup>62</sup> See Samuelson, *supra* note 38, at 522 (“It would oversimplify the facts—although not by much—to say that the battle in Congress over the anti-circumvention provisions of the DMCA was a battle between Hollywood and Silicon Valley.”) (citing WIPO Copyright Treaties Implementation Act; and Online Copyright Liability Limitation Act: Hearing on H.R. 2281 and H.R. 2280 Before the Subcomm. on Courts and Intellectual Property of the House Comm. on the Judiciary 105th Cong. 78-82 (1997)).

trafficking in circumvention technology.<sup>63</sup> This would prevent hackers from posting handiwork over the Internet but would avoid limiting the fair use of circumvention technology under TRIPs. Those engaged in the fair use of digital content that is copyrighted do not necessarily need unlimited access to circumvention technology. In order to ensure that fair users are not deprived of copyrightable expression, access to circumvention technology could be regulated under an application process.

Developing and less-developed nations may be less inclined to adopt this proposal than the “innovators.” Far from possessing the luxury to question the relevance of copyright regimes or whether such regimes should require loose or strict protection, developing nations were given at most five years and least-developed nations a maximum of ten years to implement copyright regimes that complied with TRIPs.<sup>64</sup> Despite the concessions granted to developing and less-developed nations in areas like textiles and agriculture in the Uruguay Round, the prevailing

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<sup>63</sup> 17 U.S.C. § 1201(a)(2) (2002) provides that:

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

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

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

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

Section 1201(a)(3) provides that:

(A) to “circumvent a technological measure” means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner; and

(B) a technological measure “effectively controls access to a work” if the measure, in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work.

<sup>64</sup> See TRIPs, *supra* note 1, art. 65–66. See also Ruth L. Gana, *Prospects For Developing Countries Under the TRIPs Agreement*, 29 Vand. J. Transnat’l L. 735 (1996) (arguing TRIPs can only be effective under a system of worldwide capitalism and that such a system will not come about in light of divergent ideas among nations respecting intellectual property rights and policies).

view is that compliance will not be voluntary.<sup>65</sup> Since development depends in large part upon access to technology, developing and less-developed countries will not want to implement or observe laws that limit access to digital content.<sup>66</sup>

## VI. PROHIBITING TRAFFICKING IN CIRCUMVENTION TECHNOLOGIES IN DEVELOPING AND LESS-DEVELOPED NATIONS

Developing and less-developed countries have a strong argument against the inclusion of anti-circumvention provisions prohibiting trafficking in circumvention technologies under TRIPs. Commentators have opined that TRIPs “reveals an overall disproportionate burden in the area of intellectual property protection in developing countries” that hinders their development and access to digital infrastructures.<sup>67</sup> This access would be severely limited if copyright owners were to exercise their Article 11 rental rights in any given developing or less-developed country.<sup>68</sup> Article 11 of TRIPs essentially allows owners of copyrights in software to control which countries are able to license their work. Fearful of the potential for Article 11 to limit their access to technology, developing and less-developed countries sought compulsory licenses of intellectual property during the Uruguay Round but were rebuffed.<sup>69</sup>

Returning to our hypothetical, now substitute China for Norway. China’s treatment under TRIPs would depend on whether she was defined as a developing or less-developed country. China would be defined as a less-developed country under the World Bank taxonomy, but not under the United Nations definition.<sup>70</sup> The dispute settlement board would likely find

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<sup>65</sup> Gana, *supra* note 64, at 739–40. Professor Gana points out that:

[T]he lack of avid participation by developing countries in pre-Uruguay Round trade negotiations is attributable to the perception that the system yielded no concrete benefits to them. This was a strongly felt and legitimately held conviction, particularly since developed countries had long maintained barriers against key imports from developing nations in the areas of textiles and agricultural products. At the same time, the GATT system made these countries vulnerable to arbitrary unilateral actions by developed countries . . . . The relationship of countries to the TRIPs agreement thus may be regarded as a bargained-for exchange—intellectual property protection for fair trade rules in specific industries that should have been in place for the system to work the way that it purports to work. (citations omitted).

See also Carlos Alberto Primo Braga, *The Economics of Intellectual Property Rights and the GATT: A View From the South*, 22 Vand. J. Transnat’l L. 243 (1989).

<sup>66</sup> See Braga, *supra* note 65, at 252; Gana, *supra* note 64, at 739–740.

<sup>67</sup> See Gana, *supra* note 64, at 740 n.12 (citing Carlos M. Correa, *TRIPs: An Asymmetric Negotiation*, 1993 Third World Econ. 9, 10 (“arguing the TRIPs Agreement does not reflect interdependence, but rather is ‘essentially asymmetric, non-transparent and autocratic’ and reflects imbalances in the comparative effects on developing countries’ intellectual property laws.”)).

<sup>68</sup> See *id.* at 762–763.

<sup>69</sup> See Braga, *supra* note 65, at 443; Gana, *supra* note 64, at 761.

<sup>70</sup> See Reiko R. Feaver, *China’s Copyright Law and the TRIPs Agreement*, 5 J. Transnat’l L. & Pol’y 431, 454 (1996).

that China was a developing country and thus entitled to the five-year grace period. Since Hollywood's suit was initiated in 2000, and TRIPs took effect in 1994, this five-year period has passed. China would be subject to trade sanctions if it did not "ensure that enforcement procedures . . . are available under [its] national laws so as to permit effective action against any act of infringement of intellectual property rights covered by [TRIPs]."<sup>71</sup> Although China brought its copyright law into compliance with the Berne Convention in 1992, and "substantially meets international standards as outlined in the Berne Convention, and now in the TRIPs Agreement,"<sup>72</sup> it would nonetheless have an argument against protecting the object code underlying the encryption technology which might otherwise be protected under Article 10 of TRIPs. This argument would not rest upon the broad ideological underpinnings of Article 7, as was the case under our previous analysis of the hypothetical (section III), but on the language of Article 8(2): "Appropriate measures, provided that they are consistent with . . . [TRIPs] may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology."<sup>73</sup> China could argue that failing to impugn the defendants disassembly of the encryption code was an "[a]ppropriate measure[]" and within the scope of Article 8(2).

Recall that our hypothetical Norwegians enabled the DVDs to be viewed upon Linux, which is free to all users who are willing to learn how to use it. Microsoft's Windows can only be licensed or purchased. Stretching the facts of our hypothetical for illustrative purposes, suppose that Windows were unavailable, or that Microsoft and Hollywood deprived China of Windows and DVDs by exercising their rental rights under Article 11 of TRIPs.<sup>74</sup> When combined with Articles 40(1) and 40(2) of TRIPs, which recognized that "licensing practices . . . pertaining to intellectual property which restrain competition . . . and impede the transfer of technology . . . [may be] . . . prevent[ed] and control[led]," the underlying force of Article 8(2) would become much stronger.<sup>75</sup> The combination of Articles 8 and 40 would present China with

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<sup>71</sup> TRIPs, *supra* note 1, art. 41(1).

<sup>72</sup> Feaver, *supra* note 70, at 438.

<sup>73</sup> TRIPs, *supra* note 1, art. 8(2).

<sup>74</sup> China's substantive copyright law may preclude it from the dilemma posed by the hypothetical because it has elected to protect copyright by enacting software regulations limiting the rental rights of owners of copyrights in computer programs. Whether these software regulations run afoul of TRIPs is an interesting question. For a thorough treatment *see* Gana, *supra* note 64.

<sup>75</sup> TRIPs, *supra* note 1, art. 40:

1. Members agree that some licensing practices or conditions pertaining to intellectual property rights which restrain competition may have adverse effects on trade and may impede the transfer and dissemination of technology.
2. Nothing in . . . [TRIPs] shall prevent Members from specifying in their national legislation licensing practices or conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse on competition in the relevant market. As provided above, a Member may adopt, consistently with the other provisions of . . . [TRIPs], appropriate measures to prevent or control such practices, which may include for example exclusive grantback conditions, conditions preventing challenges to validity and coercive package licensing, in the light of the relevant laws and regulations of that Member.

a strong defense to the infringement claims of owners in copyrights of software who unfairly restricted China's access to such technology through Article 11 of TRIPs.

Since the enforcement of Microsoft's Article 11 rental rights in China would impair China's ability to gain access to technology, arguably "constitut[ing] an abuse of intellectual property rights having an adverse effect on competition," China could legitimately "adopt . . . appropriate measures to prevent or control"<sup>76</sup> the effects of Microsoft exercising its Article 11 rental rights.<sup>77</sup> Limiting the interoperability of operating systems by preventing them from playing DVDs, "adversely affect[s] the international transfer of technology"<sup>78</sup> and poses a threat to China's development of a digital infrastructure. If China chooses not to honor Hollywood's copyright in the DVDs and not to enforce anti-circumvention laws prohibiting trafficking in circumvention technology against the defendants, China "may, in formulating or amending [its] laws and regulations, adopt measures necessary . . . to promote . . . technological development,"<sup>79</sup> without necessarily running afoul of TRIPs.

China's case would rest upon the domestic copyright law of developed countries in the field of reverse engineering for the purpose of creating interoperable computer systems. Since the EC Directive on Legal Protection for Computer Programs (EC Directive) permits reverse engineering "to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs,"<sup>80</sup> China would merely have to show similar protection under United States law.

Prior to the enactment of the DMCA, which resulted in section 1201 of the United States Copyright Act, China's task would have been much easier. China could have merely pointed to the Ninth Circuit's holding in *Sega Enterprises v. Accolade, Inc.*, which legitimized the disassembly of encryption code as "a matter of law a fair use of the copyrighted work."<sup>81</sup> The facts of our hypothetical are distinguishable from *Sega Enterprises v. Accolade, Inc.* in that the defendants in our hypothetical shared their disassembly of the encryption code with every user of the Internet throughout the world.

Nonetheless, had the defendant been denied access to the software necessary to play the DVD s under Article 11 of TRIPs, the defense would have been much stronger. While Articles 8 and 40 arguably enable developing countries to defend against copyright infringement suits under such circumstances, a better alternative would be to amend TRIPs to prevent copyright holders from exercising their Article 11 rights and to grant them worldwide protection in the form of anti-circumvention measures prohibiting trafficking in circumvention technologies. The

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<sup>76</sup> *Id.* art. 40(2).

<sup>77</sup> See Gana, *supra* note 64, at 762 (Professor Gana points out that ". . . commercial rental, at least for some developing countries, is often the only avenue that ensures widespread dissemination.").

<sup>78</sup> TRIPs, *supra* note 1, art. 8(2).

<sup>79</sup> *Id.* art. 8(1).

<sup>80</sup> McManis, *supra* note 53, at 239 (quoting Council Directive 91/250 of 14 May 1991 on the Legal Protection of Computer Programs, art. 6, 1991 O.J. (L 122/42)).

<sup>81</sup> *Sega Enters. v. Accolade, Inc.*, 977 F.2d 1510, 1514 (9th Cir. 1992); see also *Atari Games Corp. v. Nintendo of America, Inc.*, 975 F.2d 832 (Fed. Cir. 1992) (reverse engineering for the purpose of creating an interoperable system is fair use under 17 U.S.C. § 107).

enhanced protection of digital copyrights under such an international regime would lead to an overall increase in wealth without endangering the fair use of circumvention technologies.

As explained earlier, the Article 11 rental rights are superfluous since they are outdated with respect to cinematic works and overbroad with respect to computer programs. The potential copyright infringement of cinematic works and computer programs can be more effectively fought under an international copyright regime that includes anti-circumvention provisions than under a rental rights regime. Moreover, allowing the producers of computer programs to indiscriminately limit access to their products under a rental rights regime amounts to technological colonialism. The producers of copyrightable digital content are undoubtedly entitled to protection. This protection should take the form of international anti-circumvention provisions because it would provide the greatest protection without necessarily limiting access to digital technology.

## VII. CONCLUSION

As it stands, TRIPs does not sufficiently protect the fences that guard digital copyrights. International anti-circumvention provisions prohibiting trafficking of circumvention technologies purport to fill this vacuum. By merely prohibiting trafficking in circumvention technologies, users of the Internet would still be entitled to the fair use of circumvention technology under TRIPs. Prohibitions on trafficking would merely prevent digital-lockpicking code from being freely posted on the Internet. The fair use of circumvention technology would not be limited by a prohibition on trafficking in circumvention technologies because fair users could still gain access to circumvention technology under a regulated application process.

In light of peer-to-peer networks that make it hard to identify who exactly is distributing circumvention technology, accomplishing the international prohibition of the distribution of circumvention would be difficult but by no means impossible. Internet transmissions are comprised of packets of data, which among other things denote the point at which a packet is sent and the point at which it is received. These particular points are commonly referred to as Ports and are specific locations within Internet Protocol addresses. Packet “sniffing” hardware and software applications that detect decryption technology could conceivably be attached to the device used to transmit data packets.<sup>82</sup> The device is called a router, and a software protocol embedded in the router called Simple Network Management Protocol (“SNMP”) enables the Internet service provider (“ISP”) that installed the router to view specific transmissions passing from the router to a particular network. The information passed in these transmissions can include the particular Port from which decryption technology was sent and which particular Port received the decryption technology. The regulated application process I propose requires the support and participation of ISPs that install routers on their customer’s premises and are in a position to monitor the transference of circumvention technology using SNMP. This monitoring undoubtedly gives rise to invasion of privacy issues that ISPs would much rather avoid.<sup>83</sup>

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<sup>82</sup> Interview with Tony Lott, Former Director of Engineering and Ayumi Oikawa, Former Systems Administrator of Intercom Online, Inc., in New York City (Oct. 28, 2002).

<sup>83</sup> See Amitai Etzioni, *Implications of Select New Technologies for Individual Rights and Public Safety*, 15 Harv. J.L. & Tech. 257 (2002). See also Daniel J. Solove, *Digital Dossiers and the Dissipation of Fourth Amendment Privacy*, 75 S. Cal. L. Rev. 1083 (2002).

However, if international anti-circumvention measures that allowed for the monitoring and reporting solely of traffickers in circumvention technology were adopted, these privacy issues could legitimately be avoided.

Alternatively, government authorities could leave ISPs out of the enforcement of anti-circumvention laws altogether by inspecting the logs of File Transfer Protocol websites for those who visited such websites and what specific information they shared. This method would nevertheless also raise privacy concerns. Underlying the policy debate is the fundamental question of whether the need to create a digitally secure environment outweighs the privacy rights of users of the Internet.<sup>84</sup>

Ultimately, by identifying the parties who are posting circumvention technology unlawfully, a stronger case can be made for those who use circumvention technology legitimately. The needs of those who use circumvention technology legitimately will be different from those who use it unlawfully. Objective indicia of one's need for circumvention technology could justify one's access under an application process and fair users like academics, researchers, producers of documentary films and the like could still enjoy access to otherwise protected digital content.

The proposed *quid pro quo*, anti-circumvention measures for the eradication of rental rights, embodies a compromise with developing and less-developed countries that would lead to increased wealth throughout the world. The international adjudication of digital copyrights need not be an adversarial process that creates hefty transaction costs. Given the worldwide scope of Internet transactions and digital distribution models, the protection of digital media can redound to the economic benefit of users and producers through the adoption of anti-circumvention provisions prohibiting trafficking in circumvention technologies under TRIPs.

The absence of anti-circumvention provisions in TRIPs is an example of international copyright law not keeping pace with technology. There are sound economic and geo-political reasons why TRIPs should adopt anti-circumvention provisions and shed its rental rights regime. The entire world should, after all, be able to share in the wealth created by digital copyrighted content. Sharing in this wealth concomitantly gives rise to a responsibility to regulate the means by which it becomes instantly accessible and ready for consumption.

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<sup>84</sup> Such a discussion is too broad for the scope of this article, *but see id.*