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The Law of Unintended Consequences: The Digital Millennium Copyright Act and Interoperability

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The Law of Unintended Consequences: The Digital Millennium Copyright Act and Interoperability

Jacqueline Lipton*

Abstract

The Digital Millennium Copyright Act (DMCA) has been criticized for many reasons, including its impact on the fair use defense to copyright infringement, and its potential to chill the free exchange of scientific, technical, and educational information. Law professors and special interest groups have opposed elements of the DMCA from its inception and continue to lobby for reform. One of the more recent concerns about the DMCA involves the incorporation of copyrightable software code into tangible goods for purposes related to the functionality of those goods. Some manufacturers of such products recently have attempted to use the DMCA to prevent commercial competitors from developing and marketing interoperable replacement parts in competition with them in relevant after-markets. Despite recent judicial determinations against such manufacturers, the potential for future manufacturers to argue for the application of the DMCA in these kinds of cases remains a matter of some concern as an unintended consequence of the legislation. This Article advocates the development and implementation of a legislative "carve out" to the DMCA in cases involving interoperable replacement parts for tangible goods where copyrightable software code is incorporated incidentally into either the original good or the authorized replacement part or both. DMCA liability should not arise in situations where copyright infringement is not a central commercial concern of the plaintiff.

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Since they were enacted . . . , the ‘anti-circumvention’ provisions of the [DMCA] have not been used as Congress envisioned. Congress meant to stop copyright pirates from defeating anti-piracy protections added to copyrighted works In practice, the anti-circumvention provisions have been used to stifle a wide array of legitimate activities, rather than to stop copyright piracy. As a result, the DMCA has developed into a serious threat to several important public policy priorities.¹

1. Electronic Frontier Foundation, *Unintended Consequences: Five Years Under the DMCA*, 1, at http://www.eff.org/IP/DMCA/unintended_consequences.pdf (Sept. 24, 2003).

I. Introduction

Imagine that you buy a television set, and after a few years, you lose the remote control. You need to replace it, and you find that you have a choice of buying an expensive new control from the manufacturer of the original television or a cheaper "universal" control from a competitor. Presumably, you select the cheaper control.

But what if you buy the cheaper control and then get a letter from the television manufacturer that says you have been involved in a contributory infringement of its copyright in some channel-tuning software? This software is installed in the original manufacturer's remote control unit and has been duplicated in the cheaper universal version. The letter directs you to return the universal control to its manufacturer and to purchase a replacement at a higher cost from the original television manufacturer. You also have been accused of contributory involvement in trafficking of a device—the cheaper universal control—intended to circumvent encryption software that controls access to the copyrighted tuning software. Is such an allegation likely to happen? Probably not, but what if you never get the initial choice between the cheaper universal control and the more expensive replacement from the original manufacturer because the company that had been marketing the cheaper control has been put out of business by the television manufacturer on the grounds that the cheaper universal control was infringing the anti-trafficking provisions² of the Digital Millennium Copyright Act (DMCA)?³

If this does not sound like the work of the copyright act to you, think again. At least two recent cases have run arguments like this—one involving laser printer toner cartridges⁴ and one involving electronic garage door openers.⁵ To date, the argument has been unsuccessful in each case, despite its initial success at the district court level in the printer toner cartridge litigation.⁶

2. 17 U.S.C. § 1201(a)(2), (b) (2000) (listing infringement violations).

3. *Id.* §§ 1201–1205. The competing control device may also have been infringing software copyright of the original television manufacturer. See *infra* Part IV.A (discussing copyright infringement). I note that I am making the standard colloquial use of the term "DMCA" as referring only to the anti-circumvention and anti-trafficking provisions of the statute and the associated defenses found in Chapter 12 of Title 17 of the United States Code.

4. See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 966–71 (E.D. Ky. 2003) (awarding a preliminary injunction to a laser printer toner cartridge manufacturer that argued that the replacement cartridge manufacturer's product violated the DMCA), *rev'd*, 387 F.3d 522 (6th Cir. 2004).

5. See *Chamberlain Group, Inc. v. Skylink Tech., Inc.*, 381 F.3d 1178, 1203–04 (Fed. Cir. 2004) (dismissing a garage door opener manufacturing plaintiff's claim of a DMCA violation against the manufacturer of the universal garage door openers).

6. See *Lexmark*, 387 F.3d at 529 (vacating the district court's preliminary injunction).

Nonetheless, the troubling issue is not the outcome of these specific cases. Rather, it is the potential for the DMCA to be used to quash commercial competition in contexts such as these, where a copyright work—usually software code incorporated into a replacement product such as a toner cartridge or garage door opener—is a purely incidental facet of the product in question. Despite recent judicial determinations against manufacturers of toner cartridges and garage door openers running such arguments, the current legislative and judicial framework leaves a number of avenues open for these arguments to resurface in the future with the potential for success.

In passing the DMCA, Congress intended to protect copyright holders against digital piracy in copyright works.⁷ Congress did not intend to impact significantly the usual rules and policies relating to commercial competition in tangible goods. These rules and policies generally are provided by contract, supplemented by legislation and case law dealing with commercial transactions,⁸ and also regulated to a significant extent by antitrust laws.

This Article argues for the development of a legislative "presumption"⁹ against DMCA liability that covers situations where a complainant is attempting to utilize the anti-circumvention¹⁰ or anti-trafficking provisions,¹¹ or both, against a commercial competitor in relation to the manufacture and distribution of competing physical goods that incorporate copyrightable software code incidentally. Such an exception is necessary to ensure that future applications of the DMCA do not adversely impact the rules and policies underlying general commercial competition in markets for tangible goods. The issues covered in this Article ultimately may have broader implications for future reform of the DMCA.

7. See Dan I. Burk, *Anti-Circumvention Misuse*, 50 UCLA L. REV. 1095, 1135 (2003) (stating that legislative aims behind the drafting of the DMCA were to prevent "piracy" in digital works); see Electronic Frontier Foundation, *supra* note 1, at 1 (noting that "Congress meant to stop copyright pirates").

8. See, e.g., U.C.C. § 2-102 (2000) (noting that this Article applies to transactions in goods).

9. Throughout this Article, the term "presumption" is used somewhat colloquially to indicate a state of affairs where a complainant is required to establish a legitimate concern about copyright piracy to the satisfaction of the court in order to proceed with the action and to shift the burden to the defendant to raise defenses to the claim. The term is not used in a strict, technical sense.

10. See 17 U.S.C. § 1201(a)(1)(A) (2000) (prohibiting circumvention of an access control measure).

11. See *id.* § 1201(a)(2) (prohibiting trafficking of products that circumvent access control technologies); *id.* § 1201(b) (prohibiting trafficking of additional products that circumvent copy control technologies).

However, in the short term, Congress should establish clear legislative rules to ensure that cases really about the appropriate balance of competing commercial interests in the face of potentially illegal tying arrangements are decided on the basis of relevant antitrust principles and policies, and not on the basis of copyright principles.¹² This is particularly important where protection of a copyright work against digital piracy is not a central commercial concern of the complainant. A rule that keeps such disputes squarely within the boundaries of antitrust analysis would prevent costly attempts to distort copyright law and policy in directions that it was never intended to extend.

It is important that the DMCA does not become a tool for those engaging in potentially questionable tying practices to distract attention from their possible antitrust violations by claiming copyright and DMCA infringements against a commercial competitor.¹³ Such parties may have other valid claims against their competitors, such as inducement of breach of licensing terms imposed on consumers of their products, but these complaints are not a matter for copyright law and policy. Furthermore, defenses to these claims should not be shrouded in comparatively poorly understood doctrines such as the copyright misuse doctrine,¹⁴ but instead should be argued clearly as a matter of applicable commercial and antitrust law and policy. In particular, counterclaims in antitrust law may be more easily pleaded and adjudicated than copyright misuse defenses that raise similar policy issues, but arguably in more oblique and uncertain ways.¹⁵

12. Illegal "tying" arrangements are agreements in which a seller, with significant market power, conditions the availability of one product on the purchaser's agreement also to purchase a second unwanted product for which there is an identifiable, distinct product market. See *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 461 (1992) (holding that a tying arrangement is "an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product"); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984) (holding that the question of tying turns on whether "there is a possibility that the economic effect of the arrangement is . . . that petitioners have foreclosed competition on the merits in a product market distinct from the market for the tying item").

13. Not all restrictive commercial contracts of this kind will be illegal tying arrangements. The point here is that commercial parties should not be entitled to use the DMCA as a sword to put a commercial competitor on the defensive in cases that are not really about the protection of copyright interests.

14. See Brett Frishmann & Dan Moylan, *The Evolving Common Law Doctrine of Copyright Misuse: A Unified Theory and Its Application to Software*, 15 *BERKELEY TECH. L.J.* 865, 930–31 (2000) (considering the basis of the common law copyright misuse doctrine and attempting to provide a unified theory of the doctrine).

15. In any event, it is not clear that a copyright misuse defense would apply to a DMCA infringement claim. This debate is taken up in more detail later in this Article. See *infra* Part IV.D (considering whether a copyright misuse claim might validly be raised as a defense in a DMCA infringement action); see also Burk, *supra* note 7, at 1132–40 (arguing for a new "anticircumvention misuse" defense to DMCA infringements to bring the copyright misuse policies

An important underlying concern here, brought into sharp relief by the recent appeal in the *Lexmark International, Inc. v. Static Control Components, Inc.* litigation, is the question of who should bear the initial burden of proof in these situations.¹⁶ A copyright or DMCA analysis would suggest that the commercial competitor should shoulder the burden of establishing noninfringement of copyright law generally, and of the DMCA in particular, as well as raising applicable defenses. This may include costly and time-consuming attempts to establish the noncopyrightability of the relevant software code even in situations where the code is only incidental to the dispute at hand. This Article suggests that, at the very least, Congress should amend the DMCA to incorporate a rule that places the burden of proof on the complainant-manufacturer to establish that the prevention of copyright piracy is indeed a central commercial concern in its complaint.¹⁷ The burden would shift to the defendant only in cases where the complainant convinces a court of its legitimate concern with copyright piracy.¹⁸

Part II examines the relevant provisions of the DMCA and their intended operation and also surveys the ways in which they have been applied in recent cases involving interoperable physical goods. Part III proposes an exception to the DMCA's anti-circumvention and anti-trafficking provisions for situations involving interoperable physical goods. This Part calls for a legislative presumption against DMCA liability in those situations that would operate on the basis of a rule distinguishing between disputes involving physical goods that incidentally incorporate copyrighted software and those whose subject matter is the protection of a digital copyright work.

To some extent, this suggestion draws from ideas underlying the Uniform Computer Information Transactions Act (UCITA).¹⁹ This statute incorporates

into the realm of DMCA claims).

16. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 550 (6th Cir. 2004) (discussing the burden of proof in DMCA claims).

17. *See id.* at 552 (Merritt, J., concurring). In his concurrence, Judge Merritt notes:
[W]e should be wary of shifting the burden to a rival manufacturer to demonstrate that its conduct falls under [one of the statutory exceptions to DMCA liability]. . . . A monopolist could enforce its will against a smaller rival simply because the potential cost of extended litigation and discovery where the burden of proof shifts to the defendant is itself a deterrent to innovation and competition.

Id.

18. *See id.* at 552–53 (Merritt, J., concurring) (implying that it is open to the court to read the DMCA to require plaintiffs to shoulder the burden of establishing the defendant's purpose to pirate a copyrighted work). This view, however, does not represent the majority opinion, and it is not clear that it is indeed open to the court to impose such a rule—hence the argument in this Article for a legislative amendment in this direction.

19. UCITA is discussed as a model for an exception to the DMCA in this Article.

provisions that distinguish computer information transactions from transactions that incidentally involve computer information.²⁰ The proposed presumption would operate by placing the burden of proof on the complainant to establish that the protection of a copyright work against piracy is a central commercial concern in the dispute. Thereafter, the burden would shift to the defendant to raise any applicable defenses.

Part IV situates this discussion in a broader context and considers the place of the above suggestion within copyright law more generally with particular reference to the relationship between the DMCA's anti-circumvention and anti-trafficking provisions and copyright's fair use, first sale, and copyright misuse doctrines. Part V offers conclusions on these issues and summarizes some ideas for future law reform of the DMCA.

II. The DMCA and Interoperability

A. The Anti-Circumvention and Anti-Trafficking Provisions of the DMCA

1. The Scheme of the Legislation

Congress incorporated the DMCA into the copyright act in 1998, and the DMCA came into operation in October 2000. The DMCA deals with a number of issues relating to copyright management in the digital age. The sections most relevant to the present discussion are the anti-trafficking provisions found in 17 U.S.C. §§ 1201(a)(2) and 1201(b). These provisions prohibit the manufacture, import, offering to the public, providing, or otherwise trafficking in devices that can circumvent technological protection measures designed to restrict access to, or use of, a copyright work.²¹ The prohibitions have their main application to devices that are designed primarily to circumvent

However, it should be noted that UCITA itself met with limited success as a statute for reasons unconnected with what is under discussion in this Article. UCITA garnered little support and has been enacted only in two jurisdictions to date—Maryland and Virginia. For the current legislative status of UCITA, see UNIFORM LAW COMMISSIONERS, A FEW FACTS ABOUT THE . . . UNIFORM COMPUTER INFORMATION TRANSACTIONS ACT, at http://www.nccusl.org/nccusl/uniformact_factsheets/uniformacts-fs-ucita.asp (last visited Dec. 28, 2004) (on file with the Washington and Lee Law Review).

20. See, e.g., Unif. Computer Info. Transactions Act (UCITA) § 102 cmt. 7 (2002), available at <http://www.law.upenn.edu/bll/ulc/ucita/2002final.pdf> (on file with the Washington and Lee Law Review). This Article discusses UCITA in detail in Part III.B.

21. 17 U.S.C. § 1201(a)(2), (b) (2000).

technological protection measures²² and to devices that have only limited commercially significant purposes other than to circumvent such measures.²³

The DMCA also prohibits acts of anti-circumvention per se; that is, it contains a prohibition on circumventing a technological protection measure that effectively controls access to a copyright work.²⁴ This more basic prohibition does have some application to the issues considered in this Article. When a business complains about a competitor trafficking in a product that has limited or no commercial purpose other than to circumvent a technological protection measure, it may be the case that the competitor also has engaged in associated acts of circumvention or has encouraged consumers to engage in circumvention activities by providing the means for them to do so, or both. The main aim of the original business, however, likely will be to prevent trade in the relevant competing product.²⁵

There are few real exceptions to the operation of the prohibitions on trafficking and circumvention contained in the DMCA. The legislation states that Congress did not intend for the DMCA to adversely impact existing limitations on copyright infringement and defenses to copyright infringement,²⁶ the scope of contributory liability for copyright infringement,²⁷ or rights of free speech in relation to copyright works.²⁸

However, there clearly is an impact, particularly when courts hold that the fair use defense cannot be asserted in an anti-circumvention proceeding because fair use only protects certain *uses* of a copyright work, as opposed to *access* of a copyright work without authority.²⁹ In fact, several recent bills have

22. *Id.* § 1201(a)(2)(A), (b)(1)(A).

23. *Id.* § 1201(a)(2)(B), (b)(1)(B).

24. *Id.* § 1201(a)(1)(A).

25. For a recent discussion of the relationship between anti-circumvention and anti-trafficking provisions in the DMCA and how they may affect the way businesses construct technological protection measures to maximize their legal protections, see generally R. Anthony Reese, *Will Merging Access Controls and Rights Controls Undermine the Structure of Anti-Circumvention Law?*, 18 BERKELEY TECH. L.J. 619 (2003).

26. 17 U.S.C. § 1201(c)(1) (2000) (stating that "[n]othing in this section affects rights, remedies, limitations, or defenses to copyright infringement").

27. *Id.* § 1201(c)(2) (stating that "[n]othing in this section shall enlarge or diminish . . . contributory liability for copyright infringement").

28. *Id.* § 1201(c)(4) (stating that "[n]othing in this section shall enlarge or diminish any rights of free speech").

29. See *Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 346, 347 (S.D.N.Y. 2000) (holding that fair use is not a defense to DMCA infringement), *aff'd*, 273 F.3d 429 (2d Cir. 2001); Burk, *supra* note 7, at 1137–38 (stating that the DMCA makes no explicit provision for fair use with regard to the anti-circumvention right itself, as distinct from the copyright in the underlying work); Pamela Samuelson, *Intellectual Property in the Digital Economy: Why*

been introduced into Congress to remedy the perceived defects of the DMCA in terms of its impact on the fair use defense.³⁰ Interestingly, some of the judges in each of the two recent decisions in *Lexmark International, Inc. v. Static Control Components, Inc.*³¹ and *Chamberlain Group, Inc. v. Skylink Technologies, Inc.*³² suggest a greater role for the fair use defense, even in the DMCA context.³³ This reasoning, however, may not stand in the future, particularly in the face of prior precedent suggesting that the fair use defense does not apply in *access* situations. These earlier precedents were distinguished in the more recent cases rather than being overruled.³⁴ Thus, there is still confusion as to the fate of the fair use defense in DMCA proceedings.

The DMCA also includes some specific defenses for nonprofit libraries,³⁵ law enforcement, intelligence, and other government agencies,³⁶ reverse engineering (interoperability),³⁷ and encryption research.³⁸ Since the inception of the legislation, these exceptions have, for the most part, had limited application,³⁹ to the extent that they have been judicially

the Anti-Circumvention Regulations Need to be Revised, 14 BERKELEY TECH. L.J. 519, 539 n.108 (1999) (stating that "[a]n extremely narrow interpretation of the provision might suggest that fair use could be raised as a defense to an infringement claim").

30. See generally Digital Media Consumers' Rights Act of 2003, H.R. 107, 108th Cong. Benefit Authors without Limiting Advancement or Net Consumer Expectations (BALANCE) Act of 2003, H.R. 1066, 108th Cong. For an explanation of the ways the fair use defense could be preserved by legislative amendment in the wake of the DMCA, see Reese, *supra* note 24, at 663–64.

31. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522 (6th Cir. 2004).

32. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178 (Fed. Cir. 2004).

33. See *Lexmark*, 387 F.3d at 562 (Feikens, J., concurring in part, dissenting in part) (suggesting that the ability to raise a fair use defense to a copyright infringement claim raised in the same proceedings as a DMCA claim would remove the potential for DMCA liability because the successful establishment of fair use would mean that there would be "no right of a copyright owner" protected under § 1201(b) to support an infringement claim under the section); *Chamberlain*, 381 F.3d at 1202 (specifically referring to the need to protect fair use under § 1201(c)(1) when faced with a DMCA infringement claim).

34. See, e.g., *Chamberlain*, 381 F.3d at 1198–99 (distinguishing *Universal Studios*).

35. 17 U.S.C. § 1201(d) (2000) (providing a defense for libraries that "gain[] access to a commercially exploited copyright work solely in order to make a good faith determination of whether to acquire a copy of that work").

36. *Id.* § 1201(e) (providing a defense for "lawfully authorized investigative, protective, information security, or intelligence activity").

37. *Id.* § 1201(f)(1) (providing a defense for use for "the sole purpose of identifying and analyzing those elements of the program that are necessary to achieve interoperability").

38. *Id.* § 1201(g) (providing a defense for activities that "are conducted to advance the state of knowledge in the field of encryption technology").

39. See Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints*

tested.⁴⁰ The recent court of appeals decision in *Lexmark* suggests that the reverse engineering defense might have more of a role to play in the future than previously was thought.⁴¹ The comments to this effect, however, are dicta because the Sixth Circuit, having already held that the DMCA action likely was unsupportable on the facts at hand, did not have to decide the question of the applicability of the reverse engineering defense. In any event, the majority of the Sixth Circuit limited their comments on the reverse engineering defense to the preliminary injunction standard of review, accepting that their views may not govern the findings on the defense at the permanent injunction stage.⁴²

2. The DMCA and Interoperable Replacement Parts

The situations under consideration in this Article involve the use of technological protection measures in the context of commercially linking an after-market replacement part to a product sold in commerce.⁴³ The

on *Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354, 417–21 (1999) (describing the various exemptions and their limited uses); David V. Lampman II, Comment, "A Prologue to a Farce or a Tragedy"? A Paradox, a Potential Clash: Digital Pirates, the Digital Millennium Copyright Act, the First Amendment & Fair Use, 38 GONZ. L. REV. 367, 393–94 (2002) (describing the exemption as too narrow to be effective); see also Joseph P. Liu, *The DMCA and the Regulation of Scientific Research*, 18 BERKELEY TECH. L.J. 501, 524–25 (2003) (describing the "hurdles" that one must overcome to make use of the encryption defense as limiting its use).

40. See, e.g., *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 970–71 (E.D. Ky. 2003) (stating that the reverse engineering exemption to the DMCA's anti-circumvention and anti-trafficking provisions is not a broad exception that would excuse any behavior that makes a device interoperable with another device and explaining that a defendant cannot avail itself of the exemption if its conduct constitutes copyright infringement), *vacated by* 387 F.3d 522 (6th Cir. 2004). But see *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 537–42 (6th Cir. 2004) (overturning much of the district court's reasoning).

41. See *Lexmark*, 387 F.3d at 550 (holding that the defendant may benefit from the interoperability defense, particularly at the preliminary injunction stage of the proceedings).

42. *Id.* at 550–51. The court of appeals in *Chamberlain* made similar comments about the reverse engineering defense under § 1201(f), which are technically dicta because the court found no DMCA infringement on the facts. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1200–04 (Fed. Cir. 2004).

43. I have here avoided the use of the term "tying" in the strict antitrust sense of the term. Illegal "tying" arrangements are agreements in which a seller with significant market power conditions the availability of one product on the purchaser's agreement also to purchase a second unwanted product for which there is an identifiable, distinct product market. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 18 (1984) (considering "whether petitioners are selling two separate products that may be tied together, and, if so, whether they have used their market power to force their patients to accept the tying arrangement"). Many of these arrangements will amount to tying in this sense, although some may not offend antitrust law. See *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 464 (1992) (stating that "appreciable economic power in the tying market" is a "necessary feature of an illegal tying arrangement").

technological protection measures will generally be in the form of software code (TPM code). These measures can serve to encrypt other software code (interoperability code) that ties a replacement part, such as a toner cartridge, to an original good, such as a printer, into which the cartridge is inserted. This interoperability code probably will have some functionality that allows the replacement product to work effectively within the original good. In the case of the printer toner cartridge, the interoperability code likely will create messages between the cartridge and the printer that enable the printer to recognize the cartridge as authorized by the printer manufacturer to operate within the printer.⁴⁴ The same mechanism could be, and increasingly is, utilized in other after-market replacement part industries, such as automotive parts, television and stereo remote controls, and, of course, garage door openers.

In other words, manufacturers in many industries now can achieve through technological means a form of tying that previously might only have been achieved—and probably not as effectively—through contract terms. Regardless of whether the tying conduct in question is achieved via technology, contract, or a combination of both, and whether it comprises permissible versus illegal constraints on subsequent uses of a product, these situations are not within the ambit of traditional copyright law and policy, particularly where the products in question only incidentally incorporate software code. The concern arises because (1) copyright law generally, and the DMCA specifically, deals with the protection of copyright works against unauthorized accesses and uses and (2) software code is copyrightable as a "literary work."⁴⁵ Where the interoperability code is a literary work⁴⁶ and is protected against unauthorized

44. *Lexmark*, 253 F. Supp. 2d at 952 (noting that Lexmark's digital authentication measure prevents the unauthorized access to its Printer Engine Program and Toner Loading Program), *vacated by* 387 F.3d 522 (6th Cir. 2004). Interoperability code, as defined here, may well reside in two different physical items. In the printer toner cartridge example, aspects of the interoperability code resided on the printer toner cartridges and other aspects resided on the printers purchased by Lexmark's customers. The court of appeals ultimately held that the code residing on the printers may be copyrightable, and therefore potentially entitled to general copyright and specific DMCA protection, while the code residing on the toner cartridges was insufficiently original to merit such protection. *Lexmark Int'l, Inc. v. Static Control Corp.*, 387 F.3d 522, 544 (6th Cir. 2004). In the final analysis, the majority of the court felt that even the software code residing on the printers did not merit copyright or DMCA protection. *Id.* at 548–49.

45. MARSHALL LEAFFER, *UNDERSTANDING COPYRIGHT LAW* 99–102 (3d ed. 1999) (offering a general overview of copyrightable literary works and paying specific attention to computer programs).

46. Whether or not these kinds of software programs are copyrightable will be a case-specific inquiry depending on the facts at hand. In *Chamberlain Group, Inc. v. Skyline Technologies, Inc.*, 292 F. Supp. 2d 1040 (N.D. Ill. 2003), and in the *Lexmark* and *Chamberlain* appeals, the respective courts were not convinced that the software in question was

access or use by the TPM code functioning as a technological measure protecting the rights of a copyright owner, the DMCA technically can be applied to prevent circumvention of the TPM code⁴⁷ and trafficking in a device that can circumvent either the TPM code⁴⁸ or the protection afforded by the TPM code.⁴⁹

The TPM code itself also may be copyrightable as a literary work in many cases. This Article, however, focuses on the use of TPM code as a technological measure restricting access to copyrighted interoperability code. The question for discussion here is whether incidental uses of interoperability code and protections of such code via TPM code in what are basically transactions involving the sales and leasing of tangible goods that happen to incorporate some software should be an issue for the DMCA.

In an age where the line between tangible goods and intangible information products is becoming increasingly difficult to draw with any clarity,⁵⁰ it is necessary to start formulating some rules and policies that might help to distinguish one from the other. Failure to do so may result in an inappropriate set of legal rules about intangible information products being applied to transactions that are not really about information at all, but rather are standard commercial transactions involving tangible goods. Recent cases support the notion that such transactions should not attract DMCA liability, and arguably not even general copyright liability, but these decisions could be distinguished in subsequent cases on a number of grounds left open by the courts of appeal in *Lexmark* and *Chamberlain* respectively.⁵¹ Even if these decisions stem the tide to some extent in terms of inappropriate litigation under copyright laws, the adoption of a legislative presumption against DMCA liability in cases not centrally focused on the prevention of digital copyright

copyrightable. *Lexmark*, 387 F.3d at 544–45; *Chamberlain*, 381 F.3d at 1204. However, this does not mean that no functional software can ever be copyrightable. *Lexmark*, 387 F.3d at 544–45; *Chamberlain*, 381 F.3d at 1204. Software is always functional, and much software is copyrightable.

47. 17 U.S.C. § 1201(a)(1)(A) (2000).

48. *Id.* § 1201(a)(2)(A).

49. *Id.* § 1201(b)(1)(A).

50. This difficulty arises because physical goods increasingly incorporate software code. See HANK SHIFFMAN, JSTAR: PRACTICAL JAVA ACCELERATION FOR INFORMATION APPLIANCES, at <http://www.disordered.org/Java-Embed.html> (Feb. 2000) ("Information appliances are a new class of specialized devices . . .") (on file with the Washington and Lee Law Review); Martyn Williams, *Wired Appliances Add Surfing to Kitchen Duty*, PC WORLD, at <http://www.pcworld.com/resource/printable/article/0,aid,51584,00.asp> (June 4, 2001) (considering the most recent "attempt[s] to load advanced electronics into home appliances") (on file with the Washington and Lee Law Review).

51. See *infra* Part II.B–C (discussing the *Lexmark* and *Chamberlain* cases).

piracy would avoid costly litigation that potentially confuses copyright policy with antitrust and general commercial law and policy. Importantly, such a presumption would clarify the troubling issue that now arises in digital copyright litigation—placing a heavy burden of proof on a defendant to establish that the complainant does not have a realistic case under copyright law. As Judge Merritt notes in his concurring opinion in *Lexmark*, this burden in itself could be a deterrent to innovation and competition, a result that clearly runs counter to the aims of both copyright and antitrust law and policy.⁵²

*B. Lexmark International, Inc. v. Static Control Components, Inc.*⁵³

1. Lexmark in the District Court

The *Lexmark* case involved a slightly more complex version of the situation described above—the use of interoperability software to ensure that only authorized toner cartridges were purchased for use in a certain class of Lexmark printers and that unauthorized cartridges manufactured by Lexmark's competitors would not operate in those printers. The preliminary injunction granted in favor of Lexmark by the district court recently was overturned by the Court of Appeals for the Sixth Circuit.⁵⁴ Because of the profound disagreements between the two courts on the interpretation of specific DMCA provisions and the application of copyright law generally to the facts at hand, the following discussion commences with a detailed consideration of the district court's reasoning before considering the Sixth Circuit's analysis.

Lexmark had released two types of toner cartridges into the market for use with its T-Series printers—regular cartridges and "Prebate" cartridges.⁵⁵ The Prebate cartridges were sold at an upfront discount to customers.⁵⁶ In exchange for the discount, the customers were bound contractually to use the Prebate toner cartridges only once and to return the used cartridges to Lexmark for remanufacturing and recycling.⁵⁷ Lexmark's customers could choose freely

52. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 552–53 (6th Cir. 2004) (Merritt, J., concurring).

53. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943 (E.D. Ky. 2003), *vacated by* 387 F.3d 522 (6th Cir. 2004).

54. *Lexmark*, 387 F.3d at 551.

55. *Lexmark*, 253 F. Supp. 2d at 947.

56. *Id.* at 947.

57. *Id.* at 947 n.1. A contractual clause to this effect was printed on top of every Prebate toner cartridge box. The text of the relevant clause read:

RETURN EMPTY CARTRIDGE TO LEXMARK FOR REMANUFACTURING

which cartridges to buy.⁵⁸

The contractual restrictions on re-use of Prebate toner cartridges were supplemented by digital rights management technology (DRM)⁵⁹ applied by Lexmark to both its Prebate toner cartridges and its printers.⁶⁰ The DRM measures consisted of several software programs inserted into the cartridges and printers.⁶¹ In particular, a Printer Engine Program (PEP) was inserted into the printers to control various printer operations including "paper feed, paper movement, motor control, . . . and voltage control."⁶² The PEP software was registered as a copyright work at the Copyright Office.⁶³

Lexmark also utilized a set of Toner Loading Programs (TLPs) in its toner cartridges.⁶⁴ These programs enabled the printers to approximate the amount of

AND RECYCLING. Please read before opening. Opening this package or using the patented cartridge inside confirms your acceptance of the following license/agreement. This all-new cartridge is sold at a special price subject to a restriction that it may be used only once. Following this initial use, you agree to return the empty cartridge only to Lexmark for remanufacturing and recycling. If you don't accept these terms, return the unopened package to your point of purchase. A regular price cartridge without these terms is available.

Id.

The case, and the discussion in this Article, proceeded on the basis that this was a valid contractual term. My own opinion is that the term was valid contractually because it was made clear to purchasers at the time of purchase, and purchasers were given an option to purchase a more expensive cartridge without the restriction. There may be an argument that the term insufficiently was drawn to the attention of consumers and that this was part of a contract of adhesion. However, contractual clauses relating to uses of software are not invalidated on these grounds traditionally. It is interesting to note that the agreement in this case is described in the judgment as a "shrinkwrap" agreement "placed across the top of every Prebate toner cartridge box." *Id.* at 947. Technically, the fact that the agreement is presented under a plastic wrap does not make it a shrinkwrap agreement, particularly if the terms are visible to the customer at the time of purchase. Shrinkwrap, in its more technical sense, generally refers to terms that are not available to the customer at the time of purchase but are hidden in a box; the customer does not get an opportunity to examine the terms until he tears open the plastic wrap and opens the box. LEAFFER, *supra* note 45, at 112. In any event, the description of the contractual terms in *Lexmark* as shrinkwrap terms is not material to this Article.

58. *Lexmark*, 253 F. Supp. 2d at 947.

59. One generally accepted definition of DRM systems is the "secure packaging and delivery software designed to prevent purchasers and third parties from making unauthorized uses of digital works." Dan L. Burk & Julie E. Cohen, *Fair Use Infra-Structure for Rights Management Systems*, 15 HARV. J.L. & TECH. 41, 48 (2001).

60. *Lexmark*, 253 F. Supp. 2d at 948–49.

61. *Id.*

62. *Id.* at 948.

63. *See id.* at 948–49 (noting that a computer program is a "literary work" and is protected from unauthorized copying); LEAFFER, *supra* note 45, at 99–102 (explaining that computer programs are copyrightable literary works).

64. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 949

toner left in a toner cartridge; in conjunction with the PEP, the TLP allowed the printer to display a "toner low" message on the printer screen at an appropriate time.⁶⁵ These programs also were registered at the Copyright Office.⁶⁶ The TLPs additionally assisted Lexmark in detecting copyright infringers by including a Lexmark cartridge identifying reference tag.⁶⁷

The final design feature of the Lexmark printing system relevant to this discussion is Lexmark's use of an authentication sequence that was designed to run "each time a toner cartridge [was] inserted into a Lexmark printer, the printer [was] powered on, or whenever the printer [was] opened or closed."⁶⁸ The technical details of the authentication sequence are set out in some detail in the district court's judgment.⁶⁹ Suffice to say that Lexmark's intention in designing the sequence was that access to the PEP would be disabled unless the toner cartridge was recognized as an authorized cartridge.⁷⁰

Lexmark's complaint was that one of its competitors in the toner cartridge market, Static Control Components (SCC), manufactured a SMARTEK microchip that could be used to replace the microchip found in Lexmark's toner cartridges.⁷¹ The aim of the SMARTEK chip was functionally to copy Lexmark's TLPs and allow unauthorized toner cartridges to function effectively in Lexmark printers.⁷² Thus, Lexmark sued SCC for both copyright infringement—for copying the TLPs—and for infringement of the anti-trafficking provisions of the DMCA—for trafficking in a device that circumvented access and used measures attached to Lexmark's copyrighted PEP and TLP software.⁷³

A number of factors were relevant to the initial grant of the preliminary injunction by the district court, including SCC's engagement in wholesale copying of Lexmark's copyrighted software in order to market a competing product,⁷⁴ rather than reverse engineering for the purposes of creating an interoperable computer program.⁷⁵ In terms of copyright infringement, courts

(E.D. Ky. 2003), *vacated by* 387 F.3d 522 (6th Cir. 2004).

65. *Id.*

66. *Id.*

67. *Id.*

68. *Id.* at 952.

69. *Id.* at 952–53.

70. *Id.*

71. *Id.* at 955.

72. *Id.*

73. *Id.* at 947.

74. *Id.* at 965.

75. *Id.* at 959–60 (analyzing the fair use and reverse engineering doctrines derived from

in the past have accepted a limited fair use exception for "intermediate copying" engaged in for the sole purpose of reverse engineering in order to discover the functional requirements to create an interoperable product.⁷⁶ However, Judge Forester held at first instance in *Lexmark* that this exception is narrow and is confined to situations where a computer program is copied in order to analyze ideas embedded in the program.⁷⁷ The exception does not apply to situations where protected software is copied and then incorporated into a product for "commercial exploitation and profit."⁷⁸

Judge Forester also took the view that SCC had no reverse engineering defense available under Section 1201(f) of the DMCA.⁷⁹ This section provides a defense to infringement of the DMCA's anti-circumvention provisions if the circumvention of an effective technological measure is carried out "for the sole purpose of identifying and analyzing those elements of the program that are necessary to achieve interoperability of an independently created computer program with other programs."⁸⁰ Judge Forester held that SCC's SMARTEK microchips could not be considered "independently created computer programs" for the purposes of this section because of the wholesale copying of Lexmark's software.⁸¹ The judge noted that the "microchips serve[d] no legitimate purpose other than to circumvent Lexmark's authentication sequence" and that they could not "qualify as independently created when they contain[ed] exact copies of Lexmark's" TLP software.⁸²

In the tradition of hard cases making bad law, it is arguable that the district court in *Lexmark* came to the right practical result on the issues but for the wrong legal reasons. Even though the district court was overturned on appeal, the majority of the Sixth Circuit suggested that although the district court was incorrect in making its findings at the *preliminary* injunction stage, some of the issues may still be open for further debate at the *permanent* injunction stage.⁸³ Thus, the court of appeals did not necessarily preclude a future court from ultimately deciding such a case along the lines adopted by the district court, but

Sega Enterprises Ltd. v. Accolade, Inc., 977 F.2d 1510 (9th Cir. 1992)).

76. *Id.* at 959–60.

77. *Id.* at 959.

78. *Id.*

79. 17 U.S.C. § 1201(f) (2000).

80. *Id.* § 1201(f)(1).

81. *Lexmark*, 253 F. Supp. 2d at 971.

82. *Id.*

83. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 550 (6th Cir. 2004).

rather felt that the district court's decision was inappropriate when applying the preliminary injunction standard of review.⁸⁴

In terms of the underlying policy considerations at issue, Lexmark apparently had good commercial reasons for marketing its toner cartridges in the way that it did. Lexmark presented evidence that approximately ninety percent of the cartridges sold for its T-Series printers were Prebate cartridges sold at the discount price.⁸⁵ Lexmark's remanufacturing program depended on the return of used Prebate cartridges by its customers.⁸⁶ The court accepted Lexmark's argument that if customers did not abide by their contractual agreement to return the cartridges, the cost of Lexmark's remanufacturing process would be increased and such increases would be passed on to consumers in the form of more expensive toner cartridges.⁸⁷

Arguably, the district court should have focused on the merits of this argument in this case. The underlying policy problem here seems to be what kind of competition should be permitted in the toner cartridge market(s) rather than copyright infringement and DMCA infringement. Cases like this should revolve around rules and policies from commercial, contract, and antitrust law, rather than from policies of copyright law. In fact, the majority in the *Lexmark* appeal made this precise point: "Lexmark's market for its toner cartridges and the profitability of its Prebate program may well be diminished by the SMARTEK chip, but that is not the sort of market or value that copyright law protects."⁸⁸ The difficulty today is that the Sixth Circuit's comment does not necessarily resolve the *legal* problem, although it clearly states the policy concern. For reasons set out below, manufacturers technically may still raise copyright and DMCA arguments like Lexmark did in this case, depending on the structure of the software code utilized within a relevant product.

2. The Lexmark Appeal

The appellate court in *Lexmark* took pains to explain where the district court erred in its analysis of the relevant laws, both in terms of general copyright principles and specific DMCA analysis.⁸⁹ The Sixth Circuit vacated

84. *Id.*

85. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 956 (E.D. Ky. 2003), *vacated by* 387 F.3d 522 (6th Cir. 2004).

86. *Id.*

87. *Id.*

88. *Lexmark*, 387 F.3d at 545.

89. *See id.* at 537–42, 544–45, 546–48, 550 (describing the district court's three legal

the preliminary injunction and remanded the case back to the district court for further consideration.⁹⁰ However, the parties could settle the matter rather than proceed to further hearings. Regardless of the final outcome of this particular litigation, the *Lexmark* appeal does leave certain questions open with respect to the application of copyright and DMCA law to interoperable physical products cases. Such questions remain open because the court took care to specify that its holdings were confined to the preliminary injunction context and would not necessarily be determinative at the permanent injunction stage.⁹¹ The majority commented on the structure of the software utilized by Lexmark that could be used to distinguish this decision from a future decision involving an interoperable physical product incorporating a computer code as a technological tying device.⁹²

The basic thrust of the appellate decision at first glance may be very pleasing to those people concerned about inappropriate extensions of copyright law in general, and the provisions of the DMCA in particular, to these kinds of situations. The majority of the court of appeals took the view that the software allegedly copied by SCC (the TLP software) may not be copyrightable for lack of originality,⁹³ largely because of the application of merger⁹⁴ or *scènes à faire* doctrines, or both.⁹⁵ Thus, a copyright infringement action might not be available with respect to SCC's admitted copying of this code at the permanent injunction stage, and insufficient evidence of a valid copyright work existed to support a preliminary injunction.⁹⁶

errors: wrongly concluding that the Toner Loading Program was entitled to copyright protection, using the incorrect legal standard for distinguishing protectable expression from the unprotected ideas, and incorrectly assessing whether the Toner Loading Program functions as a lock-out code).

90. *Id.* at 551.

91. *See id.* at 541–42, 544, 550 (noting that the court's analysis only explains why the district court's issuance of a preliminary injunction was erroneous, not whether a permanent injunction would issue ultimately).

92. *Id.* at 548.

93. *See id.* at 540–41 (noting that the district court erred in holding that the TLP software had sufficient originality to obtain copyright protection in the context of granting a preliminary injunction, although originality may be an open question at the permanent injunction stage).

94. Copyright protection may be denied under the merger doctrine when only one way, or very few ways, exist to express an idea. In such cases, the idea and the expression are said to be "merged." *Id.* at 534–35.

95. This doctrine denies copyright protection to a program where the structure of the program was dictated by practical realities such as hardware and mechanical specifications, software standards and compatibility requirements, design standards, industry practices, and standard programming practices. *Id.* at 535.

96. *See id.* at 541 (noting that the district court erred in holding that the TLP software had sufficient originality to obtain copyright protection in the context of granting a preliminary

Even if a copyright infringement action were available with respect to SCC's copying of the TLP, the appellate court suggested that SCC might well avail itself of the fair use defense at the permanent injunction phase of the case.⁹⁷ The Sixth Circuit's comments on fair use are, strictly speaking, dicta because the majority suggested that it need not consider the fair use defense in light of its conclusions on the preliminary injunction record that the TLP was not copyrightable.⁹⁸ In a brief fair use analysis, however, the majority suggested that a fair use defense may be available to SCC largely on the basis of the fourth "fair use factor" found in 17 U.S.C. § 107—namely, "the effect of the use upon the potential market for the value of the copyrighted work."⁹⁹ As noted above, the court of appeals stated that the district court incorrectly focused on the market for toner cartridges, rather than on the market for software code such as the TLP, which may be incorporated into the toner cartridges.¹⁰⁰ In the Sixth Circuit's view, this error of focus, along with a mistaken view of the district court that SCC copied the TLP for its commercial value *as a copyright work*,¹⁰¹ should be sufficient grounds for the lower court to reconsider the fair use issue.

With respect to the DMCA claims, the majority of the Sixth Circuit in *Lexmark* found that the SMARTEK chip was not designed primarily to circumvent technological encryption measures that effectively prevent unauthorized access to a copyright work. Having held that the TLP is likely not a copyright work per se, the analysis focused on whether the TLP contained software code that effectively prevented access to the admittedly copyrightable PEP code residing in the Lexmark printers.¹⁰² The Sixth Circuit held that Lexmark's DMCA claim failed because the relevant code did not actually control access to the PEP housed on the Lexmark printers. Although the code in question clearly performed an authentication sequence between a Lexmark toner cartridge and a Lexmark printer, the actual copyrighted work (the PEP code) was also accessible directly from the printer by anyone who had

injunction, although originality may be an open question at the permanent injunction stage).

97. *Id.* at 544.

98. *Id.*

99. *Id.* at 544–45.

100. *Id.* at 545.

101. This issue relates to the first "fair use factor" under 17 U.S.C. § 107, which invites the court to consider "the purpose and character of the use, including whether it is of a commercial nature" *Id.* at 544.

102. *Id.* at 546–47.

purchased, and was therefore authorized to use, a Lexmark printer.¹⁰³ The majority noted that:

Anyone who buys a Lexmark printer may read the literal code of the Printer Engine Program directly from the printer memory, with or without the benefit of the authentication sequence, and the data from the program may be translated into readable source code after which copies may be freely distributed No security device, in other words, protects access to the Printer Engine Program Code and no security device accordingly must be circumvented to obtain access to that program code.¹⁰⁴

Although the authentication sequence housed on the toner cartridge blocked one form of access to the PEP, it was freely accessible in other ways.¹⁰⁵ In the majority's view, arguing that the authentication sequence is an access control measure under the DMCA would be like saying that "a lock on the back door of a house 'controls access' to a house whose front door does not contain a lock."¹⁰⁶

Although the access issue made for a compelling argument on the facts at hand in *Lexmark*, future manufacturers with copyrighted software analogous to the PEP in *Lexmark* might ensure that their product is more effectively locked and that access is denied to everyone, including those people who have legitimately purchased the physical product in question. The combination of a powerful technological lock and contractual license terms forbidding purchasers to access relevant code would create a situation where the Sixth Circuit's reasoning in *Lexmark* would not apply. The decision of the Sixth Circuit relied on the fortuitous circumstance that Lexmark had not thought to protect its PEP code more stringently in order to maintain DMCA infringement proceedings against competitors.¹⁰⁷ Future manufacturers may be more careful in this respect. In fact, the Sixth Circuit's reasoning on this point could now be read as a recipe for future manufacturers on precisely how to launch a successful DMCA claim in a subsequent interoperable products case. Armed with validly copyrighted software such as the PEP and a serious attempt to lock the code away from all comers, a manufacturer could make out a prima facie DMCA proceeding despite the judicial determinations in the *Lexmark* appeal.¹⁰⁸

103. *Id.*

104. *Id.*

105. *Id.* at 547.

106. *Id.*

107. *Id.* at 548.

108. In fact, Judge Merritt's concurring opinion in the *Lexmark* appeal makes precisely this point. See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 551 (6th Cir.

Lastly, the *Lexmark* appellate court addressed the "interoperability defense" under 17 U.S.C. § 1201(f)(3).¹⁰⁹ As with the Sixth Circuit's comments on the fair use defense to copyright infringement, the comments on the interoperability defense to DMCA infringement are dicta. The majority noted that it only considered the interoperability defense because the defense may become relevant at the permanent injunction stage of this dispute.¹¹⁰ The majority's comments on this defense were not particularly illuminating with respect to ways in which future courts might interpret the defense in similar cases. The comments are largely fact-specific, focusing on *Lexmark*'s failure to provide evidence to support certain arguments that would refute the application of the defense.¹¹¹ Again, we see little judicial guidance as to precisely how this defense might be utilized in future litigation.

3. Interoperability Issues After *Lexmark*

Even in the wake of the *Lexmark* appeal and, for that matter, the *Chamberlain* appeal,¹¹² a number of worrying issues remain. For example, the decision leaves future product manufacturers open to craft their software code differently to ensure that a DMCA argument will be available to them. Judge Merritt noted in his concurrence in the decision in the *Lexmark* appeal:

[He would have preferred the majority to have gone further in order to] make clear that in the future companies like *Lexmark* cannot use the DMCA in conjunction with copyright law to create monopolies of manufactured goods for themselves just by tweaking the facts of this case: by, for example, creating a Toner Loading Program that is more complex and "creative" than the one here, or by cutting off other access to the Printer Engine Program.¹¹³

2004) (Merritt, J., concurring). Judge Merritt stated:

We should make clear that in the future companies like *Lexmark* cannot use the DMCA in conjunction with copyright law to create monopolies of manufactured goods for themselves just by tweaking the facts of this case: by, for example, creating a Toner Loading Program that is more complex and "creative" than the one here, or by cutting off other access to the Printer Engine Program.

Id.

109. *Id.* at 550–51 (explaining the district court's erroneous conclusions with respect to the defense).

110. *Id.* at 550.

111. *Id.* at 550–51.

112. See *infra* Part II.C (discussing the *Chamberlain* appeal).

113. *Lexmark*, 387 F.3d at 551 (Merritt, J., concurring).

However, the majority does not go this far, arguably leaving these questions open for future courts, and, indeed even for the district court on remand in *Lexmark* if the matter does not settle prior to a rehearing of the substantive issues.

By not creating a clear rule or presumption against DMCA liability in these kinds of interoperable products cases, the *Lexmark* decision also did not address the burden of proof problem raised by Judge Merritt in his concurring opinion: "[W]e should be wary of shifting the burden to a rival manufacturer to demonstrate that its conduct falls under [an exception to DMCA liability] in cases where there is no indication that it has any intention of pirating a protected work."¹¹⁴ He expressed a concern that placing too much of a burden on defendants in this class of cases could deter innovation and competition by allowing monopolists to threaten smaller commercial rivals with the cost of protracted litigation.¹¹⁵ Judge Merritt is unquestionably correct here. The problem is that the current drafting of the DMCA does not make it clear that the legislative intention was not to place this kind of burden on defendants in interoperable physical products cases. The legislative presumption advocated in this Article would address this problem by ensuring that future plaintiffs bear the burden of establishing that the protection of a copyright work against digital piracy is a central commercial concern.

Because the *Lexmark* appeal did not discuss the fair use defense to copyright infringement and the interoperability defense to DMCA infringement in significant detail, the case adds little in the way of judicial guidance on the future application of these defenses in this class of cases. In particular, little guidance exists as to the availability of a fair use defense with respect to a DMCA claim. As noted above, the weight of current judicial opinion is that, despite the inclusion of Section 1201(c)(1) in the DMCA, fair use is not a defense to an action about unauthorized *access* to a copyright work.¹¹⁶ Both the *Lexmark* and the *Skylink* courts of appeals suggested that there must be some relationship between fair use and the DMCA because of the inclusion of this section in the legislation.¹¹⁷ However, these suggestions do not sit well with

114. *Id.* at 552 (Merritt, J., concurring).

115. *Id.* at 552–53 (Merritt, J., concurring).

116. *See supra* note 29 and accompanying text (stating that courts do not allow the fair use defense to apply to accessing a copyrighted work without authority).

117. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 562 (6th Cir. 2004) (Feikens, J., concurring in part, dissenting in part) (noting that the DMCA does not affect defenses to copyright infringement); *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1200 (Fed. Cir. 2004) (same).

previous authority, and some further legislative guidance may ultimately be necessary to decide this issue. Although this argument is not the focus of the suggestions made in this Article, this issue requires further consideration in the future. At least the adoption of a legislative presumption such as that suggested in this Article should minimize the extent to which courts would need to consider the issue in the interoperable products context.

Finally, and this is perhaps a smaller technical point, the issue remains that the Sixth Circuit in *Lexmark* was mindful of the fact that it was handing down a decision to overturn a preliminary injunction. It criticized the district court's application of a preliminary injunction standard of review. The appellate court left open the possibility that a number of the key issues, such as copyrightability of relevant code and application of the DMCA provisions, could be decided differently at the permanent injunction stage.¹¹⁸

As suggested by Judge Merritt, clear measures should be taken to confine DMCA liability in interoperability cases to situations where the interoperable product in question is actually a copyright work, such as a computer game stored in a video game cartridge, a movie stored on a DVD-ROM or videotape, or a collection of copyrighted music stored on a CD or audio tape.¹¹⁹ Congress enacted the DMCA to prevent piracy of such valuable information products.¹²⁰

The reason for confining DMCA liability to such cases, even if a general copyright remedy may be available to a plaintiff in a noncontent-industry focused case, is taken up below.¹²¹ Basically, the argument is that whereas copyright law protects works in many different contexts, the DMCA is aimed specifically at digital piracy and carries heavy penalties, including criminal sanctions, for infringement. The DMCA also has more limited defenses and exceptions available to a defendant than traditional copyright infringement proceedings. The application of the DMCA should, therefore, be limited to appropriate digital piracy contexts, despite the potential for a general copyright infringement action in a nondigital-piracy case.

At the very least, a presumption against the application of the DMCA should exist unless the manufacturer of the physical good can show that

118. *Lexmark*, 387 F.3d at 540–42, 544, 550.

119. *Id.* at 552 (Merritt, J., concurring).

120. See Burk, *supra* note 7, at 1135 (noting that the legislative aims behind the drafting of the DMCA were to prevent "piracy" in digital works); Electronic Frontier Foundation, *supra* note 1, at 1 (noting that by enacting the DMCA, Congress meant to stop copyright pirates from defeating antipiracy protections added to copyrighted works and to ban "black box" devices intended for that purpose).

121. See *infra* Part III.A (discussing the wisdom of confining DMCA liability in interoperability cases to situations where the product is actually a copyright work).

prevention of digital copyright piracy is a central commercial concern in the case.¹²² Bearing in mind that the DMCA originally was directed at the prevention of digital copyright piracy at the behest of industries like the movie industry and the music industry,¹²³ applying it without more careful consideration to situations where digital copyright piracy is not the subject of the plaintiff's concern seems to be drawing a long bow.

C. *Chamberlain Group, Inc. v. Skylink Technologies, Inc.*¹²⁴

The *Chamberlain* litigation was similar in nature to the *Lexmark* litigation, although in *Chamberlain*, neither the district court nor the Federal Circuit Court of Appeals was particularly convinced by a complainant manufacturer's claims of copyright and DMCA infringements allegedly committed by a commercial competitor. In particular, the court of appeals favored an interpretation of the DMCA that would restrict its application to cases involving bona fide attempts to prevent copyright infringement.¹²⁵ The plaintiff, Chamberlain, manufactured and marketed a "Security+" garage door-opener system.¹²⁶ The system involved a "rolling computer code" intended to make the system more secure than traditional garage-door-opening systems.¹²⁷

The remote control device, usually kept in a user's car, transmitted the rolling code to the receiver/door-opening mechanism in the purchaser's garage. Thus, relevant "rolling code software" was incorporated both into the portable remote control device and the receiver/door-opening mechanism. Chamberlain

122. See *Lexmark*, 387 F.3d at 552 (Merritt, J., concurring) (noting that "a better reading of the [DMCA] is that it requires plaintiffs as part of their burden of pleading and persuasion to show a purpose to pirate on the part of defendants").

123. Burk, *supra* note 7, at 1135 (noting that content industries lobbying Congress for anti-circumvention provisions emphasized the potential for digital piracy as the chief concern); Gord Larose, *Law, Politics, and Policy As They Impact DRM*, at http://www.info-mech.com/drm_policy.html (last visited Nov. 11, 2004) (describing various interest groups that have lobbied for and against the DMCA) (on file with the Washington and Lee Law Review).

124. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178 (Fed. Cir. 2004); *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 292 F. Supp. 2d 1040 (N.D. Ill. 2003); *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 292 F. Supp. 2d 1023 (N.D. Ill. 2003).

125. See *Chamberlain*, 381 F.3d at 1202 (noting that the DMCA "prohibits only forms of access that bear a reasonable relationship to the protections that the Copyright Act otherwise affords copyright owners").

126. *Chamberlain*, 292 F. Supp. 2d at 1025–26.

127. *Id.* at 1027–29 (describing operation of rolling code mechanism).

had registered both versions of the software—the version in the remote control and the version in the door opener—at the Copyright Office.¹²⁸

In competition with Chamberlain, Skylink marketed a universal garage-door-opener transmitter that could operate effectively with a Chamberlain garage-door-opening mechanism.¹²⁹ Skylink sold the universal transmitter to consumers as either a replacement for lost remote control devices or as an additional transmitter.¹³⁰ Thus the universal transmitters were sold in competition with Chamberlain and generally at a lower price than Chamberlain's transmitters.¹³¹ Chamberlain argued that Skylink's conduct in marketing its universal transmitters constituted various infringements of the anti-trafficking provisions of the DMCA.¹³² Chamberlain argued that its rolling code software was a copyright work that incorporated elements of DRM to protect itself effectively against unauthorized access and use.¹³³

Chamberlain was ultimately unsuccessful for a number of reasons, both at first instance and on appeal of Skylink's successful summary judgment motion to the Court of Appeals for the Federal Circuit.¹³⁴ For one thing, there was doubt that the rolling code software was copyrighted validly in the first place.¹³⁵ Further, even if there had been a circumvention of a technological protection measure for DMCA purposes, neither the district court nor the court of appeals was convinced that it was *unauthorized* as required for DMCA infringement.¹³⁶ Both courts accepted Skylink's argument that Chamberlain must implicitly authorize its customers—to whom it distributes its software embedded in the remote control—to purchase any brand of transmitter that will open their garage door.¹³⁷ It arguably cannot be the case that consumers who purchase a garage-door-opening system are locked in to using only one brand of replacement

128. *Id.* at 1027.

129. *Id.* at 1026.

130. *Id.* at 1030–32.

131. *Id.* at 1033.

132. 17 U.S.C. § 1201(a)(2) (2000).

133. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 292 F. Supp. 2d 1023, 1028 (N.D. Ill. 2003).

134. *Id.*; *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178 (Fed. Cir. 2004).

135. *Chamberlain*, 292 F. Supp. 2d at 1038 (finding that a disputed issue of fact exists regarding whether or not the current rolling code computer program is in fact protected by copyright).

136. 17 U.S.C. § 1201(a)(3)(A)–(B) (2000).

137. *See Chamberlain*, 292 F. Supp. 2d at 1039–40 (finding that garage owners likely would be authorized implicitly to circumvent Chamberlain's rolling code); *Chamberlain*, 381 F.3d at 1204 (finding that Chamberlain's customers likely would be authorized implicitly to circumvent the encryption code on the garage door opener).

transmitter if they lose the original remote control.¹³⁸ As Judge Pallmeyer stated in the opinion granting Skylink's summary judgment motion:

[Garage door opener] transmitters are similar to television remote controls in that consumers of both products may need to replace them at some point due to damage or loss, and may program them to work with other devices manufactured by different companies. In both cases, consumers have a reasonable expectation that they can replace the original product without violating federal law.¹³⁹

This is really the heart of the problem addressed in this Article. Although the focus of this discussion is about creating a specific exemption within the DMCA for the creation of interoperable physical goods that incidentally incorporate copyrighted or copyrightable computer code, more difficult policy issues underlie the DMCA concerns. These concerns have to do with the nature of personal property in the new millennium, particularly as the distinction between physical goods and information products becomes increasingly blurred. This is a phenomenon largely caused by the fact that more and more digital technology is now being incorporated into physical items from large scale industrial machinery, to car motors, to basic household appliances ranging from digital pianos, to stereo systems, to the humble toaster.¹⁴⁰

The court of appeals in *Chamberlain* was extremely cognizant of the fact that the case involved the evolving nature of personal property rights in the digital age. The decision concludes with the assertion that "[t]he DMCA does not create a new property right for copyright owners."¹⁴¹ The judgment favors courts interpreting the DMCA claims to require the plaintiff to demonstrate a link between the DMCA claim and a serious concern about copyright infringement. According to the courts, "A copyright owner seeking to impose [DMCA] liability on an accused circumventor must demonstrate a reasonable relationship between the circumvention at issue and a use relating to a property right for which the Copyright Act permits the owner to withhold

138. Judge Pallmeyer made the point for the district court that in using a universal remote control device manufactured by a competitor of Chamberlain, the consumer may lose the protection of Chamberlain's warranty because it does not cover use of unauthorized accessories. However, this in itself is not sufficient to show that consumers of Chamberlain's products are not authorized to use universal remote control devices with a Chamberlain garage door opener. *Chamberlain*, 292 F. Supp. 2d at 1045.

139. *Id.* at 1046.

140. UCITA § 102 cmt. 7 (2002), available at <http://www.law.upenn.edu/bll/ulc/ucita/2002final.pdf> (on file with the Washington and Lee Law Review).

141. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1204 (Fed. Cir. 2004) (on file with the Washington and Lee Law Review).

authorization."¹⁴² The DMCA itself should not be interpreted as creating new property rights. Otherwise, a company could use the DMCA to leverage its sales into after-market monopolies.¹⁴³ Such a practice normally would be prohibited by general antitrust laws and, more specifically, the copyright misuse doctrine.¹⁴⁴

The extent to which an owner of personal property can incorporate after-sale restrictions on the use of a physical good has never been particularly clear in our legal system. Such restrictions, recently described as "personal property servitudes" by Professor Glen Robinson,¹⁴⁵ raise difficult issues of policy at the intersection of property, contract, and antitrust law. As intellectual property is implicated increasingly in relevant disputes, particularly in the context of detailed intellectual property licenses purporting to impose restrictions on licensees, it becomes imperative that we resolve some of these confusions.

The appeal decision in *Chamberlain* may be regarded as a good start because of the powerful suggestion in the case that DMCA liability should be limited to situations involving copyright infringements. Undoubtedly, this view is correct as a matter of policy. However, it does not necessarily accord with the current drafting of the DMCA, which does not require evidence of an actual or potential copyright infringement as the basis for a DMCA claim. Additionally, the actual holding in *Chamberlain* does not prevent companies in the future from using contractual terms to limit the "authorized uses" of their products and the software incorporated therein to avoid the argument that their customers, as well as the alleged infringers of the DMCA (their commercial competitors), are making or enabling authorized uses of the copyrightable or copyrighted software. In some circumstances, such companies may still be able to plead their cases to ensure that a stronger link could be made between a potential copyright infringement and the alleged DMCA liability, particularly if they had not "authorized" a particular use of the relevant software code.¹⁴⁶

142. *Id.*

143. *Id.* at 1201.

144. *Id.*

145. See Glen O. Robinson, *Personal Property Servitudes* (2003) (suggesting that there may be little rationale under personal property law or intellectual property law to prevent proprietary servitudes from attaching to tangible and intangible personal property as incidents of property ownership), available at <http://ssrn.com/abstract=477541> (on file with the Washington and Lee Law Review).

146. A manufacturer's ability to do so depends on whether competing interests in copyrightable software like fair use defenses are regarded as actual rights to use the software in the purchaser's hands, or merely a tolerated convenience. It has never been clear whether fair use provides affirmative legal rights in the hands of the fair user with respect to relevant copyright material, although some courts have recently suggested as much. In fact, the court of appeals in *Chamberlain* appears to assume that fair use is a legal right. See *Chamberlain*, 381

Similar reasoning applied in the *Lexmark* situation.¹⁴⁷ Nothing in the *Lexmark* appeal prevents a manufacturer of a printer toner cartridge from technologically and contractually excluding a consumer from accessing a copyrighted Printer Engine Program.

As the *Chamberlain* and *Lexmark* cases both demonstrate, consumers and commercial competitors may have very different normative expectations than an original product manufacturer about what conduct is appropriate with respect to the product in an after-market context. The *Chamberlain* decision certainly demonstrates increasing judicial concerns about protecting the reasonable expectations of the average consumer purchasing a remote control mechanism to open a garage door. Surely consumers must have an implicit right to buy a product that will enable them to utilize their garage door openers.

On the other hand, the *Lexmark* situation demonstrated a more serious attempt by a product manufacturer, through the use of contract and technological protection measures, to limit the uses a consumer may make of its Prebate toner cartridges after the initial sale. Here, the district court in its initial decision was quite sympathetic to the rights of the manufacturer, although the majority of the court of appeals ultimately did not share these views. Judge Forester in the district court showed less concern for the position of the ultimate consumers, although he made the point that consumers do have an initial choice not to purchase a Prebate cartridge.¹⁴⁸ He was mindful that consumers could elect to pay a higher price for a toner cartridge that they were entitled to refill themselves or have refilled by a third-party toner cartridge manufacturer.¹⁴⁹ Thus, if a consumer chose the cheaper Prebate cartridge, it is not necessarily unreasonable to expect her to abide by the contractual condition to return the cartridge to Lexmark for remanufacturing. Some of these ideas were mirrored in Judge Feikens's partial dissenting opinion in the appeal in *Lexmark*. With respect to the toner cartridges, which the majority found to incorporate noncopyrightable software code, Judge Feikens noted that "[s]ince the consumer is only authorized to use the Prebate cartridge until the toner runs out, it follows that the license also blocks the consumer from using the TLP after that time."¹⁵⁰

F.3d at 1200 (noting the significance of 17 U.S.C. § 1201(c) in preserving the fair use defense).

147. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 546–47 (6th Cir. 2004) (discussing Lexmark's DMCA claim that the authentication sequence blocked access to the software code).

148. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 948 (2003), *vacated by* 337 F.3d 522 (6th Cir. 2004).

149. *Lexmark*, 253 F. Supp. 2d at 948.

150. *Lexmark*, 387 F.3d at 563 (Feikens, J., concurring in part, dissenting in part).

More work needs to be done by judges, legislators, and commentators in unbundling the complex legal and social/cultural issues that may be in conflict here; that is, in ascertaining and implementing legal rules that reflect appropriate social norms about limitations that a manufacturer may validly place on uses of its products after an initial sale. However, at the very least it is important that the DMCA's operation should be restricted to disputes that are really about digital copyright piracy. Its application should not be extended to disputes that only incidentally involve copyrightable software code, unless the plaintiff can rebut a presumption against doing so.

III. Crafting a Workable Exception for Interoperable Products

A. Physical Goods and Information Assets

Obviously, there are many open questions about precisely what restrictions the manufacturer of a product should be entitled to place in downstream commerce as a matter of policy.¹⁵¹ However, those questions should be answered within appropriate legal frameworks, such as contract law, sales law, licensing law, and antitrust law.¹⁵² One of the overriding problems with cases such as *Lexmark* and *Chamberlain* is the attempt to utilize copyright law to deal with these problems and, more particularly, reliance by manufacturers of such products on the anti-trafficking provisions of the DMCA.

Congress intended these provisions to guard against piracy of digital copyright works.¹⁵³ They were not intended to protect producers of physical goods against downstream commercial competition on the basis that a specific physical good might happen to incorporate some copyrightable software code.¹⁵⁴ The results in *Lexmark* and *Chamberlain* are heartening because they evidence the fact that judges to date have not been particularly sympathetic to attempts to distort digital copyright law in this direction. However, they do evidence a worrying reliance by commercial plaintiffs on the DMCA's anti-trafficking provisions in cases that are not really about digital copyright piracy. Further, the ultimate decisions in these cases do not close the door on future

151. See generally Robinson, *supra* note 145.

152. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1201 (Fed. Cir. 2004) (noting that copyright law, augmented by the DMCA, should not interfere with the usual operation of antitrust and copyright misuse principles).

153. Burk, *supra* note 7, at 1135 (noting that legislative aims behind the drafting of the DMCA were to prevent "piracy" in digital works).

154. *Chamberlain*, 381 F.3d at 1193 (noting that the DMCA anti-circumvention provisions do not establish a new property right).

plaintiffs trying to do the same thing. More producers of tangible products may well rely on the incidental incorporation of copyrightable software into their physical goods to control downstream commerce. They may even use the majority's reasoning in *Lexmark* to give them guidance as to how to structure their software code to ensure copyrightability and the potential availability of a DMCA claim against a commercial competitor.

This is not the first time in commercial practice that problems have arisen in terms of ascertaining the appropriate classification of a case that involves both tangible goods and information goods. In fact, problems like this probably will increase in coming years because physical goods incorporate more and more digital technology. Thus, it is extremely important for those engaged in the lawmaking process to be aware of the implications of these advances in technology and manufacturing for the future development of both commercial¹⁵⁵ and intellectual property laws. In particular, it is necessary for legislatures to start creating clear rules to establish which set of policy principles will govern such situations.

B. Lessons from UCITA

One obvious recent example of where this kind of problem has been confronted in legislative drafting occurred in the Uniform Computer Information Transactions Act (UCITA).¹⁵⁶ Although this proposed law has been relatively unsuccessful in practice¹⁵⁷ and has only been adopted in two states,¹⁵⁸ its drafting provides a good example of the problem under discussion here.

The drafters intended UCITA to be a uniform state law that would provide a set of default rules for contracts the subject matter of which was computer information.¹⁵⁹ Although "computer information" was quite broadly defined in

155. In this context, I regard "commercial law" as incorporating the Uniform Commercial Code, general contract law, and antitrust law.

156. See generally UCITA.

157. See generally Letter from Attorneys General to NCCUSL, at <http://www.arl.org/info/frn/copy/agoppltr.html> (July 23, 1999) (on file with the Washington and Lee Law Review).

158. UCITA has been adopted in Maryland and Virginia. NAT'L CONFERENCE OF COMM'RS ON UNIF. STATE LAWS, A FEW FACTS ABOUT THE UNIF. COMPUTER INFO. TRANSACTIONS ACT, at http://www.nccusl.org/nccusl/uniformact_factsheets/uniformacts-fs-ucita.asp (last visited Nov. 11, 2004) (on file with the Washington and Lee Law Review).

159. See UCITA § 102(11) (2002) (defining "computer information transaction" as "an agreement or the performance of it to create, modify, transfer, or license computer information or informational rights in computer information").

the statute, it is basically a slightly expansive way of referring to computer software.¹⁶⁰ The initial impetus for drafting UCITA was that the Uniform Commercial Code (UCC), particularly Articles 2 and 2A, traditionally provided default contract rules for parties engaged in sales and licensing transactions that focused on *physical goods*. The drafters thought that the increase in prevalence of computer information transactions in the latter part of the twentieth century necessitated a new set of contractual default rules to cater specifically to these agreements.¹⁶¹

One important task that faced the drafters of UCITA was working out how to distinguish the scope of the new legislation from that of the existing Articles 2 and 2A of the UCC. Clearly, Articles 2 and 2A would apply to transactions involving traditional personal property, and UCITA was intended to cover only those transactions involving computer information. However, the drafters were faced with the same problem now arising under the DMCA: What to do about a mixed transaction that involves both computer information and physical goods.

The drafters' solution is found in Section 103 of UCITA. This section sets out rules that attempt to delineate transactions or individual aspects of transactions that should be governed by UCITA from those that should be regulated under the UCC. Section 103(b)(1) provides that if a transaction includes computer information as well as goods, UCITA will apply to the part of the transactions that involves "computer information, informational rights in it,"¹⁶² and creations or modifications of

160. See *id.* § 102 (10) (defining "computer information" as "information in electronic form which is obtained from or through the use of a computer or which is in a form capable of being processed by a computer" and explaining that "[t]he term includes a copy of the information and any documentation or packaging associated with the copy").

161. UCITA was originally conceived as a new Article 2B for the UCC. For five years between 1995 and 1999, during a decade of joint effort, the American Law Institute (ALI) and the National Conference of Commissioners on Uniform State Laws (NCCUSL) were drafting UCITA to be Article 2B of the Uniform Commercial Code. Many members of ALI became critical of the proposed Article 2B and ALI withdrew its participation and support in drafting the highly controversial proposed law that was supposed to be promulgated to the fifty states for uniform adoption. After ALI withdrew from the joint drafting committee, NCCUSL renamed the law UCITA, which, as a uniform act, only would require the vote of NCCUSL at its conference while a UCC article also would have required ALI approval. Ed Foster, *What is UCITA?*, *Infoworld*, at <http://www.infoworld.com/cgi-bin/displayStory.pl?features/990531ucita1.htm> (Aug. 30, 1999) (on file with the Washington and Lee Law Review).

162. See UCITA § 102(38) (2002). This section defines informational rights to encompass:

[A]ll rights in information created under laws governing patents, copyrights, mask works, trade secrets, trademarks, publicity rights, or any other law that gives a person, independently of contract, a right to control or preclude another person's use of or access to the information on the basis of the rights holder's interest in the

it."¹⁶³ The Section further provides that where a copy of a computer program is contained in or sold or leased as part of moveable goods,¹⁶⁴ UCITA will apply to the copy and the computer program only if "the goods are a computer or a computer peripheral";¹⁶⁵ or "if giving the buyer or lessee of the goods access to, or use of, the program is ordinarily a material purpose of transactions in goods of the type sold or leased."¹⁶⁶

The legislative aim behind Section 103 was to ensure that when a transaction involves physical goods and computer information, UCITA would apply to the transaction only to the extent that the subject matter involved computer information. Thus, the incidental incorporation of software into a physical product would not bring a transaction involving that product under the ambit of UCITA's contractual default rules automatically. A transaction involving tangible personal property would continue to be governed by Articles 2 and 2A of the UCC, and UCITA would only come into play to the extent that a part of the transaction actually focused on rights or liabilities with respect to computer information that may be incorporated into the product. Maybe the drafters of the DMCA could learn something from this approach.

In fact, the commentary to UCITA talks specifically about products like those under judicial consideration in *Lexmark* and *Chamberlain*. Paragraph 4(b)(3) of the commentary mentions situations where a computer program is embedded and contained in goods.¹⁶⁷ The commentators explain that the general Section 103 rules are intended to apply in such cases; that is, UCITA applies to the computer program while goods law applies to the goods. However, "in some cases . . . an embedded program is a mere part of the goods and [UCITA] should not apply."¹⁶⁸

information.

Id.

163. *Id.* § 103(b)(1).

164. *See id.* § 102(33) (defining "goods"). This section explains that the term "goods" encompasses:

[A]ll things that are movable at the time relevant to the computer information transaction. The term includes the unborn young of animals, growing crops, and other identified things to be severed from realty which are covered by [Section 2-107 of the Uniform Commercial Code]. The term does not include computer information, money, the subject matter of foreign exchange transactions, documents, letters of credit, letter-of-credit rights, instruments, investment property, accounts, chattel paper, deposit accounts, or general intangibles.

Id.

165. *Id.* § 103(b)(1)(A).

166. *Id.* § 103(b)(1)(B).

167. *Id.* § 103 cmt. 4.b.(3).

168. *Id.*

The commentary goes on to flesh out the distinction between mixed goods and goods that only incidentally incorporate computer information:

[UCITA] does not apply to a copy of a program on a computer chip embedded as part of an automobile engine and sold or leased as an indistinguishable part of the automobile containing the engine. On the other hand, [UCITA] does apply to a copy of a program contained on a computer chip in a computer and transferred along with the computer.¹⁶⁹

This is a very useful distinction in practice because it focuses on the characterization of particular products even in situations where the product is mixed. The drafters of UCITA did not think it was too difficult to ask transacting parties, and ultimately courts, to decide whether the product in question was a physical good that incidentally incorporated valuable software, or rather an information asset that happened to be contained within a particular physical storage device such as a hard disc or CD-ROM. The basic premise is to work out what the parties were actually contracting for—was it the physical product or the computer information? UCITA was to apply to a transaction to the extent that the subject matter of the parties' bargain was computer information.

Although UCITA is a very different kind of a law from the DMCA, this approach to characterizing valuable commercial assets may be instructive for drafters of any future revisions to the DMCA and for courts interpreting the current provisions of the DMCA. It might help to avoid the "unintended consequences" that could arise if future litigants pursue the path of raising arguments such as those raised by the plaintiffs in *Lexmark* and *Chamberlain*.

Under an approach that draws from the UCITA example, courts and future legislators could help to focus attention on appropriate aspects of relevant disputes and thus avoid blurring the lines between contract law, antitrust law, and copyright law. Each of these bodies of law has its own separate underlying policies and principles developed over many generations. There is no question that these bodies of law intersect with each other at various points, but this is all the more reason to maintain a clear focus on the policies underlying each body of law and each relevant principle of law when adjudicating disputes at the intersecting points. The various judgments in the *Lexmark* appeal evidence that the judges appreciated these important distinctions,¹⁷⁰ despite some ambiguity within

169. *Id.*

170. See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 545 (6th Cir. 2004) ("Lexmark's market for its toner cartridges and the profitability of its Prebate

the DMCA as currently drafted.¹⁷¹

If a dispute is truly characterized as being about copyright law, then copyright policies and principles should apply, including those derived from the DMCA. However, if the dispute is not about copyright, courts should focus on what the dispute really is about and apply the appropriate set of principles and policies. It may be the case that some disputes involving physical goods are about copyright *to some extent*, but only in a limited way (for example, where a dispute revolves around a physical product that happens to incorporate some valuable copyrighted code, but where the commercial focus of the plaintiff is on protecting the physical product from perceived unfair competition in a downstream market). The *Lexmark* and *Chamberlain* cases are probably good examples of this class of case.

In such cases, it may be that the plaintiff should have a limited claim for copyright infringement in terms of any software that is actually copied by the defendant, depending on the circumstances and, of course, the copyrightability of the software. However, there are good arguments why the plaintiff should be limited to this remedy in copyright, supplemented by remedies from commercial law that are really about trade in tangible goods. Adding DMCA liability to copyright liability in these kinds of cases may be an example of an undesirable extension of the powerful sanctions¹⁷² under the DMCA to circumstances they were not intended to cover—that is, to situations that are not really about the prevention of digital copyright piracy.

program may well be diminished by the SMARTEK chip, but that is not the sort of market or value that copyright law protects."). The Sixth Circuit went on to explain:

Giving authors monopolies over manufactured goods as well as over their creative expressions will clearly not "promote the Progress of Science and the useful Arts," but rather would stifle progress by stamping out competition from manufacturers who may be able to design better or less expensive replacement parts like toner cartridges.

Id. at 553.

171. In *Lexmark*, most of the judges referred to the legislative intentions behind the drafting of the DMCA as expressed in Congressional debates. *Id.* at 549, 564. However, there are nevertheless ambiguities on the face of the statute about its operation in interoperable physical products cases as this discussion demonstrates.

172. Civil remedies for violations of the anti-circumvention and anti-trafficking provisions of the DMCA could include temporary and permanent injunctions, impoundment of the violating device or product, statutory or actual damages, costs, reasonable attorney's fees, and remedial modification or destruction of the violating device or product. 17 U.S.C. § 1203(b)–(c) (2000). Criminal sanctions for willful violations for commercial advantage or private financial gain could lead to fines up to \$500,000 or up to five years in prison for a first offence, or \$1,000,000 or up to ten years in prison for any subsequent offence. *Id.* § 1204(a).

C. Revising the DMCA

1. Shifting the Burden to the Complainant

Specific revisions to the DMCA along these lines would add more certainty of policy in its application to these kinds of cases and would provide clearer legislative guidance on the application of the DMCA to cases involving "mixed" products incorporating both physical and "informational" components. Such revisions would not cure all the current perceived defects of the DMCA. There are a number of other unintended consequences that arise under the DMCA, including the fate of the fair use defense more generally, as discussed above.¹⁷³

However, this discussion is limited to interoperable physical products cases for two reasons. First, future revisions to the DMCA likely will occur in a piecemeal fashion. In coming years, the DMCA likely will be revised by specific exemptions to cater to particular situations of concern, rather than more generic revisions to the underlying operation of the access and control restrictions.¹⁷⁴ Second, a broad, generic revision of the operation of the DMCA, if it were to take place, likely would cater generally to issues such as the fair use defense to copyright infringement. In particular it likely would result in relaxation of access and use control measures for fair use purposes such as educational and scientific uses. Such revisions may not effectively encompass the issues under consideration here, that is, the increasing confusion as to whether and when to apply the newer principles of digital copyright law to disputes involving mixed products that incorporate both physical attributes and computer information.

Revisions to the DMCA aimed specifically at this problem could be modelled on the subject matter characterization approach taken in UCITA to distinguishing transactions involving physical goods from those involving computer information. Obviously, there are significant differences in

173. See Burk, *supra* note 7, at 1137–38 (discussing the future of the fair use doctrine with respect to the DMCA and anti-circumvention rights). See generally Yochai Benkler, *Siren Songs and Amish Children: Autonomy, Information and Law*, 76 N.Y.U. L. REV. 23 (2001) (discussing the impact of recent government actions concerning new communication technologies on fundamental values of autonomy and democratic discourse); David Nimmer, *A Riff on Fair Use in the Digital Millennium Copyright Act*, 148 U. PA. L. REV. 673 (2000) (discussing the impact of the DMCA on the fair use defense to copyright infringement).

174. Certainly, this appears to be what the drafters had in mind when they incorporated the provision that the Librarian of Congress periodically could exempt certain activities from the DMCA. 17 U.S.C. §§ 1201(a)(1)(B)–(a)(1)(D) (2000) (providing the existing provisions of the DMCA that allow the Librarian of Congress to make determinations to exempt certain conduct from anti-circumvention prohibitions).

application between UCITA and the DMCA. For one thing, UCITA is intended to provide a set of default contract rules for computer information transactions, whereas the DMCA is intended to regulate access to, and use of, copyright works. However, that is not a reason why lessons about subject matter characterization from UCITA cannot be applied in the DMCA context. In fact, if commercial and transactional laws become concerned increasingly with characterization issues, there is arguably good reason for laws dealing with intellectual property rights to be similarly concerned.

One of the main problems with the way all these laws are drafted is that commercial lawyers generally are not experts in issues of intellectual property law and vice versa. Thus, there is a risk that laws drafted by one set of experts can overreach and impact areas in which they were not intended to apply. This is arguably what could happen with the DMCA and interoperable physical goods in the future. Though the drafters of UCITA were careful to delineate the transactions to which UCITA's provisions were intended to apply,¹⁷⁵ the drafters of the DMCA did not concern themselves too much with the limitations of the access and control provisions they were imposing on the greater commercial community. Instead, they presumed that the legislative carve-outs, such as the reverse engineering defense in 17 U.S.C. § 1201(f)(3), would suffice to avoid the kinds of problems addressed here.¹⁷⁶ Provided that the DMCA achieved the intended goals of restricting digital copyright piracy, Congress did not seem to be particularly concerned that the DMCA might overreach into too many other areas of commerce, outside of the digital copyright piracy cases.¹⁷⁷

It is particularly important that federal intellectual property laws do not have the potential to overreach like this because such a result could have a dramatic impact on inconsistent state law.¹⁷⁸ At the intersection of intellectual

175. It is worth noting that the purpose of these limitations was not really to avoid conflict with federal intellectual property laws, but rather to prevent conflict with Articles 2 and 2A of the UCC. Thus, the concerns of the commercial lawyers drafting UCITA were to avoid conflict with other commercial law and not necessarily to avoid conflict with federal intellectual property law. This was probably a reasonable approach in the circumstances because a harmonized uniform state law would have been preempted by federal intellectual property law in any event.

176. See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 550 (6th Cir. 2004).

177. See Burk, *supra* note 7, at 1135–36 (stating that the actual drafting of the DMCA anti-circumvention provisions are strange in their reach given Congress's concern with preventing digital piracy and acknowledging that legislative history indicates Congress did not intend to extend the reach of the anti-circumvention provisions to protecting content owners' exclusivity over adjacent, uncopyrighted technologies).

178. The United States Constitution is the supreme law of the land. When a state law

property and commercial law, much of the latter body of law, such as contract and trade secret laws, is state law. Thus, it is very important for the federal law to state clearly its limitations where possible and appropriate.

In terms of the DMCA and interoperable goods, Congress should revise the DMCA to incorporate a rebuttable presumption against DMCA liability (a) where the copyright work in question is merely incidental to a product manufactured by the complainant and (b) where a technological encryption measure has been circumvented for the purpose of creating an interoperable physical product. Arguably, this is distinct from the current Section 1201(f) exemption for reverse engineering to create interoperable software products. Thus, if a complainant manufactures a physical good that happens to incorporate software as part of its mechanical workings, such as a television set or motor car, and also incorporates some encryption of that software to prevent competitors manufacturing interoperable parts, the competitor that did manufacture an interoperable part would be entitled to a presumption against DMCA liability.

The presumption would operate to place the initial burden of proof on the plaintiff to establish the importance of protecting the copyright work against piracy as a central commercial concern in the dispute. This is not unlike the judicial presumption suggested by Judge Merritt in his concurring opinion in the *Lexmark* appeal.¹⁷⁹ Judge Merritt suggested that "a better reading of the statute [than the majority's reasoning] is that it requires plaintiffs as part of their burden of pleading and persuasion to show a purpose to pirate on the part of the defendants."¹⁸⁰ However, I have chosen a presumption involving a requirement that the plaintiff establish the importance of the copyrighted software as such, rather than that the plaintiff establish the defendant's "purpose to pirate" because it would seem to be a fairer approach from the plaintiff's point of view.

Although plaintiffs may well try to employ DMCA arguments in bad faith, as was arguably the case in *Lexmark* and *Chamberlain*, circumstances may exist in which the protection of a copyright work in a "mixed goods" scenario is a central concern of the plaintiff. In such a case, it would seem unfair to ask the plaintiff to establish evidence of the defendant's purpose in creating its

conflicts with, interferes with, or is contrary to a federal statute or treaty, the state law is preempted or rendered void by the federal law under the Supremacy Clause (Clause 2) of Article VI of the Constitution. U.S. CONST. art. VI, cl. 2.

179. See *Lexmark*, 387 F.3d at 551–53 (Merritt, J., concurring) (suggesting that a better reading of the DMCA would place the burden on the plaintiff to show a motive to pirate by the defendant).

180. *Id.* at 552.

competing product. The plaintiff may find it difficult to obtain evidence of the defendant's intentions, and it seems more reasonable to ask the plaintiff to establish the importance of the copyrighted software as such in the context of the dispute in question. The evidence to do so will more likely be in the control of the plaintiff, or easily obtainable by the plaintiff, than evidence of the defendant's alleged purposes and intentions. A plaintiff acting in bad faith may find such a requirement sufficiently onerous to deter frivolous DMCA litigation.

Thus, the plaintiff could rebut the presumption against DMCA liability if it could demonstrate that the protection of the copyright work in question is a centrally important commercial concern. For example, the plaintiff might discharge its burden of proof and rebut the presumption against DMCA liability if it could establish that the presence of specific software within a product constitutes an integral part of the product's appeal to prospective purchasers within a relevant market. In other words, plaintiffs would try to show that purchasers know they are buying the software specifically as a part of the product and intend to purchase the software as part of a "mixed package."

This is similar to the idea underlying Section 103 of UCITA. A purchaser of a toner cartridge or garage-door-opening device may not see software as integral to their purchasing needs. Indeed, they may be unaware of the software's presence within the relevant device. On the other hand, the purchaser of a specific model of CD or DVD player for a console in a motor vehicle may be relying on specific digital technology to be incorporated into the device in question. This perhaps sounds similar to a test for establishing goodwill in a trademark context. However, the difference is that the DMCA context only requires purchasers consciously to contract for relevant copyrightable digital technology as part of their purchase, not to be attracted to a particular brand of software code.

In any event, consumer expectations might only be one of a number of "commercial significance" factors for software in this context. Other factors may include: (a) commercial costs of the software purchase and development to the plaintiff product manufacturer in developing a mixed good, particularly software costs as a proportion of the overall cost of designing and manufacturing the physical product in question; (b) time and effort taken to develop relevant software incorporated into a physical good; (c) commercial viability of selling the relevant good without the incorporation of the software; and (d) efforts taken to register relevant software code at the Copyright Office. Although none of these factors alone likely will be decisive on the question of rebutting the presumption against DMCA liability, together they might be balanced to support or rebut such a presumption in any given case.

When the presumption against DMCA liability is not rebutted, the complainant may have actions for infringement under other laws, such as inducement of breach of contract in situations where a competitor induces customers to breach their initial contracts with the complainant by buying unauthorized interoperable products. Alternatively, it may be that there is no legal action because, as a matter of policy under commercial and competition law principles, the competitor's conduct is unobjectionable. There is a strong argument that consumers should have freedom of choice when buying such goods and should not be locked into restrictive arrangements with the original manufacturer for after-market parts and service.¹⁸¹

Clearly, if the product at the heart of a dispute is actually a copyright work that happens to be contained within a physical storage medium such as a floppy disc, CD-ROM, or DVD, the presumption against DMCA liability would not be triggered. Thus, in cases involving the circumvention of access and control measures to make unauthorized uses of copyright works, such as video games, digital movies, and digital music files, the DMCA would apply as usual, subject to any future exemptions adopted by the Librarian of Congress¹⁸² and Congress.

In summary, the basic argument here is to advocate a presumption against DMCA liability (a) where the copyright work in question is merely incidental to a product manufactured by the complainant and (b) where a technological encryption measure has been circumvented for the purpose of creating an interoperable physical product. The presumption would place the evidentiary burden on the plaintiff to establish the central importance of the copyright work as such to its claims against the defendant. If the plaintiff was able to discharge this burden, the burden would shift to the defendant to raise any applicable defenses.¹⁸³

181. See *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 292 F. Supp. 2d 1040, 1043 (N.D. Ill. 2003) (recognizing that the ALJ found that Chamberlain's consumers do reasonably expect to be able to access their garage doors with either a Chamberlain or Skylink transmitter). There appears to have been some concern with this issue in the *Chamberlain* case. Consumers have a reasonable expectation that they can replace an original garage door opener transmitter or television remote control at some point due to damage or loss without violating federal law.

182. See 17 U.S.C. §§ 1201(a)(1)(B)–(a)(1)(D) (2000) (listing the existing provisions of the DMCA that allow the Librarian of Congress to make determinations to exempt certain conduct from anti-circumvention prohibitions).

183. As noted above, the operation and scope of defenses to DMCA claims is still uncertain. This is another area where legislative revisions ultimately may be necessary, particularly in terms of clarifying the scope of the fair use defense as contemplated in 17 U.S.C. § 1201(c)(1), and of determining the boundaries of the other more specific exemptions to DMCA liability set out in 17 U.S.C. § 1201.

Courts would be entitled to consider a number of factors when deciding whether or not the plaintiff had adequately rebutted the presumption against DMCA liability, such as those factors set out above. Although a multifactor judicial test can be unpredictable, judges who decide copyright cases are no strangers to such tests. These kinds of balancing exercises seem to go with the territory of the copyright landscape. One of the most often applied judicial multifactor tests is, in fact, the well-known fair use defense to copyright infringement under 17 U.S.C. § 107 with its flexible "fair use factors." Additionally, even in the absence of the test suggested here, the judges in the *Lexmark* appeal, for example, seemed relatively comfortable in acknowledging that the protection of Lexmark's software against digital piracy was not its central concern in the dispute.¹⁸⁴ The problem was that the judges did not have a clear legislative provision to refer to on this point. Amendments to the DMCA along the lines suggested here would likely make this task easier for judges because there would be a clear legislative intention within the statute itself supporting a determination against DMCA liability in such cases.

2. *Mixed Goods and the Presumption Against DMCA Liability*

This Article advocates a presumption against DMCA liability rather than a blanket exemption in the context of interoperable physical products because there may be some circumstances where the manufacturer of physical goods that incorporates copyrightable software might have a reasonable claim for DMCA liability on top of potential liability for copyright infringement.¹⁸⁵ As noted above, products increasingly are becoming "mixed" in terms of physical and "informational" components. This will make it more difficult to draw lines between physical goods and information goods in terms of legal regulation.

While it is important not to confuse the laws and policies relating to these two types of assets, it is also important to realize that there are some circumstances where both the physical and informational components of an item will be commercially valuable to the manufacturer. If the manufacturer has invested time and resources into both aspects of a product, the physical and informational components both may be worthy of legal protection under the relevant legal rules. Thus, in situations of a truly mixed product, when both the

184. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 537 (6th Cir. 2004) (stating the scope of the dispute between the two parties).

185. I take up questions concerning general copyright infringement liability in situations where the presumption against DMCA liability would apply in the following Part. *Infra* Part IV.

physical aspects and the informational component require legal protection, the presumption against DMCA liability should be rebuttable. Even Judge Merritt in the *Lexmark* appeal, who took the most restrictive view of the plaintiff's position, felt that the situation only merited a burden shifting so that the plaintiff must prove a "purpose to pirate on the part of the defendants."¹⁸⁶ He did not feel that future plaintiffs should be excluded absolutely from bringing DMCA actions in such cases.

A useful part of the test as to when the presumption against DMCA liability would be rebuttable would be when there is some evidence of the independent commercial value of the copyrighted software incorporated into the physical product. The fact of registration of the software may provide some evidence of the perceived value of the software, at least to the party that registered the software. However, the fact of registration alone may not be conclusive on this issue. Indeed, the majority of the *Lexmark* appeals court, as well as both *Chamberlain* courts, did not find registration decisive on even basic copyrightability issues with respect to some of the disputed software in each case.¹⁸⁷

If the approach suggested here is adopted, a question arises as to whether DMCA liability in "mixed goods" cases is superfluous when the copyrightable software incorporated into the product is valuable in its own right and can be protected through traditional copyright law. In other words, if protection of copyrighted software code is a central commercial concern of the plaintiff, and the plaintiff has an available action for copyright infringement, why is DMCA liability ever necessary in a "mixed goods" scenario?

It may be that there are very few cases of this kind where DMCA liability is ever truly necessary. That being the case, one could argue that a blanket prohibition on DMCA liability in the "interoperable products" case is more appropriate than a rebuttable presumption against DMCA liability. However, given the aims of the DMCA to protect copyright holders against digital piracy where traditional copyright law proves inadequate, it is arguable that there may be some interoperable products cases where the copyrighted software is so central to the operation of the product in question that the software itself merits additional DMCA protection. DMCA liability may be necessary, for example, if the actual copyright infringer(s) cannot be found or cannot be made subject to a relevant court's jurisdiction. In such cases, it may be appropriate to proceed

186. *Lexmark*, 387 F.3d at 552 (Merritt, J., concurring).

187. See *id.* at 534 (acknowledging that both parties agree that registration with the copyright office is a prerequisite and provides prima facie evidence that the defendant may rebut); *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 292 F. Supp. 2d 1040, 1043-44 (N.D. Ill. 2003) (discussing the role and impact of copyright with respect to the DMCA).

against a trafficker in a circumvention device. The same reasoning would apply here as for traditional digital copyright products, such as digital movies, music, and video games. If digital copyrights are commercially significant to a right-holder and cannot be protected effectively by traditional copyright laws, some DMCA liability should be available.

We should also bear in mind that as computer technology is incorporated increasingly into physical goods, the lines between an "information good" and a tangible good become very blurred. In the future, it may become easier to rebut the presumption against DMCA liability. What needs to happen now is for courts and legislatures to start thinking about how best to ascertain the true subject matter of any given transaction or dispute in terms of whether the issue truly can be characterized as an intellectual property matter, or whether the protection of intellectual property is purely incidental to the actual subject matter at hand. This will help ensure that future laws appropriately are tailored to the actual commercial concerns of the parties and work to preserve and support the realistic expectations of consumers about goods they have purchased.

IV. Copyright Defenses and the DMCA

A. Interoperability and Copyright Infringement

The preceding discussion raised some questions about the relationship between general copyright liability and specific DMCA liability in the "interoperable products" area. It advocated a presumption against DMCA liability in cases where copyrighted software is not a central commercial component of the product in question. This Part considers the broader question of whether a similar presumption also should apply to general copyright infringement liability. In other words, should we advocate a presumption against any copyright liability in mixed goods cases that can be rebutted only when the plaintiff can establish the independent commercial significance of the copyrighted software? Is there any reason for suggesting an exemption to the DMCA for interoperable physical products that would not also apply to general copyright infringement liability?

These are difficult questions, particularly given the current uncertainties about the precise relationship between the DMCA and general copyright liability. If the view of the court of appeals in *Chamberlain* is adopted, and DMCA liability is confined to situations involving protection of copyrights where those protections do not encroach on competing rights in a copyright work such as fair use, there may be little reason to ever allow copyright liability

in a case that also would not attract DMCA liability.¹⁸⁸ In other words, if the plaintiff is attempting to protect its copyright in software incorporated into an interoperable product, it should have the full protection of copyright and DMCA liability. If, on the other hand, the plaintiff is trying to manipulate circumstances to utilize copyright principles unconscionably to stifle competition in a case where the protection of copyrighted software is not its true objective, then it should have neither DMCA nor copyright protection.

However, the *Chamberlain* appellate court's interpretation of the DMCA and its relationship to traditional copyright interests does not necessarily reflect the actual drafting of the DMCA, nor does it represent past judicial interpretations of the DMCA. Congress and the judiciary generally have not required any express demonstration of a clear link between a copyright infringement action and a circumvention device to ground a DMCA claim. This has meant that, despite the wording of 17 U.S.C. § 1201(c)(1),¹⁸⁹ fair use has not, for example, been upheld as a defense to the anti-trafficking provisions of the DMCA.¹⁹⁰ Therefore, it currently cannot unequivocally be asserted, as the *Chamberlain* appeals court would suggest, that copyright and DMCA liability truly are two sides of the same coin. As noted above, the *Lexmark* appeal adds no particular weight to the *Chamberlain* view on this question, particularly as the fair use issues discussed in *Lexmark* are only dicta.

Given the fact that DMCA liability can, and often does, appear to be more potentially draconian in its application, at least with respect to available defenses, than traditional copyright liability, there might be a valid argument for maintaining some possible copyright liability as a "lesser of two evils" in

188. This view was shared by the judges in the *Lexmark* appeal, although they did not state the issue as clearly as the court of appeals in *Chamberlain*. Judge Feikens, however, in his partial dissent in *Lexmark*, did make the point that the plaintiff could not succeed on a DMCA claim if the defendants could successfully raise a fair use defense to the general copyright infringement claim. This is because there would be no "right of the copyright owner" left to protect under the DMCA. *Lexmark*, 387 F.3d at 562 (Feikens, J., concurring in part, dissenting in part). The majority in *Lexmark* took the view that the PEP was copyrighted code that was not adequately protected by any technological protection measure, so there was no need to link DMCA liability with copyright liability because there was no liability for copyright infringement with respect to the PEP code. The only copying was with respect to the TLP and the majority felt that this code was not copyrightable. *Id.* at 548–50.

189. 17 U.S.C. § 1201(c)(1) (2000). This section provides that "[n]othing in this section shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under this title." *Id.*

190. See *Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 294, 323–24 (S.D.N.Y. 2000) (holding that the "fair use" provisions of the copyright act cannot be used as a defense to an infringement of the DMCA's anti-circumvention and anti-trafficking provisions as this was not the legislative intent of 17 U.S.C. § 1201(a)), *aff'd*, 273 F. 3d 429 (2d Cir. 2001).

some interoperable physical products cases even if DMCA liability is to be removed, or strongly presumed not to apply. Software components can have an independent value outside of a particular physical product into which they may be incorporated. Software modules often are reused in different contexts,¹⁹¹ so the one software module might have a clear stand alone market value as a result of its ability to be incorporated into a variety of different products and systems. This value might be protected by copyright law, but not necessarily by the DMCA in cases that are not about digital piracy because digital copyright piracy is not a central commercial concern of the plaintiff in the case in question.

As suggested above, there are currently more well-established defenses to copyright infringement than to DMCA liability.¹⁹² Thus, the availability of a general copyright infringement action in a case where copyrightable code is incorporated into a tangible good only incidentally is perhaps less objectionable than DMCA liability as a matter of policy because copyright liability is better tempered by competing legal rights and defenses than DMCA liability, at least at the present time. If DMCA liability can be clarified in the ways suggested by the court of appeals in *Chamberlain*, perhaps it is less problematic to assume that DMCA liability and general copyright liability should subsist together in all relevant cases.

However, because the current reach of the DMCA is potentially so broad, there may be situations involving interoperable physical products where the presumption against DMCA liability should stand despite the continued availability to the plaintiff of a general copyright infringement suit. This is not to say that copyright liability should be generally available in cases that are not truly about copyright infringement. However, in borderline cases, perhaps there is an argument for giving more leeway to a plaintiff to argue copyright infringement than DMCA infringement, given the likelihood that a copyright infringement action creates a somewhat more level playing field in terms of available defenses than a DMCA infringement action.

191. Barry D. Bowen, *Software Reuse with Java Technology: Finding the Holy Grail*, at <http://java.sun.com/features/1997/may/reuse.html> (1997) (discussing the attainment of reusable software with Java Technology) (on file with the Washington and Lee Law Review); Kimberley Jordan, *Software Reuse Term Paper for the MJY Team Software Risk Management WWW Site*, at <http://www.baz.com/kjordan/swse625/htm/tp-kj.htm> (Apr. 21, 1997) (discussing the advantages of creating and developing reusable software) (on file with the Washington and Lee Law Review).

192. See *supra* note 190 and accompanying text (suggesting that there are more defenses available for copyright infringement claims than for DMCA claims).

B. Fair Use

Notwithstanding the appellate court's decision in *Chamberlain*, a common general criticism of the DMCA is that it does not include sufficient protections for standard copyright defenses such as fair use.¹⁹³ Despite Congress's stated intention in Section 1201(c)(1) of the DMCA not to "affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under [the copyright act]," it is arguable that fair use in particular has been affected adversely by the DMCA.¹⁹⁴

The accepted judicial interpretation of the DMCA in relation to fair use has been that although the DMCA does not affect the availability of the fair use defense to a copyright infringement action, there is no separate "fair use" defense to a claim for infringement of the DMCA.¹⁹⁵ Also, no current provision of the DMCA expressly allows circumvention of a technological protection measure, or trafficking in a circumvention device, to enable access to a work for fair use purposes,¹⁹⁶ although the DMCA does not prohibit the *circumvention* of a copy-control measure expressly, as compared with trafficking in a device that can circumvent a copy-control measure.¹⁹⁷ It has

193. See *Reimerdes*, 111 F. Supp. 2d at 321–22 (recognizing that Congress deliberately chose not to make fair use a defense under § 1201(a) of the DCMA); Benkler, *supra* note 39, at 414–29 (criticizing the DMCA); Burk, *supra* note 7, at 1137–38 (stating that "[t]he limited exceptions provided under the statute, or under the rulemaking authority of the Librarian of Congress, lack the breadth and flexibility to fill the equitable role played by fair use").

194. See Burk, *supra* note 7, at 1137–38 (discussing the impact of the DMCA on the fair use doctrine).

195. See *id.* (noting that "the concern here is the availability of fair use or a similar doctrine to prevent the anti-circumvention right itself from being leveraged into control of adjacent technologies"); see also *Reimerdes*, 111 F. Supp. 2d at 322 (discussing the unavailability of the fair use defense under the DCMA).

196. See Burk, *supra* note 7, at 1137–38 (recognizing that there is currently no statutory DMCA provision to prevent circumvention). This is despite the fact that Congress's stated intention in enacting the DMCA was not to affect defenses like fair use. 17 U.S.C. § 1201(c)(1) (2000).

197. Though § 1201(a)(1) prohibits circumvention of a technological measure that prevents unauthorized access to a copyright work, there is no equivalent provision in § 1201(b) that deals with copy control measures. 17 U.S.C. § 1201(a)(1), (b) (2000). The intention behind this drafting was to preserve fair use rights, although this has not been particularly effective in practice, partly because of the increasing merger of access and copy control measures at the technological level. See Reese, *supra* note 25, at 621 (noting that "courts have treated such 'merged' control measures as entitled to the legal protections of *both* access—and rights—control measures"). Further, consumers often do not have the technological sophistication to circumvent a copy control measure without being involved in illegal trafficking conduct involving a circumvention device. See Samuelson, *supra* note 29, at 548–54 (providing examples of the relationship between trafficking in circumvention devices and circumvention conduct per se in cases where the circumventor does not necessarily have the technological

been suggested that fair use should be preserved under the DMCA more clearly and effectively than is currently the case,¹⁹⁸ particularly in the face of the increasing merger between technological access control and copy-control measures.¹⁹⁹

However, as the legislation currently stands, the fair use defense clearly can be raised in a copyright infringement action, but cannot generally be raised as a defense against DMCA liability for unauthorized circumvention or trafficking in a circumvention device, even, in many cases, where the resulting use of a copyright work could be excused as a fair use.²⁰⁰ This is an example of where the DMCA arguably overreaches in general and certainly overreaches in the kinds of cases under consideration in this Article.

The tide may now be turning, at least in the area of judicial interpretation of 17 U.S.C. § 1201(c)(1). At several points in the *Chamberlain* appeal, the court of appeals noted that Section 1201(c)(1) should not be contradicted by an overbroad reading of the anti-circumvention and anti-trafficking provisions of the DMCA.²⁰¹ Judge Feikens, in his partial dissent in *Lexmark*, made similar suggestions.²⁰² However, neither court directly took issue with previous judicial determinations that had barred a fair use defense to an anti-circumvention or anti-trafficking infringement proceeding.²⁰³ In fact, on a

means to create a circumvention device in order to make a fair use of a protected work).

198. See Samuelson, *supra* note 29, at 557 (arguing that the antidevice provisions of the DMCA should be amended to preserve the ability to manufacture circumvention devices for legitimate uses, including fair use).

199. See Reese, *supra* note 25, at 640–47 (discussing the rise of merging access controls with rights control); see also Digital Media Consumers' Rights Act of 2003, H.R. 107, 108th Cong., § 5(b) (proposing to allow circumvention of a technological protection measure if it does not result in a copyright infringement); Benefit Authors without Limiting Advancement or Net Consumer Expectations (BALANCE) Act of 2003, H.R. 1066, 108th Cong., § 5 (proposing to allow circumvention and/or trafficking in a circumvention device for purposes of making a noninfringing use of a copyright work in certain circumstances).

200. See Burk, *supra* note 7, at 1137–38 (discussing the inability of the fair use doctrine to play the limiting role against DMCA liability).

201. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1200 (6th Cir. 2004).

202. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 562 (6th Cir. 2004) (Feikens, J., concurring in part, dissenting in part).

203. See *Universal City Studios, Inc. v. Corley*, 273 F.3d 429, 458 (2d Cir. 2001) ("[T]he Supreme Court has never held that fair use is constitutionally required, although some isolated statements in its opinions might arguably be enlisted for such a requirement."); see also *United States v. Elcom, Ltd.*, 203 F. Supp. 2d 1111, 1134–35 (N.D. Cal. 2002). The *Elcom* court explained:

[T]he DMCA does not eliminate fair use or substantially impair the fair use rights of anyone. Congress has not banned or eliminated fair use and nothing in the DMCA prevents anyone from quoting from a work or comparing texts for the purpose of study or criticism. The fair user may find it more difficult to engage in

related issue, the *Chamberlain* court distinguished the previous cases interpreting the DMCA in a more restrictive manner that would not protect fair use as a defense to a DMCA infringement action.²⁰⁴

In a case where a valuable copyright work is truly the subject of a particular dispute, there may be an argument for a broad prohibition on circumvention of a technological protection measure if such potential overreaching is an unavoidable by-product of effectively preventing digital piracy. However, in a case where the protection of the copyright work is not the true concern of the complainant, and where the suit is being used as the basis for hindering undesired commercial competition in an after-market for a physical product, there is a good argument that DMCA liability should not be available automatically to the complainant. Otherwise, cases may arise where a defendant has a fair use defense to a copyright infringement claim but is nevertheless subject to potential DMCA liability. This is already a problem in the "true" copyright area, but it is even more worrying in cases where the plaintiff's real commercial concerns do not revolve around copyright protection.

A good example would be a mixed goods case where a plaintiff was able to establish the central commercial concern with copyrighted code, but where the competitor was able to establish a fair use defense to a copyright infringement claim. If the plaintiff has no cause of action under copyright law, she should not have an alternate action under the DMCA in such cases. This is precisely what Judge Feikens suggests in the *Lexmark* appeal:

[I]f the district court on remand were to find that the merger, scènes à faire, or fair use doctrine supplied an adequate defense to infringement, given the copying that went on in this case, I do not believe Plaintiff could meet its burden to show likelihood of success under 17 U.S.C. § 1201(b), because there would be no "right of a copyright owner" to prevent the TLP's use in this fashion.²⁰⁵

The problem is that this is not what the DMCA currently says, and it is not how other courts have decided questions relating to the impact of the fair use defense to copyright infringement or the operation of 17 U.S.C. § 1201(c)(1).

certain fair uses with regard to electronic books, but nevertheless, fair use is still available.

Id.; see also 321 Studios v. Metro Goldwyn Mayer Studios, Inc., 307 F. Supp. 2d 1085, 1101 (N.D. Cal. 2004) (finding that fair use is not a constitutionally guaranteed right, and in any event, fair use is not a defense to a DMCA infringement claim).

204. See *Chamberlain*, 381 F.3d at 1198–99.

205. *Lexmark*, 387 F.3d at 562 (Feikens, J., concurring in part, dissenting in part).

Consider, for example, a printer toner cartridge manufacturer with copyrighted software code such as the TLP code copyrighted by Lexmark, subject to technological encryption measures to prevent the unauthorized operation of a competitor's toner cartridge in the original manufacturer's printers. Assume further that the TLP code validly was copyrighted either because it was more complex than the code under consideration in *Lexmark* or because a future court did not accept the *Lexmark* appellate court's conclusions on the likely copyrightability of such code.²⁰⁶

Where the competitor managed to create an interoperable product through reverse engineering and the interoperable product did not incorporate a copy of the complainant's software, but rather incorporated new software that was functionally equivalent, there may be no copyright infringement claim. This is because certain reverse engineering techniques are considered fair uses under copyright law.²⁰⁷

In a case such as this where the fair use defense was available to the defendant under general principles of copyright law, and where the copyright claim appears somewhat incidental to the complainant's overriding commercial concerns as a matter of practice, it would be inappropriate for the DMCA to come into play. However, under the law as it currently stands, even where a defendant in this kind of interoperable goods case has a fair use defense under copyright law, he may arguably have no effective defense to a DMCA claim.²⁰⁸ As noted above, the standard fair use defense does not necessarily excuse acts

206. This would certainly be a possibility in practice. As noted above, the majority of the *Lexmark* appellate court acknowledged that it was applying a preliminary injunction standard of review to the issue of the copyrightability of the TLP and that the district court on remand may decide the copyrightability issue differently at the permanent injunction stage. *Lexmark*, 387 F.3d 522, 541 (6th Cir. 2004). Additionally, Judge Feikens in his partial dissent did not agree with the majority's reasoning on the noncopyrightability of the TLP code. See *id.* at 554 (Feikens, J., concurring in part, dissenting in part) ("[T]he record could support a finding that there was enough original expression in the TLP to qualify it for copyright protection.").

207. See *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1518 (9th Cir. 1993) (holding that disassembling a computer program to produce a compatible noninfringing program is fair use under copyright law even if it involves incidental copying of the software code); see also LEAFFER, *supra* note 45, at 450–52 (analyzing circumstances in which copying a copyright work in the course of reverse engineering might be excused as a fair use under general principles of copyright law).

208. This example assumes that a DMCA claim would lie with respect to the software in the printer toner cartridge, a proposition that was rejected in the *Lexmark* appellate court. However, the rejection appeared to be at least partially based on the perceived noncopyrightability of the toner loading program in that case. The court does not consider whether the TLP software could have been regarded as a copyright work protected by a technological protection measure because the majority did not think it was a copyrightable work. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 537–38 (6th Cir. 2004).

of circumvention or trafficking in a circumvention device under the DMCA.²⁰⁹ Although the comments in the *Chamberlain* appeal in particular are helpful here, the judicial record is not decisive in this context for the reasons set out above. The DMCA as currently drafted contains no provision to clarify either that the protection of a copyright work must be a central commercial concern of the plaintiff to support a DMCA claim or that fair use is a defense to a complaint about unauthorised access to a copyright work.

There is a specific reverse engineering exception to the operation of the DMCA.²¹⁰ However, it may not apply to situations such as these. The reverse engineering exception set out in Section 1201(f) of the DMCA only applies to reverse engineering that results in interoperability of an independently created computer program with other programs. In this context, interoperability is defined (somewhat unhelpfully) as "the ability of computer programs to exchange information, and of such programs mutually to use the information which has been exchanged."²¹¹ Although the appellate courts in both *Lexmark* and *Chamberlain* have suggested that this defense would apply to interoperable products cases such as those under discussion here, the courts' comments in both cases are technically dicta for the reasons set out above. It is therefore possible that a future court will take a more restrictive interpretation of the defense. For example, a court could take the view in an interoperable physical products case that the defendant has created a program that enables a physical product to be interoperable with another physical product, rather than with other programs as contemplated by the legislation.²¹²

Even if the interoperability defense is applied in the way suggested by the appellate courts in *Lexmark* and *Chamberlain*, the burden is still placed on the defendant to raise a second interoperability defense after having successfully argued fair use in the face of the general copyright infringement claim. If the defendant's use of a copyright work is a fair use, it arguably should not be open to the plaintiff to place the additional burden

209. See Burk, *supra* note 7, at 1137–38 (recognizing that fair use is only available in the underlying work if the work can be accessed without infringing the DMCA).

210. 17 U.S.C. § 1201(f) (2000).

211. *Id.* § 1201(f)(4).

212. Burk, *supra* note 7, at 1139 (suggesting that the § 1201(f) exemption to anti-circumvention liability only applies to the creation of interoperable software and does not extend to reverse engineering hardware or data; presumably, this implies that the exemption will not save reverse engineering undertaken for the purpose of creating an interoperable tangible good that incidentally incorporates the software in question).

on the defendant to raise a separate defense to a DMCA claim. It may be that the defendant is not put to a significant additional burden in raising this separate defense, given that the fair use defense in such a situation would likely be based on reverse engineering for interoperability purposes. Presumably, the fair use defense to the copyright infringement claim would require proof of similar factual circumstances of the interoperability defense to the DMCA claim. However, if the two defenses require evidence of substantially similar, if not precisely the same, facts, it does not make much sense to maintain two different defenses. Surely, the fair use defense simply could cover both the copyright infringement and the DMCA infringement claims.

Perhaps amending the DMCA to incorporate a more general fair use exemption is the answer here. Some moves are currently underway to incorporate such an exemption into the DMCA. Both the Benefits Authors without Limiting Advancement or Net Consumer Expectations (BALANCE) Act of 2003²¹³ and the Digital Media Consumers' Rights Act,²¹⁴ if enacted, would allow circumvention and trafficking in a circumvention device where the resulting circumvention was excused by the fair use defense, among other things.²¹⁵

However, it may be more effective for interoperable products cases to suggest that when the copyright works in question are merely incidental to a physical product that is the subject of a dispute, there should be a presumption against the application of the DMCA's anti-circumvention and anti-trafficking provisions as suggested above. Unless there is a clear policy in commercial law that unauthorized interoperable physical products should not be marketed in competition with an original product manufacturer, copyright law should not create such a prohibition incidentally. In fact, there may be good arguments that copyright law *per se* should not apply in such situations. However, as discussed above, even where copyright liability is preserved there may be good reasons to remove DMCA liability, at least by way of a rebuttable presumption.²¹⁶

213. Benefit Authors without Limiting Advancement or Net Consumer Expectations (BALANCE) Act of 2003, H.R. 1066, 108th Cong.

214. Digital Media Consumers' Rights Act of 2003, H.R. 107, 108th Cong.

215. See Benefit Authors without Limiting Advancement or Net Consumer Expectations (BALANCE) Act of 2003, H.R. 1066, 108th Cong. § 5 (allowing circumvention and/or trafficking in a circumvention device for purposes of making a noninfringing use of a copyright work in certain circumstances); Digital Media Consumers' Rights Act of 2003, H.R. 107, 108th Cong. § 5(b) (allowing circumvention of a technological protection measure if it does not result in a copyright infringement).

216. See *supra* Part III.C.2 (suggesting a rebuttable presumption against DMCA liability).

C. The First Sale Doctrine

The first sale doctrine in copyright law provides that copyright holders are limited in the extent to which they can control after-market uses of a copyright work after the first sale of the work.²¹⁷ Thus, the holder of a copyright in a book may derive royalties from the first sale of the work. However, once a copy of a book has been purchased, there is no restriction on the owner's ability to sell that copy in a second-hand market without having to provide royalties to the copyright owner.

In the past, some copyright holders have attempted to utilize the first sale doctrine to restrict after-market uses of tangible goods incorporating a copyright work. In *Quality King Distributors, Inc. v. L'Anza Research International, Inc.*,²¹⁸ the Supreme Court held that the copyright act did not prohibit the distribution in the United States of bottles of hair care products with copyrighted labels affixed to them without the authorization of the original manufacturer and holder of the relevant copyright. Under the first sale doctrine, a lawful owner of the hair care products has the right to resell them with the copyrighted labels affixed.²¹⁹

This was a gray market case in which the manufacturer of the hair care products sold them within the United States at higher prices than they were sold outside the United States. Some of the products from the foreign market made their way back into the United States and were offered for sale at a lower price than the products intended for the American market.²²⁰ The manufacturer, L'Anza, argued that the sale of these products within the United States was prohibited as an infringement of its distribution right in the copyrighted labels.²²¹ However, the Court held that such an action was not available to L'Anza because of the application of the first sale doctrine.²²² L'Anza had no

217. See 17 U.S.C. § 109(a) (2000) (providing that a lawful owner of a copy of a copyright work is entitled, without the authority of the copyright owner, to sell or otherwise dispose of the possession of the relevant copy); LEAFFER, *supra* note 45, at 310–12 (analyzing the first sale doctrine in American copyright law).

218. *Quality King Distribs., Inc. v. L'Anza Research Int'l, Inc.*, 523 U.S. 135 (1998).

219. But note that this result seems to be limited to goods or copyright works originally produced in the United States because such goods are "lawfully made under U.S. law." LEAFFER, *supra* note 45, at 317; see also *CBS, Inc. v. Scorpio Music Distribs., Inc.*, 569 F. Supp. 47, 48–50 (E.D. Pa. 1983) (holding that phonorecords manufactured and distributed in the Philippines under license from an American copyright holder were not subject to the first sale defense when imported into the United States because they were not made lawfully under U.S. law), *aff'd*, 738 F.2d 424 (3d Cir. 1984).

220. *Quality King Distribs., Inc.*, 523 U.S. at 139.

221. *Id.* at 145 n.14.

222. *Id.* at 145.

control over the distribution of the copyrighted labels after their initial sale to the foreign distributor.²²³

In the digital copyright world, copyright holders have generally side-stepped the application of the first sale doctrine by resorting to licensing transactions, rather than sales, for digital copyright works such as computer software. The software industry also successfully lobbied for amendments to the copyright act to ensure that no unauthorized uses were made of copies of computer programs for commercial purposes.²²⁴ Thus, the first sale doctrine has limited applicability in the area of general copyright liability for digital works as a practical matter.

However, in the case of physical goods that only incidentally incorporate digital copyrightable material, there might be a good argument that the first sale doctrine will apply, particularly if there is no clear licensing arrangement in place with respect to the relevant software. An argument might be made that these situations more closely parallel the *L'Anza* situation than the standard software licensing scenario. *L'Anza* suggests that the first sale doctrine will not restrict certain after-market sales of physical goods that happen to incorporate a copyright work. Presumably, there is no good reason why this principle should not apply when the copyright work incorporated into the physical product is a software product rather than a copyrighted artistic work, such as a label on a shampoo bottle.

For example, if a printer toner cartridge manufacturer provides cartridges to consumers subject to an agreement that the consumers will return the cartridges to the manufacturer for remanufacturing, presumably this agreement is nevertheless a standard sale or lease contract, the subject matter of which is a tangible good—the cartridge. In common commercial practice, it is unlikely that the manufacturer and its consumers have entered into a specific licensing arrangement for any software code that happens to be incidentally incorporated into the cartridges. If the consumers make unauthorized uses of the cartridges after purchase, this is presumably a matter for commercial law and not for copyright law.²²⁵ This situation seems analogous to *L'Anza* and distinct from a

223. *Id.*

224. 17 U.S.C. § 109(b)(1)(A) (2000); LEAFFER, *supra* note 45, at 313–14.

225. Of course, this was not the conduct targeted by Lexmark in *Lexmark International, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 947 (E.D. Ky. 2003), *vacated by* 387 F.3d 522 (6th Cir. 2004). Lexmark was concerned with copying of its copyrighted code by SCC and with SCC's marketing of a competing product incorporating the copied code. *Id.* Lexmark did not bring specific actions against its consumers for breach of contract, although presumably nothing prevented Lexmark from doing so other than the difficulties and costs associated with such proceedings. *Id.* at 946.

situation where the subject matter of the transaction is computer software, such as a software license for a computer operating system.

Arguably, it should make very little difference whether the tangible good is sold outright or leased to the consumer. The point is that there is no separate licensing agreement covering any software that may be incorporated into the good. If the main contract is a sale contract, the *L'Anza* reasoning, at least on the first sale doctrine, presumably would apply. However, even when the main contract is a lease of tangible goods, if there is no specific contractual arrangement involving the software, and the software is not a central commercial concern of the parties in terms of the subject matter of the bargain, this would appear to be an unsuitable area for DMCA liability, let alone copyright liability. Even when there is a specific contractual arrangement involving the software, as indeed there might be in many cases in the wake of the *Lexmark* appeal, it is an open question whether copyright or DMCA liability should attach when protection of the copyrighted software per se is not the central commercial focus of the plaintiff.

Obviously, the *L'Anza* case is distinguishable from *Lexmark* and *Chamberlain* because *L'Anza* did not involve any actual unauthorized copying of the copyright works affixed to the shampoo bottles.²²⁶ However, the Supreme Court's decision does suggest a judicial concern that the copyright act should not be extended into commercial contexts for which it was not designed.²²⁷ The commercial contexts in both situations are somewhat similar even if the conduct in question is not on par. In the *L'Anza* case, the context was the regulation of gray markets in physical goods, and in *Lexmark* and *Chamberlain*, the context is domestic after-markets for physical goods. However, both cases involve the regulation of some aspect of an after-market for tangible goods that happen to incorporate a copyright work, so in this sense, lessons may be learned from *L'Anza* that are useful in the "interoperable products" cases.

The idea that copyright law in general should not be used to confuse trade law policy when the interference is not warranted by the need to protect a copyright work against piracy is instructive here. It provides further support for a presumption against DMCA liability in interoperable products cases. The

226. See *Quality King Distribs., Inc. v. L'Anza Research Int'l, Inc.*, 523 U.S. 135, 140 (1998) (noting that this is an unusual copyright case because *L'Anza* has not claimed that anyone has made unauthorized copies of its copyrighted labels).

227. See *id.* at 153–54 (suggesting that policy concerns about regulation of gray markets are not the job of the court in interpreting the provisions of the copyright act and noting that international agreements regulating cross border trade may be relevant to the conduct in question but are also not relevant to interpreting the copyright act).

DMCA should not have a broader operation than copyright law in general, particularly not in cases that are not fundamentally about copyright protection.

D. Copyright Misuse

It is not yet clear how the DMCA might affect other rights, remedies, limitations, or defenses to copyright infringement in the future, outside of questions about fair use and first sale. Arguably, the copyright misuse doctrine might apply in copyright infringement actions involving interoperable goods that incorporate copyrighted software.²²⁸ However, there is, as yet, no clear legislative or judicial guidance as to whether a copyright misuse claim might validly be raised as a defense in a DMCA infringement action.

The copyright misuse defense in general copyright law can be raised when a defendant is able to establish either that the copyright holder violated the antitrust laws or that the copyright holder illegally extended its monopoly beyond the scope of the copyright or violated the public policies underlying the copyright laws.²²⁹ This would appear to be the perfect tool for striking the right balance in cases involving interoperable physical goods that happen to incorporate copyrighted software, particularly because it brings relevant antitrust policies into play in appropriate cases.

However, it is simply not clear if the defense applies and, if so, how it would apply in post-DMCA cases. Although the appellate court in *Chamberlain* took the view that the DMCA does not create an exemption from the copyright misuse doctrine,²³⁰ it is not clear that this approach would be binding on subsequent courts. Arguably, this point is only dicta because copyright misuse by the plaintiff does not appear to have been argued strongly on the face of the record. The case ultimately was decided on the basis that the defendant's activities did not facilitate unauthorized uses of the plaintiff's copyrighted software, and that the plaintiff had failed to establish a critical nexus between the circumvented access to the copyright work and the

228. Copyright misuse was argued unsuccessfully at the district court level in *Lexmark*. See *Lexmark*, 253 F. Supp. 2d at 965–66 (discussing the copyright misuse doctrine and why it does not apply in the case at hand—Lexmark is simply enforcing its rights in its computer programs and not attempting to extend copyright protection illegally). The defense was not discussed in any detail in the appeal because of the majority finding that there was no copyright or DMCA infringement. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 551 (6th Cir. 2004).

229. *Lexmark*, 253 F. Supp. 2d at 966.

230. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1193 (Fed. Cir. 2004).

protection of a valid copyright interest.²³¹ The comments about copyright misuse were only incidental to the final decision, although hopefully they will be taken up and followed in subsequent cases.²³²

In this vein, Professor Dan Burk has suggested the adoption of an "anti-circumvention misuse" defense to DMCA infringement proceedings, paralleling the idea of the copyright misuse defense to traditional copyright infringement, on the assumption that copyright misuse may not in fact be a valid defense in a DMCA proceeding.²³³ Professor Burk's suggestion is broader than the DMCA revisions advocated in this Article specifically for interoperable products cases. His ideas may, if implemented, cure some of the broader defects of the DMCA as currently drafted and may have particular resonance for interoperable products cases.

An anti-circumvention misuse defense is a different but complementary approach to the suggestion made in this Article for a presumption against DMCA liability in interoperable physical products cases where copyrighted software is not a central commercial concern of the plaintiff. Professor Burk's suggestion would potentially apply more broadly than just to cases involving interoperable physical products. It would apply in pure information product scenarios where a plaintiff was utilizing the DMCA to maintain an unjustified monopoly in an information product market—for example, by tying one software product to another software product in contravention of traditional antitrust principles. However, Professor Burk's suggestion presumably would also place the burden on the defendant to raise the anti-circumvention or anti-trafficking misuse defense in contrast to the suggestion made here of an *ab initio* presumption against DMCA liability as a hurdle requirement that the plaintiff would have to rebut in order to maintain its DMCA claim.

In any event, despite Congress's stated intention in Section 1201(c)(1) of the DMCA that the DMCA prohibitions on circumvention and trafficking in circumvention devices are not intended to "affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under [the copyright act],"²³⁴ it may be that the copyright misuse defense does not apply directly to

231. *Id.* at 1204.

232. Copyright misuse was not at issue in the *Lexmark* appeal because, in the absence of copyright liability and DMCA liability, it did not arise. At first instance, the copyright misuse doctrine was not debated seriously because Judge Forester took the view that Lexmark was simply enforcing its rights in its computer programs and not attempting to extend its copyright protection illegally. *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 253 F. Supp. 2d 943, 965–66 (E.D. Ky. 2003), *vacated by* 387 F.3d 522 (6th Cir. 2004).

233. Burk, *supra* note 7, at 1132.

234. 17 U.S.C. § 1201(c)(1) (2000).

infringements of those prohibitions. Like the fair use defense, the copyright misuse defense may be limited to general copyright infringement, rather than to specific infringements of the provisions of the DMCA, unless future judicial determinations on these issues start to follow the view taken recently by the appellate court in *Chamberlain*.

There is arguably a general need to clarify the operation of the copyright misuse defense in relation to the anti-circumvention and anti-trafficking provisions of the DMCA. At the very least, there is a need to create a clear legislative presumption against DMCA liability for cases involving interoperable physical goods that only incidentally incorporate a copyright work, when the copyright work is not central to the transaction or dispute in question.²³⁵ When the copyright act is becoming overbroad and the copyright misuse defense is of uncertain application, there should be a presumption against DMCA liability in situations that only incidentally involve copyright works in commerce.

Copyright misuse may prove ultimately to be a very valuable tool for striking an appropriate balance in DMCA claims when the subject matter of the dispute is a mixed product incorporating some copyrightable software. However, unless and until the application of the copyright misuse defense to DMCA claims in general, and to DMCA claims involving mixed products in particular, can be clarified, legislative amendment of the DMCA may be the best short-term solution. This amendment would provide some clearer legislative guidance to courts than is currently the case as to when the application of a copyright misuse defense might be reasonable in particular circumstances.

V. Conclusions

This Article has touched on a discrete problem that illuminates some broader issues. The suggestion made to create a specific presumption against DMCA liability in interoperable products situations addresses a particular area of concern that the Electronic Frontier Foundation, in the past, has been branded as one of the unintended consequences of the overbroad drafting of the DMCA.²³⁶ Despite recent judicial decisions that may stem the tide here, at least

235. As noted above, a broader approach to the problem of DMCA liability at least is found in Professor Burk's idea for a general anti-circumvention misuse defense. See Burk, *supra* note 7, at 1132-40 (discussing the need to recognize a new claim of anti-circumvention or paracopyright misuse).

236. See Electronic Frontier Foundation, *supra* note 1, at 1 (discussing various ways in which the DMCA has been applied contrary to congressional intent).

until manufacturers start crafting software codes and contractual provisions to get around the judicial reasoning in *Lexmark*, the problems with the drafting of the DMCA remain.

Discussion of this issue raises some more general concerns that courts and legislatures must address in the longer term. An obvious broader issue that has resurfaced again and again throughout this Article is that of the application of standard limitations on copyright infringement to claims that specifically relate to DMCA infringement. Despite the wording of Section 1201(c)(1) of the DMCA, the extent to which traditional limitations on copyright—such as fair use, first sale, copyright misuse, merger, and *scènes à faire*—might apply in DMCA infringement proceedings is simply not clear. These issues will need to be clarified, and likely will be clarified by courts if not by legislative amendment in coming years. It may be that the recent appeals in the *Chamberlain* and *Lexmark* cases are good first steps on the road to really grappling with the underlying policy problems inherent in the current drafting of the DMCA in this context.

Lexmark also begins to grapple with the important underlying concern stemming from questions about the copyrightability of certain types of software. The majority in *Lexmark* suggests that *Lexmark*'s TLP code is not copyrightable for lack of originality.²³⁷ There is also a useful analysis of the potential application of the merger and *scènes à faire* doctrines to comparatively short software programs with high levels of functionality and low levels of creativity.²³⁸ These issues, and the disagreements between the majority and Judge Feikens on these points, have not been addressed in detail in this Article because they relate more to general copyright infringement actions than specific DMCA issues.

However, the point was made by judges in both the *Lexmark* and *Chamberlain* appeals that when no copyright action lies in an interoperability case, there is no relevant copyright for the plaintiff to protect under a DMCA claim.²³⁹ As noted above, this is not precisely what the DMCA says. There is no clear requirement of a successful copyright action to support a DMCA claim. There is only a requirement that the technological encryption measure in

237. See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 540–41 (6th Cir. 2004) (discussing the originality requirement necessary for copyright protection).

238. *Id.* at 535–36.

239. See *id.* at 551 (concluding that because the TLP was not copyrightable, *Lexmark*'s direct copyright infringement and DMCA claims failed); *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1204 (Fed. Cir. 2004) (explaining the grounds for liability created by the DMCA).

question effectively protects a copyright work.²⁴⁰ An example of the difference between the two situations has been addressed in this Article; that is, if Lexmark had encrypted its admittedly validly copyrighted PEP code effectively, it may have been able to mount a successful DMCA action despite the fact that SCC had not copied the PEP code. Arguably, all Lexmark would have had to establish for a successful DMCA claim would have been the copyrightability of the PEP code—not a successful copyright infringement action regarding the PEP code—and that SCC had circumvented a technological protection measure effectively preventing access to the PEP code.

The question of copyrightability of software per se has been a contentious issue in many jurisdictions for many years. The potential application of both copyright infringement actions and potential DMCA claims in the case of software incorporated into physical products is but one example of copyrighting software causing unforeseen problems. This is not necessarily an argument for returning to old debates about whether or not code should ever be copyrightable.²⁴¹ However, it does suggest that software copyrights should be analyzed with care in practice. The *Lexmark* appellate court does a good job of refocusing our attention on the underlying problems with accepting wide-ranging software copyrights generally in its discussion of the potential noncopyrightability of the TLP code.²⁴²

While these general problems remain with respect to digital copyright law, it is important that something be done in the interoperable products context in the short term to ensure that manufacturers of physical products incorporating copyrighted software do not have the option of utilizing the DMCA in the manner attempted by Lexmark and Chamberlain. Manufacturers should not be in a position to avail themselves of DMCA claims where their central concern is not with digital copyright piracy. At least this should be so when the

240. 17 U.S.C. § 1201(a)(1)(A), (a)(2), (b)(1) (2000).

241. On the historical question of copyright and patent protection for software code generally, as compared with the creation of *sui generis* intellectual property rights for software, see generally Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329 (1987) (discussing the market failures resulting from the use of copyright law as the primary means for protecting intellectual work in computer software); J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432 (1994) (discussing the problems associated with the proliferation of legal hybrids resulting from deviations from the traditional bipolar structure of the international intellectual property system); Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308 (1994) (suggesting foundational concepts upon which a new legal regime designed to protect computer software could be based).

242. See *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 537–39 (6th Cir. 2004) (discussing the legal errors made by the district court in determining that Lexmark was likely to prevail on its copyright claim).

manufacturer in question does not have a clear case of copyright infringement. It should perhaps also be the case in some situations in which a copyright infringement is arguably present but protecting against digital piracy is not a central commercial aim of the complainant.

To this end, this Article has advocated an approach to amending the DMCA that would create a presumption against liability under Sections 1201(a)(1)(A), 1201(a)(2), and 1201(b) when the complainant's case revolves around a physical product that only incidentally incorporates a copyrighable work, and when the defendant's circumvention or trafficking conduct relates to an attempt to create an interoperable physical product. The presumption would put the initial burden of proof on the plaintiff to establish the central commercial relevance of the software code to its dispute. If the plaintiff rebuts the presumption, the burden would shift to the defendant to raise applicable defenses to the DMCA claim.²⁴³ Although the defenses to a DMCA action are still problematic and likely will require further legislative and judicial development, at least the shifting of the initial burden of proof to the plaintiff will place less immediate importance on the development of these defenses in cases that are not really about digital copyright piracy.

Obviously, some of the questions of fact arising under this approach could be costly and difficult to address. For example, it will not always be an easy task to establish just how central a copyright work is to the value of a mixed product in commerce. These decisions will be matters for the courts based on the evidence presented by the parties. Courts are well qualified to make such decisions based on available evidence and on the judges' perceptions of relevant social norms. Even a multiple-factor judicial test such as that advocated in this Article should not be overly problematic. Judges in the copyright area are very familiar with multi-factor judicial tests, largely from years of judicial development in the interpretation of the fair use factors, now set out in 17 U.S.C. § 107.

243. For completeness, it should perhaps be noted here that a legislative amendment rather than executive action is suggested because the legislature is arguably better placed to establish presumptions about burdens of proof than the executive. As noted by Judge Merritt in *Lexmark*, the other option is to create judicial presumptions about burdens of proof and persuasion in these cases. *Lexmark*, 387 F.3d at 552–53 (Merritt, J., concurring). However, for the reasons discussed above, a legislative presumption might be preferable. Given the current drafting of the DMCA, it is not clear that the judiciary should have the ability to interpret the legislation to shift burdens of proof in the way suggested by Judge Merritt. In any event, it may take longer to achieve judicial consensus among the different court circuits than a simple legislative change. Judge Feikens is quick to point out in *Lexmark* how the circuit courts have differed as to the basis of their interpretations of the merger and *scènes à faire* doctrines in copyright law. *Id.* at 557–60 (Feikens, J., concurring in part, dissenting in part). It would seem that the creation of judicial presumptions about burdens of proof under DMCA claims may well suffer the same fate.

In any event, many cases will not involve difficult issues of fact in this context. It likely will be more or less obvious in most cases whether the parties are really arguing about commercial competition in a market for physical goods in which some copyrighted software is purely incidental to the goods in question, or whether the plaintiff's real concern is with copyright piracy. Judges simply need to be attuned to the need to draw clear distinctions between commercial law issues and copyright issues where appropriate. This is not a novel question for courts. After all, UCITA had asked judges to do the same thing.

This leads to the other broader issue that is raised in this Article, namely, the extent to which intellectual property laws should ever encroach into matters that are better characterized as being about trade or commerce in physical products. As commercial goods become more mixed in characterization due to the increasing incorporation of digital technology, there will be more of a need to consider the appropriate role of intellectual property laws in regulating commercial markets in these goods. Can the incorporation of a copyright work into a physical good somehow change the basic legal character of the good? Should it?

Though not specifically addressing that broader question in any detail, this Article does emphasize the fact that drafters of commercial laws increasingly have to think about the impact of digital technology and intellectual property law in the commercial sphere, while drafters of intellectual property laws need to examine more closely the impact their legislation may have in various commercial contexts. The current levels and methods of incorporating copyrighted software into tangible goods may only be the tip of the iceberg. Increasingly, in the future, legislators, judges, and legal commentators will have to come to grips with the nature of legal rights in mixed products and concomitant limitations on those rights.

The boundaries between sales law, licensing law, antitrust law, and intellectual property law are becoming more and more blurred as the nature of products in commerce evolves in the digital age. In formulating new legal and policy approaches to regulating trade in these goods, it is important to keep the traditional boundaries in mind and, from that basis, to make decisions as to whether the boundaries need to be re-evaluated. The above discussion assumes the need to maintain and assert the traditional boundaries between laws regulating commercial dealings in physical goods and those regulating copyright piracy. If ultimately those boundaries are to be altered, they should be changed consciously and with a clear intention to do so, not accidentally as an unforeseen result of a law intended to combat digital copyright piracy.