

THE EVOLVING COMMON LAW DOCTRINE OF COPYRIGHT MISUSE: A UNIFIED THEORY AND ITS APPLICATION TO SOFTWARE

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ABSTRACT

This Article explores the common law defense of copyright misuse from a variety of angles in an effort to refine and unify existing views. The unified model that emerges is then applied to software copyright, addressing the tension that software creates within copyright law as well as between copyright, patent, and antitrust law. Part II develops a jurisprudential model for understanding the substantive relationship between the copyright misuse doctrine and copyright, patent, and antitrust laws, and the procedural approaches taken by courts when formulating and applying misuse principles—per se rules and the rule of reason. Part III examines four Supreme Court cases that provide guidance for the application of misuse principles in the copyright context. It then turns to an analysis of the application of copyright misuse in the federal courts of appeals. These discussions enable a distillation of guiding principles from the case law in an attempt to clarify the “current state of the copyright misuse doctrine.” Part IV applies the principles derived in Parts II and III to software copyrights and proposes a per se rule against licensing restrictions upon reverse engineering that complements antitrust-based misuse and the fair use doctrine. Rather than attempt to provide a comprehensive set of public policy-based misuse rules, this Article instead presents a single rule as

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an illustration of how further doctrinal development might proceed.

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I. INTRODUCTION: INTELLECTUAL PROPERTY AND ITS MISUSE

Intellectual property misuse is a common law defense to infringement that derives from the equitable doctrine of “unclean hands.”¹ The defendant raising the defense need not be affected by the plaintiff’s inequitable conduct.² However, in some jurisdictions, a defendant may be barred from raising the defense if the defendant’s hands are unclean.³ When defendants successfully use misuse defenses, the courts bar immediate relief from the “guilty” plaintiffs. However, the misuse doctrine does not bar future reliance on the courts. The intellectual property owners may return to court once they have “purged” the misuse, for example, by striking anticompetitive provisions in their licensing agreements.⁴

Judicial creation of intellectual property misuse doctrines has been piecemeal, beginning with patent misuse and only recently moving into copyright misuse. Both trademark and trade secret misuse remain subjects for academic discussion without practical force in the courts.⁵ Although

1. See, e.g., *Atari Games Corp. v. Nintendo of Am. Inc.*, 975 F.2d 832, 846 (Fed. Cir. 1992) (“In the absence of any statutory entitlement to a copyright misuse defense, however, the defense is solely an equitable doctrine. Any party seeking equitable relief must come to the court with ‘clean hands.’”) (quoting *Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240, 244 (1933) (applying Ninth Circuit law)); see also *United States Gypsum Co. v. Nat’l Gypsum Co.*, 352 U.S. 457, 465 (1957) (explaining extension of unclean hands doctrine to patent law).

2. *Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970, 979 (4th Cir. 1990).

3. The Ninth Circuit may preclude a defendant from invoking the equitable doctrine of misuse where the defendant has unclean hands. *Atari Games Corp.*, 975 F.2d at 846. However, not all courts require that the defendant to an infringement suit have clean hands in order to raise a misuse defense; they may simply refuse to enforce the intellectual property right if the plaintiff has unclean hands, regardless of whether the defendant also does. See *Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772, 794-95 (5th Cir. 1999) (considering contrary opinions of “a smattering of other courts” to be “unpersuasive”).

4. See *Lasercomb*, 911 F.2d at 979 n.22 (“This holding, of course, is not an invalidation of *Lasercomb*’s copyright. *Lasercomb* is free to bring a suit for infringement once it has purged itself of the misuse.”); see also *United States Gypsum*, 352 U.S. at 465 (same in patent misuse context).

5. Trademark misuse today resembles copyright misuse twenty years ago: it has been raised as a defense in trademark infringement cases but is not widely recognized. See *infra* note 52. However, we mention trademark misuse because its equitable origin resembles patent and copyright misuse, and it may evolve along similar lines if trade-

intellectual property misuse has been mentioned or alluded to in its various forms by courts for over a century, the Supreme Court did not establish the patent misuse doctrine until 1954 in *Morton Salt Co. v. G.S. Suppiger*.⁶ Since then, patent misuse has developed significantly. Yet copyright misuse, which was mentioned in dictum in the *Morton Salt* opinion,⁷ remained in limbo until the 1990 *Lasercomb America Inc. v. Reynolds* decision of the Fourth Circuit, which expressly upheld the doctrine's existence.⁸ Since 1990, both the Fifth and Ninth Circuits have established copyright misuse as a viable defense in their jurisdictions.⁹ The Supreme Court and the remaining circuit courts have not established this defense, leaving the doctrine's fate uncertain.

Today, patent misuse is a well-established doctrine where courts generally apply antitrust principles to determine whether a patentee's use is misuse.¹⁰ In fact, Congress amended the patent law to require a showing of "market power in the relevant market for the patent or patented product" for a misuse defense to be successful in "tying" cases—when a patent owner conditions a license or the sale of a patented product on the "acquisition of a license to rights in another patent or purchase of a separate

marks increasingly allow their owners to restrain competition. See *Carl Zeiss Stiftung v. V.E.B. Carl Zeiss, Jena Steelmasters, Inc.*, 298 F. Supp. 1309, 1314 (S.D.N.Y. 1969) (recognizing that antitrust violation can constitute a trademark misuse defense, but only when the trademark is the primary instrument in restraining competition); *Estee Lauder, Inc. v. The Fragrance Counter, Inc.*, No. 99 Civ. 0382, 1999 U.S. Dist. LEXIS 14825 (S.D.N.Y. Sept. 24, 1999).

6. 314 U.S. 488, 494 (1942).

7. *Id.*

8. *Lasercomb*, 911 F.2d at 979.

9. *Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516 (9th Cir. 1997); *Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772 (5th Cir. 1999).

10. Modern day patent misuse "requires that the alleged infringer show that the patentee has impermissibly broadened the 'physical or temporal scope' of the patent grant with anticompetitive effect." *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986) (quoting *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 343 (1971)). The courts generally follow a rule of reason approach with a few per se misuse exceptions. See *Va. Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997); *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992) (establishing rule of reason analysis for patent misuse where conduct at issue is neither per se misuse nor exempt from misuse consideration by section 271(d) of the Patent Act). For historic treatment of patent misuse, see, for example, Troy Paredes, *Copyright Misuse and Tying: Will Courts Stop Misusing Misuse?*, 9 HIGH TECH. L.J. 271, 278-79 (1994); Patricia A. Martone et al., *The Patent Misuse Defense-Its Continued Expansion and Contraction*, 448 PLI/PAT 325, 333-35 (1996).

product.”¹¹ It is not surprising that patent misuse depends on patentees’ attempts to affect market dynamics, since the superceding public policy behind the patent system is to promote the creation and dissemination of utilitarian or functional innovation. This innovation is a primary upstream force behind downstream market dynamics.¹²

Copyright misuse, on the other hand, is far from well-established. Only recently have federal courts of appeals begun to apply affirmatively this doctrine. In three court of appeals cases, the courts have explicitly relied on public policy in lieu of antitrust principles in evaluating the misuse defense.¹³ Other courts of appeals, particularly the Seventh Circuit, have been less receptive to copyright misuse grounded in public policy. In *Saturday Evening Post Co. v. Rumbleseat Press, Inc.*,¹⁴ Chief Judge Posner extended his rationale regarding antitrust analysis in patent misuse cases to copyright misuse:

‘If misuse claims are not tested by conventional antitrust principles, by what principles shall they be tested? Our law is not rich in alternative concepts of monopolistic abuse; and it is rather late in the day to try to develop one without in the process subjecting the rights of patent holders to debilitating uncertainty.’ This point applies with even greater force to copyright misuse, where the danger of monopoly is less.¹⁵

Are claims of copyright misuse and violation of antitrust law really two sides of the same coin, both to be determined with “conventional antitrust principles”? Or, as many suggest, does copyright misuse embody more than market-based concerns? If so, by what principles should public policy-based misuse claims be tested? Should courts fashion common law rules to limit misuse? Can they do so without generating friction with the intellectual property and antitrust laws? Finally, even where antitrust prin-

11. 35 U.S.C. § 27(d) (1994). This section also exempts certain activities, such as the refusal to license, from the misuse defense. *Id.*

12. *See, e.g.*, J.H. Reichman & Jonathan A. Franklin, *Privately Legislated Intellectual Property Rights: Reconciling Freedom of Contract with Public Good Uses of Information*, 147 U. PA. L. REV. 875, 967 (1999) (noting that “information functions as the raw material” input into downstream applications); Brett Frischmann, *Innovation and Institutions: Rethinking the Economics of U.S. Science and Technology Policy*, 24 VT. L. REV. 347, 356-57, 377-82 (2000) (modeling the upstream-downstream relationships).

13. *See infra* Part III.B.

14. 816 F.2d 1191 (7th Cir. 1987).

15. *Id.* at 1200 (quoting *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 512 (7th Cir. 1982)); *see also infra* note 124 and accompanying text.

ciples govern, is the danger of monopoly really less for copyrighted innovations than for patented innovations?

This Article examines the copyright misuse doctrine and the principles with which courts evaluate misuse defenses. It is important to remember that copyright misuse is an evolving common law doctrine and that this Article provides only a static “snapshot” of its current state. However, when considering what copyright misuse ought to be in the future, one should take into account what the law is today. Accordingly, we devote substantial attention to the influential case law before turning to general principles.

Part II provides a brief introduction to the jurisprudential functions of the copyright misuse doctrine. It first develops a schematic model for understanding the jurisprudential relationship between the copyright misuse doctrine and copyright, patent, and antitrust laws. Next, it considers two approaches to formulating and applying misuse principles: *per se* rules and the rule of reason.

Part III analyzes the case law in the Supreme Court and the federal courts of appeals. Part III.A examines four foundational Supreme Court cases: *Morton Salt, United States v. Paramount Pictures, Inc.*,¹⁶ *United States v. Loew's, Inc.*,¹⁷ and *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*¹⁸ These cases provide lower courts guidance on what misuse principles should be applied in the copyright context. Parts III.B and III.C consider the case law in the federal courts of appeals, looking more carefully at the express application of copyright misuse as a defense to infringement to determine on what principles courts refuse to enforce the copyright, or apply the doctrine and fail to find misuse. Part III.B covers precedential case law, and Part III.C covers persuasive case law. Although the case law and legal commentary seem in disarray, Part III.D distills a set of guiding principles for evaluating copyright misuse and provides our “unified theory” of copyright misuse. It concludes that courts should ask first whether a challenged action amounts to *per se* misuse by looking to the facts for evidence of blatantly egregious conduct. Two sets of *per se* rules may be fashioned by the courts. The first type identifies misuse violating the public policy behind the intellectual property grant while the second type identifies misuse violating the antitrust laws. If a challenged action does not fit within either set of *per se* rules, we suggest

16. 334 U.S. 131 (1948).

17. 371 U.S. 38 (1962).

18. 441 U.S. 1 (1979).

that the courts then engage in a rule of reason analysis similar to that used by courts in the patent misuse and antitrust contexts.

Part IV applies the jurisprudential model and procedural principles developed in Part II to the unique context of software. Part IV.A explores the nature of software both as an innovation and in its wider landscape, emphasizing the ways that software challenges standard assumptions about copyright law. Part IV.B focuses on how the nature of software creates a substantive need for common law using the jurisprudential model from Part II. Part IV.B next turns to existing doctrines, namely fair use and anti-trust-based copyright misuse, identifying their limitations. We argue that these doctrines form part of an answer to the challenges posed by software, but that a need for doctrinal development remains. Finally, Part IV.C proposes refinements to the current approach to software, recommending that narrow public policy-based per se rules supplement a core antitrust-based defense. In particular, we advocate one per se rule against licensing restrictions that bar reverse engineering, although we envision that other per se rules might eventually be added along the guidelines we provide.

This Article provides a unified approach for development of the copyright misuse doctrine. The approach both recognizes a substantive need for common law using the jurisprudential model and recommends carefully crafted rules to meet that need.

II. JURISPRUDENTIAL FUNCTIONS OF COPYRIGHT MISUSE

Before exploring the copyright misuse case law, it is helpful to consider the justifications for and limitations of the common law doctrine.¹⁹

19. Federal common law-making has an extensive literature. See, for example, the numerous sources cited in HART & WECHSLER'S THE FEDERAL COURTS AND THE FEDERAL SYSTEM, ch. 7 (Fallon et al. eds., 4th ed. 1996); Symposium, 12 PACE L. REV. 227 (1992); Martin H. Redish, *Federal Common Law, Political Legitimacy, and the Interpretive Process: An "Institutionalist" Perspective*, 83 NW. U. L. REV. 761 (1989); Martha A. Field, *Sources of Law: The Scope of Federal Common Law*, 99 HARV. L. REV. 881 (1986); Thomas W. Merrill, *The Common Law Powers of Federal Courts*, 52 U. CHI. L. REV. 1 (1985). An important distinction between this Article's treatment of federal common law and that of most other commentators is that federalism concerns are not very important in the intellectual property misuse context. The common law misuse defense operates as a defense to an infringement claim originating from a federal intellectual property right. The sources of "friction" (or fear of judicial activism) primarily derive from separation of powers concerns and interstatutory concerns, i.e., potential conflicts between antitrust and patent, antitrust and copyright, or copyright and patent, rather than federalism. See *infra* Part I.A.2. For a discussion of limits on the federal courts' power to

When courts formulate and apply misuse principles, whether based in equity or antitrust, they affect the statutory scheme created by Congress. At first glance, only the copyright statute seems affected. However, as the case law analysis in Part III demonstrates, other areas of law, especially patent and antitrust, are implicated. This Part briefly develops a schematic model for understanding the jurisprudential relationship between the copyright misuse doctrine and copyright, patent, and antitrust laws. Next, this Part considers two approaches to formulating and applying misuse principles: *per se* rules and the rule of reason.

A. Three “Substantive” Legal Functions of the Misuse Doctrine

The misuse doctrine is a mechanism that operates on at least three distinct levels. First, it gives courts the flexibility to “fill in gaps” left in statutory law; we label this the *corrective function* of the misuse doctrine.²⁰ Second, the misuse doctrine allows courts to coordinate related and interdependent bodies of law; we label this the *coordination function*. Third, it allows courts to safeguard the public interest generally; we label this the *safeguarding function*. This subsection briefly explains the substantive nature of these three functions.

1. Corrective Function

The corrective function of the misuse doctrine involves both judicial interpretation of express statutory language and congressional intent, and judicial lawmaking where gaps in the substantive law exist.²¹ For the most part, judges are expected to exercise these functions within reasonable dis-

fashion common law, see Field, *supra* and Merrill, *supra*. For a discussion of separation of powers concerns arising from federal common law, see George D. Brown, *Federal Common Law and the Role of the Federal Courts in Private Law Adjudication—A (New) Erie Problem?*, 12 PACE L. REV. 229 (1992). Cf. William F. Baxter, *Separation of Powers, Prosecutorial Discretion, and the ‘Common Law’ Nature of Antitrust Law*, 60 TEX. L. REV. 661 (1982) (considering the separation of powers concerns regarding the exercise of prosecutorial discretion in light of the statutory scheme).

20. The gap-filling nature of common law is well known. See, e.g., Merrill, *supra* note 19, at 33-34; Thomas W. Merrill, *The Judicial Prerogative*, 12 PACE L. REV. 327, 354 (1992).

21. For the purposes of this Article and the common law misuse doctrine, “[i]nterpretation shades into judicial lawmaking on a spectrum, as specific evidence of legislative advertence to the issue at hand attenuates.” Field, *supra* note 19, at 894; see also *id.* at 893-95; Merrill, *supra* note 19, at 4-5. The fine distinctions between statutory interpretation and common law-making are simply less important in the misuse context, given the federal statutory schema involved. On the fine distinctions, see generally Field, *supra* note 19 and Redish, *supra* note 19. See also Robert S. Summers, *Statutory Interpretation in the United States*, in INTERPRETING STATUTES: A COMPARATIVE STUDY 407-59 (D. Neil MacCormick & Robert S. Summers eds., 1991).

cretion under the copyright, patent, and antitrust statutes. For example, much of the federal antitrust law that exists today derives from decades of dynamic common law-making by the federal courts.²² The broad precepts of the Sherman and Clayton Acts have produced a complex set of rules to effectuate the Acts' procompetitive agenda in light of changing social, technological, and economic factors under a large variety of factual settings.²³ Courts have also historically formulated common law in the patent and copyright areas.²⁴ Consider, for example, the fair use doctrine. Fair use was originally a common law defense before Congress stepped in to codify the doctrine in 17 U.S.C. § 107.²⁵ The fair use example highlights the fact that Congress can always, and sometimes does, supercede common law by passing a statute.²⁶ Thus, corrective common law-making can also be viewed as a signal to Congress that a gap exists.

22. See Baxter, *supra* note 19, at 662-73.

23. See *id.* The "broad language of Section 1 of the Sherman Act . . . is often viewed as inviting the courts to fashion a common law of anti-competitive practices." HART & WECHSLER'S THE FEDERAL COURTS AND THE FEDERAL SYSTEM 754 (citing Nat'l Soc'y of Prof'l Eng'rs v. United States, 435 U.S. 679, 688 (1978)); see Merrill, *supra* note 19, at 43-46 (1985). But see RICHARD POSNER, THE PROBLEMS OF JURISPRUDENCE 289 (1990) ("[F]ew statutes contain a delegation of common law authority to courts. The Sherman Act is not one of them."). For an interesting discussion of statutes as a starting point (or the initial conditions) for the development of common law, see Hon. Harlan Fiske Stone, *The Common Law in the United States*, in THE FUTURE OF THE COMMON LAW 120, 130-34 (1937).

24. Beyond the common law origins of intellectual property rights, courts have played an active role in developing common law in conjunction with statutory schema; examples include the doctrine of equivalents in patent law and the fair use and the first sale doctrines in copyright law. See MERGES ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 123-30, 345-348, 470-76, 490-98 (2000); James A.D. White, *Misuse or Fair Use: That is the Software Copyright Question*, 12 BERKELEY TECH. L.J. 251, 260-63 (1997) (discussing common law modification of copyrights and patents); Ralph S. Brown, Jr., *Unification: A Cheerful Requiem for Common Law Copyright*, 24 UCLA L. REV. 1070, (1977); see also Arti K. Rai, *Intellectual Property Rights in Biotechnology: Addressing New Technology*, 34 WAKE FOREST L. REV. 827, 831-38 (1999) (evaluating the Court of Appeals for the Federal Circuit's application of patent law doctrine to biotechnology).

25. 17 U.S.C. § 107 (1994). See David Nimmer, *A Riff on Fair Use in the Digital Millennium Copyright Act*, 148 U. PA. L. REV. 673, 741 n.360 (2000) (noting that both the fair use and the first sale doctrine were common law creations that Congress codified). For further discussion of the development of fair use, see Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors*, 82 COLUM. L. REV. 1600 (1982) (discussing the development of fair use); William W. Fisher III, *Reconstructing the Fair Use Doctrine*, 101 HARV. L. REV. 1661 (1988).

26. For an interesting discussion of the interaction between a common law rule and its subsequent codification, see John B. Shumadine, *Striking a Balance: Statutory Dis-*

As the label we attach suggests, the gap-filling and interpretive functions exercised by courts applying corrective common law are internal to the statutory body of law at issue. Courts correct legal ambiguities (of varying scope) within a statutory scheme.²⁷ For example, the set of judicially-crafted rules governing vertical price fixing derives from the express and implied policies underlying the Sherman Act, and the judicially-crafted fair use doctrine embodies equitable principles concerning the societal trade-off made via the copyright grant. In either case, the judicial power is cabined by the express and implied scope of the statute being interpreted or "filled in."²⁸ As will be explored in significant detail in Parts III and IV, the copyright misuse doctrine may be a vehicle for correcting various ambiguities or gaps in the copyright law, particularly as it is applied to software. For example, the inclusion of software within copyrightable subject matter exposes the absence of a disclosure requirement in the copyright law. While the traditional expression gaining statutory protection is naturally disclosed when encountered by the public—consider, for example, books, songs, and paintings, among others—the expression in the source and object code of software is not, jeopardizing the societal trade-off established by the copyright statute. The copyright misuse doc-

placement of Established Federal Common Law and the D'Oench Doctrine in Murphy v. F.D.I.C. and Motorcity of Jacksonville Ltd. v. Southeast Bank, 51 ME. L. REV. 129 (1999).

27. Some degree of legal ambiguity is unavailable, thereby necessitating judge-made law. Larry Kramer, *The Lawmaking Power of the Federal Courts*, 12 PACE L. REV. 263, 269 (1992).

That is, courts must make a certain amount of common law simply because there is no clear line between 'making' and 'applying' law, between commands that are clear on the face of a statute and those made through an exercise of judgment and creativity. Deciding individual cases thus generates some common law because the process of adjudication necessarily entails articulating rules to elaborate and clarify the meaning and operation of statutory texts.

Id.; see also Louise Weinberg, *Federal Common Law*, 83 NW. U. L. REV. 805, 839 (1989). In addition to constructing and interpreting statutes, Congress delegates lawmaking authority to the courts expressly or by implication under a broad mandate in many different areas. See, e.g., Redish, *supra* note 19, at 789 ("A more extreme example than section 1 of the Sherman Act is section 301(a) of the Labor Management Relations Act, which, as construed, vests unlimited authority in the hands of the federal judiciary to fashion a common law of labor agreements.") (internal footnotes omitted); George Lee Flint, Jr., *ERISA: Reformulating the Federal Common Law for Plan Interpretation*, 32 SAN DIEGO L. REV. 955, 967-70 (1995).

28. The internal (or intrastatutory) nature of corrective common law-making can be contrasted with the more complicated, interstatutory nature of coordination-oriented common law-making, where judges are forced to coordinate interrelated bodies of law. See *infra* Part II.A.2.

trine may fill the gap in the statute and protect public access to copyrighted expression.

2. *Coordination Function*

The coordination function of the misuse doctrine involves the reconciliation of external (or interstatutory) relationships between the related and interdependent bodies of antitrust, copyright, and patent law. While similar to the corrective function in that coordination involves statutory interpretation and gap-filling, it operates externally to any single body of law. The express or implied statutory objectives derived internally—from myopic consideration of a single body of law—may not lead to principled rules at the interfaces.²⁹ Common law misuse allows courts to develop rules that evolve dynamically. For example, in the patent misuse context, courts have coordinated patent and antitrust law. Over the course of the twentieth century, courts, as well as legislators, enforcement officials, and commentators, have struggled to resolve “conflicts” between the two bodies of law in a variety of ways, ranging from near preemption in favor of patentees to strict antitrust-based limits on patentees’ behavior in the marketplace to a moderated contemporary approach.³⁰ Today, the patent misuse doctrine’s reliance on antitrust principles reinforces the importance of the market mechanism in achieving the public policies embodied in both statutory schemes.³¹

29. Of course, where Congress expresses a default rule, as in preemption situations, then coordination by the courts is unnecessary. As will be seen in the Parts that follow, there is no clear statutory default to guide courts at the intersection of antitrust, copyright and patent law, particularly in the context of software.

30. See Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1813-20 (1984); John H. Barton, *Patents and Antitrust: A Rethinking in Light of Patent Breadth and Sequential Innovation*, 65 ANTITRUST L.J. 449, 449 (1997) (noting the stark change from “the 1970s pattern of weak patent law and strong antitrust law [to the] 1990s pattern of strong patent law and weak antitrust law”).

31. Congress took an active role in coordinating patent and antitrust under the misuse doctrine when it modified the common law patent misuse doctrine by passing the Patent Reform Act, codified at 35 U.S.C. § 271 (1994). The Act prevents per se misuse treatment for refusals to license and tying arrangements, requiring instead that courts determine whether a patent holder possessed sufficient market power to give rise to an antitrust violation. See 35 U.S.C. § 271(d)(4)-(5) (1994). Since the Act’s passage, the Federal Circuit has taken a more lenient view of licensing agreements in some cases. See, e.g., *Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1408 (Fed. Cir. 1996) (allowing royalty arrangement that covered unpatented components as a convenient, non-coercive way for patentee to determine value of license); *Carborundum Co. v. Molten Metal Equip. Innovations, Inc.*, 72 F.3d 872, 880 (Fed. Cir. 1995) (recognizing patentee’s right to determine best way to maximize profits from invention, whether through direct production, licensing, or withholding of patent); see also *Cygnus Therapeutic Sys. v. ALZA Corp.*,

In the copyright misuse context, courts coordinate both copyright and antitrust law as well as copyright and patent law. As will be seen in Parts III and IV, coordinating copyright and antitrust law leads to a copyright misuse doctrine that is identical to the patent misuse doctrine—both rely on antitrust principles for a finding of misuse. However, the coordination of copyright and patent law is a more complicated task because it involves important policy decisions as to the appropriate social cost-benefit trade-off for promoting development of different types of innovation.³² For the most part, this task should be left to Congress because of its constitutional authority under the Intellectual Property Clause and its presumptive institutional competence in developing policy. However, judges may be forced to coordinate, or at least to signal to Congress that coordination is necessary, where friction between the two intellectual property regimes arises.³³ As will be explored in more detail in Part IV,³⁴ copyright protection of computer software, which derives its economic value from the functional

92 F.3d 1153 (Fed. Cir. 1996); *Rite-Hite Corp. v. Kelley Co., Inc.*, 56 F.3d 1538 (Fed. Cir. 1995).

32. The important differences between the patent and copyright systems flow from differences in the subject matter they cover. While the patent system embodies the socially acceptable trade-off for functional innovations, allowing patented innovations to receive the strongest form of protection for the shortest duration, the copyright system embodies the socially acceptable trade-off for nonfunctional, expressive works, providing a weaker form of protection than patents but for a longer duration.

Both forms of intellectual property represent a legislatively determined trade-off between increased ex ante incentives for investment and reduced ex post utilization through an exclusive property right, where in a rough sense, it is accepted that the social benefits of increased supply exceed the social costs of short term inefficient use. Implicit in the socially-approved incentive structure is a corresponding increase in the supply of innovation over the long-term. Moreover, the intellectual property laws ensure some short-term dissemination, for example, through disclosure patent publication. Importantly, the economic trade-offs involved in utilizing the intellectual property system to promote innovation are considerably more nuanced than the traditionally examined exchange of temporary monopoly rents for improved investment. See Brett Frischmann, *Innovation and Institutions: Rethinking the Economics of U.S. Science and Technology Policy*, 24 VT. L. REV. 347 (2000); J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432 (1994) (discussing many of the nuances); A. Samuel Oddi, *Un-Unified Economic Theories of Patents—The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267 (1996).

33. See *infra* note 35.

34. In Part III.B, note that many of the copyright misuse cases arising in the federal courts of appeals involve software copyright infringement. Part IV details some of the inherent difficulties in protecting software through copyright.

ends it facilitates rather than its expressive content, gives rise to such friction.³⁵

3. *Safeguarding Function*

Finally, when exercising the safeguarding function, courts play their traditional role as “balancer of equities” in specific cases. Misuse doctrines grew from the equitable notion that a plaintiff with “unclean hands” could not use the courts to obtain redress. In addition to balancing the equities between the parties to a case, courts safeguard the public policy underlying the governing statutory scheme where internal statutory protections are lacking and an external conflict is not implicated.³⁶ For example, copyright holders who use their copyrights to gain leverage through licensing provisions that broaden the scope of their copyright may be misusing their copyright even if the leveraging is insufficient to raise antitrust concerns.³⁷

The final Part of this Article demonstrates that the copyright misuse doctrine may apply in the computer software context under each jurisprudential function. First, it may correct for the absence of an explicit disclosure requirement in copyright law.³⁸ Second, it may be used to coordinate copyright, patent, and antitrust law. And finally, it may safeguard several interrelated public interests underlying the copyright laws: (1) promoting creative transfers; (2) preserving the unlimited reuse of ideas and unprotected expression; and (3) stimulating downstream innovation and competition in software development. In addition to the “substantive” demand

35. See, e.g., *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596, 598 (9th Cir. 2000) (“In this case we are called upon once again to apply the principles of copyright law to computers and their software, to determine what must be protected as expression and what must be made accessible to the public as function.”); *White*, *supra* note 24, at 252 (“Computer software is distinct from other forms of copyrighted works in various ways, providing more market power to the copyright owner and impacting federal patent law in ways that require restraints on the actions of software copyright owners.”) (emphasis added).

36. Courts should only exercise the safeguarding function when gap-filling or coordinating is also necessary; otherwise, courts are likely to overreach into the legislative power. See generally *Brown*, *supra* note 19, at 235 (discussing the academic separation of powers debate as to whether federal common law-making power is coordinate or subordinate to the congressional lawmaking power). This Article does not seek to resolve this debate.

37. See *infra* Parts III.B (discussing *Lasercomb*, *Practice Management*, and *Alcatel*) and III.D.2 (discussing public policy-based misuse).

38. See *infra* Part IV. As will be explored in more detail in Part IV, the copyright misuse doctrine may enable courts to effectuate the implicit (yet statutorily absent) public policy favoring disclosure of copyright-protected expression.

for correction, coordination, and equitable safeguards,³⁹ the case-by-case nature of judicial rulemaking has a "procedural" component that must also be considered.

B. "Procedural" Rules Guiding Application of the Misuse Doctrine: Per Se Rules and the Rule of Reason

This section provides a brief explanation of the types of rules that judges create when formulating the substantive common law discussed above. The creation of common law depends upon case by case adjudication and the evolution of judicial precedent. The legally binding nature or precedential value of a substantive rule depends in part upon the manner in which it is applied in subsequent cases.

"Per se" and "rule of reason" describe *procedural* approaches to judicial decisionmaking. Numerous formulations and explanations of what these labels mean can be found in the antitrust case law and literature.⁴⁰ Generally, they differentiate the degree to which judges entertain evidence and certain defenses when applying the law in a given case.⁴¹ In theory, an absolute per se rule would preclude any defense and restrict the presentation of evidence to what is needed to characterize the alleged conduct as fitting within the per se classification. In practice, defenses creep into the characterization.⁴² At the opposite extreme from per se rules is the rule of reason approach. The rule of reason involves a comprehensive, fact-intensive inquiry where, in the end, courts assess the *reasonableness* of contested conduct.⁴³ The "quick look" approach is something between strict per se and rule of reason, either a slightly more involved consideration of evidence and defenses in the per se context or a slightly less involved balancing approach.⁴⁴

In *Broadcast Music*, an important case discussed fully in Part III, the Supreme Court mandated that courts apply a per se rule when "the practice

39. See White, *supra* note 24, at 287 (discussing the emerging need for judicially-imposed copyright limitations in the software context).

40. See generally MILTON HANDLER ET AL., TRADE REGULATION, ch. 4 (4th ed. 1997).

41. For an interesting discussion of per se rules in antitrust law, see Thomas G. Krattenmaker, Commentary, *Per Se Violations in Antitrust Law: Confusing Offenses with Defenses*, 77 GEO. L.J. 165 (1988).

42. The *Broadcast Music* case analyzed in Part III provides an excellent example.

43. Thus, in an antitrust case, successful characterization of conduct as per se illegal obviates the court's need to consider actual competitive effects because anticompetitive effects are presumed to exceed procompetitive effects.

44. See generally MILTON HANDLER ET AL., TRADE REGULATION, ch. 4 (4th ed. 1997).

facially appears to be one that would always or almost always tend to restrict competition and decrease output.”⁴⁵ Judge Posner reframed the *Broadcast Music* test in *General Leaseways*: “if the elimination of competition is apparent on a quick look, without undertaking the kind of searching inquiry that would make the case a [r]ule of [r]eason case in fact if not in name, the practice is illegal per se.”⁴⁶ In *General Leaseways*, the Seventh Circuit concluded “on the basis of the record compiled in the preliminary injunction hearing” that the market division at issue was a per se violation of the Sherman Act.⁴⁷

In this Article, per se rules are similarly narrow legal constructions that fulfill the “facially apparent” and “always or almost always” requirements.⁴⁸ On the other hand, the rule of reason encompasses a full consideration of the evidence and relevant defenses in a balancing or reasonableness inquiry. This Article rejects a rule of reason approach outside the antitrust context because the requisite balancing of public interests—market and non-market-based—involves policy decisions best left to the legislative branch. By the same token, courts should also be wary of creating per se rules where the corrective, coordination, and safeguarding functions involve a complex balancing of public interests.

The unified approach to assessing misuse, presented below in Part III.D.3, argues that (1) courts should apply traditional antitrust principles, consisting of per se rules and the rule of reason, when coordinating copyright and antitrust or gap-filling along the interface of these bodies of law; and (2) courts should avoid any form of reasonableness or balancing test and should constrain themselves to formulating per se rules when filling gaps in the copyright laws, coordinating copyright and patent law, or safeguarding the policies underlying the copyright laws. This approach limits

45. *Broadcast Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 19-20 (1979); *accord* *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 133 (1998) (“Yet certain kinds of agreements will so often prove so harmful to competition and so rarely prove justified that the antitrust laws do not require proof that an agreement of that kind is, in fact, anti-competitive in the particular circumstances.”); *State Oil Co. v. Khan & Assocs.*, 522 U.S. 3, 10 (1997). “The *per se* rules avoid ‘the necessity for an incredibly complicated and prolonged economic investigation . . . in an effort to determine at large whether a particular restraint has been unreasonable.’” *Fed. Trade Comm’n v. Superior Court Trial Lawyers Ass’n*, 493 U.S. 411, 430 (1990) (quoting *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1, 5 (1958)). Thus, the administrative costs of adjudicating each case exceed the error costs (i.e., the cost of finding the occasional situation where a restraint is reasonable is not worth the adjudication costs).

46. *General Leaseways, Inc. v. Nat’l Truck Leasing Ass’n*, 744 F.2d 588, 595 (7th Cir. 1984).

47. *Id.*

48. *Broadcast Music*, 441 U.S. at 19-20.

judicial lawmaking to the formulation of per se rules based on recognizable and egregious factual settings that implicate the concerns mentioned in Part II.A. A per se rule is a clearer signal to Congress and the public of a gap or conflict in the law; additionally, per se rules more clearly delineate the intellectual property rights themselves.⁴⁹ A reasonableness or balancing test inquiry would be problematic because judges are left to value and balance public interests in the absence of statutory guidance against other public interests recognized in the statute. Restricting common lawmaking, particularly of common law defenses to statutorily-recognized infringement, to per se rules limits the frequency and effects of judicial activism to egregious cases.⁵⁰

III. THE COMMON LAW EVOLUTION OF COPYRIGHT MISUSE

Although intellectual property misuse can be traced back to early notions of equity, the doctrine has experienced different evolutionary tracts

49. Compare Ben Sheffner, *Alcatel USA, Inc. v. DGI Technologies, Inc.*, 15 BERKELEY TECH. L.J. 25, 44 (2000) ("While concerns about vagueness are understandable, they do not seem any stronger in this context than are similar concerns about the application of the fair use doctrine in copyright or the notoriously slippery 'rule of reason' mode of analysis in antitrust."), with William W. Fisher III, *Reconstructing the Fair Use Doctrine*, 101 HARV. L. REV. 1661, 1668 (1988) (discussing the fair use doctrine as an "equitable rule of reason").

50. Cf. White, *supra* note 24, at 279. White writes:

[U]sing a judicial doctrine to define the appropriate scope of rights for a 'scope of the grant' analysis has its own problems. In particular, such a scheme would create debilitating uncertainty if intellectual property owners do not know the extent of the rights granted to them until after judicial intervention in an enforcement action. In this situation, any benefits achieved by a careful balancing of rights would likely be overshadowed by the transaction costs associated with the system. Such a system would thus be unworkable if each individual creator needed to rely on a judicial pronouncement for a definition of his rights. One solution, however, is to balance the rights for a class of works rather than for each individual work. A small number of judicial decisions could then define the scope of the rights granted to creators of works in each class, and the resulting uncertainty would be no more than exists in any common law system of jurisprudence, including that of antitrust law. Of course, such a system would be practical only if the determination of class membership was simple, and would be reasonable only if the works in the class had shared features which altered the normal balance of rights and thus justified a judicial restriction on the standard statutory grant.

Id. (citations omitted).

in the patent, trademark, and copyright areas. Patent misuse is a technical defense to infringement that relies largely on antitrust analysis for resolution.⁵¹ Trademark misuse, on the other hand, remains an inchoate collection of principles largely based in equity and is not a recognized defense in most jurisdictions.⁵² Copyright misuse resembled trademark misuse until 1990, when the Fourth Circuit recognized the former doctrine.⁵³ Since 1990, the common law development of copyright misuse has yielded two schools—(1) courts that apply a “public policy approach” to assessing misuse, and (2) courts that apply an “antitrust approach.” After reviewing the significant case law, we analyze these two schools of thought and explain how they can be reconciled.

In an effort to establish what the copyright misuse doctrine is today, this Part takes a careful look at the precedential case law.⁵⁴ Accordingly,

51. See, e.g., *Saturday Evening Post Co. v. Rumbleseat Press, Inc.*, 816 F.2d 1191, 1200 (7th Cir. 1987) (citing *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 512 (7th Cir. 1982)).

52. See, e.g., *Northwestern Corp. v. Gabriel Mfg. Co.*, No. 95 C 2004, 1998 U.S. Dist. LEXIS 12763 (N.D. Ill. Aug. 14, 1998) (“The main difficulty with the present motion seems to be that the defense of trademark misuse is a phantom defense.”). *But cf.* *Manhattan Med. Co. v. Wood*, 108 U.S. 218 (1883) (rejecting enforcement of trademark on equitable grounds); *United States Jaycees v. Cedar Rapids Jaycees*, 794 F.2d 379 (8th Cir. 1986); *Carl Zeiss Stiftung v. V.E.B. Carl Zeiss, Jena, Steelmasters, Inc.*, 298 F. Supp. 1309 (S.D.N.Y. 1969) (recognizing that antitrust violation can constitute a trademark misuse defense, but only when trademark is primary instrument in restraining competition); *Estee Lauder, Inc. v. The Fragrance Counter, Inc.*, No. 99 Civ. 0382, 1999 U.S. Dist. LEXIS 14825 (S.D.N.Y. Sept. 24, 1999).

53. Two early unclean hands cases involving copyrights are illustrative (both were cited by the Supreme Court in *Morton Salt*). In the first, *Edward Thompson*, the plaintiff published two encyclopedias and claimed that the defendant copied them directly in putting together a separate work. *Edward Thompson Co. v. Am. Law Book Co.*, 122 F. 922 (2d Cir. 1903). The defendant argued that both competitors engaged in the same practice—the plaintiff also had compiled his information from the works of others. See Raymond Nimmer & Murali Santhanam, *The Concept of Misuse in Copyright and Trademark Law: Searching for a Concept of Restraint*, 524 PLI/PAT 397, 410 (June 1998). Relying on equity, the court refused to punish the defendant in light of the plaintiff’s unclean hands. In the second case, *Stone & McCarrick*, misleading representations by the infringement plaintiff regarding infringement led the Fifth Circuit to withhold protection for an instruction manual. See *Stone & McCarrick, Inc. v. Dugan Piano Co.*, 220 F. 837 (5th Cir. 1915). Neither case mentioned copyright misuse, but both decisions affirmed a clean hands defense to copyright infringement.

54. We take as a given that the doctrine in fact exists. The existence of the copyright misuse doctrine is considered uncertain due to a lack of statutory basis and no express recognition by the U.S. Supreme Court. However, in our opinion, the degree of uncertainty as to mere existence is small. A significant number of federal courts have applied the doctrine, thereby providing a concrete legal foundation that is binding in various jurisdictions.

Part III.A analyzes four foundational Supreme Court cases that impact the evolution of the copyright misuse: *Morton Salt*, *Paramount Pictures*, *Loew's*, and *Broadcast Music*. These cases provide lower courts guidance on misuse principles that can be applied in the copyright context.⁵⁵ Parts III.B and III.C consider the case law in the federal courts of appeals, looking more carefully at the express application of copyright misuse as a defense to infringement to determine on what principles courts refuse to enforce the copyright or apply the doctrine and fail to find misuse. Part III.B focuses on the precedential case law where a copyright misuse defense is expressly established, and Part III.C focuses on persuasive case law where a copyright misuse defense is considered but not found to exist. Each section ends with interim conclusions to provide a comprehensive outlook on how the cases relate to each other. Finally, Part III.D extracts guiding principles from the case law in an attempt to clarify where the copyright misuse doctrine stands today.

A. Copyright Misuse: U.S. Supreme Court Case Law

1. *Morton Salt Co. v. G.S. Suppiger (1942)*

*Morton Salt*⁵⁶ lays the foundation for copyright misuse. The reasoning employed by the Court addresses patent misuse, while the dicta and commentary address copyright misuse. Moreover, the Court cited two cases “for application of the like doctrine in the case of copyright,” indicating the Court’s recognition that misuse principles can be applied broadly.⁵⁷

In 1942, the Supreme Court firmly established the patent misuse doctrine.⁵⁸ Although courts have applied patent misuse since 1917,⁵⁹ pre-1942

This Part does not trace the historical development of copyright misuse from generic “clean hands” defenses to patent misuse and onwards through dicta referring to a possible existence of copyright misuse—this is done elsewhere in the literature. See e.g., Nimmer & Santhanam, *supra* note 53; G. Gervaise Davis III, *The Growing Defense of Copyright Misuse and Efforts to Establish Trademark Misuse: Legitimate Restraints on Copyright Owners or Escape Routes for Copyright Infringers? Ways of Protecting Domain Names?*, 524 PLI/PAT 433, 450 (June 1998). Of course, the historical development of patent and trademark misuse doctrine affects the legal standing of copyright misuse. See also *supra* note 10 (patent misuse); *supra* note 5 (trademark misuse).

55. Moreover, these cases lend sufficient support for the existence of a copyright misuse doctrine.

56. *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942).

57. *Id.* at 494. The two cases cited by the Court are *Edward Thompson Co. v. Am. Law Book Co.*, 122 F. 922 (2d Cir. 1903) and *Stone & McCarrick, Inc. v. Dugan Piano Co.*, 220 F. 837 (5th Cir. 1915). See discussion of these cases *supra* note 53.

58. *Morton Salt*, 314 U.S. at 494.

59. See, e.g., *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917).

patent misuse resembles today's copyright misuse—evolving doctrinally with an uncertain future. Morton licensed its patented salt-depositing machine with a condition that licensees exclusively use Morton's salt tablets. The Court found that using the patent to restrain competition in a market for unpatented goods (i.e., the salt tablets) was patent misuse. The Court stressed that the public policy behind the patent system involved a delicate balance between the social benefits of improved progress in "Science and the useful Arts" and the social costs of granting a "limited monopoly."⁶⁰ Tipping the balance by using the "granted monopoly" to "secure an exclusive right or limited monopoly not granted" is forbidden and contrary to the public policy behind the system.⁶¹ Courts of equity "may rightly withhold assistance from such use of the patent by declining to entertain a suit for infringement, and should do so at least until it is made to appear that the improper practice has been abandoned and that the consequences of the [patent misuse] have been dissipated."⁶²

The *Morton Salt* misuse defense was based in equity and did not mirror the statutory antitrust law. Notably, the Court distinguished the patent misuse defense from traditional antitrust analysis under the Clayton Act and reversed the Seventh Circuit opinion which relied on a finding that the patent did not substantially lessen competition for salt tablets.⁶³ Thus, although patent misuse in tying cases was later modified by legislation to resemble an antitrust-based defense,⁶⁴ the original basis in equity may also apply to copyright misuse today. Moreover, the two copyright cases cited by the Court are both copyright infringement actions wherein a defense based in equity prevailed.⁶⁵ Neither case involved antitrust law nor anti-competitive behavior that would rise to the level of an antitrust violation today.

2. *United States v. Paramount Pictures, Inc. (1948)*

Although *Paramount Pictures*⁶⁶ did not involve a copyright misuse defense, it sets the stage for more intensive judicial scrutiny at the interface of copyright and antitrust. The Court relied on the *Morton Salt* rationale and emphasized the inherent dependence of the success of the copyright

60. *Morton Salt*, 314 U.S. at 492 (citing U.S. CONST. art. I, § 8, cl. 8 and 35 U.S.C. § 31 (1994)).

61. *Id.*

62. *Id.* at 493.

63. *Id.* at 490.

64. 35 U.S.C. § 271(d) (1994).

65. The cases, *Edward Thompson* and *Stone & McCarrick*, are discussed *supra* note 53.

66. *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 (1948).

laws in achieving their ends on efficient operation of the market. The opinion demonstrates interstatutory coordination at the interface of anti-trust and copyright law.

In a multi-faceted antitrust action brought by the United States against various companies in the motion picture industry,⁶⁷ the Court addressed the issue of block-booking of copyrighted material for the first time. Block-booking is a particular tying arrangement where the sale or license of one or more copyrighted works is conditioned on the sale or license of other copyrighted works. The Court condemned the practice as a means used to enlarge the scope of individual copyrights and directly cited *Morton Salt* for support.

Paramount Pictures focused extensively on the public policy behind the issuance of an intellectual property right and the carefully prescribed balance achieved by the statutory scheme.⁶⁸ Moreover, the Court went further and recognized that the public policy behind granting intellectual property is dependent upon successful operation of the market mechanism, which allows consumers to differentiate among innovations based upon quality.⁶⁹ This concept acknowledges a role for the market in shaping the scope and value of an intellectual property right and reaffirms the role of antitrust law in protecting market dynamics. The citation to *Morton Salt* acknowledges (or suggests) that the misuse doctrine also plays a role in cabining the scope of an intellectual property right.

3. *United States v. Loew's, Inc. (1962)*

Along with *Paramount Pictures*, the *Loew's*⁷⁰ opinion is often cited as support for copyright misuse claims.⁷¹ While *Loew's* clearly supports extension of antitrust-related presumptions to the copyright misuse context, it does not appear to support extension of misuse principles from patent to copyright.⁷²

Loew's presented the Supreme Court with the issue of whether block-booking violated section 1 of the Sherman Act. The Court upheld the

67. The United States brought suit under section 4 of the Sherman Act to prevent and restrain violations. 15 U.S.C. § 4 (1994).

68. See *Paramount Pictures*, 334 U.S. at 157-58.

69. *Id.* at 158.

70. *United States v. Loew's, Inc.*, 371 U.S. 38 (1962).

71. For example, the Fourth Circuit's *Lasercomb* decision, discussed *infra* Part III.B, cited *Loew's* in extending the misuse defense from patents to copyrights based on the "similarity of rationales" underlying the two systems. *Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970, 973-74 (4th Cir. 1990). See also *United Tel. Co. of Mo. v. Johnson Publ'g Co.*, 855 F.2d 604, 611 (1988) (noting that Johnson cited *Loew's* in its brief).

72. *But see Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942).

lower court's finding that the practice was an antitrust violation.⁷³ Relying on *International Salt*⁷⁴ and *Paramount Pictures*, the Court recognized a presumption that a copyright confers sufficient economic leverage to induce purchasers to go along with a tying arrangement.⁷⁵ The Court also reasoned that the existence of substitutes does not destroy the presumption of market power.⁷⁶

Statutory developments since the *Loew's* decision make it unlikely that the Court's presumptions regarding copyrights could operate under an antitrust-based misuse analysis today.⁷⁷ For example, in the patent misuse context, where contemporaneous antitrust-based presumptions stood on firmer ground, the law now requires a showing of market power.⁷⁸ Courts, enforcement officials, and commentators alike have generally leaned away from presuming that intellectual property confers market power.⁷⁹ None-

73. The Court modified the injunctive decrees of the lower court, requiring film distributors to offer individually priced films up front, prohibiting illegitimate non-cost based price differentials between films offered individually and those offered in a package, and prohibiting temporary refusals to deal except as necessary for bona fide negotiations with competing stations.

74. *Int'l Salt Co., Inc. v. United States*, 332 U.S. 392, 396 (1947).

75. *Loew's*, 371 U.S. at 45-46. In a related fashion, the Court recognized a second presumption that a copyrighted work is unique. *Id.* at 48.

76. *Id.* at 49.

77. Some commentators have questioned the logic of scrutinizing tying arrangements at all: "[T]he tying arrangement, whatever else it may accomplish, is obviously not a means of gaining two monopoly profits from a single monopoly." ROBERT BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 373 (1978); see also *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 511 (7th Cir. 1982) (Posner, J.) ("If . . . the patent owner requires the licensee to agree to continue paying royalties after the patent expires, he will not be able to get him to agree to pay as big a royalty before the patent expires."). For a critique of Judge Bork's and Chief Judge Posner's view, see Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515, 516, 523-24 (1985) (questioning that extant power is a fixed sum (where this power is compared to a stick of dynamite) by suggesting that how the power is deployed may entail significantly different effects (e.g., whether the dynamite is left whole in the middle of a room or broken in half for placement under both structural members of a building)).

78. See Act of Nov. 19, 1988, Pub. L. No. 100-703, tit. II, § 20, 102 Stat. 4676 (codified as amended at 35 U.S.C. § 271(d)(5) (1994)).

79. See U.S. Dep't of Justice & FTC, *ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY* (1995), <http://www.usdoj.gov/atr/public/guidelines/ipguide.htm> [hereinafter *ANTITRUST GUIDELINES*]; see also Robert H. Lande & Sturgis M. Sobin, *Reverse Engineering of Computer Software and U.S. Antitrust Law*, 9 HARV. J.L. & TECH. 237, 238 (1996) (recognizing that software copyrights "are not likely to raise significant antitrust issues"); Roger E. Memers & Robert J. Staaf, *Patents, Copyrights, and Trademarks: Property or Monopoly?*, 13 HARV. J.L. & PUB. POL'Y 911 (1990) (discussing the role of exclusive rights to use intangible goods in the market).

theless, this issue has not yet been visited in the copyright context, and *Loew's* has yet to be overruled.

4. *Broadcast Music, Inc. v. CBS (1979)*

In *Broadcast Music*,⁸⁰ the Court recognized the economics of copyrights, including the inherent transaction costs associated with monitoring and enforcement and the implications for efficient licensing. As a result, the court required a rule of reason approach to evaluating the lawfulness of the blanket licenses used by the American Society of Composers, Authors and Publishers ("ASCAP") and Broadcast Music, Inc. ("BMI"). Although copyright misuse is not expressly considered in its opinion, the Court's antitrust analysis illuminates a set of guiding principles to be applied when an asserted misuse defense is based upon anticompetitive behavior.⁸¹

Columbia Broadcasting System, Inc. ("CBS") brought suit against ASCAP, BMI, and their members and affiliates seeking an injunction under the antitrust laws⁸² and a declaratory judgment of copyright misuse.⁸³ After dismissal by the district court, the Second Circuit reversed and remanded.

Similar to the block-book licensing of *Paramount* and *Loew's*, ASCAP and BMI each managed portfolios of copyrighted musical works and issued blanket licenses to perform each and every composition contained therein. The Supreme Court left intact the Second Circuit's holding that the blanket licenses were distinguishable from block-booking due to the available opportunity to negotiate individual licenses and, therefore, were not unlawful tying arrangements. The Supreme Court focused instead on the blanket license as an unlawful means of price fixing.

The Supreme Court reversed both the Second Circuit's holding that ASCAP's and BMI's blanket licensing policies amounted to *per se* violations of the Sherman Act and "the copyright misuse judgment dependent

80. *Broadcast Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1 (1979); *see also* *Columbia Broad. Sys., Inc. v. Am. Soc'y of Composers, Authors and Publishers*, 562 F.2d 130 (2d Cir. 1977).

81. In *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1 (1958), the Supreme Court similarly rejected application of a *per se* rule to tying arrangements absent a showing that the defendant had market power in the tying product. *Id.* at 11-12.

82. Specifically, CBS claimed that the defendants' licensing practices violated both sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1-2 (1994), and sought an injunction under section 16 of the Clayton Act, 15 U.S.C. § 26 (1994 & Supp. IV 1998). *CBS*, 562 F.2d at 132.

83. The declaratory judgment was sought under the Declaratory Judgment Act, 28 U.S.C. §§ 2201-2202 (1994).

upon it.”⁸⁴ The Second Circuit did not hold that blanket licenses were *per se* violations; it held “that the ASCAP blanket license *in its present form* is price-fixing and with respect to the television networks cannot be saved by a ‘market necessity’ defense. It therefore constitutes a violation of Section 1 of the Sherman Act.”⁸⁵ Thus, because price fixing is *per se* unlawful, this particular form of blanket license violated antitrust law.⁸⁶

The Supreme Court refused to “wholly equate[]” the collective arrangement among copyright holders to the “simple horizontal arrangement among competitors.”⁸⁷ Commercial copyright transactions require negotiation, monitoring, and enforcement that can be prohibitively costly for individuals but minimized through collective arrangements. Although not quite a “market necessity,” blanket licenses may increase the private and social benefits of copyrighted works and improve market functionality by overcoming prohibitive transaction costs through economies of scale. Therefore, the Court concluded that blanket licenses do not “facially appear[] to . . . always or almost always tend to restrict competition and decrease output”⁸⁸—analysis of actual competitive effects was needed.

Justice Stevens, in his dissent, applied a rule of reason analysis and found the particular blanket licenses to be unlawful.⁸⁹ He argued that “[t]he rules which prohibit a patentee from enlarging his statutory monopoly by conditioning a license on the purchase of unpatented goods, or by refusing to grant a license under one patent unless the licensee also takes a license under another, are equally applicable to copyrights.”⁹⁰ In doing so, he cited, *inter alia*, two leading patent misuse cases, *Paramount* and *Loew’s*.

5. Conclusions

Although the Supreme Court has not expressly applied copyright misuse in an infringement action, it has acknowledged the doctrine’s existence, suggested that it is derived from principles of equity applicable to intellectual property in general, and provided a rule of reason framework

84. *BMI*, 441 U.S. at 24.

85. *CBS*, 562 F.2d at 140 (emphasis added).

86. The Second Circuit continued: “[T]he blanket license need not be prohibited in all circumstances. The blanket license is not simply a ‘naked restraint’ ineluctably doomed to extinction.” *Id.*

87. *BMI*, 441 U.S. at 23.

88. *Id.* at 19-20.

89. *See id.* at 25-38 (Stevens, J., dissenting).

90. *Id.* at 28 (Stevens, J., dissenting) (footnotes omitted).

for evaluating conduct at the antitrust-intellectual property interface.⁹¹ There is little doubt that copyright misuse will eventually resurface in the Supreme Court and be reconciled. On this point, lower courts and commentators alike agree; however, divergent opinions abound as to what should be the proper scope and guiding principles for copyright misuse.

B. Precedential Case Law in Federal Courts of Appeals

This section analyzes the controlling case law in three circuits that have recognized and applied the copyright misuse doctrine as a defense to bar recovery in a copyright infringement suit. Part III.C next discusses the status of the doctrine in other circuits that have yet to affirmatively apply it.

1. *Lasercomb America, Inc. v. Reynolds (1990)*

In 1990, the Fourth Circuit firmly established the copyright misuse doctrine as a viable defense to copyright infringement.⁹² Remarkably, the decision was the first affirmative application of the copyright misuse defense in a federal court of appeals.

Lasercomb licensed its copyrighted CAD/CAM software to the Holiday Steel Rule Die Corporation (Holiday Steel).⁹³ The software enabled steel rule die manufacturers to utilize a computer to create a design and then direct manufacturing systems.⁹⁴ Holiday Steel first copied the software for unauthorized private use, circumventing protective devices and avoiding additional fees, and then marketed its own software that was nearly identical to Lasercomb's program. The district court found the defendants liable for copyright infringement and dismissed their affirmative copyright misuse defense. The Fourth Circuit reversed both the injunction and damages award granted by the district court based upon its conclusion "that Lasercomb's anticompetitive clauses in its standard licensing agree-

91. At times, the Court has ignored the doctrine despite vigorous pleas in briefs. *See, e.g.*, Brief for Petitioner, *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc.*, 499 U.S. 340 (1991) (No. 89-1909). Copyright misuse was argued strenuously from the district court to the Supreme Court but went unacknowledged in the Supreme Court opinion. *See Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc.*, 499 U.S. 340 (1991). An antitrust suit followed but was unsuccessful for failure to prove anticompetitive harm derived from a refusal to deal. *See Rural Tel. Serv. Co., Inc. v. Feist Publ'ns, Inc.*, 957 F.2d 765 (10th Cir. 1992).

92. *See Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970 (1990).

93. CAD is short for computer-aided design, and CAM is short for computer-aided manufacture.

94. The appellants/defendants were Larry Holiday, president and sole shareholder of Holiday Steel, and Job Reynolds, computer programmer for Holiday Steel. *Id.* at 971.

ment constitute misuse of copyright.”⁹⁵ The defense was available “even though [Reynolds was] not part[y] to the standard licensing agreement.”⁹⁶

The damning provisions of Lasercomb’s standard licensing agreement prohibited licensees from writing, developing, producing or selling “computer assisted die making software.”⁹⁷ The district court found that even if copyright misuse were an available defense, the anticompetitive provisions were “reasonable in light of the delicate and sensitive area of computer software.”⁹⁸ The Fourth Circuit rejected the lower court’s reliance on the “‘rule of reason’ concept” and stressed the independence of copyright misuse from antitrust law:⁹⁹

[W]hile it is true that the attempted use of a copyright to violate the antitrust law probably would give rise to a misuse of copyright defense, the converse is not necessarily true—a misuse need not be a violation of antitrust law in order to comprise an equitable defense to an infringement action.¹⁰⁰

The circuit court found that Lasercomb’s attempt “to use its copyright in a manner adverse to the public policy embodied in the copyright law” is sufficient to support a misuse defense.¹⁰¹ The license provisions were not only anticompetitive but they also “suppress[ed] any attempt by the licensee to independently implement the [unprotected] idea which [Lasercomb’s software] expresses,”¹⁰² thus reaching beyond the scope of the granted property right.

The Fourth Circuit dedicated a significant portion of its opinion to explaining the historical basis and public policy behind the intellectual property systems and the related development of the patent misuse defense as a limitation on the scope of the grant. Adhering to the reasoning of *Morton*

95. *Id.* at 979. The Fourth Circuit did not reverse the lower court’s finding of fraud. *Id.* at 980.

96. *Id.*

97. *Id.* at 973.

98. *Id.*

99. The court attributed the confusion regarding the relationship between misuse defenses and antitrust law to a mistaken reading of the *BMI* opinion, particularly the holding that “[w]e reverse that judgment, and the copyright misuse judgment dependent upon it” *Id.* at 978 n.17. The court pointed out that the misuse judgment was a declaratory judgment rather than a defense to infringement. *Id.* However, if the alleged activity constituted misuse but not an antitrust violation, as the Fourth Circuit stated is possible, then a declaratory judgment would be justified as a preemptive defensive action against infringement claims.

100. *Id.* at 978.

101. *Id.*

102. *Id.*

Salt, the circuit court extended the scope limitation rationale from patents to copyrights.¹⁰³ In doing so, the court also cited *Paramount Pictures*, quoting the Supreme Court's discussion of block-booking as a means for enlarging the granted monopoly.¹⁰⁴

In applying the copyright misuse doctrine to the facts, the court paid particular attention to the language of the licensing agreement and did not focus on the actual effects on competition or market power of the plaintiff, as it would in an antitrust analysis. The attempt to use the copyright "to control competition in an area outside the copyright, *i.e.*, the idea of computer-assisted die manufacture [constitutes copyright misuse] regardless of whether such conduct amounts to an antitrust violation."¹⁰⁵

2. *Practice Management Information Corp. v. American Medical Ass'n* (1996)

In *Practice Management*,¹⁰⁶ the Ninth Circuit appeared to follow the Fourth Circuit's analysis in *Lasercomb* to establish copyright misuse as a defense to infringement. Expressly agreeing with the Fourth Circuit, the Ninth Circuit reiterated that a finding of copyright misuse does not require that an antitrust violation be shown.¹⁰⁷ In establishing the copyright misuse defense within its jurisdiction, the circuit court did not discuss the historical development or rationale behind the doctrine.¹⁰⁸

103. *Id.* at 977. Interestingly, the Fourth Circuit excerpts a passage from *Morton Salt* and inserts a few terms, such as "copyright" for "patent," to demonstrate the adaptability of the reasoning. *Id.*

104. *Id.* at 977 n.16. The Fourth Circuit also cited *Mitchell Bros. Film Group v. Cinema Adult Theater*, 604 F.2d 852 (5th Cir. 1979), in which the Fifth Circuit suggested in dicta that the scope limitation rationale of *Morton Salt* likely applies to copyrights.

105. *Id.* at 979.

106. *Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516 (9th Cir. 1997).

107. *Id.* at 521. AMA argued that Practice Management's failure to show an antitrust violation precluded a copyright misuse finding, but the circuit court rejected the argument.

108. *Id.* It relied primarily on *Lasercomb* and also cites the Fifth Circuit opinion, *DSC Communication Corp. v. DGI Techs., Inc.*, 81 F.3d 597, 601 (5th Cir. 1996), in which the district court's preliminary injunction was affirmed, based on the conclusion that "DSC did not have a substantial likelihood of success on the merits because . . . DGI may prevail on its misuse to the defense." *Id.* DSC was the preliminary injunction phase of the *Alcatel* decision discussed next. The Ninth Circuit also cited two earlier opinions in which it implied that the doctrine existed: *Triad Sys. Corp. v. Southeastern Express Co.*, 64 F.3d 1330, 1337 (9th Cir. 1995) and *Supermarket of Homes, Inc. v. San Fernando Valley Bd. of Realtors*, 786 F.2d 1400, 1408 (9th Cir. 1986). In both cases, the copyright misuse doctrine was recognized, but none of the conduct alleged by the plaintiffs constituted misuse. In *Triad*, the court rejected claims that Triad, a hardware and software producer, was obligated to allow Southeastern Express, an independent service operator, to

As in *Lasercomb*, anticompetitive licensing provisions were the basis for the misuse holding. The American Medical Association (“AMA”) granted the Health Care Financing Administration (“HCFA”) a “nonexclusive, royalty free and irrevocable license to use, copy, publish and distribute” a coding system for medical procedures (compiled into the “Physician’s Current Procedural Terminology” or “CPT”) on the condition that the HCFA exclusively use the CPT and require its use in “programs administered by the HCFA, by its agents, and by other agencies whenever possible.”¹⁰⁹

The circuit court dismissed various arguments made by the AMA that likely would be considered in a “rule of reason” antitrust analysis and focused exclusively on the plain text of the licensing agreement.¹¹⁰ Prohibiting the HCFA (and those within its regulatory reach) from using competing products gave the AMA “a substantial and unfair advantage” in the marketplace.¹¹¹ The improper use of the CPT copyright as leverage to gain this advantage was sufficient for the court to hold that “Practice Management established its misuse defense as a matter of law”¹¹²

An important issue on which the Ninth Circuit may diverge from *Lasercomb* is whether a defendant with unclean hands may invoke the doctrine. In *Atari Games Corp. v. Nintendo Co., Ltd.*,¹¹³ the Federal Circuit applied Ninth Circuit law on copyright infringement claims and affirmed the district court’s holding that “Atari’s unclean hands prevent it from in-

use its diagnostic software for free under either a fair use or misuse theory. *Triad*, 64 F.3d at 1337. So long as Triad did not use its copyright as leverage to prohibit Southeastern Express or any other independent service operator from developing its own software, Triad was validly operating within the scope of the intellectual property grant. *Id.*

109. *Practice Management*, 121 F.3d at 517-18 (quotations and citations omitted). By congressional mandate, the HCFA was required “to establish a uniform code for identifying physicians’ services for use in completing Medicare and Medicaid claim forms.” *Id.* at 517. The HCFA sought to avoid duplication by contracting with the AMA. *Id.*

110. For further discussion of antitrust principles including the rule of reason, see *supra* Part II.B. For example, the AMA argued that the HCFA decided to use exclusively the CPT as a standard because of natural efficiencies. Although it is unclear whether competing products or close substitutes existed, the circuit court ignored considerations of market power altogether, instead focusing on the exclusive dealings provisions.

111. *Practice Management*, 121 F.3d at 521.

112. *Id.* The circuit court vacated the preliminary injunction and remanded for entry of judgment in Practice Management’s favor. *Id.*

113. 975 F.2d 832, 846 (Fed. Cir. 1992) (applying Ninth Circuit law).

voking equity" as a defense.¹¹⁴ The Ninth Circuit did not address this issue in *Practice Management*.

3. *Alcatel USA, Inc. v. DGI Technologies, Inc. (1999)*

*Alcatel*¹¹⁵ was a significantly more complex case than either *Lasercomb* or *Practice Management*. In those cases, a rather simple reading of the licensing provisions provided a sufficient basis for finding copyright misuse. Although *Alcatel* ultimately depended similarly on the text of the license, the Fifth Circuit looked more carefully at the context and the effects of the plaintiff's anticompetitive behavior.

Alcatel USA, Inc. (formerly known as DSC Communications Corporation, "DSC") produced telephone switching equipment used in routing long distance telephone calls. Its copyrighted operating system software controlled the switching equipment, much like Lasercomb's software was ultimately used to control manufacturing equipment when producing tool dies. DSC licensed its software through an agreement providing:

- 1) the operating system software remains the property of DSC;
- 2) the customer has the right to use the software only to operate its switch;
- 3) the customer is prohibited from copying the software or disclosing it to third parties;
- 4) the customers are authorized to use the software only in conjunction with DSC-manufactured equipment.¹¹⁶

In order to keep up with growing demand, DSC customers often expanded their capacity by adding "cards" to the switch.¹¹⁷ DGI Technologies, Inc. ("DGI") was formed in 1989 precisely to produce expansion cards for use with DSC switches. Yet, because the cards had to be compatible with the controlling operating system, DGI was forced to download and copy DSC's operating system software for testing and development.

114. *Id.* at 846. ("[t]he Ninth Circuit has noted that the doctrine of unclean hands can also preclude the defense of copyright misuse") (quoting *Supermarket Homes*, 786 F.2d at 1408).

115. *Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772 (5th Cir. 1999).

116. *Id.* at 777.

117. *See id.* at 778-79. Actually, the expansion cards were added in groups and did not all have to be microprocessor cards. One microprocessor card in the group would be sufficient. So, for a while, DGI purchased a DSC microprocessor card to sell along with its "ordinary" cards. However, market conditions and DSC's marketing practices forced DGI to produce its own microprocessor card. *Id.*

DSC brought suit against DGI seeking relief for, inter alia, copyright infringement. The Fifth Circuit affirmed (1) the jury's determination that damages for trade secret misappropriation were due, (2) those parts of the district court's injunction against DGI based upon the trade secret claim, and (3) the district court's dismissal of DGI's antitrust counterclaim. However, the circuit court reversed those parts of the injunction that were based upon DGI's copyright infringement because Alcatel had misused its copyright.¹¹⁸

As opposed to *Lasercomb* and *Practice Management*, in which Lasercomb and the AMA each attempted to suppress competition with its copyrighted product, copyright misuse in *Alcatel* stemmed from DSC's attempt to use its "copyrights to indirectly gain commercial control over products DSC does not have copyrighted [or patented]."¹¹⁹ DSC's licensing agreement prevented competing "card" manufacturers from developing products that were compatible with DSC's copyrighted operating system. The Ninth Circuit found that "DGI was effectively prevented from developing its product, thereby securing for DSC a limited monopoly over its uncopied [and unpatented] microprocessor cards."¹²⁰ In effect, this licensing arrangement gave DSC a de facto monopoly on the microprocessor cards.¹²¹

The Fifth Circuit acknowledged that copyright misuse is an equitable or "clean hands" defense, and concluded the licensing provisions alone dirtied DSC's hands sufficiently for relief to be withheld on the infringement claim. As in *Lasercomb* and *Practice Management*, the court did not explicitly consider the extent of DSC's market power in the "card" market or the actual effects on competition, as it would in an antitrust action. Instead, the text of the licensing agreement was controlling.

4. Conclusions

The three circuit court opinions discussed in this section illustrate the tip of the iceberg with regard to potential applications of the copyright misuse defense. In all three cases, the copyright licenses contained anti-

118. For a discussion of the district court proceedings, see Sheffner, *supra* note 49, at 28.

119. *Alcatel*, 166 F.3d at 793 (quotation omitted). In concluding that this conduct amounted to misuse, the court observed that "the public policy which includes original works within the granted monopoly excludes from it all that is not embraced in the original expression." *Id.* A similar misuse of copyright moved the district court in *qad. inc. v. ALN Assocs., Inc.*, 770 F. Supp. 1261 (N.D. Ill. 1991) to bar enforcement of a software copyright.

120. *Alcatel*, 166 F.3d at 794.

121. *Id.* at 793-94.

competitive provisions that were relatively easy to discern as “overreaching” and, accordingly, were treated essentially as per se misuse.¹²²

In *Lasercomb*, the Fourth Circuit established the defense as parallel to patent misuse, derived from the equitable doctrine of unclean hands, and distinguished from antitrust law.¹²³ The Fifth and Ninth Circuits, in *Alcatel* and *Practice Management* respectively, followed suit without adding much substantive guidance. Although the circuits’ adoption of the doctrine was a necessary first step in jurisprudential development, it was primarily aimed at safeguarding the public interest in limiting the scope of the copyright and the corresponding statutory trade-off. It remains to be seen whether the defense will be limited to these seemingly per se misuse situations or extended beyond the text of licensing agreements.

C. Persuasive Case Law in Federal Courts of Appeals

Outside the Fourth, Fifth and Ninth Circuits, the viability of the copyright misuse defense remains uncertain. Although district courts have entertained the defense, the appellate courts have generally denied the existence of misuse based on the facts presented. Thus, their holdings may be limited to the facts, and their discussion and analysis of the doctrine most likely should be considered persuasive dicta, without binding precedential value. Accordingly, not all of the circuit court opinions mentioning copyright misuse are analyzed; instead, attention is briefly given to the more influential, substantive decisions in order of importance.

1. Seventh Circuit

The Seventh Circuit has been adamant in its antitrust approach to misuse analysis. In *Saturday Evening Post Co. v. Rumbleseat Press, Inc.*, a pre-*Lasercomb* decision, Judge Posner extended his view of patent misuse to copyright misuse, characterizing the doctrine as a defense that should be evaluated under traditional antitrust principles.¹²⁴ The case involved a no-

122. This is nearly identical to the establishment of per se rules against tying in the patent misuse context. See *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488, 493-94 (1942). See *supra* Part III.A.

123. In an unpublished per curiam opinion, the Fourth Circuit applied the *Lasercomb* rationale to a similar case involving anticompetitive licensing restrictions for copyrighted software. *PRC Realty Sys., Inc. v. Nat’l Ass’n of Realtors*, No. 91-1125, 1992 U.S. App. LEXIS 18017 (4th Cir. Aug. 4, 1992) (per curiam). The Fourth Circuit held that the National Association of Realtors had validly asserted a copyright misuse defense against PRC Realty Systems: “PRC is not allowed . . . to use its copyright as a hammer to crush all future development of an independent idea by NAR, or any other licensee.” *Id.* at *36.

124. 816 F.2d 1191, 1200 (7th Cir. 1987) (citing *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 512 (7th Cir. 1982)).

contest clause in a licensing agreement that prohibited Rumbleseat from challenging the validity of the Saturday Evening Post Company's copyright. Judge Posner illuminated the potential procompetitive and anticompetitive effects of a no-contest clause and expressed doubts that copyrights generally confer "economically significant monopoly" power.¹²⁵

Refusing to create "a federal common law rule that would jostle uncomfortably with the Sherman Act" and "[n]oting the convergence of patent-misuse principles with antitrust principles," the Seventh Circuit held that "a no-contest clause in a copyright licensing agreement is valid unless shown to violate antitrust law."¹²⁶ While subsequent Seventh Circuit cases have not evaluated copyright misuse claims on antitrust grounds,¹²⁷ Posner's supposition that copyrights are less likely to confer market power than patents has been reiterated by the Seventh Circuit.¹²⁸

2. Eighth Circuit

In *United Telephone Co. of Missouri v. Johnson Publishing Co., Inc.*,¹²⁹ the Eighth Circuit rejected a copyright misuse defense based on the facts presented. However, the court considered the relevant case law supporting the extension of the misuse doctrine from patent to copyright, including *Morton Salt*, *Paramount Pictures*, and *Loew's*. Then, assuming "that judicial authority teaches that the patent misuse doctrine may be applied as a defense to copyright infringement," the court evaluated whether United Telephone actually restrained competition by its pricing scheme or its "effort to require Johnson to purchase a license in its entire white pages listing" and concluded that it did not.¹³⁰ Similar to the Seventh Circuit, the

125. *Id.* at 1199.

126. *Id.* at 1200.

127. In *qad. inc. v. ALN Assocs., Inc.*, 974 F.2d 834 (7th Cir. 1992), the Seventh Circuit "appears [to follow] Lasercomb's holding and reject[] any requirement that misuse must be based on antitrust violations." Davis, *supra* note 54, at 450. However, the Seventh Circuit's decision affirming the district court's removal of an injunction was based on the deceptive conduct of qad.'s lawyers during the litigation and not on qad.'s inequitable conduct. *qad.*, 974 F.2d at 839. Thus, it seems likely that the Seventh Circuit holding did not turn on a successful assertion of the copyright misuse defense but rather on fraud or unethical conduct during legal proceedings. *Cf.* Davis, *supra* note 54 (noting the weakness of the misuse decision).

128. See *Reed-Union Corp. v. Turtle Wax, Inc.*, 77 F.3d 909, 913 (7th Cir. 1996) ("[C]opyrights do not exclude independent expression and therefore create less market power than patents.").

129. 855 F.2d 604 (8th Cir. 1988). The circuit court affirmed the district court's decision awarding damages and a permanent injunction to United Telephone in a copyright infringement suit between white pages directory publishers. *Id.*

130. *Id.* at 612.

Eighth Circuit approach extends the misuse doctrine from patents to copyrights and applies a rule of reason analysis along the lines of traditional antitrust principles.¹³¹

3. *First Circuit*

In *Data General Corp. v. Grumman Systems Support Corp.*,¹³² the First Circuit entertained a complex copyright infringement action in which antitrust counterclaims paralleled a copyright misuse defense.¹³³ Although the First Circuit acknowledged the copyright misuse doctrine's development and discussed *Lasercomb*,¹³⁴ it expressly chose not to "decide whether the federal copyright law permits a misuse defense."¹³⁵

Interestingly, the circuit court acknowledged that "the Lasercomb court [did] not require proof of an antitrust violation" for a successful misuse defense,¹³⁶ but relied on the lack of an antitrust violation to reject Grumman Systems' misuse defense. Grumman Systems based its misuse defense solely on the alleged anticompetitive behavior underlying the antitrust counterclaims, which the court held to be without merit, and the court found the misuse defense to be "equally devoid of merit."¹³⁷ In addition, the court noted that Grumman Systems might be precluded from raising the misuse defense because it had engaged in inequitable conduct itself.¹³⁸

131. Compare *id.*, with *Saturday Evening Post Co. v. Rumbleseat Press, Inc.*, 816 F.2d 1191, 1199-1200 (7th Cir. 1987).

132. 36 F.3d 1147 (1st Cir. 1994).

133. See *id.* Data General manufactured computers and competed with Grumman Systems in the servicing market for its products. The infringement action arose from illicit copying of Data General's diagnostic software by Grumman Systems. The First Circuit thoroughly evaluated a number of complex, interrelated claims and generally affirmed the district court's decision in favor of Data General. See *id.*

134. *Id.* at 1169-70. The Court noted that the rationale in *Lasercomb* did not turn on "the particular type of anti-competitive behavior," suggesting that the *Lasercomb* holding is not limited to the facts of that case. *Id.*

135. *Id.*

136. *Id.*

137. *Id.*

138. *Id.* ("Mere infringement may not be inequitable conduct in this context because a misuse defense would appear to sanction at least some infringement as a necessary measure of self-help. But violation of a valid injunction against further infringement issued pursuant to a court's equitable powers would constitute blatantly inequitable behavior."). This clean hands approach to the misuse doctrine seems to comport with the Federal Circuit's assessment of Ninth Circuit law in *Atari v. Nintendo*, 975 F.2d 832 (9th Cir. 1992). See also *supra* notes 120 and 122 and accompanying text.

4. *Eleventh Circuit*

In 1996, the Eleventh Circuit seemed to endorse the copyright misuse doctrine where copying is required to achieve compatibility in the computer software context.¹³⁹ It expressly joined "other circuits in finding that external considerations such as compatibility may negate a finding of infringement."¹⁴⁰ The court refused to enforce the contested copyright, and emphasized the fact-specific nature of its holding.¹⁴¹ Accordingly, the holding most likely is limited to the compatibility issue for computer software.¹⁴²

5. *Conclusions*

Although many circuit courts have not affirmatively established the copyright misuse defense in their jurisdictions, some have considered the doctrine at length, notably the First, Seventh, and Eighth Circuits. The Seventh and Eighth Circuits have tended towards the antitrust-based approach to evaluating alleged misuse.¹⁴³

D. **Making Sense of the Law**

This section extracts guiding principles from the case law in an attempt to clarify where the copyright misuse doctrine is today. Despite the existence of two seemingly divergent approaches to assessing misuse (antitrust-based copyright misuse and public policy-based copyright misuse), the final subsection presents a unified view.

1. *Antitrust-Based Copyright Misuse*

Most of the opinions rejecting the copyright misuse defense on the facts have applied antitrust principles. The Seventh and Eighth Circuits have employed a rule of reason analysis to assess the anticompetitive effects of alleged misuse. Although criticized by some commentators for

139. *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532 (11th Cir. 1996).

140. *Id.* at 1547.

141. *Id.* at 1547-48.

142. In an earlier decision, the Eleventh Circuit rejected a misuse defense where the copyright holder was merely exercising the exclusionary rights granted by the copyright. *See Bellsouth Adver. & Publ'g Corp. v. Donnelley Info. Publ'g Co.*, 933 F.2d 952 (11th Cir. 1991), *vacated*, 977 F.2d 1435 (11th Cir. 1992), *rev'd on other grounds*, 999 F.2d 1436 (11th Cir. 1993), *cert. denied*, 114 S.Ct. 943 (1994).

143. To some extent, the First Circuit approach in *Data General* may be characterized as an antitrust-based approach. However, the circuit court acknowledged the broader public policy-based approach of *Lasercomb*.

misunderstanding the equitable nature of the misuse doctrine,¹⁴⁴ Judge Posner advocated a principled antitrust approach to evaluating misuse claims, citing a lack of equally tested or applicable alternatives. Antitrust-based copyright misuse resembles modern day patent misuse, which applies per se misuse to certain activities (which are established as such by the Supreme Court).¹⁴⁵ The following two-part rule of reason test is applied to all other activities:

- Is the restraint within the scope of the patent claims (and thus the patent grant)?
- If the answer is yes, then the activity is per se legal. If the answer is no, does the activity on the whole promote or restrict competition?

The latter part of the test requires courts to balance the anti- and pro-competitive effects of a particular activity, e.g., a licensing provision, and determine the net competitive effect.¹⁴⁶

The Seventh Circuit in *Saturday Evening Post* and the Eighth Circuit in *United Telephone* engaged in a similar analysis. The presumptions upon which the rule of reason analysis of misuse is based are 1) that intellectual property generally is procompetitive and does not confer market power in the antitrust context; 2) that any market power given via an intellectual property right is valid; and 3) that intellectual property owners are entitled to exploit their intellectual property through the most efficient means available.¹⁴⁷ These presumptions have emerged in the antitrust-intellectual property dialogue during the 1980s and 1990s and represent the current institutional opinion of the Department of Justice Antitrust Division.¹⁴⁸ This view is supported by the Supreme Court holding in *BMI* that courts

144. For a discussion of the debate between proponents of the antitrust-based and public policy-based approaches, see White, *supra* note 24.

145. For conduct alleged to constitute a per se violation, courts may still look to multi-factored tests. For example, in the context of tying arrangements, a per se violation is established if: (1) the markets in the tied products are different; (2) there is an agreement tying the products; (3) the producer has market power in the tying product; and (4) there is a substantial anticompetitive effect in the tied product market. Liability may yet be avoided, but only if the defendant can prove that it had no alternative to the tying arrangement because of conditions in the market. Of these factors, the most complex for antitrust plaintiffs to show is typically the producer's market power in the tied product. See Ramsey Hanna, *Misusing Antitrust: The Search for Functional Copyright Misuse Standards*, 46 STAN. L. REV. 401, 412-13 (1994).

146. See *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992).

147. See ANTITRUST GUIDELINES, *supra* note 79.

148. *Id.*

generally must conduct a more probing analysis into the market conditions and the procompetitive need for seemingly anticompetitive practices at the antitrust-intellectual property interface.¹⁴⁹

Extending the rule of reason approach to copyright misuse requires courts first to evaluate the scope of the rights and the breadth of protection granted to copyright holders, and, second, to evaluate the net competitive effects of any questionable conduct. Both inquiries are commonly undertaken by courts and are readily within their adjudicative capacity. Removing the latter part of the test transforms the rule of reason approach into a *per se* rule.

2. *Public Policy-Based Copyright Misuse*

Courts and commentators have attempted to distinguish the copyright misuse defense from antitrust law by focusing on the equitable nature of the doctrine as a clean hands defense and on the scope limitation function that it provides.¹⁵⁰ Inequitable conduct on the part of the copyright holder need only offend the public policy behind the copyright system to trigger the defense.¹⁵¹ As the Fourth Circuit noted in *Lasercomb*:

[A] misuse need not be a violation of antitrust law in order to comprise an equitable defense to an infringement action. The question is not whether the copyright is being used in a manner violative of antitrust law (such as whether the licensing agreement is “reasonable”), but whether the copyright is being used in a manner violative of the public policy embodied in the grant of a copyright.¹⁵²

Courts applying this rationale have looked specifically at copyright licensing provisions and decided whether the scope of the “limited monopoly” granted by the copyright is being expanded.

149. *See supra* Part III.A.4.

150. *See, e.g.*, Ernest Bainbridge Lipscomb III, 8 WALKER ON PATENTS §§ 28-33 (3d ed. 1989) (distinguishing between antitrust violation and patent misuse in that the latter does not require proof of “substantial lessening of competition”); Xavier Fellmeth, *Copyright Misuse and the Limits of the Intellectual Property Monopoly*, 6 J. INTELL. PROP. L. 1, 25 (1998) (observing that the general rule is that an antitrust violation is not necessary to establish copyright misuse).

151. *See, e.g.*, Fellmeth, *supra* note 150, at 36-37 (arguing against antitrust principles in favor of a “public policy approach that focuses on whether the behavior of the intellectual property rights owner is consistent with the policies of the relevant intellectual property law”).

152. *Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970, 978 (4th Cir. 1990).

The three circuit court decisions establishing copyright misuse, discussed *supra*, are illustrative.¹⁵³ In *Lasercomb*, the licensor restricted the licensee's ability to develop similar software, effectively expanding the scope of the copyright beyond the protected expression to the unprotected idea.¹⁵⁴ Similarly in *Practice Management*, license provisions restricting the licensee's ability to use competing products were found to be expansive and thus misuse.¹⁵⁵ Finally, in *Alcatel*, license provisions that restricted a licensee's ability to develop products to compete with the licensor's uncopyrighted products similarly were found to be misuse.¹⁵⁶

In all three cases, the copyright was used as leverage to gain competitive advantage over licensees in areas beyond the scope of the limited privileges conferred by the copyright. While the scope limitation function of the misuse doctrine seems particularly fitting in these cases, the per se approach will likely be less straightforward in more complicated situations in the absence of blatantly objectionable license text. A more nuanced approach is inevitable, as seen in the patent misuse context,¹⁵⁷ and will likely involve a set of per se rules applicable to easily recognizable factual settings and a rule of reason analysis in the remaining cases.¹⁵⁸ It remains to be seen whether a rule of reason analysis not rooted in competitive effects but instead focused on the more amorphous concept of public policy will arise in the courts. As the next section indicates, we caution against such a development.

153. See *supra* Part III.B.

154. *Lasercomb*, 911 F.2d at 979.

155. *Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516 (9th Cir. 1997).

156. *Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772, 794-95 (5th Cir. 1999).

157. Modern day patent misuse "requires that the alleged infringer show that the patentee has impermissibly broadened the 'physical or temporal scope' of the patent grant with anticompetitive effect." *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986) (quoting *Blonder-Tongue Lab, Inc. v. University of Ill. Found.*, 402 U.S. 313, 343 (1971)). Courts have generally followed a rule of reason approach with a few per se misuse exceptions. See *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992) (establishing rule of reason analysis for patent misuse where conduct at issue is neither per se misuse nor exempt from misuse consideration by section 271(d) of the Patent Act); see also *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 510 (7th Cir. 1982).

158. Most likely, the per se rules will not be based exclusively on antitrust considerations and, instead, will be based upon the scope limitation policy seen in *Lasercomb*, *Practice Management*, and *Alcatel*. However, a public policy balancing approach akin to the rule of reason is not likely to evolve due to measurement difficulties.

3. *Bringing Public Policy and Antitrust Together*

Most courts evaluating a copyright misuse defense acknowledge the equitable nature of the doctrine and the scope limitation function it plays, yet none have enunciated a form of public policy misuse that does not involve some degree of anticompetitive effects. This is not surprising because of the nature of intellectual property. Any use of a copyright has some anticompetitive effect. The public policy behind the copyright system is premised upon an exchange between short-term “monopoly” costs and long-term efficiency gains in investment, production, and dissemination of innovation.¹⁵⁹ Thus, one might conclude that the proper inquiry is not *what* the behavior in question violates—public policy or antitrust law—but rather whether the social costs arising from copyright use exceed the expected short-term social costs inherent in the intellectual property grant.¹⁶⁰ However, this formulation proves too much because assessing the social costs necessarily involves a careful look at the underlying public policies at stake. Yet the social cost inquiry returns us to a modified rule of reason analysis: Is the behavior in question a valid exercise of statutorily granted rights over the particular innovation? If not, what are the net effects from the behavior?

The public policy approach focuses on the first step of the rule of reason analysis and ignores the actual effects. In fact, this appears to be the approach taken in the *Lasercomb* and *Practice Management* decisions. Both the Fourth and Ninth Circuits stopped short of the second prong of the rule of reason test. The Fifth Circuit in *Alcatel*, on the other hand, emphasized the restrictive effect that DSC’s behavior had on DGI’s ability to compete. Still, none of the three circuit courts considered the potential positive effects of the licensing provisions in question.¹⁶¹ Thus, it seems that the public policy approach may reduce the rule of reason approach to a single step, which is akin to a *per se* rule. Although no court explicitly

159. See, e.g., *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539 (1985) (“[C]opyright supplies the economic incentive to create and disseminate ideas.”); *Mazer v. Stein*, 347 U.S. 201, 219 (1954) (“The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare.”); cf. Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1024-25 (1989) (discussing incentive-to-invent theory of patent law).

160. Social costs include effects not directly reflected in the market, such as reduced dissemination or abuse of the copyright privilege.

161. Contrast the analysis in *Lasercomb*, *Practice Management*, and *Alcatel* with the Seventh Circuit’s analysis of the no-compete provision in *Saturday Evening Post Co. v. Rumbleseat Press, Inc.*, 816 F.2d 1191, 1199-1200 (7th Cir. 1987).

declared the particular licensing practice to be per se misuse, the lack of additional guidance leaves little room for distinction. Therefore, restricting a licensee's ability to innovate or tying an uncopyrighted or unpatented good to a copyrighted good is likely to be per se misuse.

In establishing these per se rules, the Fourth, Fifth, and Ninth Circuits were not creating per se antitrust rules based on the conclusion that in the general run of cases the questioned conduct is presumably anticompetitive on the whole. Instead, the courts were creating per se rules that keep intact the socially acceptable trade-off manifest in the copyright law. In a sense, the circuit courts were safeguarding the public interest in maintaining a copyright of limited scope while at the same time coordinating the various intellectual property systems.¹⁶² Choosing to protect one's software through copyright should not and, at least in these jurisdictions, does not facilitate patent or trade secret protection on related functional innovations.

Limiting public policy-based misuse to per se misuse under a small set of factual settings readily identifiable both by courts and private actors allows a principled or unified theory of copyright misuse to emerge. Generally, copyright misuse should closely resemble patent misuse, having a small set of "known" per se rules and otherwise being determined under a rule of reason analysis. Copyright misuse may diverge, in practice, from patent misuse by its incorporation of per se rules based on the public policy behind the copyright system that complement per se rules based on antitrust principles.

IV. THE UNIQUE CASE OF SOFTWARE

This Part considers the copyright misuse defense as it relates to computer software, emphasizing the jurisprudential and procedural principles developed in Parts III.A and III.B. In building our approach to software copyright misuse, Part IV.A discusses the nature of software as an innovation and next turns to the landscape of software. This sets the stage for Part IV.B, which applies the jurisprudential model to identify the substantive need for common law. Part IV.B also considers the limits of the fair use doctrine and antitrust-based copyright misuse that make them incomplete protections for those who would reverse-engineer software. Finally, Part IV.C proposes a copyright misuse defense with an antitrust core, yet

162. The scope limitation aspect can be seen as a combination of the corrective, coordination, and safeguarding functions.

one complemented by a per se misuse rule against reverse engineering licensing restrictions.¹⁶³

Importantly, the proposed refinement of existing doctrine does not endeavor to be a complete solution; instead, this approach stresses the need for precise and clear development of the law. Thus, we imagine that courts may craft additional public policy-based per se rules along the guidelines we provide,¹⁶⁴ with antitrust doctrine applying in remaining cases.

A. The Unique Nature of Software

In early cases involving software copyrights, a handful of district courts expressed doubt that unreadable programs could be protected on the grounds that they are not expressive.¹⁶⁵ Congress, however, answered this

163. A number of other commentators have endorsed extensions of existing doctrine (including copyright misuse) that would protect reverse engineering, and some courts have adopted such extensions within limits. *See, e.g.*, *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992) (extending fair use to intermediate copying); *Lasercomb Am. Inc. v. Reynolds*, 911 F.2d 970 (4th Cir. 1990) (extending copyright misuse to tying arrangements); Julie E. Cohen, *Reverse Engineering And The Rise Of Electronic Vigilantism: Intellectual Property Implications Of "Lock-Out" Programs*, 68 S. CAL. L. REV. 1091, 1200 (1995) (arguing that fair use should protect intermediate copying solely for "enabling" uses, and that functionality should guide analysis for copying non-literal program elements); Karen E. Georgenson, *Reverse Engineering of Copyrighted Software: Fair Use Or Misuse?*, 5 ALB. L.J. SCI. & TECH. 291, 313 (1996) (supporting copyright misuse defense for necessary intermediate copying and any derivative uses); Dennis S. Karjala, *Copyright Protection of Computer Documents, Reverse Engineering, and Professor Miller*, 19 U. DAYTON L. REV. 975, 992-93 (1994) (arguing that disclosure of source code should be a prerequisite for protection); David A. Rice, *Public Goods, Private Contract and Public Policy: Federal Preemption of Software License Prohibitions Against Reverse Engineering*, 53 U. PITT. L. REV. 543, 550-51 (1992) (arguing that copyright law preempts licensing restrictions barring reverse engineering). *But see* Marshall Leaffer, *Engineering Competitive Policy and Copyright Misuse*, 19 U. DAYTON L. REV. 1087, 1106-07 (1994) (arguing against copyright misuse defense for reverse engineering).

164. For example, courts should certainly retain a per se misuse rule against fraud in connection with a copyright. *See, e.g.*, *Atari Games Corp. v. Nintendo of Am. Inc.*, 975 F.2d 832, 837 (Fed. Cir. 1992); *qad. inc. v. ALN Assocs., Inc.*, 974 F.2d 834 (7th Cir. 1992). Likewise, the Fourth, Fifth, and Ninth Circuits adopted what appears to be a per se rule against licensing restrictions that expand the scope of copyrights to cover uncopyrighted products. *See* Part III.D.3.

165. *See, e.g.*, *Data Cash Systems v. JS&A Group*, 480 F. Supp. 1063, 1066 n.4 (N.D. Ill. 1979) (reasoning that a computer program is a mechanical device and therefore may not obtain copyright protection as a written work), *aff'd on other grounds*, 628 F.2d 1038 (7th Cir. 1980); *Apple Computer, Inc. v. Franklin Computer Corp.*, 545 F. Supp. 812 (E.D. Pa. 1982) (following *Data Cash Systems*), *rev'd*, 714 F.2d 1240, 1243-48 (3d Cir. 1983) (source and object code copyrightable); *see also* FINAL REPORT OF THE NAT'L COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 70 (1980) (Hersey, Comm'r, dissenting) [hereinafter CONTU REPORT] (arguing that "[p]rograms are pro-

question by carving out a limitation in copyright protection of software in its 1980 amendment to § 117 of the Copyright Act,¹⁶⁶ thereby implying the existence of a general protection of software under § 102(a).¹⁶⁷ Moreover, the Commission on New Technological Uses ("CONTU"), appointed by Congress to study the copyrightability of software, concluded in its final report that the Copyright Act should "make it explicit that computer programs, to the extent that they embody an author's original creation, are proper subject matter of copyright."¹⁶⁸ In light of these develop-

foundly different from the various forms of 'works of authorship' secured under the Constitution by copyright. Works of authorship have always been intended to be circulated to human beings and to be used by them—to be read, heard, or seen, for either pleasurable or practical ends. Computer programs, in their mature phase, are addressed to machines."); Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2314 (1994) (critiquing copyright protection of software). *But see* Computer Assoc. Int'l v. Altai, Inc., 982 F.2d 693, 702 (2d Cir. 1992) (object code copyrightable); Williams Elecs., Inc. v. Artic Int'l, Inc., 685 F.2d 870, 875 (3d Cir. 1982); Tandy Corp. v. Personal Micro Computers, Inc., 524 F. Supp. 171, 173 (N.D. Cal. 1981). For other commentators weighing in on the subject of how to protect computer programs (copyright, patent, or sui generis), see A. Samuel Oddi, *An Un-easier Case for Copyright Than for Patent Protection of Computer Programs*, 72 NEB. L. REV. 351, 353 n.2 (1993). The origins of *Data Cash Systems'* "communicative" standard lie partly in a 1908 Supreme Court decision, in which the Court rejected copyright protection for a player-piano roll because its expression could not be perceived. *See Data Cash Systems*, 480 F. Supp. at 1068 (citing *White-Smith Music Publ'g Co. v. Apollo Co.*, 209 U.S. 1 (1908)).

166. The amendment cured an obvious defect in then-existing protection of copies of software residing in a computer's memory, providing that "it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program" when necessary for "the utilization of the computer program" or "for archival purposes." 17 U.S.C. § 117 (1994). The legislative history of the 1976 Copyright Act suggests that the House had previously intended that software be treated as a literary work. *See* H.R. REP. NO. 1476, 94th Cong., 2d Sess., at 54 (explaining that § 102(a)'s reference to 'literary works' "includes . . . computer programs").

167. *See, e.g.,* Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1248 (3d Cir. 1983) ("The language of [§ 117], by carving out an exception to the normal proscriptions against copying, clearly indicates that programs are copyrightable and are otherwise afforded copyright protection."). Congress also provided in § 102(a) that copyright covers works in any means "from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device." 17 U.S.C. § 102(a) (1994). Through conjunctive language in the clause "perceived, reproduced, or otherwise communicated," § 102(a) appears to allow for the possibility that a work's expression might not be perceived so long as it may be either reproduced or otherwise communicated. This is precisely the case with software, where digital computers can copy and transfer executable files, yet the files cannot be perceived by humans.

168. CONTU REPORT, *supra* note 165, at 1. However, the Commission was not unanimous in its support of software copyrightability. *See id.*

ments, a consensus quickly emerged among federal courts that copyright does indeed protect software as a literary work,¹⁶⁹ a view unlikely to change, particularly in light of international consensus on the issue.¹⁷⁰

Despite software's inclusion in the ambit of copyright law, software's unique attributes continue to present courts with special pedagogical challenges. An understanding of these challenges helps to define the need for doctrinal development. We concentrate on particular attributes of software as an innovation before turning to the landscape of software.

1. *Software as Hidden Expression—Source Versus Object Code*

Software challenges a basic assumption that copyrights should afford the public greater access to expressive works. This section first explains why software is hidden expression as a matter of technological coincidence. Further, it argues that copyright law is designed to promote creative expression not only by stimulating its production, but also by envisioning wider public access to such expression.¹⁷¹ Finally, this section briefly explores the tension created by software where the public acquires no expression.

Computer programs are instructions that manipulate computer hardware to useful ends. These instructions are typically written by humans in languages that, while resembling natural languages, are lexically scaled down in order to afford greater precision.¹⁷² These human-readable instructions are referred to as source code, and this code is written in one or more files called source files.

Programs usually must undergo additional processing in order to be executed by a computer. Sometimes this intermediate processing is done after the program has already been initiated: a process known as interpretation, where each line of a source file is translated into a format that can

169. *See supra* note 165; *see also* *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1519 (9th Cir. 1992) ("Although some scholarly authority supports [the view that object code is not eligible for the full range of copyright protection], we have previously rejected it based on the language and legislative history of the Copyright Act.") (citing *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175 (9th Cir. 1989)); *Apple Computer, Inc. v. Formula Int'l Inc.*, 725 F.2d 521, 524-25 (9th Cir. 1984)).

170. *See, e.g.*, Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, art. 10, para. 2, 108 Stat. 4809, 33 I.L.M. 81 [hereinafter TRIPS] ("Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971)."); *see also* Samuelson et al., *supra* note 165, at 2313 nn.7-8 (1994) (discussing the international framework).

171. *See infra* note 181.

172. Common programming languages include C, C++, Java, and Lisp.

be executed by the processor. However, running such programs—commonly referred to as scripts—through an interpreter is often too slow to be practical for large applications. For this reason, most programs are prepared for execution in two stages: first, source code is “compiled” into object code, which is a simplified format that can be understood only by a digital processor; and, second, object files are linked together to resolve external references. This processing creates a single executable program.¹⁷³ The executable program is not dependent on any of the files that went into creating it—indeed, the purpose of compilation and linking is to resolve dependencies to afford faster processing. As a consequence, a compiled and linked program can function entirely without the presence of its underlying source code.

If source code, apart from its executable program, is published in guides or on the Internet for instructive or other purposes, one may readily conclude that it is a literary work within the meaning of the Copyright Act.¹⁷⁴ Source code can be an extraordinarily complex, structured expression of ideas. Yet source code as a literary work does not present courts with a novel problem, so existing principles of law can be adapted to define the scope of copyrights on source code.¹⁷⁵ Courts have generally approved some form of dissection analysis, filtering ideas and functional elements from expression.¹⁷⁶

173. Two or more executable programs may interact through various means, yet the defining feature of an executable program is that it can be executed by itself. Note that a program may be *designed* to work with other programs and thus not work correctly if it is executed by itself; however, this remains technically possible for any executable program.

174. See, e.g., *Computer Assocs. Int'l v. Altai*, 982 F.2d 693 (2d Cir. 1992); *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 855 n.3 (2d Cir. 1982).

175. See, e.g., *Altai*, 982 F.2d 693 (adapting idea-expression dichotomy to software); *Nichols v. Universal Pictures Co.*, 45 F.2d 119, 121 (2d Cir. 1930) (discussing idea-expression dichotomy); *Baker v. Selden*, 101 U.S. 99 (1879) (distinguishing between an expression, which is copyrightable, and the functional component of that expression, which is not).

176. See, e.g., *Whelan Assoc., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222 (3d Cir. 1986); see also David Bender, *Computer Associates v. Altai: Rationality Prevails*, *COMPUTER LAW.*, Aug. 1992, at 1; Pamela Samuelson et al., *The Nature of Copyright Analysis for Computer Program: Copyright Law Professors' Brief Amicus Curiae in Lotus v. Borland*, 16 *HASTINGS COMM. & ENT. L.J.* 657 (1994) (approving of the growing use of filtering methodology among the Second, Ninth, Tenth, and Federal Circuit Courts of Appeals). *But cf.* Arthur Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 *HARV. L. REV.* 977, 1004-05 (1993) (arguing that code enhancing program efficiency, which *Altai* had held unprotectable, should not be treated as non-creative expression out of hand).

Yet, protection of the object code embedded in executable files presents special challenges. The functional independence of executable programs effectively hides the program's underlying expression, which allows software manufacturers to maintain greater secrecy and control over their designs. Because executable files do not depend on their source files in order to operate, source files are typically not made available to those who are given access to the executable files.¹⁷⁷ In this way, users of an executable program cannot evaluate the program's source files and thereby understand its algorithm. Although this fact does not afford complete control or secrecy, someone with only executable files must undertake relatively costly efforts in order to translate executable files back into source code—a process known commonly as decompilation, disassembly, or, more generically, reverse engineering.¹⁷⁸ Increasingly, producers supplement their copyright protection of hidden expression through alternate frameworks like licensing restrictions or technology in order to raise the costs of reverse engineering.¹⁷⁹

While the hidden nature of object code does not preclude copyright protection,¹⁸⁰ it creates friction with a core premise of copyright law, namely that producers will distribute expressive works to the public.¹⁸¹

177. This may be done partly to maintain secrecy and partly to maintain quality control over the product.

178. For the technological details of reverse engineering, see Georgenson, *supra* note 163, pt. II.

179. For example, producers typically limit their licensees' use of software in ways that bar reverse engineering. See, e.g., *Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772, 777 (5th Cir. 1999); see also *infra* note 184 and accompanying text.

180. See, e.g., *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1519 (9th Cir. 1992) (copyright does not "require that a work be directly accessible to humans in order to be eligible for copyright protection"); see also *supra* note 165 and accompanying text.

181. See, for example, *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985), in which the Supreme Court explained: "In our haste to disseminate news, it should not be forgotten that the Framers intended copyright itself to be the engine of free expression. By establishing a marketable right to the use of one's expression, copyright supplies the economic incentive to create and disseminate ideas." See also *Atari Games Corp. v. Nintendo of Am. Inc.*, 975 F.2d 832, 842 (Fed. Cir. 1992) ("The Copyright Act encourages authors to share their creative works with society."); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 432 (1984) (recognizing the "ultimate aim [of the Copyright Act], to stimulate artistic creativity for the general public good") (quoting *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975)). Indeed, the conferral of exclusive rights typically requires an attendant transfer of information, e.g., patent disclosure requirements and the source-identifying function of trademarks.

Congress chose to confer property rights to authors,¹⁸² rather than simply passing a criminal law against misappropriation,¹⁸³ or relying on other mechanisms.¹⁸⁴ Thus, the law lures authors to produce expressive works with exclusive, alienable rights,¹⁸⁵ increasing the prospects that authors will profit from their labors by transacting in the market.¹⁸⁶ The transactional framework allows for the efficient distribution of expressive works, thereby maximizing the public's welfare in accessing expression.¹⁸⁷ Therefore, Congress's central reliance on property rights in copyright law

182. See 17 U.S.C. § 106 (1994 & Supp. IV 1998) (creating exclusive rights to copy, prepare derivative works, distribute, perform, and display protected works, as well as to authorize these activities). The Constitution explicitly *authorizes*, but does not require, Congress to employ property rights. U.S. CONST. art. I, § 8, cl. 8.

183. *Cf., e.g.*, Digital Millennium Copyright Act of 1998 (DMCA), Pub. L. No. 105-304, 112 Stat. 2860 (codified as amended in scattered sections of U.S.C.) (prohibiting circumvention of technologies designed to control access to copyrighted works). Section 1204 criminally punishes willful violations of the DMCA for commercial advantage. See 17 U.S.C. § 1204(a) (Supp. IV 1998).

184. Pure contract principles and self-help through encryption technologies are two areas, for example, that software producers increasingly explore today. See, e.g., Julie E. Cohen, *Lochner in Cyberspace: The New Economic Orthodoxy of "Rights Management,"* 97 MICH. L. REV. 462 (1998) (regarding contract) [hereinafter Cohen, *Lochner*]; Julie E. Cohen, *Copyright and The Jurisprudence of Self-Help*, 13 BERKELEY TECH. L.J. 1089 (1998) [hereinafter Cohen, *Self-Help*] (regarding contract and "electronic fencing"). The penumbra of options a producer might employ to protect digital content is sometimes referred to as digital rights management. See generally Julie E. Cohen, *A Right to Read Anonymously: A Closer Look at "Copyright Management" in Cyberspace*, 28 CONN. L. REV. 981, 983-87 (1996) [hereinafter Cohen, *Copyright Management*] (describing digital rights management systems).

185. See 17 U.S.C. § 106 (1994 & Supp. IV 1998).

186. This incentive-structure mitigates the free-riding problem associated generally with non-excludable, non-rivalrous public goods like innovation. See ROBERT COOTER & THOMAS ULEN, *LAW AND ECONOMICS* 40-41 (2d ed. 1997) (discussing non-excludable and non-rivalrous nature of public goods as source of market failure); see also Cohen, *Lochner*, *supra* note 184, at 470-71 & n.25 (discussing public-goods nature of expressive works); Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501, 526 (1999) (discussing non-rivalrous nature of innovation). See generally Wendy J. Gordon, *Asymmetric Market Failure and Prisoner's Dilemma in Intellectual Property*, 17 DAYTON L. REV. 853 (1992) (analogizing the prisoner's dilemma to the production of copyrightable work in order to demonstrate likely market failure in the absence of copyright protection).

187. It is well understood that markets (subject to certain qualifications) maximize welfare by allocating resources to actors who value them most highly. See PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, *ECONOMICS* ch. 15 (16th ed. 1998). The Supreme Court has acknowledged the dual purpose of copyright to stimulate and distribute innovation. See *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985) ("[C]opyright supplies the economic incentive to create *and disseminate* ideas.") (emphasis added).

evinces an intent to distribute ideas and expression to the public, as well as to stimulate their production.¹⁸⁸

In addition to the incentive structure, copyrights are limited in scope and duration so that expression and ideas eventually pass into the public domain. This allows consumers priced out of the market for an expressive work during the term of the copyright to gain access when the copyright expires. Likewise, the consuming public may reuse unprotected ideas and expression even during the term of copyright. As with the incentive structure, Congress struck a balance between public and private interests, giving the public greater access to ideas and expression than it might otherwise have without copyright law.¹⁸⁹

Although Congress designed the Copyright Act to promote creative expression, object code's principal value lies not in its "expression," but instead in its ability to perform tasks effectively.¹⁹⁰ Indeed, object code is unique in copyright law in that it *has no perceptible expression*. By contrast, traditional subject matter, such as paintings or novels, bears ideas and protected expression on its face.¹⁹¹ By transacting, buyers of traditional works can perceive the expression as a matter of course. However, transactions involving software have little if anything to do with expression.

The hidden nature of software challenges the assumption that copyright naturally entails broader distributions of expression. As Part IV.B explores, the resulting imbalance helps to explain the emergence of copyright misuse and particularly the extension of the fair use defense to intermediate copying,¹⁹² both of which apply predominately in the software context.

188. See *supra* notes 183 and 184 and accompanying text. Note, too, that Congress might simply have subsidized expressive works were it solely concerned with production.

189. If one loosely imagined the relationship between authors and the public as a social contract, one might reasonably say that greater expression is the benefit for which the public bargains in paying higher prices during the term of copyright. Higher prices during the copyright are a consequence of exclusivity. Exclusive rights are (at least conceptually) a form of legal monopoly, which generally allows authors to extract monopoly rents (subject to antitrust law).

190. This point is developed more extensively in Part IV.A.2.

191. To the limited extent that courts have grappled with hidden expression in other contexts, they have been reluctant to extend protection. See, e.g., *White-Smith Music Publ'g Co. v. Apollo Co.*, 209 U.S. 1 (1908) (denying protection of encoded player piano roll as non-expressive).

192. See *infra* Part IV.B.2.

2. *Software as a Black Box—Program Independence*

In addition to being hidden expression, executable programs are stand-alone units that comprise the protected and unprotected elements of the underlying source code.¹⁹³ This, too, challenges copyright doctrine because a producer can enforce its copyright over programs as a single black box, thereby acquiring a de facto monopoly over the unprotected material within.

A fundamental axiom of copyright law is that copyrights may not protect ideas, unoriginal expressions, or unfixed expressions.¹⁹⁴ Ideas and such expressions reside in the public domain, and an author may not appropriate them through their inclusion in a work that qualifies for copyright protection.¹⁹⁵

Yet protecting object code as a black box effectively extends the copyright to unprotected, internal elements.¹⁹⁶ Reverse engineering entails copying object code into a computer's memory, which violates the copyright unless such copying is authorized.¹⁹⁷ If the defendant's conduct does not qualify as a fair use,¹⁹⁸ the law effectively protects all the elements in the black box irrespective of whether the elements could otherwise be pro-

193. See *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596, 602 (9th Cir. 2000) ("The object code of a program may be copyrighted as expression, *but it also contains ideas and performs functions that are not entitled to copyright protection.*") (citations omitted) (emphasis added); *Computer Assocs. Int'l v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992) (recognizing that programs comprise unprotected ideas and expression).

194. See, e.g., *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., Inc.*, 499 U.S. 340 (1991) (recognizing that the Copyright Act "encourages others to build freely upon the ideas and information conveyed by a work"); *Baker v. Selden*, 101 U.S. 99 (1879); *Altai*, 982 F.2d 693 (applying idea-expression dichotomy to software); *Whelan Assoc., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222 (3d Cir. 1986).

195. Cf., e.g., *Feist*, 499 U.S. at 350 (barring protection of facts).

196. To a limited extent, the DMCA reinforces the black-box principle by supporting the integrity of lock-out and related technologies. 17 U.S.C. § 1201 (Supp. IV 1998).

197. See *Sony*, 203 F.3d at 602 ("The unprotected ideas and functions of the code therefore are frequently undiscoverable in the absence of investigation and translation that may require copying the copyrighted material."); *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1519 (9th Cir. 1992) ("[W]e hold that intermediate copying of computer object code may infringe the exclusive rights granted to the copyright owner . . . regardless of whether the end product of the copying also infringes those rights."). 17 U.S.C. § 117 does not apply here because the copy is not (1) an essential step in utilizing the program, or (2) for archival purposes only.

198. The defendant might have a fair use defense, although the scope of the defense remains uncertain as Part IV.B.2 explains.

tected. Thus, a mere act of discovery, without some form of common law involvement, could subject a user of software to liability.¹⁹⁹

By enforcing black-box software copyrights, courts effectively seal the box from public viewing. Thus, protection of object code carries the potential to disrupt the public-private balance²⁰⁰ by limiting downstream innovation rather than promoting it.²⁰¹

3. *Software as a Functional Innovation*

The third attribute setting software apart from other copyrightable media is its functional nature.²⁰² Software creates tension at the patent-copyright interface because patent law presumptively covers functional innovations whereas copyright law covers expressive innovations. Moreover, fitting software into copyright law is inconsistent with established copyright doctrine that generally rejects protection for functional works.

In general terms, software has blurred the functional-nonfunctional dichotomy that traditionally delineated classes of innovation. Although functional innovations are the "proper subject matter" of the patent system, over the last few decades, innovators have increasingly looked for intellectual property protection through other institutional mechanisms. In some cases, innovations with functional attributes fall short of the patentability criteria, forcing innovators to look to other forms of protection. In other cases, innovators look to other forms of protection with the hope to gain exclusive rights for a longer duration than available under the pat-

199. This would be roughly like imposing liability on the reader of a book for opening the cover. The analogy is admittedly imperfect because the reader has not copied her book, whereas copying is a predicate step to "reading" a program through decompilation.

200. This appears consistent with a wider trend limiting public access to information. See, e.g., *supra* note 184; Reichman & Franklin, *supra* note 12, pt. I.C.3 (1999) (discussing proposed Article 2B of the UCC). Professor Rai has observed in the related context of patent law that "the Constitution also mandates that the patent law maintain a balance between property rights and the public." Rai, *supra* note 24, at 829.

201. Cf. Reichman & Franklin, *supra* note 12, at 914 (discussing in the related context of proposed Article 2B of the UCC the "risk of misbundled property rights in the information economy, which new evidence suggests are likely to reduce downstream applications of promising scientific or theoretical breakthroughs").

202. See David W.T. Daniels, *Learned Hand Never Played Nintendo: A Better Way to Think about the Non-Literal, Non-Visual Software Copyright Cases*, 61 U. CHI. L. REV. 613, 618 (1994) (describing software as inherently functional); cf. Samuelson et al., *supra* note 165, at 2333 (pointing to "[t]he predominantly functional nature of program behavior and other industrial design aspects of programs").

ent system; some innovators simply prefer trade secrecy to fully disclosing their innovation.²⁰³

The emergence of the computer software industry provides the archetypal example. Computer software is currently protected through copyright because both source code and object code are considered "written expressions." Yet the economic value of copyrighted object code is completely derived from the functional ends facilitated by the software.²⁰⁴ Courts and commentators alike have struggled to determine what form of intellectual property—patent, copyright, or some sui generis creation—is appropriate for computer software.²⁰⁵

Correspondingly, copyright misuse is an appropriate judicial mechanism for restricting the social costs of granting copyrights on functional innovations. In fact, as discussed in Part II, both the Fourth and Fifth Circuit decisions establishing copyright misuse arose in the context of copyrighted software with functional applications. Although some courts have intimated that patents are more prone to convey market power than copyrights,²⁰⁶ others have acknowledged otherwise in the software context:

Certainly, a monopolist's refusal to license others to a commercially successful patented idea is likely to have more profound anti-competitive consequences than a refusal to allow others to duplicate the copyrighted expression of an unpatented idea (although such differences may become less pronounced if copyright law becomes increasingly protective of intellectual property such as computer software).²⁰⁷

In addition to the tensions between patent and copyright, software also creates internal tension within copyright law. Courts generally deny functional innovations protection if they fall outside the patent system. For example, in the context of pictorial, graphical, and sculptural ("PGS") works,

203. Trade secrecy, a weaker form of intellectual property protection, protects information that is not readily discoverable. *See* UNIF. TRADE SECRETS ACT § 1, 14 U.L.A. 433 (1990); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 157 (1989).

204. *See* Cohen, *Vigilantism*, *supra* note 163, at 1108 ("The parallels between computer programs and literary classics are far from obvious. A computer program is, first and foremost, a series of instructions to the computer to execute a given task.").

205. *See, e.g.*, *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000); Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329 (1987); Samuelson et al., *supra* note 165; James A.D. White, *Misuse or Fair Use: That is the Copyright Question*, 12 BERKELEY TECH. L.J. 251 (1997).

206. *See* *Reed-Union Corp. v. Turtle Wax, Inc.*, 77 F.3d 909, 913 (7th Cir. 1996).

207. *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 36 F.3d 1147, 1185 (1st Cir. 1994).

courts have developed the useful article doctrine to deal with these works' functional nature.²⁰⁸ Under this doctrine, copyright protection is denied "if design elements reflect a merger of aesthetic and functional considerations"²⁰⁹ The reason for this strict refusal is because "the artistic aspects of [the] work cannot be said to be conceptually separable from the utilitarian elements."²¹⁰ The case of computer programs presents an even starker picture because there is *no apparent expression*: only the functional effects caused by the program's operation. In trademark law, protection is denied for trade dress that is functional, i.e., "if it is essential to the use or purpose of the article or if it affects the cost or quality of the article."²¹¹ Courts recognize that, as in the PGS context, trademark holders could otherwise acquire patent-like protection (in this case by exhausting competitors' potential options for a comparable trade dress).²¹² Accordingly, courts outside of patent law and software have consistently denied protection for functional elements.

The functional value of software challenges courts to coordinate patent and copyright law. Patent law imposes more rigorous requirements than copyright, such as a disclosure requirement, a shorter duration, and more robust protection,²¹³ arguably because functional innovations are more

208. See *Mazer v. Stein*, 347 U.S. 201 (1954) (concerning works of "applied art"); *Brandir Int'l Inc. v. Cascade Pac. Lumber Co.*, 834 F.2d 1142 (2d Cir. 1987); *Esquire, Inc. v. Ringer*, 591 F.2d 796 (D.C. Cir. 1978) (applying a physical separability test). See generally Robert C. Denicola, *Applied Art and Industrial Design: A Suggested Approach to Copyright in Useful Articles*, 67 MINN. L. REV. 707 (1983).

209. *Brandir*, 834 F.2d at 1145.

210. *Id.*

211. *Inwood Labs., Inc. v. Ives Labs., Inc.*, 456 U.S. 844, 851 n.10 (1982); *accord Qualitex Co. v. Jacobson Prods. Co., Inc.*, 514 U.S. 159, 164 (1995) ("The functionality doctrine prevents trademark law, which seeks to promote competition by protecting a firm's reputation, from instead inhibiting legitimate competition by allowing a producer to control a useful product feature."); *Two Pesos, Inc. v. Taco Cabana, Inc.*, 505 U.S. 763, 775 (1992).

212. *Two Pesos*, 505 U.S. at 775 (recognizing that the functionality limitation "serves to assure that competition will not be stifled by the exhaustion of a limited number of trade dresses"). Similarly, copyrights are not permissible if there are so few elements that one could exhaust the ways of expressing an idea. See *Morrissey v. Procter & Gamble*, 379 F.2d 675, 678-79 (1st Cir. 1967).

213. *Compare* 35 U.S.C. §§ 101-103, 112, 154, 261 (1994 & Supp. IV 1998) (requiring novelty, utility, and non-obviousness; requiring sufficient description in the patent application to allow others to recreate the innovation; conferring twenty years of protection; giving patents "all the attributes of personal property"), *with* 17 U.S.C. §§ 102(a), 106, 302 (1994 & Supp. IV 1998) (requiring originality and fixation; conferring limited rights of ownership; conferring seventy years of protection plus the life of the author).

prone to confer market power.²¹⁴ Allowing a functional innovation like software into copyright carries the potential to disrupt the public-private balance that each system has struck.²¹⁵

4. *The Landscape of Software*

The previous discussion considered attributes of software as a *class* of innovation, whereas this section looks at software in a broader context in order to evaluate its impact on innovation. While a careful analysis of the landscape demands far more attention than we can provide here, this subsection considers a sample of features that affect innovation.

As information-related technologies have pervaded the international economy, software producers have sought a fuller range of protection for their products. What has emerged is a rich tapestry of legal safeguards for innovation. This Article deals mainly with proprietary sources of protection, i.e., patent and copyright law.²¹⁶ Trade secrecy, the traditional fallback for producers without intellectual property rights, confers weak legal protection to producers, exposing them to risks of lawful appropriation.²¹⁷ Licenses remain a central form of legal protection, complementing or possibly even substituting for intellectual property rights.²¹⁸ In recent years, Congress has increasingly looked to criminal law as a means of regulating access to information technologies including software.²¹⁹

Legal protections are not, however, the complete picture. The wildcard in protecting software is technology itself, such as lock-out programs and

214. See *supra* note 206.

215. Cf. Michael J. Kline, *Requiring An Election of Protection for Patentable/Copyrightable Computer Programs (Part II)*, 67 J. PAT. & TRADEMARK OFF. SOC'Y 339, 340-51 (1985) (recognizing that the availability of copyright and patent protection for software resembles "a form of 'double patenting,'" a particularly nixing fact given the longer term of copyright protection).

216. See *Diamond v. Diehr*, 450 U.S. 175 (1981) (holding that software can be patented subject to traditional requirements).

217. See generally Gordon L. Doerfer, *The Limits on Trade Secret Law Imposed by Federal Patent and Antitrust Supremacy*, 80 HARV. L. REV. 1432 (1967).

218. See Cohen, *Self-Help*, *supra* note 184, at 1094.

219. See, e.g., 17 U.S.C. §§ 1201-05 (Supp. IV 1998) (prohibiting circumvention of technologies designed to control access to copyrighted works); Computer Fraud & Abuse Act, 18 U.S.C. § 1030 (1994 & Supp. IV 1998) (dealing with hacking); 15 C.F.R. § 734.2(b)(9) (1999) (restricting export of cryptographic technologies); Inbox Privacy Act, S.759, 106th Cong. (1999); Unsolicited Electronic Mail Act, H.R. 3113, 106th Cong. (1999); Can Spam Act, H.R. 2162, 106th Cong. (1999); Collections of Information Anti-Piracy Act, H.R. 354, 106th Cong. (1999); cf. *United States v. Alkhabaz*, 104 F.3d 1492 (6th Cir. 1997) (applying interstate threats statute, 18 U.S.C. § 875(c) (1994), in context of e-mail communications).

encryption methods.²²⁰ Technology may allow clever producers to craft their own extra-legal protection, impacting existing legal doctrine in under-terminated ways. Three possible scenarios emerge. First, producers may supplement their legal protection with technological protections. For example, a video game manufacturer might rely on lock-out technology and/or copyright law to protect its object code.²²¹ Second, producers may circumvent legal rules through technology. For example, in the Microsoft case, the district court found that Microsoft reengineered its operating system, bypassing an earlier consent decree.²²² Third, producers might rely exclusively on technology as a form of self-help. For example, AOL configured its servers to return large volumes of unsolicited e-mail to their senders in an effort to discourage “spamming.”²²³

Whether one considers legal or technological measures, today’s landscape affords software producers unprecedented protection over their products.²²⁴ While reduced risk may attract entrants to the market, excessive protection can create higher barriers to downstream innovation,²²⁵ limiting the synergistic benefits of innovation.²²⁶

Aside from the breadth of protections, the software landscape also impacts innovation through a set of structural factors. The first of these factors is the extraordinary pace of technology: leaps in technology may quickly allow actors to achieve market dominance. Technology can thereby promote competition in cases where it breaks down existing mo-

220. See Cohen, *Self-Help*, *supra* note 184; A. Michael Froomkin, *The Essential Role of Trusted Third Parties in Electronic Commerce*, 75 OR. L. REV. 49 (1996) (cryptography).

221. See *Sega Enters. v. Accolade, Inc.* 977 F.2d 1510, 1514-15 (9th Cir. 1992).

222. See *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30, 51 (D.D.C. 2000) (“Microsoft’s decision to offer only the bundled—‘integrated’—version of [two related products] derived not from technical necessity or business efficiencies; rather, it was the result of a deliberate and purposeful choice to quell incipient competition before it reached truly minatory proportions.”).

223. See *Cyber Promotions, Inc. v. America Online, Inc.*, 948 F. Supp. 436 (E.D. Pa. 1996). Spamming is synonymous with unsolicited e-mail.

224. See Cohen, *Self-Help*, *supra* note 184, at 1094 (“[D]igital rights management regimes will enable information providers to appropriate far more protection against copying and distribution than intellectual property law now provides.”).

225. Cf. Oddi, *supra* note 165, at 365 (“If a competitor has already heavily blanketed a particular area with patents or copyrights or both, the cost of entering the market may be increased and the overall cost may be increased by lessened competition.”).

226. See *infra* Part IV.A.5 (discussing the benefits more extensively). For further discussion of the recursive nature of innovation (innovation as an input to innovation), see Frischmann, *supra* note 12, pt. I.

nopolies,²²⁷ yet it also may simply swap one monopolist with another.²²⁸ Software copyright protection favoring producers magnifies these sudden shifts in market power,²²⁹ particularly in networking markets like those relying on the Internet.²³⁰

Furthermore, the software market exhibits lead-time effects, meaning that producers have a window during which they can gain an advantage on competitors.²³¹ The advantage acts as a barrier to entry, and it is particularly significant because innovation often acts as an input to further innovation.²³² Lead-time effects may arise naturally or legally. In the first case, a producer has an advantage in developing derivative software to the extent that it understands its own technology and has processes and facilities in place to allow more rapid development. A competitor, on the other hand, would need to reverse-engineer and spend time learning the technology before developing it. Copyright law extends natural lead-time effects during the statutory term of protection by giving authors exclusive rights to produce derivative works.²³³ The consequence of lead-time ef-

227. James J. Anton & Dennis A. Yao, *Standard-Setting Consortia, Antitrust, and High-Technology Industries*, 64 ANTITRUST L.J. 247, 258 (1995) (“In an industry exhibiting constant product and process innovation, not only will the market positions of the incumbents change rapidly, but also new entrants will appear and sometimes totally displace incumbents.”). *But see* Fellmeth, *supra* note 150, at 4 (“A copyright monopoly on a computer hardware operating system, for example, need only last a decade or two to allow the monopolist to create massive inefficiencies and stifle innovation.”).

228. Compare Mark A. Lemley & David McGowan, *Could Java Change Everything? The Competitive Propriety of a Proprietary Standard*, ANTITRUST BULL. Fall/Winter 1998, at 721, stating:

Network theory implies that strong network markets will tend to ‘tip’ to a standard technology because a large portion of the value of goods in such markets is, by definition, to communicate with others who own the standard as well or to interoperate with goods compatible with the standard. The relatively high network value and low inherent value of such goods implies that, once consumers perceive that a de facto standard has been established, tipping will occur very quickly.

Id.; *United States v. Microsoft*, 87 F. Supp. 2d 30 (D.D.C. 2000) (detailing Microsoft’s efforts to limit Java’s potential).

229. *See* Fellmeth, *supra* note 150, at 4; *see also infra* Part IV.A.5 (discussing the imbalance); *cf.* Nimmer & Santhanam, *supra* note 53, at 423 (recognizing a greater willingness by courts to apply misuse in the software context because of the market power conferred by the copyright).

230. *See* Lemley & McGowan, *supra* note 228, at 721.

231. *See* J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2438-39 (1994).

232. *See supra* note 12.

233. 17 U.S.C. § 106(2) (1994).

fects is to allow dominant actors greater breathing room to maintain or extend their dominant status.

Software further exhibits application effects, or the increased value attributable exclusively to users' familiarity with a product.²³⁴ Application effects could roughly be thought of as brand loyalty, though they are particularly significant in the software context because of its relative complexity compared to other products. Producers benefit because users are more likely to buy upgrades of familiar products than they are to buy and learn a substitute.

Closely related to application effects are network effects, or the increased value attributable to more users of a product.²³⁵ The paradigmatic example of network effects is the telephone: owning the only phone in town is less valuable than owning one if everyone else has one.²³⁶ Network effects in software can lead to standardization of technologies, which can confer considerable benefits to a producer whose product becomes the standard.²³⁷ In software, an example of network effects is Microsoft Windows, which is more valuable because so much of the market uses it, thereby reinforcing Microsoft's dominant share of the PC operating system market.²³⁸

Application effects and network effects are similar in that they both create barriers to entry for competitors and pressure for standardization. They differ, however, in that application effects relate exclusively to a user's desire for consistency, whereas network effects follow from others'

234. See, e.g., *Lotus Dev. Corp. v. Borland Int'l*, 49 F.3d 807, 821 (1st Cir. 1995) (recognizing users' desire for program consistency), *aff'd by an equally divided Court*, 116 S. Ct. 804 (1996); cf. *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59, ¶ 37 (D.D.C. 2000) (the user seeks "an operating system for which successive generations of his favorite applications will be released").

235. See Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479 (1998); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985). For a discussion of the challenges that network effects pose to antitrust analysis (defining markets and measuring competitive effects), see David Balto & Robert Pitofsky, *Antitrust and High-Tech Industries: The New Challenge*, ANTITRUST BULL. Fall/Winter 1998, at 513, 526-27.

236. See Lemley & McGowan, *supra* note 235, at 488.

237. See Lemley & McGowan, *supra* note 228.

238. See *Microsoft*, 97 F. Supp. 2d, ¶ 39 ("The fact that there is a multitude of people using Windows makes the product more attractive to consumers."); cf. Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329, 1357-58, 1361-63 (1987) (discussing importance to software producers of achieving interoperability with other systems); Balto & Pitofsky, *supra* note 235, at 529 (discussing importance to society of interoperable, yet competing technological standards).

use of a technology. To illustrate the difference, traditionalists might retain familiar technologies (e.g., Atari consoles c. 1980) *despite* the network effects of emergent technologies (e.g., Sony Playstation II).

This discussion reveals the software landscape as one tending towards monopoly in important respects, and one affording producers an extensive range of protections. These both have important implications for copyright law, making excesses in the level of legal protection particularly severe.²³⁹

5. *Conclusions*

Software's unique nature effectively magnifies the value of copyright protection by allowing producers to fence in ideas and expression.²⁴⁰ Producers can build fences through a variety of means: acquiring copyrights on hidden expression, exercising black-box copyrights, seeking protection through alternate legal frameworks, seeking protection through extra-legal technologies, and (if the producer has market power) withholding production thereby raising price.²⁴¹

Information fencing benefits society by encouraging production of software, though it imposes an important social cost, namely the reduced public access to an author's ideas and expression. Access is an integral part of "Progress," in that it facilitates review, debate, and refinement of

239. See Robert P. Merges, *Who Owns the Charles River Bridge? Intellectual Property and Competition in the Software Industry* (Apr. 2, 1999) (unpublished manuscript, at <http://www.sims.berkeley.edu/BCLT/pubs/merges/>) (examining tension between producers' desire for market dominance and public benefits of interoperability).

240. Cf. KENNETH J. ARROW, *ECONOMIC WELFARE AND THE ALLOCATION OF RESOURCES TO INVENTION, IN THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609, 616 (National Bureau of Economic Research ed., 1962) (optimal production turns on producers' expected control whereas optimal utilization turns on public's access). Commentators have discussed electronic fencing devices that producers may employ to shield data, though we apply the term "information fencing" generically to describe restrictions on access to information. See Cohen, *Self-Help*, *supra* note 184, pt. II; J.H. Reichman & Paul F. Uhlir, *Database Protection at the Crossroads: Recent Developments and Their Impact on Science and Technology*, 14 BERKELEY TECH. L.J. 793, 810 (1999) ("If [public-domain] data were rendered technically identifiable, nothing would prevent the proprietor from using electronic fencing devices and standard form contracts to further preclude extraction even after the intellectual property right had expired.").

241. Cf. Reichman & Uhlir, *supra* note 240, at 794 ("[A] powerful movement to commodify data and information previously treated as a public good—that is, as an inexhaustible, indivisible, and ubiquitous component of the public domain—could limit the ability of the scientific, technical, and educational communities to capitalize on such opportunities.").

existing innovations.²⁴² It also raises the prospects for derivative innovations that one or few producers might not have conceived of or been able to afford. By restricting access to innovation, producers fundamentally alter the nature of copyright protection for computer programs.²⁴³

B. The Demand for Software Copyright Misuse

Part IV.B expands on this analysis in two ways, first articulating a demand for substantive doctrinal development, and next explaining why fair use and antitrust-based copyright misuse by themselves do not fully meet the demand.

The substantive basis for common law derives from the jurisprudential model developed in Part II. The model supports common law to fulfill each function of common law rule-making, namely to correct an internal deficiency in the Copyright Act, to coordinate copyright law with patent and antitrust law, and to safeguard policies of copyright law.

1. *The Jurisprudential Functions and Software*

Our model sets forth the three jurisprudential functions of correcting, coordinating, and safeguarding.²⁴⁴ Where a demand arises for courts to fulfill one or more of the functions, a case can be made that courts should intervene. The challenges posed by protecting software in copyright implicate all three jurisprudential functions, establishing a strong substantive basis for doctrinal development.

The hidden nature of software exploits a gap in the Copyright Act, namely the absence of an explicit requirement that expressive works be perceptible. Any such gap, of course, implicates the corrective function as described above. As discussed above, a core yet unarticulated premise of copyright law is that authors will distribute expression and ideas to the public, primarily through the market.²⁴⁵ Yet software copyrights challenge this premise by rendering expression imperceptible. The public loses an essential benefit of copyright law—greater knowledge—and instead gains

242. See Reichman & Uhler, *supra* note 240, pt. II.A (discussing “user-friendly” copyright rules that would allow, for example, scientists, engineers, and educators to re-use unprotected material within a published work).

243. See Cohen, *supra* note 163, at 1198 (“If closed proprietary platforms and lock-out programs become more common, competition and innovation cannot continue to thrive without systematic rethinking of the way that intellectual property protection for computer programs is conceived and enforced.”).

244. See *supra* Part II.A.

245. See *supra* Part IV.A.1.

a functional innovation.²⁴⁶ Correspondingly, producers gain the opportunity to fence information. Practically, courts cannot be expected to read a perceptibility requirement into the Copyright Act where Congress did not express one,²⁴⁷ yet they may scrutinize conduct by a plaintiff that frustrates a defendant's access to a program's underlying expression. By forbidding overreaching restrictions, the courts can thereby help to fill the gap.

The Copyright Act contains another gap reflected in its protection of black boxes, or works affording de facto protection of ideas and expression in the public domain.²⁴⁸ As discussed, software works like a black box, because standalone executable files cannot be decompiled without a predicate act of infringement. Enforcement of software copyrights would thus protect everything in the box whether or not certain elements belong to the producer. Common law could allow the box to be opened, so the public could reuse unprotected elements, thereby stimulating downstream innovation. If a producer maintained restrictions beyond the term of copyright, courts could likewise permit the opening of the box on the grounds that the full contents then belong to the public. As to the form of common law, a court could not plausibly read a decompilation rule into the statute, but it could scrutinize efforts to keep the black box sealed.

The functional nature of software presents the need for courts to coordinate copyright and patent law, particularly given differences in scope, duration, and criteria of protection.²⁴⁹ The patent-copyright interface is based on a distinction between functional and expressive innovations. Even though software is protectable under copyright law, its value lies in its functionality, which muddies the distinction between patents and copyrights. Allowing software to reside in copyright alters the public-private balance that each regime has struck.

While there is no easy answer to the tensions that software copyrights create with patent law, courts may scrutinize efforts that effectively expand rights as necessary intrusions into patent law. Producers expand their rights by frustrating decompilation of their source code. If producers can

246. Were more functional innovation the essential aim, Congress could merely subsidize software producers or give them tax breaks. *See* Frischmann, *supra* note 12.

247. *See* *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1248 (3d Cir. 1983).

248. *See supra* Part IV.A.2.

249. *See* Rice, *supra* note 163, at 546 ("Differences in approach, scope and limits of patent and copyright necessitated by the public goods problem make it imperative to settle whether and how each should apply to a particular product of human innovation or creation.").

maintain a secret base of functional knowledge that is further grounded in a legal monopoly, copyright law can undercut the integrity of patents. Software patents appear less valuable by contrast (e.g., due to the longer duration of copyrights).

Software copyrights further present a coordination issue with antitrust law, because the magnified protection carries a greater potential for competitive harm than with traditional subject matter. As with many industries, software can be fiercely competitive, yet the scope and nature of protection can and does create monopolies—Microsoft being the most obvious example.²⁵⁰ Antitrust law serves as the obvious limit on overreaching just as it does in the patent regime. Thus, courts already recognize a substantive need for common law, and need only look to familiar law to ensure that producers have not unreasonably burdened competition.

Thus far, we have focused on particular attributes of software as an innovation; yet looking at software in its broader context, a striking imbalance in public and private interests emerges. In the absence of common law, software producers can effectively acquire a monopoly of underlying ideas and expression, all the while maintaining secrecy in their designs, for a term of life plus seventy years. The producers can potentially supplement their copyrights with patent protection,²⁵¹ licensing restrictions,²⁵² federal criminal law,²⁵³ and technological restrictions.²⁵⁴ And the industry itself may magnify emergent inefficiencies because of the high pace of change, thereby compounding lead-time effects and application effects.

The nature of software copyright protection marks the emergence of information fencing in copyright law; this, in turn, justifies common law to safeguard a broader public policy favoring openness. Doctrinal development might involve new rules that seek to balance public and private interests, or it might turn to familiar doctrine. We advocate a mix of both, namely narrowly-crafted public policy-based rules complementing antitrust law and the fair use doctrine.

250. As of November 1999, Microsoft enjoyed roughly a ninety-five percent market share, with the prospect that this figure would increase in subsequent years. *See United States v. Microsoft Corp.*, 84 F. Supp. 2d 9, 27-28 (D.C. Cir. 1999).

251. *See Diamond v. Diehr*, 450 U.S. 175, 192-93 (1981) (establishing patentability of software subject to standard criteria).

252. *See Cohen, Lochner, supra* note 184 (digital rights management); Reichman & Uhler, *supra* note 240, at 810 (pointing to standard form contracts).

253. *See supra* note 219.

254. *See Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1515-16 (9th Cir. 1992) (involving lock-out technology for computer games); Froomkin, *supra* note 220 (discussing cryptography extensively).

This subsection has developed a basis for common law without rigorously defining a role for copyright misuse. We undertake this process in the following subsections by evaluating the limits of the fair use doctrine and antitrust-based misuse. What emerges is a remaining need for court action, calling for the extension of existing doctrines.

2. *The Limits of Fair Use*

Fair use is a complete, statutory defense to copyright infringement that protects conduct such as reporting, scholarship, and parody.²⁵⁵ Several courts of appeals have held that fair use also protects certain forms of reverse engineering.²⁵⁶ Yet, the defense does not fully meet the substantive demand for common law rule-making because of limitations on its scope. Moreover, applying the defense involves an ad hoc balancing of statutory factors,²⁵⁷ leaving actors with lingering uncertainty.²⁵⁸

255. See 17 U.S.C. § 107 (1994) (including "criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research"); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994) (parody).

256. See, e.g., *Sega*, 977 F.2d at 1527-28 (holding that "where disassembly is the only way to gain access to the ideas and functional elements embodied in a copyrighted computer program and where there is a legitimate reason for seeking such access, disassembly is a fair use of the copyrighted work"); *Atari Games Corp. v. Nintendo of Am.*, 975 F.2d 832, 843 (Fed. Cir. 1992) (holding that "reverse engineering object code to discern the unprotectable ideas in a computer program is a fair use"); see also *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000).

257. See, e.g., *Sony v. Connectix*, 203 F.3d at 602 (limiting holding to facts of case). The factors are "(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purpose; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work." 17 U.S.C. § 107 (1994).

258. See Fisher, *supra* note 25, for a particularly strong criticism of the fair use doctrine as applied generally:

The fair use doctrine, recently revamped by the Supreme Court, is in bad shape. Confronted with a defendant who seeks to avoid liability under the Copyright Act on the ground that his action, though inconsistent with section 106, was nevertheless "fair," a court is now obliged to undertake an examination of the "particular facts and circumstances" of the case, guided only by a nonexhaustive list of "factors," many of which are ambiguous or flawed, and by four general "objectives" (drawn from four different traditions in political theory) that frequently will point toward different outcomes. The difficulty of predicting how courts will make such judgments has left many producers and users of copyrighted materials uncertain as to their legal rights.

Id. at 1793-94.

While the Supreme Court has not taken a reverse engineering case, the Court has stressed that fair use is generally reserved for uses that do not adversely affect the plaintiff's market.²⁵⁹ For example, the Court rejected the defense where a defendant had copied factual news accounts in writing an article, based partly on the fact that the defendant's article "adversely affect[ed] the potential market for the copyrighted work."²⁶⁰ The Court has further recognized that the market effects analysis extends to uses that preempt a copyright holder's entry into a foreseeable market.

The Ninth Circuit made the definitive statement on reverse engineering as a fair use,²⁶¹ holding that "where disassembly is the only way to gain access to the ideas and functional elements embodied in a copyrighted computer program and where there is a legitimate reason for seeking such access, disassembly is a fair use of the copyrighted work."²⁶²

Sega established the fair use defense for intermediate copying, yet the court established limits on its scope that made it an incomplete answer to the substantive need for further common law development. The *Sega* court suggested that where a defendant's purpose in disassembling object code is not "legitimate," the fair use defense would be unavailable.²⁶³ In qualifying legitimate conduct, the court emphasized that the defendant, Accolade, had not avoided an independent creative process: indeed, most of Accolade's software had already been developed for other hardware systems.²⁶⁴ This reasoning implies that a defendant who decompiles simply to avoid "reinventing the wheel" might fare differently than Accolade.²⁶⁵ The

259. See *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 566 (1985) (recognizing that market effect "is undoubtedly the single most important element of fair use"); see also *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 590 (1994); cf. *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 451 (1984) ("[I]f the intended use is for commercial gain, [significant market harm] may be presumed."); *Am. Geophysical Union v. Texaco, Inc.*, 60 F.3d 913, 926-27 (2d Cir. 1994) (acknowledging that market effect includes foreseeable derivative markets); *Lewis Galoob Toys, Inc. v. Nintendo of Am., Inc.*, 964 F.2d 965, 971 (9th Cir. 1992).

260. *Harper & Row*, 471 U.S. at 568 (quoting *Sony v. Universal*, 464 U.S. at 451).

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

262. *Id.* at 1527-28. Yet, Professor Miller provided a critique of *Sega* as "singularly ill-suited to vindicating the public interest" because intermediate copying would not be allowed for literary works other than software. Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1022 (1993). But see Cohen, *supra* note 163, at 1105 ("*Sega* is faithful to both the letter and the spirit of the copyright laws.>").

263. See *Sega*, 977 F.2d at 1527-28.

264. *Id.*

265. See *Triad Sys. Corp. v. Southeastern Express Co.*, 64 F.3d 1330, 1336 (9th Cir. 1995) ("Southeastern did not make a minimal use of Triad's programs solely to achieve

court's reasoning also suggests that the availability of noninfringing uses (such as licensing) would alter the analysis.²⁶⁶

Further, the *Sega* court's analysis of market effects leaves uncertainty, and appears to be partially at odds with the Supreme Court's guidance. The *Sega* court stressed that disassembly, in order to create competitive software, "affected the market for Genesis-compatible games in an indirect fashion."²⁶⁷ Its reasoning is illuminating: "no consumer except the most avid devotee of President Ford's regime might be expected to buy more than one version of the President's memoirs, [yet] video game users typically purchase more than one game."²⁶⁸ The court suggested that because one more competitor in an active market would not seriously impact a plaintiff, its economic loss was de minimus.²⁶⁹

Yet, if one considers a different market, it is unclear that *Sega's* reasoning still applies. A competitor that decompiles Netscape or Internet Explorer in order to enter the browser market might significantly alter the existing balance in market share.²⁷⁰ Factors that may support a distinction between video games and browsers include the availability of substitutes, the barriers to market entry, and (potentially) the demand for the products in general. As consumers have demanded more sophisticated features in

compatibility with Triad's computers for Southeastern's own creative programs. Rather, Southeastern has invented nothing of its own; its use of Triad's software is, in the district court's words, "neither creative nor transformative and does not provide the marketplace with new creative works."); Karen E. Georgenson, *Comments: Reverse Engineering of Copyrighted Software: Fair Use or Misuse?* 5 ALB. L.J. SCI. & TECH. 291, 302 (1996) ("Emphasizing the distinction between intermediate copying to achieve compatibility, which allows entrance into a market, and intermediate copying done to pirate another's creative expression, the [*Sega*] court found it significant that Accolade used the ideas found in the program to produce a compatible product and did not copy any creative expression directly.").

266. See also *Sony Computer Entm't, Inc. v. Connectix Corp.*, 203 F.3d 596, 603 (9th Cir. 2000) (considering "whether the methods by which Connectix reverse-engineered the Sony BIOS were *necessary* to gain access to the unprotected functional elements within the program") (emphasis added).

267. *Sega*, 977 F.2d at 1523.

268. *Id.*

269. *Id.* at 1534 (concluding that "the fourth statutory factor weighs in Accolade's, not *Sega's*, favor, notwithstanding the minor economic loss *Sega* may suffer"); see also *Sony v. Connectix*, 203 F.3d at 607 ("[S]ome economic loss by Sony as a result of this competition does not compel a finding of no fair use."); cf. *Atari Games Corp. v. Nintendo of Am.*, 975 F.2d 832, 844 (Fed. Cir. 1992) ("Atari could not use reverse engineering as an excuse to exploit commercially . . . protected expression.").

270. See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994) (considering "whether unrestricted and widespread conduct of the sort engaged in by the defendant . . . would result in a substantially adverse impact on the potential market" for the original).

the browser market, the barriers to entry have steadily increased. As a result, the browser market, like President Ford's memoirs, presents consumers with relatively few choices. Therefore, a software manufacturer that reverse-engineers and substantially borrows Netscape's body of functionality could plausibly supplant Netscape in the browser market.

The *Sega* court's market effects analysis also exhibits some internal tension. The court apparently embraced competition as a justification for intermediate copying by emphasizing the public benefit of market entry and competition. However, the court sought to distance the challenged conduct from the foreseeable competitive harm by casting the downstream market effects of intermediate copying as "indirect." Particularly given the Supreme Court's guidance, it remains unclear that the Court would recognize increased competition as consistent with Congress' intent in § 107(4).

Further, as commentators have observed, a fair use defense does not preclude software developers from imposing higher technical and legal barriers against reverse engineering.²⁷¹ Rather, it protects only prospective competitors who are clever or persistent enough to surmount these ever-increasing hurdles. Therefore, even a broader fair use defense, which could completely and unambiguously protect intermediate copying, would not suffice in promoting creative transfers if barriers to decompilation become unreasonably high.

Finally, even if fair use were sufficient to meet the substantive demand for further common law, it remains procedurally more limited than copyright misuse. The fair use defense succeeds only where the defendant *at bar* makes some fair use of a copyrighted work. In contrast, courts evaluating a misuse defense primarily focus on the plaintiff's conduct: the misuse defense can prevail without further focus on the defendant.²⁷² In this sense, the broader procedural coverage of misuse can complement fair use in restoring the public benefits inherent in copyright law. In any event, the preceding discussion clarifies that copyright misuse is not substantively coextensive with fair use. Therefore, both defenses remain necessary to reinvigorate the downstream innovation in software development.

271. See Cohen, *Self-Help*, *supra* note 184, at 1093 ("Together with technology experts, information providers are developing secure packaging and delivery software designed to prevent purchasers and third parties from making unauthorized uses of digital content."); Marshall Leaffer, *Engineering Competitive Policy and Copyright Misuse*, 19 U. DAYTON L. REV. 1087, 1097 (1994) (discussing the use of legal and technological hurdles to impede reverse engineering).

272. Assuming that the defendant comes to the court with clean hands. See, e.g., *Atari*, 975 F.2d at 846. It is not settled whether the defendant needs to have clean hands. See Part IV.B-C.

Thus, fair use is an important part of an answer, but not a complete answer to the challenges posed by software. Producers remain able to effectively seal downstream innovation through licensing or technology.²⁷³ Patent and copyright still apparently conflict, and the system of information fencing generally prevails. Courts must turn to other sources of law to fill out the necessary range of responses.

3. *The Limits of Antitrust-Based Copyright Misuse*

Like the fair use defense, antitrust-based misuse plays an important role in meeting the demand for common law, yet it is not a complete solution. Antitrust and copyright law are compatible in certain respects,²⁷⁴ warranting the extension of antitrust principles to a copyright defense. Yet antitrust does not necessarily promote copyright policy, leaving a remaining demand for further court involvement.

Antitrust is partly consistent with copyright law in that antitrust prevents unreasonably anticompetitive conduct which would impair markets. Copyright significantly depends on markets to distribute innovation efficiently. By promoting competitive markets, antitrust thereby indirectly promotes broader distributions of innovation in general. Software's particular nature makes it susceptible to aggregations of market power,²⁷⁵ so antitrust law can play a correspondingly greater role in promoting the distributional policies of copyright law.²⁷⁶

273. See *Atari*, 975 F.2d at 842 ("An author cannot acquire patent-like protection by putting an idea, process, or method of operation in an unintelligible format and asserting copyright infringement against those who try to understand that idea, process, or method of operation.").

274. Cf. *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 511 (7th Cir. 1982) (recognizing that antitrust and intellectual property misuse are both "designed to prevent an anti-competitive practice . . ."); WARD S. BOWMAN, JR., *PATENT AND ANTITRUST LAW: A LEGAL AND ECONOMIC APPRAISAL* ch. 1 (1973) (discussing compatibility of patent and antitrust law, in that both promote allocative and productive efficiency). See generally HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY, THE LAW OF COMPETITION AND ITS PRACTICE* 217-18 (West Publ'g 1994) (1948) (explaining that patents, as well as copyrights and trademarks, are governed by detailed federal statutes that create numerous potential conflicts with antitrust policy); William F. Baxter, *Legal Restrictions on Exploitation of the Patent Monopoly: An Economic Analysis*, 76 *YALE L.J.* 267 (1966) (arguing that monopoly power under patent protection can be abused by restrictive licensing agreements, leading to greater monopoly power than is economically justified).

275. See *supra* Part IV.A.

276. See 35 U.S.C. § 271(d)(5) (1994) (requiring showing of market power for misuse defense).

Yet, antitrust doctrine is not designed, nor is it sufficient, to promote intellectual property policy in a more directed sense.²⁷⁷ Antitrust analysis cannot account for the *social* costs of information fencing,²⁷⁸ just as it cannot correct internal deficiencies in copyright law or coordinate copyright and patent law. The three courts of appeals adopting copyright misuse recognized as much in holding that conduct may violate copyright policy without rising to the level of an antitrust violation.²⁷⁹

4. Conclusions

Software copyrights justify common law-making on the three levels of the jurisprudential model, namely correcting, coordinating, and safeguarding. Software exposes discrete gaps in the Copyright Act and creates a need to coordinate copyright law with patent and antitrust law. Further, doctrinal development is justified by the emergence of information fencing, creating a need for courts to safeguard core policies of copyright law.

Notwithstanding the fair use defense or antitrust-based misuse, a substantive need for judicial scrutiny of software copyrights persists. Copyright misuse presents courts with an opportunity to extend the existing common law to help restore the public-private balance in copyright law.

C. Refinements in Software Copyright Misuse

The substantive basis for software copyright misuse remains only part of an answer. This section proposes a refined approach to copyright misuse that should help meet the existing demand for common law, while affording greater precision and certainty than the existing common law.

Antitrust-based copyright misuse is the cornerstone of our approach. Antitrust law is capable of balancing the costs and benefits of a producer's

277. Cf. Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813 (1984) (considering the complex and often conflicting relationship between antitrust and patent law).

278. However, scholars have suggested that *economic* evidence of the desirability of innovation policy is far from determinative. See, e.g., George L. Priest, *What Economists Can Tell Lawyers About Intellectual Property: Comment on Cheung*, 8 RES. L. & ECON. 19, 21 (John Palmer & Richard O. Zerbe, Jr. eds., 1986) ("Economists know almost nothing about the effect on social welfare of the patent system or of other systems of intellectual property.").

279. See *Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772, 799 (5th Cir. 1999) (dismissing the antitrust claim while finding a misuse of copyrights); *Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516, 521 (9th Cir. 1997) (agreeing with the Fourth Circuit that a defendant "need not prove an antitrust violation to prevail on a copyright misuse defense"); *Lasercomb Am. Inc. v. Reynolds*, 911 F.2d 970, 978 (4th Cir. 1990) (commenting that misuse of copyright "need not be a violation of antitrust law in order to comprise an equitable defense to an infringement action").

conduct, and gives actors relative certainty. Where antitrust cannot fulfill the demand for common law, fair use can push further to protect certain forms of intermediate copying. Finally, courts may supplement the existing protections with narrow public policy-based misuse rules that restore the public-private balance of copyright law.

With this sketch of our approach, the rest of this section further explores the remaining substantive need for common law. In particular, we focus on conduct impairing the public's access to source code, while remaining sensitive to the need for rules that provide appropriate certainty. Through this focus, we derive a single per se misuse rule against licensing provisions that clearly restrict reverse engineering.²⁸⁰ Subsection 2 explores how the approach would alter the analysis in the *Alcatel* case.

1. *Crafting a Rule*

A per se rule barring *any* restrictions on reverse engineering would cover too many types of conduct.²⁸¹ Such a bar would include both legal and technological restrictions without a coherent way of distinguishing overreaching from legitimate protection. Particularly in the realm of technology, courts should be wary of imposing rules because of the risk of impairing legitimate innovation, such as security technologies for sensitive data-processing systems. For cases presenting antitrust concerns, courts should apply traditional antitrust per se rules or the rule of reason. For the remaining class of cases that appear to undermine a public policy of copyright law, courts should allow the legislature to pass a resolution rather than try to formulate a sui generis public policy-based balancing test.

Reverse engineering restrictions are not always so difficult to evaluate. Indeed, some such restrictions can be easily discerned, and carry minimal potential for public benefit, instead of simply fencing in information to aggregate private gain. Licensing restrictions against reverse engineering fit into this class: unlike technical barriers to innovation, they can be easily identified and judged.

The jurisprudential functions support a per se rule against reverse engineering licensing restrictions. Such a rule, in conjunction with existing common law, would fill gaps in the law that allow the hidden expression and black-box protection of software.²⁸² The rule would provide further

280. Yet we recognize that this list might be expanded. For example, a per se misuse rule exists for fraud and license restrictions extending copyright protection to uncopyrighted products. *See supra* note 164.

281. *But see* Georgenson, *supra* note 163 (arguing that the copyright misuse doctrine should be applied to software reverse engineering cases in lieu of the fair use defense).

282. *See supra* Part IV.B.1.

coordination with patent and antitrust law by reducing the private benefit of software copyrights and their attendant potential for monopoly.²⁸³ Finally, a per se rule would help to safeguard the open system of copyright law by reducing information fencing.

2. *Applying the Rule*

This section returns to the *Alcatel* decision examined above to see how the range of common law rules we recommend would have applied.²⁸⁴ This analysis is not intended to be complete. Since the law is well understood in certain forms of analysis (such as the rule of reason and fair use), our purpose is simply to identify where these forms of analysis would apply rather than to follow the analysis through to its conclusion.

In *Alcatel*, the Fifth Circuit denied plaintiff (DSC) copyright relief because it had sought protection over unpatented switching devices.²⁸⁵ Following *Lasercomb's* public policy misuse approach, the court reasoned that “[i]f DSC is allowed to prevent such copying, then it can prevent anyone from developing a competing microprocessor card, even though it has not patented the card.”²⁸⁶ As we observed, the court likely adopted a public policy-based misuse rule against licensing restrictions that extend the scope of copyright protection to uncopyrighted products.²⁸⁷

Under our approach, a court should first look for per se violations of antitrust law or copyright policy. It is doubtful that DSC's conduct would give rise to per se antitrust liability,²⁸⁸ yet DSC did impose the following licensing restrictions:

- (1) the operating system software remains the property of DSC;
- (2) the customer has the right to use the software only to operate its switch;
- (3) the customer is prohibited from copying the software or disclosing it to third parties;
- (4) the customers are au-

283. *See id.*

284. For the previous discussion of *Alcatel*, see *supra* Part III.B.3.

285. *See Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772, 778-79 (5th Cir. 1999).

286. *Id.* at 793-94.

287. *See supra* Part III.D.2.

288. The court rejected DGI's Sherman Act section 1 claim of monopoly, concluding there was no showing of monopoly power in a relevant market. *See Alcatel*, 166 F.3d at 784. DGI did not bring a section 1 tying claim, which requires a plaintiff to prove that there was “an agreement by a party to sell one product but only on the condition that the buyer also purchases a different (or tied) product, or at least agrees that he will not purchase that product from any other supplier,” that the seller “has ‘appreciable economic power’ in the tying product market,” and that “the arrangement affects a substantial volume of commerce in the tied market.” *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 461-62 (1992) (quotations omitted).

thorized to use the software only in conjunction with DSC-manufactured equipment.²⁸⁹

The *Alcatel* court mainly concerned itself with DSC's restriction against using other equipment manufacturers.²⁹⁰ The tying arrangement thus formed the basis for the court's public policy-based ruling.

DSC's second and third licensing restrictions also indirectly bar reverse engineering implicating our own rule, yet they would not be sufficiently clear to deny enforcement of the copyright. The second restriction might, for example, be included to ensure quality control or limit DSC's liability for unauthorized uses, which involve some social benefit. The third restriction merely restates DSC's right to prevent copying, which presents no problem. The third restriction, because it is an outright bar against disclosure, comes the closest to violating our per se rule. However, because the restriction deals with third parties and not the defendant, the provision simply reinforces DSC's right to exclude unauthorized persons from accessing the work.

Finally, a case calling for application of the rule of reason would proceed on familiar grounds, weighing anticompetitive costs against procompetitive efficiencies.

The key to this analysis is that a licensing restriction should be unambiguous in order to justify application of a per se rule.²⁹¹ Otherwise, a restriction serving some legitimate purpose could be foreclosed inadvisably. Yet nonapplication of a per se rule, as in antitrust, does not mean courts should not scrutinize the plaintiff's conduct. It simply recommends an established doctrine that can adequately balance public and private interests while affording greater certainty than a sui generis public policy-based balancing test.

V. CONCLUSION

This Article has explored the common law defense of copyright misuse in a manner calculated to expose the theoretical underpinnings of the doctrine as well as to provide practical guidance on future doctrinal development. The federal courts play an increasingly important role in today's world. Copyright, patent, and antitrust laws converge, intersect, and con-

289. *Alcatel*, 166 F.3d at 777.

290. *Id.* at 793-94.

291. *Cf. Nynex Corp. v. Discon, Inc.*, 525 U.S. 128, 133 (1998) (recognizing that the antitrust per se rule should apply only where conduct "will so often prove so harmful to competition and so rarely prove justified that the antitrust laws do not require proof that an agreement of that kind is, in fact, anticompetitive in the particular circumstances").

flict on numerous issues, particularly when applied to industries experiencing rapid technological change. In response, common law emerges from the substantive demand for internal statutory correction, interstatutory coordination, and safeguards that protect the public interest.

Given the evolving nature of common law, any future development of the copyright misuse defense must build upon the current state of the law. Supreme Court guidance has paved the way for intellectual property misuse, although the Court has yet to explicitly hold that copyright misuse exists. In addition, the binding and persuasive case law of the federal circuit courts demonstrates conflicting views on precisely how to apply the doctrine, e.g., whether the defense should be based on public policy or antitrust principles. A mixed approach involving antitrust-based misuse supplemented by narrow public policy-based *per se* rules best allows courts to meet the substantive demand for common law rules without overreaching.

In the software context, this Article proposed a single public policy-based, *per se* rule against licensing restrictions that complements antitrust-based misuse and the fair use doctrine. This proposal is only part of an answer to the challenges posed by software.²⁹² In crafting additional public policy-based *per se* rules, courts should first consider the substantive need for doctrinal development. They should then turn to existing doctrines and ask whether the need has been met. If the need is met, of course, the court need only apply the familiar doctrine. If existing law provides an incomplete or unclear answer, the court should ask if a public policy-based *per se* rule could be crafted precisely and clearly to meet the needs of the case. Courts should be wary of this road, as we have argued, because of the risk of overreaching and of foreclosing legitimate efforts to innovate. Unless the court can identify both the need for doctrinal development and a clear procedural approach, the court should rely on the rule of reason to balance the competing public and private interests. There are admittedly important public interests that are not cognizable (or are poorly represented) in the antitrust rule of reason, but absent legislative guidance, courts should not attempt to balance the various public policies at stake.

292. See, e.g., *supra* note 164; cf. Mark A. Lemley, *The Law and Policy of Intellectual Property Licensing*, 87 CALIF. L. REV. 111, 116 (1999) (anticipating that copyright misuse would bar some license terms that Proposed Article 2B of the UCC would validate).

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