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Reconstructing the Software License

Michael J. Madison
University of Pittsburgh School of Law

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*Michael J. Madison**

I. INTRODUCTION

Software licensing and licensing of digital information in general create a regime of information governance for the Internet and beyond. This Article proposes to describe how this regime works—or fails to work—in legal terms.

What prompts this discussion is the emergence of "open source" licensing,[1] a scheme of software licensing that makes comprehensive governance of a field of information production and distribution—the creation and maintenance of an information "commons"—its goal, rather than its by-product. But the conceptual problems underlying software-licensing-as-governance are not limited to the open source model. They extend to "conventional" negotiated, bilateral software licenses; to shrinkwrap, click-through, and click-wrap license forms in the mass market (for both computer programs and for other digital information works); and to technologies for "Digital Rights Management" and laws, such as the anti-circumvention provisions of the Digital Millennium Copyright Act ("DMCA"),[2] designed to protect them. All three of these legal forms are expressions of a single licensing framework. This Article aims to explore the conceptual conflicts they embody. Scholars and advocates who praise the open source licensing model and condemn the DMCA and standard proprietary licenses must confront what appear to be structural commonalities among them. To promote the open source model, it

* Assistant Professor, University of Pittsburgh School of Law. E-mail: madison@law.pitt.edu. Thanks to Brett Frischmann, Jacqui Lipton, Fred Yen, Joe Liu, Molly Schaffer Van Houweling, Dan Burk, Lawrence Lessig, Greg Vetter, and participants at the Loyola University Chicago School of Law Conference on Technology and Governance for providing valuable commentary as this Article was being written. Thanks also to Lee Kim and Kate Steinbuhler for research assistance.

1. Open source licensing schemes permit users to access both the source code and object code of a particular computer program. In contrast, conventional or closed source licensing schemes typically permit access only to the object code, preventing manipulations of the underlying program itself. A more thorough definition of open source licensing is provided in Part II.B.

2. *See* 17 U.S.C. § 1201 (2000).

appears, is to accept the legitimacy of licensing models that the open source model is designed to oppose. One way to confront this paradox is to question whether and when licenses are enforceable legal artifacts in the first place. Governance raises legitimacy questions.[3] What is the source of the legitimacy of software licensing?

Licensing is governance of an unusual sort, since it operates at several levels simultaneously. At the level of the individual license, all licenses of copyrighted works exert some form of governance. Licenses define the circumstances under which those who work with copyrighted material can do so without fear of suit. Software licensing takes this a step further. For all intents and purposes, according to software licenses themselves, copies of computer programs are never sold outright. They are always licensed. On a second level, "the" license for a given program governs not only the relationship between the copyright owner and a particular licensee but also the relationship between the owner and all "users" of that program. Each user may pay royalties according to a different schedule (or not pay royalties at all), but the license serves as an effective constitution for the information domain defined by the program. At a third level, to the extent that all computer programs are subject to licenses and to the extent that those licenses are effectively identical in relevant respects, the world of software is effectively governed by the very concept of the license. If there is no ability to choose an "unlicensed" version of the copyrighted work, the licensing norm displaces the Copyright Act as the relevant law. To the extent that this norm extends beyond computer programs to digital works of all kinds and potentially to all copyrighted works, the Copyright Act

3. In large part, the legitimacy of a government, that is, its power to impose order through law and to expect acceptance of and compliance with its authority, ultimately depends on the internalized sense of the populace that the governance process is rational or objective. *See* Alan Hyde, *The Concept of Legitimation in the Sociology of Law*, 1983 WIS. L. REV. 379, 380–85 (discussing the German sociologist Max Weber's definition of legitimacy); *cf.* TOM R. TYLER, WHY PEOPLE OBEY THE LAW 161–69 (1990) (discussing psychological bases for perceived legitimacy of law); Tom R. Tyler, *Compliance with Intellectual Property Laws: A Psychological Perspective*, 29 N.Y.U. J. INT'L L. & POL. 219, 229–33 (1996–1997) (discussing psychological bases for perceived legitimacy of law); Tom R. Tyler & Gregory Mitchell, *Legitimacy and the Empowerment of Discretionary Legal Authority: The United States Supreme Court and Abortion Rights*, 43 DUKE L.J. 703, 764–72 (1994) (discussing governance of abortion). Legitimacy also depends on governance proceeding via externally validated processes and forms. *See* JURGEN HABERMAS, LEGITIMATION CRISIS 97–123 (Thomas McCarthy trans., Beacon Press 1975) (1973); Wesley Shih, *Reconstruction Blues: A Critique of Habermasian Adjudicatory Theory*, 36 SUFFOLK U. L. REV. 331, 335–41 (2003) (discussing Habermas' discourse principle). This Article thus views governance as defined by social structures as well as by formal organizational structures exercising coercive authority per se. For an example of a narrower view of governance as structured coercion, see Roderick M. Hills Jr., *The Constitutional Rights of Private Governments*, 78 N.Y.U. L. REV. 144, 148–50 (2003).

recedes to an ever greater extent. Finally, there is the possibility that the licensing norm itself is internalized by the reader, listener, and user communities such that the world of information production and consumption is regulated informally, even in the absence of formal "legal" enforcement of particular licenses and of norms exogenous to the license itself.[4] Understanding the legitimacy of the licensing norm, as both a formal and an informal governance institution, is important at each of these levels.

This Article concerns and examines each of these levels. A key concern common to all of them is the following attribute of software licensing: Owners of software copyrights purport to "license" copies of the programs themselves as well as the work each copy contains. Governance thus extends not only to the manner in which "licensees" work with (intangible) copyrighted works of authorship but also to the manner in which "licensees" work with (at least nominally tangible) artifacts,[5] and to their transactions in artifacts. In the digital age, the licensing norm supplies a regime of private governance of all aspects of our information culture, both intangible and tangible.

Suppose a software developer uses computer program code in some way that contradicts the precepts of the license to which it is allegedly subject—a conventional proprietary license or a newer "open source" license. What remedy, if any, does and should some rights holder have against that developer?[6] There are at least three possible sources of legitimacy and thus enforceability here, none of which are entirely

4. Michael J. Madison, *Legal-ware: Contract and Copyright in the Digital Age*, 67 FORDHAM L. REV. 1025, 1029 (1998) [hereinafter Madison, *Legal-ware*] (warning that this result might follow from legal enforcement of shrinkwrap licenses).

5. "Artifact" in general means any object produced by human workmanship. Here, I use the term to refer both to common tangible or physical instantiations of copyrighted works, such as books, as well as modern abstract equivalents, such as computer programs, that, in practice, have no meaningful tangible substrate. In an important sense, computer programs are artifacts that consist of mathematical abstractions. In practical terms, they may lack any meaningful physical form. They may be delivered to users via disk, tape, or chip, but in the context of a computer network, they may also be delivered entirely electronically, as electronic signals.

6. Since the open source model is designed to hold upstream and downstream software producers in a de facto collaborative arrangement, *see infra* Part II.B, it should be noted that it is possible to create the collaborative environment without the kicker of the formal license. ROBERT C. ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 167–83 (1991) (describing limited conditions in which social norms are likely to emerge as welfare-enhancing regulators); A. Michael Froomkin, *Habermas@discourse.net: Toward a Critical Theory of Cyberspace*, 116 HARV. L. REV. 749, 759–63 (2003) (describing the theoretical Habermasian possibility of legitimate institutions arising via the process of discourse itself); *id.* at 798 n.233 (characterizing open source software development as an (imperfect) example of legitimation via consensus); *see also infra* note 146 and accompanying text (discussing the emergence of private cooperative social norms and their relation to copyright law).

independent of the others but which can be roughly categorized as follows. First, licensing and each individual license may consist of a valid, specialized application of contractual norms, either in a stand-alone framework (that is, licenses are nothing more than enforceable contracts) or representing the enforceable allocation and re-distribution of property law entitlements in computer software. Second, licensing as a system of information governance may be a custom or norm that has been effectively adopted as law and that should justify enforcement of any particular license. Third, licensing as private governance may operate effectively as, and both the system and its components should be enforceable by analogy to, other recognized systems of private ordering of social arrangements. My principal goal below is to review each of those arguments, and they occupy Parts III, IV, and V respectively. Definitions and characterizations of software licensing as a governance regime are necessary as initial matters. Those topics occupy Part II.

This Article concludes that none of these sources supplies complete and effective *legal* support for the software license, particularly as background distinctions between computer "software" and "hardware," on the one hand, and the world of legal regulation, on the other, are eroding. Part VI suggests that the foundational problems with licensing-as-governance mean that it may be time to jettison, at least in some contexts, licensing as a conceptual framework. Collaborative social relationships among participants in open source projects, and "commons" and public domain dimensions of information production and distribution, may be better supported using other frameworks. Controlled, proprietary information production and distribution may likewise turn out to be poorly matched to the licensing model. Our existing conceptual category—licensing-as-governance in particular—may turn out to be a poor legal guide to the multiplicity of paths that the world of digital information creates.

II. LICENSING AS GOVERNANCE

In a sense, most of us know how licensing works. In another sense, we do not, or at least we rarely focus on its legal mechanics. This Part describes the practice of licensing of digital information generally as a mode of private governance of the contemporary information environment. It describes the key features that link the legal forms that licensing takes, including conventional licenses for pre-written computer programs and other digital works, open source software licenses, and copy and access control technologies, including Digital

Rights Management technologies regulated by the DMCA and potentially applicable to all digital information works.

Any license of a copyrighted work is a way of describing rights to "own" and "use" certain cultural artifacts. To copyright lawyers, the landscape of the license, and thus of the software license, is familiar. For books or plays or films, the landscape described by the license is relatively simple and categorical. The license does not describe who owns the physical book or script or film itself, though that "thing" may be leased or rented, and the document entitled "license" may describe the terms of that rental. Perhaps explicit but typically implicit in that document are two facts: First, that there exists a legally defined "work of authorship" that is embodied in that thing but that has a legally recognized existence independent of it, and second, that ownership of the physical thing is a legal status that exists independently of ownership of the copyright in that "work of authorship." The high school that wants to perform Thornton Wilder's "Our Town" can buy copies of the script, yet it still will need to license separately the right to its public performance. But that high school, if it has paid in full for its copies of the script, can resell or give away those copies, perhaps to another high school. That second school, if it also wants to perform the play, has to negotiate a separate license.

There are thus three distinct legal phenomena represented in that landscape: ownership of the physical book (which may reside with the copyright owner or with the user); ownership of the "work of authorship" itself, which we know as the copyright in the work and which remains with the licensor; and the license to enjoy some right within that copyright, which is granted to the licensee.

The landscape defined by the typical software license is different. The software license defines its subject not only as the enjoyment of some right within the copyright in a given computer program but also as "the Program" itself. The licensor asserts that it retains title to "the Program," by which the license means not "the copyright to the Program," but "this particular copy of the Program that the licensee is paying for." The license then goes on to provide that the licensee has only the rights to reproduce or distribute the Program as may be provided in the text of the license, and the licensee may, or may not, dispose of its copy of the Program according to the terms of the license. The landscape of the software license has four, not three, distinct legal phenomena represented within it: ownership of the disc, tape, cartridge, or chip on which the user's copy of the Program is stored (and which is typically owned outright by the software user); ownership of the Program, that is, the electronic instantiation of the instructions that

comprise the computer program, stored on that medium (according to software licenses, this is owned by the copyright owner and "licensed" to the user); ownership of the copyright in that Program, which is the work of authorship (also owned by the copyright owner); and the license to enjoy some right within that copyright (granted to the licensee). To own the work of authorship in a "book" is to own the copyright in that work but not necessarily to own each book containing that work. In the typical software license, a software developer owns both a copyright in the Program and title to each copy of that Program imprinted somewhere on a disk.

It is this unique assertion of control over the tangible artifact, the user's particular copy of the Program, that distinguishes licensing of digital electronic works from the traditional world of copyright licensing. For, the argument goes, that artifact cannot pass from its initial "licensee" to another except by permission of the artifact's owner, which is the copyright owner. And if it cannot so pass, then that permission may be granted conditionally; in effect, each copy of the Program itself may be painted with the condition, so that its "licensed" status remains intact as it passes from storage medium to storage medium, and from possessor to possessor. No copy of that Program ever exists that is not "owned" by its initial "creator." This Part describes how this framework can be traced through not only conventional "closed source" software licenses but through all forms of contemporary software licensing.

A. The Closed Source License

The core of the conventional software license is copyright-based legal protection for the computer program.[7] Very broadly speaking, a computer program exists, technologically, in two possible forms: "source code," in which the instructions that constitute the program are prepared in a language comprehensible to both humans and computers, and "object code" (sometimes called "binary" or "executable" code), a computer-generated translation of those same instructions that is intended to be comprehensible primarily to a computer, which a given computer actually uses when it runs that program. Conventional distribution of computer software has been based on distribution of copies of this "object code" and retention of the source code by the

7. Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1253–54 (3d Cir. 1983) (confirming the copyrightability of computer programs in object code form under the Copyright Act of 1976).

developer.[8] The distinction preserves the developer's ability to control production of derivative versions of the program and add-on features, both of which are feasible only with access to the underlying source code.[9] The conventional software license consists of a document or electronic record that accompanies each (object code) copy of the program, formally assented to by each user of that program, which confirms this technological division and further purports to specify the scope of the user's legal right to make use of that object code. Most important among the specifications of permitted and proscribed uses, the conventional license states that the licensee may not modify the program in any way or "reverse engineer" the object code that has been provided, that is, to engage in any of a number of techniques that might be used to reverse the translation process and obtain a copy of the source code to the program.[10]

The conventional license goes one important step beyond recitals of acceptable and unacceptable use. The license states that title to the code itself, to the particular copy of the program (in object code form) that is acquired by the licensee, remains with the developer.[11] In this important sense, the software license is designed to defeat copyright law's doctrine of first sale, which would otherwise permit the "licensee" to re-distribute that copy of the program,[12] and copyright's traditional distinction between the work of authorship protected by copyright law and the tangible artifact in which a work is embodied that is protected by other law. This gives bite to the conventional license statement that forbids the "licensee" from transferring this copy of the object code without the permission of the developer,[13] to the claim that the software product cannot be broken into components and redistributed in

8. In the software industry, the source code to a given program is rarely licensed and even then only under very narrow conditions. It is often referred to as the "crown jewels" and is guarded in the corporate equivalent of the keep of a castle. *See* Andrew Johnson-Laird, *Software Reverse Engineering in the Real World*, 19 U. DAYTON L. REV. 843, 896 (1994).

9. Retention of the source code has the added benefit of preserving the secrecy of any trade secrets in the source code. On the trade secret origins of the software license, see *infra* notes 131–33 and accompanying text.

10. *See generally* Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575 (2002) (analyzing reverse engineering of analog and digital technologies).

11. *See generally* David A. Rice, *Licensing the Use of Computer Program Copies and the Copyright Act First Sale Doctrine*, 30 JURIMETRICS J. 157 (1990).

12. *See* Madison, *Legal-ware*, *supra* note 4, at 1038–42. The typical license also incorporates terms that address a variety of other commercial considerations, including limitations on remedy and limitations on liability. *See id.* at 1074–75.

13. *See* 17 U.S.C. § 109(a) (2000) (providing ownership of a particular copy as a defense to claims of unauthorized distribution under section 106).

"unbundled" form,[14] and to the licensor's argument that "ordinary" use of the program, which typically involves reproducing the work on the licensee's computer, is authorized, if at all, by the license and not by operation of copyright law.[15] In short, the license is supposed to be enforceable because these conditions and restrictions are legally attached to each copy of the program, and they bind any user who uses that copy. Resistance is futile: All use of the computer program, at all times, is legally controlled by the copyright owner, acting through the license.

B. The Open Source License

The open source model of software licensing is characterized by a philosophy of structured openness and sharing of a computer program's source code, rather than the inherent closure that characterizes the conventional license.[16] But the basic software licensing framework—control of use, via control of title to the code itself—remains the same. As the conventional license begins with the developer's ownership of the software copyright, the open source model begins with control of the copyright in the code by some entity or group.[17] Though open source licenses differ from one another in many technical respects, under any open source license the source code of the program must always be available for inspection and adaptation by users, researchers, and customers—that is, anyone who wants to work with or use the

14. *See* Adobe Sys., Inc. v. Stargate Software Inc., 216 F. Supp. 2d 1051, 1060 (N.D. Cal. 2002).

15. Section 117 of the Copyright Act permits the "owner" of a copy of a computer program to engage in limited copying of that program in connection with its ordinary use. *See* 17 U.S.C. § 117 (2000). A mere "licensee" of that copy has, it appears, no rights under this section. *See infra* notes 97–101 and accompanying text (describing purposes of section 117 and the apparent conflict between its text and that of section 202, which distinguishes between rights in the work of authorship and the tangible object in which it is fixed).

16. The philosophical bases of the open source movement are as important as the legitimacy of its legal forms. As a commons-oriented model for scientific collaboration, "open source" mostly refers to computer software, but it also refers to computer hardware and to hardware and software combinations, particularly open source robots. *See, e.g.*, RoboCup Federation, The RoboCup Soccer Simulator, *at* http://sserver.sourceforge.net (last visited Sept. 28, 2003) (developing a research and educational tool for teams of automatic robotic soccer players). The "open source" movement emphasizes the more reliable character of "open" code somewhat more than its freedom from conventional property-based control. *See* Open Source Initiative, *at* http://www.opensource.org (last visited Sept. 28, 2003). The latter is the hallmark of the "free software" movement. *See generally* FREE SOFTWARE FOUND., GNU'S NOT UNIX, *at* http://www.fsf.org (last updated Dec. 1, 2003). For my purposes, I focus on the license forms themselves, which are collected around the "open source" model described in the text.

17. Criteria for certification of a license form as meeting the best-established definition of "open source" license are published by the Open Source Initiative at http://www.opensource.org/docs/definition.php.

program. Any future user, researcher, programmer, or customer is free to adapt and modify that code as he or she would like. Users are free to redistribute compiled (machine-executable) versions of their modified versions, for a fee or otherwise. The original source code must remain available, and the license under which it was obtained must provide that derivative creators may distribute the source code to their adaptations or modifications. Not all open source licenses require distribution of the source code to modifications.[18] Terms that do so are sometimes referred to as "copyleft" provisions and appear in the widely-used, open-source-qualified GNU General Public License[19] and the Mozilla Public License.[20] (Both license forms are certified under the Open Source Definition ("OSD"), published by the not-for-profit Open Source Initiative ("OSI"). To be certified by OSI as an OSD-compliant license, the license must provide that any distribution of the program, in its original form and as modified, include source code.)[21] By extending the source code disclosure obligation across all participants in an open source development project, "copyleft" emphasizes the value that the open source model generally ascribes to access to source code across time and that is characteristic of the open source model as a whole. In some descriptions of the model, the term "copyleft" is avoided in favor of broader descriptions of the principle that any onward distribution of the code be accompanied by license terms identical to those that accompanied receipt of the code,[22] including terms that mandate the availability of the source code. This mechanism thus implements the idea that the open source model represents an ongoing venture in

18. The distinction between licenses that require that source code be included in any downstream distribution of the source code and licenses that permit but do not require downstream source distribution is the distinction between what some refer to as "copyleft" provisions, for the former, and "open source" provisions, for the latter. *See* David McGowan, *Legal Implications of Open-source Software*, 2001 U. ILL. L. REV. 241, 254.

19. FREE SOFTWARE FOUND., THE GNU GENERAL PUBLIC LICENSE (GPL) (1991), *available at* http://www.opensource.org/licenses/gpl-license.php (last visited Sept. 28, 2003).

20. OPEN SOURCE INITIATIVE, MOZILLA PUBLIC LICENSE (n.d.), *available at* http://www.opensource.org/licenses/mozilla1.0.php (last visited Sept. 28, 2003).

21. OPEN SOURCE INITIATIVE, THE OPEN SOURCE DEFINITION paras. 2–3, *at* http://www.opensource.org/docs/definition.php (2003).

22. *See* Greg R. Vetter, The Collaborative Integrity of Open Source Software 37–41 (Aug. 2003) (forthcoming UTAH L. REV. June 2004) (describing the "Open Source Approach"), *available at* http://www.law.uh.edu/faculty/gvetter/documents/Vetter.TheCollabIntegOf OSS.5.c_8.17.2003.pdf (last visited Dec. 31, 2003). The use of "copyleft" as a rhetorical term is associated primarily with the Free Software Foundation, promoter of "free" software. *See generally* FREE SOFTWARE FOUND., THE FREE SOFTWARE DEFINITION, *at* http://www.fsf.org/philosophy/free-sw.html (last updated Feb. 7, 2003). The discussion in the text avoids engaging in debates over the merits of "open source" rather than "free" software, while preserving the orientation of the open source model towards access to source code.

managed collaboration.[23] As with closed source licenses, however, any use of the program that would conflict with the express terms of the license is forbidden,[24] and violation of those terms causes the license to terminate.

The history and politics of the movement to develop "open source" software and corresponding licenses are mostly beyond the scope of this Article, but its goals are important here. The movement originated with a group of software developers (hackers, in the original meaning of that phrase)[25] who objected to the extent to which the typical form of software licensing restricted use of programs to the use of their object code form only. That restriction, coupled with restricting permission to modify and adapt programs, tended to inhibit communication and collaboration among them and within the computing community generally. As a philosophical matter, computer programs were not meant to be "owned" by a single source; as a practical matter, programs so produced and owned were likely to be functionally inferior; as a cultural matter, communication and collaboration among technologists ought not to be circumscribed.[26] Both ideally and pragmatically, the open source model creates and encourages an innovation "commons."[27]

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23. Nothing in the open source model prohibits firms from selling copies of open source programs, including copies of versions compiled into machine-readable code, so long as sales are made under the terms of the relevant open source license. IBM, for example, has embraced open source software in connection with serving the corporate computing market. For-profit software companies such as Red Hat, Inc. (http://www.redhat.com), MandrakeSoft (http://www.mandrakesoft.com), and SuSE Linux (http://www.suse.com) have been built around selling and servicing open source products alone.

24. *See* Robert W. Gomulkiewicz, *How Copyleft Uses License Rights to Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 HOUS. L. REV. 179, 185–89 (1999); McGowan, *supra* note 18, at 254–60; Christian H. Nadan, *Open Source Licensing: Virus or Virtue?*, 10 TEX. INTELL. PROP. L.J. 349, 355–61 (2002); Margaret Jane Radin & R. Polk Wagner, *The Myth of Private Ordering: Rediscovering Legal Realism in Cyberspace*, 73 CHI.-KENT L. REV. 1295, 1312–13 (1998).

25. For a history of the free software and open source movements, see PETER WAYNER, FREE FOR ALL: HOW LINUX AND THE FREE SOFTWARE MOVEMENT UNDERCUT THE HIGH-TECH TITANS (2000). The ideal of the "hacker" is described in detail by Eric Raymond in *How to Become a Hacker*, http://www.catb.org/~esr/faqs/hacker-howto.html (last visited Sept. 28, 2003). *See also* STEVEN LEVY, HACKERS: HEROES OF THE COMPUTER REVOLUTION (1984); *"Keep Designing": How the Information Economy Is Being Created and Shaped by the Hacker Ethic*, WHOLE EARTH REVIEW, May 1985, T 44, 46.

26. *See supra* notes 18–24 and accompanying text (citing scholars and entities endorsing the open source movement).

27. *See* LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 49–73 (2001) (discussing commons in the context of open source licensing).

The "open" style of licensing was therefore designed to, and now does, facilitate a broadly collaborative development process.[28] "Open source" technically means a form of information licensing, but practically, it means a large, distributed group of computer programmers—often unknown to one another but communicating via the Internet—contributing program code and bug fixes to an ongoing collective exercise that carries the label of the "program"[29] as it exists at any given moment. In an era of ever-increasing corporate control of both the means and ends of cultural production via extensions of copyright law, the open source model frames a method of constituting and preserving a commons, or to some, an unowned public domain,[30] for certain forms of digital information.

C. The Open Source License as a Specialized Software License

The "open" (or shared) source code model thus sharply contrasts with the conventional "closed" (or hidden) source code model at one level but adopts the same underlying legal framework.[31] In the former, both legally and technologically speaking, the program is meant to be distributed and shared among all of its producers and consumers. In the latter, both legally and technologically speaking, the program is meant to be controlled by the original producer. The open source model is ultimately a specialized application of the general purpose conventional software license.

Their descriptive equivalence can be observed in two key respects. First, both "open source" and "closed source" licenses derive their legal legitimacy from the copyright owners' claims to own and control all aspects of computer program codes that are used by individual end users

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28. *See* Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 YALE L.J. 369 (2002) [hereinafter Benkler, *Coase's Penguin*] (discussing how the open source model exemplifies a model of distributed industrial production).

29. The open source Linux operating system begins with a *kernel*, the essential core of the program, but it is fully functional only as an expanded *distribution*. The General Public License permits interoperable non-open source programs to be distributed alongside open source programs. The extent to which this interoperability within a single distribution is permitted, without violating the open source license, is not completely clear. Jason B. Wacha, *Open Source, Free Software, and the General Public License*, 20 COMPUTER & INTERNET LAW., Mar. 2003, at 20, 22.

30. *See* James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 LAW & CONTEMP. PROBS. 33, 60–66 (2003) (distinguishing between "the public domain" and the "commons" in intellectual property policy); Hanoch Dagan & Michael A Heller, *The Liberal Commons*, 110 YALE L.J. 549, 557–59 (2001) (doing the same in property theory more generally).

31. *See* Boyle, *supra* note 30, at 65.

or developers.[32] Second, both forms of license assert comprehensive statements of the scope of the users' rights and obligations with respect both to the code and to the copyright in the code and limit the users' rights only to those granted in the license itself, rather than to any rights supplied by the Copyright Act or other law.[33] A software license,

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32. The basic equivalence can be seen in a comparison of the framework of a license for an open source operating system and one for a closed source operating system. From the License Agreement and Limited Product Warranty, Red Hat Linux 9 Professional Edition:

> The Software Programs, including source code, documentation, appearance, structure, and organization, are proprietary products of Red Hat, Inc. and others and are protected by copyright and other laws. Title to these programs, or to any copy, modification or merged portion of any of these programs, shall at all times remain with the aforementioned, subject to the terms and conditions of the applicable EULA [End User License Agreement] related to the Software Programs under consideration.

RED HAT, INC., LICENSE AGREEMENT AND LIMITED PRODUCT WARRANTY, RED HAT LINUX 9 PROFESSIONAL EDITION, *at* http://www.redhat.com/licenses/rhl_9_pro_us.html (last visited Sept. 28, 2003) (capital case omitted). The Red Hat Linux distribution is subject to the GNU General Public License.

From the Apple Computer, Inc., Software License Agreement for Mac OS X, Single Use License:

> 1. General. The software (including Boot ROM code), documentation and any fonts accompanying this License whether on disk, in read only memory, on any other media or in any other form (collectively the "Apple Software") are licensed, not sold, to you by Apple Computer, Inc. ("Apple") for use only under the terms of this License, and Apple reserves all rights not expressly granted to you. The rights granted herein are limited to Apple's intellectual property rights in the Apple Software and do not include any other patents or intellectual property rights. You own the media on which the Apple Software is recorded but Apple and/or Apple's licensor(s) retain ownership of the Apple Software itself. . . .

APPLE COMPUTER, INC., SOFTWARE LICENSE AGREEMENT FOR MAC OS X, SINGLE USE LICENSE, *at* http://store.apple.com/Catalog/US/Images/OSXSWlicense.pdf (last visited Sept. 28, 2003) [hereinafter APPLE LICENSE].

33. *See supra* Part II.A–B (discussing the open source and closed source models). The Apple Mac OS X license is representative of closed source distributions:

> 2. Permitted License Uses and Restrictions.
>
> A. This License allows you to install and use one copy of the Apple Software on a single Apple-labeled computer at a time. This License does not allow the Apple Software to exist on more than one computer at a time, and you may not make the Apple Software available over a network where it could be used by multiple computers at the same time. You may make one copy of the Apple Software (excluding the Boot ROM code) in machine-readable form for backup purposes only; provided that the backup copy must include all copyright or other proprietary notices contained on the original.
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> 3. Transfer. You may not rent, lease, lend, redistribute or sublicense the Apple Software. You may, however, make a one-time permanent transfer of all of your license rights to the Apple Software (in its original form as provided by Apple) to another party, provided that: (a) the transfer must include all of the Apple Software,

whether open or closed source, is a soup-to-nuts statement of the scope of legitimate behavior by a user or consumer of that software with respect to both the artifact itself, the information contained in that artifact, and the copyright, if any, that applies to that information.

D. The DMCA as Licensing

The anti-circumvention provisions of the DMCA constitute a third, equivalent effort to ratify the licensing norm, to the extent that the norm is embodied in digital technology itself. In colloquial terms, these sections of the DMCA grant legal protection to parties that use Digital Rights Management ("DRM"), a label for a collection of technologies, including encryption, watermarking, and rights permission databases, designed to monitor, charge for, and if necessary, prevent any and all conceivable uses of digital works by end users.[34] The DMCA validates a species of licensing and is thus part of licensing's regime of information governance. I do not separately critique the legitimacy of

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including all its component parts, original media, printed materials and this License; (b) you do not retain any copies of the Apple Software, full or partial, including copies stored on a computer or other storage device; and (c) the party receiving the Apple Software reads and agrees to accept the terms and conditions of this License. . . .

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APPLE LICENSE, *supra* note 32 (bold omitted); *see also* SUN MICROSYSTEMS, INC., FREE SOLARIS SOFTWARE LICENSE AGREEMENT, *at* http://www.sun.com/software/solaris/binaries/bcl.html (last visited Sept. 28, 2003); Madison, *Legal-ware*, *supra* note 4, at 1055–72 (describing use-controlling aspects of shrinkwrap licenses and contracts); Microsoft Corp., Microsoft Windows XP Professional End User License Agreement (copy on file with author). To be clear, the two license styles are not precisely congruent. Open source licenses typically permit unlimited reproduction, for example, and tinkering with open source code is encouraged rather than forbidden. The structural similarity lies in the efforts of both license styles to specify the scope of the user's right in the licensed work, in ways that differ categorically from the rights that the Copyright Act would otherwise supply. Reverse engineering might be permitted as a form of fair use. *See* Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1527–28 (9th Cir. 1992). Installation and non-concurrent use of a single copy of the program on different computers might be permitted under the first sale doctrine or by the principle distinguishing the copyright in a work of authorship from the work's tangible instantiation. *See* 17 U.S.C. §§ 109(a), 202 (2000).

34. *See* Dan L. Burk & Julie E. Cohen, *Fair Use Infrastructure for Rights Management Systems*, 15 HARV. J.L. & TECH. 41, 47–49 (2001) (describing basic contours of DRM technologies). For one technology-based explanation of the difficulty of matching DRM technologies with existing copyright law, see John S. Erickson, *Fair Use, DRM, and Trusted Computing*, COMM. ACM, Apr. 2003, at 34.

the DMCA, but it is important to note that critiques of the licensing norm extend equally, if not more strongly, to the DMCA as well.[35]

The DMCA provides civil remedies and the possibility of criminal penalties for two related acts. First, the act of "circumventing" a "technological measure" that "effectively controls access" to a copyrighted work is prohibited under § 1201(a)(1)(A).[36] "[T]o 'circumvent a technological measure' means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner."[37] "A technological measure 'effectively controls access to a work' if the measure, in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work."[38] A related provision of the statute forbids "trafficking" in anti-circumvention technology.[39] A second provision prohibits trafficking in technology that is primarily designed for the purpose of circumventing technological protection measures that effectively protect a right of a copyright holder.[40] "Any person injured by a violation of sections 1201 or 1202"[41] has standing to sue.[42] No threshold of harm need be established. The act of circumventing or trafficking in the circumvention technology constitutes the violation.

Some form of "technological protection measure" assuring the owner of control over "access" to the work and/or over "rights" in the work must be deployed before these provisions of the DMCA apply. Any copyrighted work will do, and the technological protection measure need be only "effective,"[43] not perfect. Formally, the copyright owner

35. *See, e.g.*, Michael J. Madison, *Rights of Access and the Shape of the Internet*, 44 B.C. L. REV. 433 (2003) [hereinafter Madison, *Rights of Access*] (analyzing and comparing the DMCA and click-wrap licenses, among other things, as species of access control regimes).

36. 17 U.S.C. § 1201(a)(1)(A) (2000).

37. *Id.* § 1201(a)(3)(A).

38. *Id.* § 1201(a)(3)(B).

39. *Id.* § 1201(a)(2).

40. *Id.* § 1201(b)(1). A parallel definition of "effective technological measure" that relates to a "right" of a copyright owner rather than "access" to a copyrighted work appears in § 1201(b)(2)(B). It appears that the act of circumventing a technological protection measure that effectively protects a right of a copyright holder is not unlawful under the DMCA, if one can lawfully acquire a device that permits doing so.

41. Section 1202 addresses maintaining the integrity of "copyright management information." *Id.* § 1202.

42. *Id.* § 1203(a).

43. *See* Universal City Studios, Inc. v. Reimerdes, 111 F. Supp. 2d 294, 318 (S.D.N.Y. 2000), *aff'd sub nom.* Universal City Studios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001); RealNetworks, Inc. v. Streambox, Inc., No. 2:99CV022070, 2000 WL 127311, at *9 (W.D.

may choose between "rights" control technology and "access" control technology. "Rights" control technology governs what the user may do with the work once access is properly obtained. "Access" control technology governs obtaining rights to look at, listen to, or otherwise use the work in the first place. Access control technology receives greater protection under the DMCA than rights control technology. While the DMCA prohibits trafficking in technologies for circumventing both access control technologies and for circumventing rights control technologies, actually circumventing rights control technology is not subject to the exceptions provided by the DMCA to liability for circumvention of access control technology.[44] That distinction, perhaps, explains why a copyright holder might choose the former rather than the latter.

Enforcement of these rules in tandem ratifies decisions by the copyright owner to encode in DRM systems rules that bypass established limitations on the rights of the copyright holder established by copyright law itself, in ways that are precisely equivalent to bypass tactics used in software licensing. First sale? "Access" disabling technologies permit copyright owners to condition seeing or using the work on any terms they prefer. Fair use? The DMCA states that "[n]othing in this section shall affect rights, remedies, limitations, or defenses to copyright infringement, including fair use, under this title";[45] but that section has been interpreted as not affording a "fair use" defense to defendants accused of violating the DMCA.[46] The DMCA ratifies precisely the kind of soup-to-nuts regulatory scheme offered by the software license, effected by control of the artifact as

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Wash. Jan. 18, 2000) (discussing how a technological protection measure for software need only be effective, not foolproof).

44. *See* 17 U.S.C. § 1201(d)–(g) (specifying exceptions to liability for circumventing access control technology).

45. *Id.* § 1201(c)(1).

46. The distinction between "access" and "rights" control mechanisms that the statute articulates has been honored by courts more in the breach than in the observance. As a practical matter, for now, "access" to a copyrighted work includes not only the customer's or user's *initial* access to the work, but any *subsequent* access to the work as well. *See* R. Anthony Reese, *Will Merging Access Controls and Rights Controls Undermine the Structure of Anticircumvention Law?*, 18 BERKELEY TECH. L.J. 619, 637–38 (2003). Technology that governs the latter is therefore subject to the stronger anti-circumvention and anti-trafficking prohibitions available under § 1201(a)(1)(A), and the DMCA, like the software license, becomes an all-purpose "access control" statute, enabling control of each physical copy of a copyrighted work as well as all uses of that work—precisely as the standard license norm governs access to both the physical copy of the computer program itself (by reserving title to the code) and the use of computer programs (by delineating all forms of acceptable use). *See* L. Ray Patterson, *The DMCA: A Modern Version of the Licensing Act of 1662*, 10 J. INTELL. PROP. L. 33, 52–57 (2002).

well as control over use of the work of authorship, now encoded in DRM and other technological systems.

E. From Licensing to Governance

As information governance, the software licensing norm in all three forms carries forward some traditional features of the copyright universe. Producers of copyrighted works have always had tools that permitted them to control access to and use of both their works and the physical instantiations of their works.[47] The laws of real and personal property meant that audience members could be lawfully and physically excluded from bookstores and movie theaters, and that theaters and performers could be bound to contractual film or sheet music rental arrangements. In addition, as artifacts, photographs and books were self-regulating. One could not use the work without access to a copy. Copyright owners could choose to go farther under copyright law and use licenses to define the scope of permitted use (typically among business or commercial interests), but the extent of the control over use permitted by control over the copy was limited to situations involving initial access, in true lease or rental contexts.

With digital technology and its networked form, the Internet, the physical objects of information regulation become transparent and in many cases essentially invisible. The former implicit and limited governance defined by control of access to the chattel and licensing of the copyright evaporates, and the software license tries to replicate it. The license claims to encompass all aspects of the work, which includes both the "chattel," now dephysicalized, as well as the copyright interest. Under traditional copyright and property law, the inherent nature of physical property regulated the tangible, while copyright law used licenses to control the use. With digital technology, the software license controls both; it controls the chattel in order to control the use.[48]

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47. *See* Jane C. Ginsburg, *From Having Copies to Experiencing Works: The Development of an Access Right in U.S. Copyright Law* (arguing that access controls have always been an implicit part of copyright policy), *in* UNITED STATES INTELLECTUAL PROPERTY: LAW AND POLICY (Hugh C. Hansen ed., 2002), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=222493 (last visited Nov. 11, 2003).

48. Library patrons borrow and return books but acquire no ownership interest in either the copyrights or the books themselves. Customers of video rental stores acquire possession but not ownership of videocassettes. Movie studios that own the copyrights in such films argue that customers acquire a license (sometimes express, sometimes implied) to perform these audiovisual works in the home. (Technically, no such license is required, since "home" performance is not an exclusive right of the copyright owner.) The same applies to publishers of sheet music. Orchestras and choruses rent copies of scores and execute express licenses that authorize public performances of these works. The "license" in each of these contexts, whether express or implied, refers only to the copyright interests conveyed. No ownership in the tangible forms

Moreover, the licensing model assumes that this control extends not just to the licensee's access to the chattel or to initial access to the chattel but to any access, by any user, at any time. The networked dimension of digital information and the ubiquity of licensing of digital information multiply this effect. It is nearly impossible to find a computer program in distribution today—even one distributed for free—that is not accompanied by a license bearing the classic form and governing ongoing use of both the copyrighted work and the program itself. Even before the commercial development of the Internet, it was widely observed that mass-market licenses for computer software exhibited the kind of uniformity of terms that rendered form contracts problematic.[49] With the coming of the Internet, the licensing norm developed for computer programs has been gradually but seamlessly extended to all forms of copyrighted works in digital form, including both "creative" websites and collections of digitized data.[50] Technological advances, tracked by the law, are increasingly blending the analog and the digital.[51] Copyright law has long assumed that a "book" cannot be licensed, that is, cannot be permanently transferred to another subject to continuing conditions on its further use and disposition,[52] but an electronic book—the same text, rendered in digital

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passes to the customer, who customarily expects to return the object after using it. *See infra* notes 83–85 and preceding and accompanying text (discussing licensors' retention of ownership in copies and its application to computer programs). The reproducibility of rented computer programs introduced complications to this standard account that were largely cured by the Computer Software Rental Amendments Act of 1990, which essentially prohibits rental of copyrighted computer programs. *See* 17 U.S.C. § 109(b) (2000); Step-Saver Data Sys., Inc. v. Wyse Tech. and the Software Link, Inc., 939 F.2d 91, 96 & n.7 (3d Cir. 1991).

49. *See infra* note 188 and accompanying text (noting the legal and marketplace ramifications of form contracts).

50. This trend has been under way for a number of years. *See* Madison, *Legal-ware*, *supra* note 4, at 1042–43.

51. *See infra* notes 207–14 and accompanying text (analyzing new technologies and a workable legal framework). One interesting piece of evidence of the phenomenon comes from the Creative Commons initiative, which offers forms of licenses that expressly anticipate that a work will be distributed in analog and digital forms concurrently and allow the author or publisher to customize user rights accordingly. *See* Creative Commons, Licenses Explained, *at* http://www.creativecommons.org/learn/licenses (last visited Sept. 28, 2003).

52. *See* Bobbs-Merrill Co. v. Straus, 210 U.S. 339, 350 (1908) (explaining that the sole right to read a copyrighted book does not include the right to impose, by a notice printed on the same page with the notice of the copyright, a limitation as to what price the book shall be sold at retail by future purchasers with whom there is no privity of contract). *But cf.* Holly K. Towle, *Mass Market Transactions in the Uniform Computer Information Transactions Act*, 38 DUQ. L. REV. 371, 391 & n.38 (2000) (arguing that UCITA proposal does not apply to licensing of books, but asserting that books can be licensed).

One might ask why a book cannot be licensed. Part of the answer comes from copyright law itself, and policies that rely on the free movement of tangible copies of copyrighted works in order to promote low prices and the ongoing availability of works and more abstract goals

form—clearly can be, at least under current practice.[53] If copyright law is a publicly enacted regime of information governance, then a comprehensive privately arranged-for copyright substitute is likewise a governance regime[54] and each license and license model within it an extension of the governance idea.

Licenses govern the parties to the license. The step from *govern* to *governance* is a step up in scale, and that scale is provided by digital technology and the network—the Internet—that digital technology makes possible. Not all copyrighted works are governed by licenses. One can still buy a book or borrow one from the public library, and copyright law, not a license, still applies. With computer programs and digital works, and in the absence of a network, even a single license has a relatively limited, bilateral scope. Frequently, an individual or firm would have a meaningful choice between "licensed" works in electronic form and their unlicensed equivalents in analog form. For example, when LexisNexis and Westlaw services were supplied only via

involving broad dissemination of creative and preserving conditions for future creativity. *See* Julie E. Cohen, *Copyright and the Perfect Curve*, 53 VAND. L. REV. 1799, 1804 (2000) (noting that the first sale doctrine supports unpredictability element of copyright's welfare function); Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283, 347–64 (1996) (describing in broad terms the communal benefits of widespread distribution of creative works); R. Anthony Reese, *The First Sale Doctrine in the Era of Digital Networks*, 44 B.C. L. REV. 577, 583–610 (2003) (focusing on affordability and availability of copyrighted works as policy justifications for the first sale doctrine). Part of the answer comes from property doctrine and theory. As noted in the next Part, property theory has essentially no doctrinal category for "licensed" chattels. *See infra* note 113 and accompanying text (suggesting that the law has not typically recognized licensing of chattels due to historical and policy reasons). That omission is deliberate for policy reasons similar to those derived from copyright alone. As the Supreme Court described the common-law principle in a Sherman Act case decided shortly after *Bobbs-Merrill*, "The right of alienation is one of the essential incidents of a right of general property in movables, and restraints upon alienation have been generally regarded as obnoxious to public policy, which is best subserved by great freedom of traffic in such things as pass from hand to hand." Dr. Miles Med. Co. v. John D. Park & Sons Co., 220 U.S. 373, 404 (1911) (quoting John D. Park & Sons Co. v. Hartman, 153 F. 24, 39 (6th Cir. 1907)). This is not to say that valid restraints on alienation are unheard of, but merely that copyright law supplies an abundance of reasons to confirm that their prohibition makes sense in the copyright context.

53. *See* United States v. Elcom, Ltd., 203 F. Supp. 2d 1111, 1137 (N.D. Cal. 2002).

54. *See* Jessica Litman, *Copyright Noncompliance (Or Why We Can't "Just Say Yes" to Licensing)*, 29 N.Y.U. J. INT'L L. & POL. 237 (1997); Pamela Samuelson, *Does Information Really Have To Be Licensed?*, COMM. ACM, Sept. 1998, at 15, 15–16; *cf.* Jody Freeman, *The Private Role in Public Governance*, 75 N.Y.U. L. REV. 543, 547–48 (2000) (defining governance as a set of negotiated relationships between public and private actors regarding policymaking, implementation, and enforcement). The interests at stake could not be greater. "We are entering an era in which 'Internet governance' and 'Internet regulation' are becoming synonymous with control of the Internet itself, of its paths and protocols, as opposed to control over behaviors that people and institutions engage in while using the Net." Jonathan Zittrain, *ICANN: Between the Public and the Private: Comments Before Congress*, 14 BERKELEY TECH. L.J. 1071, 1072 (1999).

proprietary, dumb terminals, law libraries still maintained complete inventories of case reporters and statutory compilations. The digital data essentially was tied to the machine, much as older computer programs essentially were tied to mainframe computers.

It was the interoperability of computer programs and digital data across networks—the liberation of the program from the machine—that led to the explosion of digital content.[55] It simultaneously gave rise to conventional mass market licenses[56] and now to open source licenses. It is the interoperability of digital information of all kinds across the Internet and related networks that gave rise to the anti-circumvention provisions of the DMCA.[57] By virtue of the network, the threat of unauthorized reproduction stretches far beyond the initial parties to the license, beyond those individuals who happen to be accessing the electronic network at any given point in time. The supplier delivering an information good is concerned not only about the relationship with the recipient of that good—the initial user (who is *governed* by a license)—but all potential relationships with further and future users of that good (the *governance* worked by the license).[58] Conventional licenses and the DMCA constitute licensing-as-governance because they treat the network as a threat. The open source license constitutes licensing-as-governance because it tries to capture the benefit of the network.[59]

Legally speaking, courts have addressed the validity of the conventional software license, though without unanimous approval.[60]

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55. *See* COMPUTER SCIENCE AND TELECOMM. BOARD & NAT'L RESEARCH COUNCIL ET AL., THE DIGITAL DILEMMA: INTELLECTUAL PROPERTY IN THE INFORMATION AGE 32–33 (2000) (discussing the advances in technology that have led to the current digital dilemma).

56. *See infra* notes 133–34 and accompanying text (discussing the history of shrinkwrap and mass-market licenses).

57. *See* Madison, *Rights of Access*, *supra* note 35, at 471–73 (discussing provisions of the DMCA related to anti-circumvention and technological measures that control access to content and trafficking).

58. Governance depends on a type of network effect. *See* Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998); Jacqueline Lipton, *Mixed Metaphors in Cyberspace*, 35 LOY. U. CHI. L.J. 235 (2003) (arguing that it is preferable for digital governance forms to regulate undesirable uses of information, particularly in the electronic network context, and not the actual or metaphorically physical structures that the information travels through).

59. *See* Boyle, *supra* note 30, at 46–47 (discussing distributed production, including open source software, via distributed information governance processes).

60. A number of decisions establish judicial precedent sanctioning the form of the conventional software license under which the licensor retains title to both the code and the copyright. *See* DSC Communications Corp. v. Pulse Communications, Inc., 170 F.3d 1354 (Fed. Cir. 1999); Triad Sys. Corp. v. Southeastern Express Co., 64 F.3d 1330 (9th Cir. 1995); MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511 (9th Cir. 1993); S.O.S., Inc. v. Payday, Inc., 886 F.2d

Those few courts that have considered the anti-circumvention provisions of the DMCA have upheld it against constitutional challenge and have relied on it to punish circumvention of a variety of technological measures guarding copyrighted works.[61] Because widespread use of open source licenses only developed during the last five years (and has yet to do so among consumers), the open source model is largely untested in the courts.[62] There is no reported decision analyzing a defection by a participant in an open source licensing community, or by a developer redistributing copies of open source programs in a closed source format or without the source code of modifications; to date, when defections have occurred, they have been handled informally, under the norms of the relevant developer

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1081, 1087–89 (9th Cir. 1989); Adobe Sys., Inc. v. Stargate Software, Inc., 216 F. Supp. 2d 1051 (N.D. Cal. 2002); Microsoft Corp. v. Software Wholesale Club, Inc., 129 F. Supp. 2d 995 (S.D. Tex. 2000); Adobe Sys., Inc. v. One Stop Micro Inc., 84 F. Supp. 2d 1086 (N.D. Cal. 2000); Microsoft Corp. v. Harmony Computers & Elecs., Inc., 846 F. Supp. 208 (E.D.N.Y. 1994); ISC-Bunker Ramo Corp. v. Altech, Inc., 765 F. Supp. 1310 (N.D. Ill. 1990); Data Prods., Inc. v. Reppart, No. 89-1291-K, 1990 WL 198610 (D. Kan. Nov. 29, 1990). Cases questioning the legitimacy of the model include *Step-Saver Data Sys., Inc. v. Wyse Tech.*, 939 F.2d 91 (3d Cir. 1991); *Softman Prods. Co. v. Adobe Sys., Inc.*, 171 F. Supp. 2d 1075 (C.D. Cal. 2001); and *Communications Groups, Inc. v. Warner Communications, Inc.*, 527 N.Y.S.2d 341 (N.Y.C. Civ. Ct. 1988).

61. *See* Madison, *Rights of Access*, *supra* note 35, at 473–78 (describing major cases applying anti-circumvention provisions of the DMCA).

62. There are a handful of exceptions, though none tests the validity of an open source license as such. One is the effort by Mattel, Inc., in 2000, to enjoin distribution of "cphack," an open source hack of Mattel's CyberPatrol computer program for filtering access to the World Wide Web that allowed CyberPatrol users to decrypt and view its list of banned sites. The cphack litigation was settled via assignment of the copyright in the cphack program to Mattel and a stipulated permanent injunction against further distribution of the program by its authors. *See* Microsystems Software, Inc. v. Scandinavia Online AB, 98 F. Supp. 2d 74 (D. Mass. 2000). The background of the dispute is reported in a decision of the First Circuit affirming enforcement of the injunction against non-parties to the litigation. *See* Microsystems Software, Inc. v. Scandinavia Online AB, 226 F.3d 35, 38–39 (1st Cir. 2000). A second is a lawsuit filed in Utah in early 2003 that asserts that IBM's distribution of the Linux operating system violates a copyright in that system allegedly derived from the Unix operating system. *See* Amended Complaint, The SCO Group, Inc. v. Int'l Bus. Mach. Corp., No. 03-CV-0294 (D. Utah), http://www.caldera.com/ibmlawsuit/amendedcomplaintjune16.html (filed June 16, 2003); Stephen Shankland, *SCO Sues Big Blue over Unix, Linux*, CNET NEWS.COM, *at* http://news.com.com/2100-1016-991464.html (Mar. 6, 2003); Stephen Shankland, *SCO Suit Now Seeks $3 billion from IBM*, CNET NEWS.COM, *at* http://news.com.com/2100-1016_3-1017965.html (June 16, 2003). A third, Progress Software Corp. v. MySQL AB, 195 F. Supp. 2d 328 (D. Mass. 2002), involved an allegation that the defendant violated the General Public License by distributing a program derived from the open source program MySQL without complying with the license. The court declined to enter a preliminary injunction on the ground that the plaintiff had shown neither that irreparable harm would ensue in the absence of the injunction nor that the balance of the hardships favored the plaintiff. The court did not rule on the validity of the license or on whether the defendant's failure to comply with it actually constituted infringement.

community.[63] The blending of the original norm-driven, not-for-profit "hacker" community that developed the open source ethos and the commercial interests that see open source licensing as a potentially profitable marketing tool suggests that more public, hostile, and litigated conflicts are likely. The balance of this Article considers whether and when the open source model should be enforced legally and includes implicit and explicit critiques of conventional software licensing and of the DMCA.

III. THE COMMON LAW OF INFORMATION LICENSING

Ask virtually any practicing lawyer about the legal significance of a software license, and the answer almost inevitably will be framed in terms of contractual obligations and property rights.[64] The conventional lawyer's understanding of the software license is that it is simply a contract that defines the obligations of the licensor and licensee. The first argument for legitimacy is simply that software licensing relies on a legitimate but purely positive legal framework, drawn wholesale from the domain of promissory obligation wrapped around a core of property rights. Whatever the licensor and licensee agree to do, they are thereby legally bound.

In two respects this framework has defined most of the litigation and appellate decision-making of recent years concerning the enforceability of software licenses. First, whether a software or digital information user has, in fact, "consented" to the obligations stated in a license has

63. The one reported exception is *Progress Software Corp.*, though the court in that case denied the relief sought by the plaintiff without reaching the merits of the license dispute. *Progress Software Corp.*, 195 F. Supp. 2d at 329–30. Other defections are described in news reports. *See, e.g.*, Dan Gillmor, *GPL Legal Battle Coming?*, SILICON VALLEY.COM, *at* http://weblog.siliconvalley.com/column/dangillmor/archives/001029.shtml#001029 (May 21, 2003).

64. *See, e.g.*, McGowan, *supra* note 18, at 289–302 (framing enforceability of open source license as a contractual question); Nadan, *supra* note 24, at 362–67 (framing enforceability of open source license as a contractual question); Raymond T. Nimmer, *Licensing in the Contemporary Information Economy*, 8 WASH. U. J.L. & POL'Y 99, 119–30 (2002) (framing licensing of information entirely as a question of contract law). *See generally* Raymond T. Nimmer, *Through the Looking Glass: What Courts and UCITA Say About the Scope of Contract Law in the Information Age*, 38 DUQ. L. REV. 255 (2000) [hereinafter Nimmer, *Through the Looking Glass*] (discussing contract law and its application to software licensing). The proposed UCITA (Uniform Commercial Information Transactions Act) defines "license" as "a contract that authorizes access to, or use, distribution, performance, modification, or reproduction of, information or informational rights, but expressly limits the access or uses authorized or expressly grants fewer than all rights in the information, whether or not the transferee has title to a licensed copy." UNIF. COMMERCIAL INFO. TRANSACTIONS ACT § 102(41) (2002). The text of the UCITA proposal is available at http://www.law.upenn.edu/bll/ulc/ucita/2002final.htm, and the status of the UCITA project is discussed *infra* notes 118–22 and accompanying text.

been litigated repeatedly, as software developers, digital information providers, and suppliers of computer technology have expanded the boundaries of inventiveness with respect to what were originally known as shrinkwrap agreements.[65] Within contract law itself, courts, scholars, and lawyers now mostly concern themselves not with whether these are contracts at all, but rather with the circumstances under which the act of "clicking" or "browsing" or "opening" or "using" will be deemed to constitute effective assent, despite the clicker's, browser's, opener's, or user's usually credible argument that no assent was intended or could be inferred reasonably. Second, assuming that mutual assent of some sort is identified, the next stage of the analysis focuses on whether contractual enforcement of the obligation thus undertaken is or should be preempted by federal law. With respect to material encompassed by the subject matter of copyright, section 301 of the Copyright Act forbids enforcement of rights "equivalent" to those granted by the Act itself.[66] A cause of action is "equivalent" to a copyright claim if the cause of action is not "qualitatively different" from a copyright claim. "Qualitatively different" means, generally, that a non-preempted cause of action requires proof of an element not required to establish a claim of copyright infringement.[67] The majority rule, at present, holds that a claim for breach of contract brought by a licensor against a licensee, where the licensee's alleged wrong consists of using the work in a manner forbidden under the license, is not preempted and can proceed under state law. This is so because the contract claim requires proof of an "extra element"—a promise, breached by the licensee—that is not required in connection with an infringement claim. That "extra element" renders the contract claim not "equivalent" to a right under copyright, under section 301.[68]

To evaluate the claim of legitimacy based on contract law principles, it is important to go beyond the question of assent. Assume, for now, that software users assent to the forms presented to them. The question is whether assent means something in this context. What exactly is a software license? As an agreement between two parties, a transaction concerning a copy of a computer program is a form of contract. As an expression of a limitation on access to an owner's copyright interest, a license is more akin to a form of property, though it is not a property

65. *See* Madison, *Rights of Access*, *supra* note 35, at 433–34.

66. 17 U.S.C. § 301(a) (2000).

67. *See* Alcatel USA, Inc. v. DGI Tech., Inc., 166 F.3d 772, 787 (5th Cir. 1999).

68. *See, e.g.*, ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1454 (7th Cir. 1996) ("A copyright is a right against the world. Contracts, by contrast, generally affect only their parties; strangers may do as they please, so contracts do not create 'exclusive rights.'").

interest as such.[69] The term "license agreement," though standard in the software industry, is a misnomer because it conflates these property-like and contract attributes of software transactions. Understanding the license requires eliminating that conflation.[70]

In copyright terms, a license of a copyright interest is a grant of permission to exploit the unique type of property interest known as copyright. The copyright owner (the licensor) grants to some user or consumer (the licensee) permission to use the copyrighted work in some way that would otherwise be reserved exclusively to the owner under section 106 of the Copyright Act. An entire section 106 right need not be conveyed. The rights may be subdivided and combined in thousands of ways.[71] The recipient need not formally agree to be bound by the limitations stated by the owner. The license may be revoked at any time, but the recipient is automatically bound and is liable for copyright infringement if the bounds of the license are exceeded.[72]

Conveyance of a right to exploit the copyrighted work of authorship is distinct from conveyance of an interest in a tangible form that embodies the copyrighted work. That tangible form may be sold to the recipient, or rented or leased (so that the tangible object is intended to be returned to its original owner),[73] or it may be given to the recipient outright. Ordinarily the form of the transaction in the tangible good has no bearing on the character of any parallel transaction in the copyright interest, though in some cases the two transactions are conceptually and legally linked. Sale or loan of a book containing a copyrighted literary work ordinarily conveys no copyright interest to the book's purchaser or

69. The license is a transaction in neither property nor contract; the "license" means only an immunity from suit. *See* Gen. Talking Pictures Corp. v. W. Elec. Co., 305 U.S. 125 (1938).

70. Software "licensing," as noted earlier, conflates transactions in intangible interests in software copyright and tangible interests in the "fixed medium of expression" that contains the "copy" of the copyrighted work. The software license *as a copyright form* applies only to the intangible. The tangible interest is addressed in the same document, but rights in that interest are governed by other law. Practitioners, scholars, and courts, however, tend to treat both as copyright problems.

71. *See* 17 U.S.C. § 201(d) (2000) (confirming divisibility of copyright).

72. *See, e.g.*, S.O.S., Inc. v. Payday, Inc., 886 F.2d 1081, 1087–89 (9th Cir. 1989) (discussing scope and construction of licenses); SAS Inst., Inc. v. S&H Computer Sys., Inc., 605 F. Supp. 816 (M.D. Tenn. 1985) (finding that the licensee violated an obligation of good faith in performance of the contract).

73. It is possible that a rental or lease arrangement could be designed so that the item is not returned after use by the lessee ends. The useful life of the item may expire concurrently with the term of the lease, and the lessor may authorize the lessee to dispose of the item rather than return it to the lessor. Whether such an arrangement constitutes an authentic lease or a disguised sale should be analyzed according to functional criteria comparable to those applied to similar questions under Article 9 of the Uniform Commercial Code ("UCC"). *See infra* note 84 and accompanying text (noting how Article 9 distinguishes authentic leases from disguised sales).

borrower.[74] There are narrow exceptions. Delivery of special effects film footage to a motion picture producer with the expectation that the footage will be incorporated into a finished film includes at least an implied license to distribute the footage.[75] The right to prepare a derivative work may imply the right to distribute copies of that work.[76] In both cases, however, the licensee's agreement or assent is not relevant to enforceability of the license, unless the copyright owner conditions the license on a promise of or receipt of compensation.

Contract concerns arise in four possible scenarios. First, the owner of the copyright may want to condition the license on a promise of royalties from the licensee. Second, the owner of the copyright may want to obtain the licensee's promise both not to use the work as the Copyright Act would otherwise prohibit (a promise that is meaningless in contractual terms, for the licensee is offering not to do something that it is already prohibited from doing),[77] and also a promise not to use the work as the Copyright Act would otherwise permit. Third, the licensee may want to obtain a promise from the licensor not to revoke the license. Fourth, the owner of the copyright may want to bargain over other commercial concerns related to use of the copyrighted work, such as limitations of liability or limitations of remedy.

Whether copyright or contract law is applicable to each of these issues involves some careful analysis. Limitations of warranty, limitations of remedy, and other purely commercial concerns, are always matters of contract and cannot be enforced except in contract law. If the licensee fails to pay royalties promised under the license, then the licensor has a claim for breach of contract. If the licensor attempts to revoke the license for reasons not permitted by contract law, the licensee has a claim for breach of contract. If the licensee exceeds the scope of the license and uses the work in a way reserved exclusively to the copyright owner under section 106 of the Copyright Act, which

74. *See* 17 U.S.C. § 202 (2000).

75. Effects Assocs., Inc. v. Cohen, 908 F.2d 555, 558–59 (9th Cir. 1990).

76. *See* Bourne v. Walt Disney Co., 68 F.3d 621, 631–32 (2d Cir. 1995).

77. A line of cases decided before enactment of the current Copyright Act implicitly rejects this analysis and holds that a licensee that exceeds the scope of an express license is liable for breach of an implied covenant not to do so. *See* Manners v. Morosco, 252 U.S. 317 (1920); County of Ventura v. Blackburn, 362 F.2d 515 (9th Cir. 1966); Harper Bros. v. Klaw, 232 F. 609 (S.D.N.Y. 1916); Underhill v. Schenck, 143 N.E. 773 (N.Y. 1924). The preemption provision of the current Act appears to deal directly with this issue by eliminating the contract claim in favor of the copyright claim, so long as the defendant has committed an act covered by section 106. *See* 17 U.S.C. § 301(a) (2000); *see also* Kabehie v. Zoland, 125 Cal. Rptr. 2d 721, 732–33 (Ct. App. 2002) (reviewing the legislative history of section 301 and the position taken by Nimmer pertaining to contract claims regarding copyrights). Yet some courts hold that breach of the license gives rise to both copyright and contract claims. *See SAS Inst., Inc.*, 605 F. Supp. at 816.

defines the exclusive rights of the copyright owner, then the licensor has a claim for copyright infringement.[78] Doctrinally, the licensor's alleged breach of contract claim in such a case should be preempted under section 301 since the licensee's affront to the licensor's interest in the work of authorship is precisely the type of affront that the Copyright Act is designed to regulate. The licensee's use of the work in a way reserved exclusively to the copyright owner and forbidden under the license but permitted under section 106 raises the most difficult interpretive question. Under a strong view of copyright preemption, no copyright claim will lie and a potential contract claim will be preempted by the Copyright Act and/or by the Constitution.[79] Under a weaker view of the preemptive reach of copyright law and policy, and the one currently favored by the majority of courts, a contract claim will lie.[80]

That knotty problem need not be resolved here. The point is simply that this cluster of potential copyright and contract claims has nothing to do with the second central economic feature of software "licensing": the licensor's alleged retention of ownership of the individual copy of the program or other data file that is acquired by the licensee. A "licensee" that has, in economic terms, purchased a copy of a computer program (acquired permanent use of the program in exchange for some defined consideration) should be treated in copyright terms as having purchased that copy, statements in the "license" to the contrary notwithstanding.

Any other result effectively treats section 109, the codification of copyright's venerable first sale doctrine, as a nullity in the context of computer programs. Section 109(a) permits the owner of a particular copy of a copyrighted work to sell or otherwise dispose of the possession of that copy without liability for infringement under section

78. 17 U.S.C. § 106 (2000 & West Supp. 2003).

79. A minority of courts analyzing preemption arguments regarding contract claims consider whether the substance of the promise to be enforced is itself the "equivalent" of an exclusive right of the copyright holder, or whether the defendant's allegedly offending conduct is distinguishable from conduct that offends the Copyright Act. There are recent examples of preemption analyses that distinguish copyright interests from non-copyright interests. *See* Wrench LLC v. Taco Bell Corp., 256 F.3d 446, 456–57 (6th Cir. 2001) (finding no preemption of claim of breach of implied-in-fact promise to pay for use of copyrighted work); Higher Gear Group, Inc. v. Rockenbach Chevrolet Sales, Inc., 223 F. Supp. 2d 953, 958–59 (N.D. Ill. 2002) (stating that a contract claim for breach of license will not be preempted where licensee breached contractual promise only to use software for its own business-related benefit).

80. *See, e.g.*, Bowers v. Baystate Techs., Inc., 320 F.3d 1317, 1323–26 (Fed. Cir. 2003) (contractual enforcement of license barring reverse engineering of computer program not preempted because claim required proof of contractual duty owed to licensor, though whether "reverse engineering" lies within the scope of the copyright owner's exclusive rights had, in other cases, been decided as a matter of statutory interpretation).

106(3), which forbids unauthorized distribution of the work.[81] "Copies" of computer programs might be "licensed" and therefore excluded from section 109 (since users would not "own" their copies), but there is no evidence in the statute or in the logic and history of copyright law that supports permitting owners of copyrights in computer programs to have the power to "license" copies in ways that publishers of books and phonorecords cannot.[82] Only the work of authorship may be licensed. The tangible work gets sold, rented, or leased, and then returned.[83] In other areas, the law has little trouble disregarding contractual characterizations of transactions in favor of functional or economically-based characterizations. Under Article 9 of the Uniform Commercial Code, which regulates security interests in personal property, a transaction gets characterized as a conditional sale coupled with a security interest, or a "true" lease of personal property, according to an objective analysis of its economic nature, not according to the parties' characterization.[84] Interpretations of the Internal Revenue Code operate

81. 17 U.S.C. § 109(a) (2000).

82. The ready reproducibility of computer software seems not to be a sufficient justification for a different rule. The fact that users "reproduce" the program when they use it is irrelevant; Congress intended to permit that behavior when it enacted section 117, authorizing the reproduction of a copyrighted computer program in conjunction with the use of a computer. *See id.* § 117. Reproduction beyond ordinary use is captured under ordinary infringement principles.

83. *See* United States v. Wise, 550 F.2d 1180 (9th Cir. 1977); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111 (1999) [hereinafter Lemley, *Beyond Preemption*]; David Nimmer et al., *The Metamorphosis of Contract into Expand*, 87 CAL. L. REV. 17 (1999).

84. *See* U.C.C. § 1-201(37) (2001); C.F. Garcia Enters., Inc. v. Enter. Ford Tractor, Inc., 480 S.E.2d 497, 499 (Va. 1997); PSINet, Inc. v. Cisco Sys. Capital Corp. (*In re* PSINet, Inc.), 271 B.R. 1, 43–46 (Bankr. S.D.N.Y. 2001). The distinction is hardly problem-free in the context of the UCC, but the statute has a logical purpose: to encourage commercial parties to rely on the Article 9 regulatory framework by preventing creditors from avoiding obligations to debtors and later creditors through disguising their credit arrangements as "leases." One might press the analogy a bit and argue that similar protection against overreaching creditors or licensors should be an important policy consideration in interpreting "license" agreements. For arguments that the "license"/sale distinction should be based more explicitly on functional considerations, see Lothar Determann & Aaron Xavier Fellmeth, *Don't Judge a Sale by Its License: Software Transfers Under the First Sale Doctrine in the United States and the European Community*, 36 U.S.F. L. REV. 1, 46–58 (2001); Wendy J. Gordon, *An Inquiry into the Merits of Copyright: The Challenges of Consistency, Consent, and Encouragement Theory*, 41 STAN. L. REV. 1343, 1367–68, 1378–94 (1989); Thomas Lee Hazen, *Contract Principles as a Guide for Protecting Intellectual Property Rights in Computer Software: The Limits of Copyright Protection, the Evolving Concept of Derivative Works, and the Proper Limits of Licensing Arrangements*, 20 U.C. DAVIS L. REV. 105, 150 (1986); Dennis S. Karjala, *Federal Preemption of Shrinkwrap and On-line Licenses*, 22 U. DAYTON L. REV. 511, 529 (1997); Rice, *supra* note 11, at 175. For a rare example of a court taking this approach, see Cent. Point Software, Inc. v. Global Software & Accessories, Inc., 880 F. Supp. 957 (E.D.N.Y. 1995).

on similar principles.[85] Elsewhere in the Copyright Act, the better approach is to evaluate the extent of the interest transferred on functional rather than formal grounds.[86]

Courts have had a difficult time maintaining these distinctions, and in practice, the distinctions sketched above are rarely observed in neat form in the cases.[87] The analytic impulse tends to confuse the intangibility of the copyright interest and of the work of authorship that is protected by the copyright, on the one hand, with the intangibility of the computer program itself, on the other hand. Just as a copy of a book is the tangible medium of expression that contains the intangible work of authorship that copyright law regards as a "literary work," in copyright terms, paradoxically, each copy of an (allegedly intangible) computer program should be treated as the "tangible medium of expression" in which the copyrighted work of authorship is "fixed." Software licenses that take advantage of that paradox are playing games with basic copyright doctrine. The DMCA, which focuses on the act of circumventing technology that protects particular copies of copyrighted works, likewise skirts the edges of legitimate copyright policy when it regulates the "copy" rather than the work of authorship.[88]

Taken together, once these strands of legal doctrine and public policy are properly sorted out, it is clear that justifying software licensing in its current form requires more than simply an appeal to basic principles of mutual assent. To return briefly to the assent question, it is clear that software users frequently either do not assent to non-negotiated standard license forms[89] or (particularly in the open source context) may experience the code in a technical environment where it is relatively easy to use the code without being confronted by a demand for assent.

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85. *See, e.g.*, Robertson v. Comm'r, 77 T.C.M. (CCH) 1849 (1999) (finding that a "lease" of computer equipment was a sham designed to enable "lessor" to claim depreciation deductions); Estate of Thomas v. Comm'r, 84 T.C. 412 (1985). For purposes of taxation of international software transactions, the Internal Revenue Service likewise focuses on substance, rather than form. *See* Jonathan Purcell, Note, *Taxation of International Computer Software Transactions Under Regulation 1.861-18*, 22 HASTINGS COMM. & ENT. L.J. 325 (2000).

86. *See* ITOFCA, Inc. v. MegaTrans Logistics, Inc., 322 F.3d 928 (7th Cir. 2003); Effects Assocs., Inc. v. Cohen, 908 F.2d 555 (9th Cir. 1990).

87. *Compare* Adobe Sys., Inc. v. Stargate Software Inc., 216 F. Supp. 2d 1051 (N.D. Cal. 2002) (license agreement bars purchaser of "educational" copies of software from reselling to commercial purchasers), *with* SoftMan Prods. Co. v. Adobe Sys., Inc., 171 F. Supp. 2d 1075 (C.D. Cal. 2001) (license agreement not a bar to purchaser's disaggregating bundled software and selling it as individual programs).

88. *See infra* notes 102–105 and accompanying text (discussing regulation of author's work and subsequent copies).

89. *See* Madison, *Rights of Access*, *supra* note 35, at 447–64 (discussing "click through" agreements).

If either or both of those conditions apply, the contract model cannot sustain the licensing norm; licensing requires resorting to property concepts. At that level, the contracting approach to software licenses fails ultimately because it does not acknowledge fundamental distinctions in copyright law between rights in tangible artifacts and in intangible works of authorship.[90]

The question remains, then, whether background property law—the law of chattels, rather than the law of copyright—enables an owner of tangible property to attach conditions to that item, which effectively follow it from owner to successor, with or without the successor's assent to abide by the condition. If property law does, then here at last is a foundation for modern licensing practice that could be followed back through and thus rehabilitate the previous arguments. The question has particular resonance in the context of open source models, which are supported in part on the ground that open source conditions bind the code itself, independent of assent by a particular user or developer.[91]

The question has no clear answer, though American law seems to be highly skeptical of the proposition that one might transfer permanent possession of a chattel to someone else, yet retain title in order to prohibit or condition further transfers.[92] Does federal law enable this

90. The conceptual confusion in this area has been pointed out before with respect to stand-alone computer software licensing. *See* Nimmer et al., *supra* note 83, at 34–41. The confusion underlies ongoing difficulty in applying statutory preemption under 17 U.S.C. § 301(a). *See also* Lemley, *Beyond Preemption*, *supra* note 83, at 136–50 (discussing "click through" and "shrinkwrap" agreements).

91. *See* Radin & Wagner, *supra* note 24, at 1312–13 (characterizing the open source license as a covenant that runs with the code).

92. One might analogize this problem in the context of software licenses to the problem of "ostensible ownership" in the law of secured lending, which more than one court has characterized as "the proposition that, other things being equal, what the creditor sees ought to be what the creditor gets." Gaudet v. Babin (*In re* Zedda), 103 F.3d 1195, 1202 (Bankr. 5th Cir. 1997). In that context, the considerable problems created by the debtor's ostensible ownership of assets that are the subject of contractual security interests are cured, at least as a legal matter, by elaborate systems of filings maintained in each state under Article 9 of the UCC. *See* Edward J. Janger, *Predicting When the Uniform Law Process Will Fail: Article 9, Capture and the Race to the Bottom*, 83 IOWA L. REV. 569, 596–97 (1998) (describing the ostensible ownership problem and Article 9's response to it). As a practical matter, implementing an Article 9-style notice filing system for software licenses would be impractical. On the scope of the ostensible ownership issue as a theoretical matter, compare Douglas G. Baird & Thomas H. Jackson, *Possession and Ownership: An Examination of the Scope of Article 9*, 35 STAN. L. REV. 175 (1983) (arguing that notice filings comparable to those required under Article 9 should be required in other contexts where ostensible ownership concerns arise), with Charles W. Mooney, Jr., *The Mystery and Myth of "Ostensible Ownership" and Article 9 Filing: A Critique of Proposals To Extend Filing Requirements to Leases*, 39 ALA. L. REV. 683 (1988) (arguing that Article 9 itself is less a

kind of transaction? A number of courts have validated "licenses" of computer code itself, but they have rarely gone beyond the label attached to the transaction by the licensor or beyond the licensor's self-described economic needs.[93] The only plausible place to look is the Copyright Act. Section 202 of the Copyright Act confirms that ownership of the object is distinct from ownership of the copyright.[94] This distinction leads, among other things, to the first sale doctrine,[95] which would make no sense without section 202. It also leads to the sensible conclusion that rights in the object are governed by the common law of property and not by federal law.[96] Section 117, which authorizes an "owner" of a copy of a computer program to make another "copy" of that program under limited circumstances, might be read as authorizing an exception to section 202 in the context of computer programs by implicitly creating a category of non-owned, that is, "licensed," physical copies whose possessors cannot rely on section 117. Some courts have effectively read section 117 this way,[97] enabling owners of copyrights in computer programs embedded in functional devices to extinguish potential competition in markets for the devices. There is little evidence that Congress intended this result or that courts have in fact confronted the apparent conflict between these two sections.[98] Section 117 speaks of a defense available to an owner of a

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reaction to ostensible ownership concerns and more a system for resolving priority disputes among competing creditors).

93. *See, e.g.*, MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511 (9th Cir. 1993) (accepting license characterization on licensor's documentation); Adobe Sys., Inc. v. One Stop Micro Inc., 84 F. Supp. 2d 1086 (N.D. Cal. 2000) (accepting expert testimony by plaintiff's expert that commercial software is always licensed). *But see* DSC Communications Corp. v. Pulse Communications, Inc., 170 F.3d 1354 (Fed. Cir. 1999) (examining "substance" of transaction to determine whether licensor conveyed rights equivalent to those typically received by purchaser).

94. 17 U.S.C. § 202 (2000).

95. *See id.* § 109(a).

96. The converse is also true, as rights in the intangible interest are governed by the Copyright Act and not by the common law of property. *See* Dowling v. United States, 473 U.S. 207, 216–18 (1985) (mail fraud conviction for transporting "stolen" "goods" cannot be sustained based on infringement of copyright). *Dowling*, it should be noted, has been read narrowly by some subsequent courts. *Compare* United States v. Wallach, 935 F.2d 445, 467 (2d Cir. 1991) (emphasizing special nature of copyright law and refusing to extend *Dowling* to prosecution regarding trade secrets), *with* United States v. Brown, 925 F.2d 1301, 1307–08 (10th Cir. 1991) (holding that *Dowling* removes intangible property from scope of federal stolen property statute).

97. *See DSC Communications Corp.*, 170 F.3d at 1359–62 (Fed. Cir. 1999) (holding that telephone companies employing copyrighted software from the manufacturer were not necessarily "owners" of the software).

98. *But see* Vault Corp. v. Quaid Software Ltd., 847 F.2d 255, 269–70 (5th Cir. 1988) (holding that state law cannot authorize enforcement of a property right, in the form of a software "license," that conflicts with section 117). For an example of an effort to synthesize briefly the two provisions that confuses more than it clarifies, see Robert W. Gomulkiewicz, *De-Bugging*

"copy" of a computer program who would otherwise infringe the copyright in the work of authorship fixed in that "copy" by making another "copy" in the course of using that program.[99] The Copyright Act defines "copies" as "material objects" in which works are fixed.[100] The point of section 117 was thus to expand the range of activities permitted to users of computer software, not to authorize creation of a separate "licensing" paradigm for copies themselves.[101]

The DMCA alone might be evidence that Congress intended to grant rights in the object itself or to confirm that copyright law traditionally has provided such rights.[102] Aside from the conflict between this

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Open Source Software Licensing, 64 U. PITT. L. REV. 75, 85 n.73 (2002) ("It may not be a first sale when someone simply gives a copyrighted work for free with no explanation; the recipient may simply receive an implied license."). This explanation confuses the work of authorship with the copy of the work. A gift of a copy ordinarily does constitute a "first sale" of that copy that permits re-distributing that copy without fear of liability for infringement. An implied license, if any, applies to other potential uses of the work of authorship fixed in that copy. The better view, which preserves this distinction between work and copy, can be used to attack other problematic aspects of intellectual property law. Professor Mark Patterson argues that conflicts between intellectual property laws (which permit certain activities that could be characterized as anti-competitive) and antitrust law (which seeks to deter and punish anticompetitive behavior) can be managed by distinguishing between the intellectual property right itself and the product in which the right is embodied. *See* Mark R. Patterson, *When Is Property Intellectual? The Leveraging Problem*, 73 S. CAL. L. REV. 1133, 1134 (2000).

99. *See* 17 U.S.C. § 117(a) (2000).

100. *Id.* § 101 (defining the term "copies").

101. It is instructive to note here that the report on which Congress relied in enacting section 117 in 1980 noted, "Because the placement of a work into a computer is the preparation of a copy, the law should provide that persons in rightful possession of copies of programs be able to use them freely without fear of exposure to copyright liability." NAT'L COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHT WORKS, FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHT WORKS 13 (1978) [hereinafter FINAL REPORT]. (The Commission is commonly referred to by the acronym "CONTU".) The transition from "rightful possessor" in this sentence to "owner" in section 117 has never been adequately explained. Emphasizing that distinction, and distinguishing a "licensee" (who lacks the section 117 defense) from an "owner," effectively reads section 117 out of the Copyright Act, given the ubiquity of software "licensing." *See* Nimmer et al., *supra* note 83, at 34–38 (describing the effects of section 117 and concluding that nothing in the Copyright Act authorizes recognition of a regime of "licensing" of physical goods).

102. Both interpretations have been offered by courts. *Compare* Universal City Studios, Inc. v. Corley, 273 F.3d 429, 433 (2d Cir. 2001) (concluding that DMCA is consistent with the scope of a copyright holder's existing ability to exclude unauthorized use of underlying creative work and, in dicta, concluding that consumer would violate DMCA by viewing a lawfully acquired DVD via computer technology not specified by the owner of the copyright in the DVD), *with* Lexmark Int'l, Inc. v. Static Control Components, 253 F. Supp. 2d 943, 970 (E.D. Ky. 2003) (finding that the defendant violated DMCA by trafficking in devices that circumvented the technological measures protecting access to the copyrighted authentication sequence in the plaintiff's device and, in dicta, concluding that a consumer would violate DMCA by using a computer printer cartridge other than the cartridge specified by the owner of copyrights in programs that operate the computer printer). The implicit conclusion of *Corley* and *Lexmark*, under which the owner of a copyright in a computer program embedded in a functional object can

interpretation and section 202, it is far from clear that Congress has the authority to do so under the Copyright Clause. The object is not a "writing" of an author, notwithstanding the fact that copyright law prior to its revision in 1976 categorized copyrighted works according to their embodiments as "books," "photographs," and so on.[103] The Commerce Clause might be invoked to justify Congressional authority, but doing so leads to a knotty problem of conflicting constitutional commands.[104] The authority to do this under the Commerce Clause leads not only to a preemption problem but also to an extraordinary parsing of the DMCA. Section 1201(a)(1) is authorized by the Commerce Clause, and § 1201(a)(2) is authorized by the Copyright Clause.[105] The legislative history of the statute can be interpreted in many ways, but it contains no hint of this distinction. The analysis gets sufficiently knotty that it

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be used to control a consumer's use of that object, was rejected in *Chamberlain Group, Inc. v. Skylink Technologies, Inc.*, No. 02-C-6376, 2003 WL 22038638 (N.D. Ill. Aug. 29, 2003) (finding no DMCA violation for consumers to operate automatic garage doors managed via a copyrighted computer program with openers manufactured by a competitor of the doors' manufacturer).

For its part, in a limited way Congress has recognized the anticompetitive potential of section 117 by further amending that statute to exclude coverage of claims against third party service organizations that use copyrighted computer programs in the course of servicing computers. *See* 17 U.S.C. § 117(c) (2000). The change means that a different result would follow today in cases such as *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993), and *Triad Systems Corp. v. Southeastern Express Co.*, 64 F.3d 1330 (9th Cir. 1995).

103. The Supreme Court in *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908), clearly distinguished between the author's work and the copies by which that work was "multiplied." *Id.* at 347. The distinction is traceable to the Statute of Anne, the English antecedent of American copyright law. *See* An Act for the Encouragement of Learning by Vesting the Copies of Printed Books in the Authors or Purchasers of Such Copies, During the Times Therein Mentioned, 1710, 8 Ann., c. 19 (Eng.) (distinguishing between the "copie" and the book(s) in which it was fixed). The "copie" was defined originally under English law as the original manuscript to which legal rights attached, then as the relevant legal right itself. *See* LYMAN RAY PATTERSON, COPYRIGHT IN HISTORICAL PERSPECTIVE 47–49 (1968); Howard B. Abrams, *The Historic Foundation of American Copyright Law: Exploding the Myth of Common Law Copyright*, 29 WAYNE L. REV. 1119, 1134–38 (1983); John Feather, *From Rights in Copies to Copyright: The Recognition of Authors' Rights in English Law and Practice in the Sixteenth and Seventeenth Centuries*, 10 CARDOZO ARTS & ENT. L.J. 455, 460–66 (1992); L. Ray Patterson, *Copyright and "The Exclusive Right" of Authors*, 1 J. INTELL. PROP. L. 1, 38–39 (1993); L. Ray Patterson, *Understanding Fair Use*, 55 LAW & CONTEMP. PROBS. 249, 258–60 (1992).

104. *See* United States v. Moghadam, 175 F.3d 1269 (11th Cir. 1999) (raising but not deciding question of whether Copyright Clause preempts Congress's possible Commerce Clause authority with respect to works of authorship).

105. 17 U.S.C. § 1201(a)(1)–(2) (2000). Supporting § 1201(a)(1) under the Commerce Clause may create yet another problem, which is that some state regulation of copies of copyrighted works—at least the objects in which DRM systems are embedded—may be preempted. *Cf.* Goldstein v. California, 412 U.S. 546, 560 (1973) (holding that, per the Constitution, States have not relinquished their complete power to give authors "exclusive right to their respective writings.").

seems farfetched to conclude that federal law is a source of authority for a copyright owner's right to "license" each individual copy of a work.

What about the common law? Actual law on this subject is scarce.[106] Available commentary suggests that the common law ought not to be availing. Professor Zechariah Chafee characterized efforts to burden the title to chattels, even where the new possessor took with notice of the condition, as equitable servitudes in chattels that were presumptively invalid as restraints on alienation, if not forbidden outright.[107] An alternative possibility is that the "license" form of the transaction in the chattel itself is a misnomer; the transaction constitutes something else. It could be a lease, a term of years, although a term of years generally ends and the property subject to the lease is returned. Software licenses could be leases in which the licensor/lessor agrees that the licensee/lessee need not return the code when the term is done or the

106. *But see* McDonald's Corp. v. Shop at Home, Inc., 82 F. Supp. 2d 801, 803–04, 817 (M.D. Tenn. 2000) (refusing to enforce, in context of a trademark case, "license" label affixed to a bag containing Beanie Baby toys purchased by the defendant).

107. *See* Zechariah Chafee, Jr., *Equitable Servitudes on Chattels*, 41 HARV. L. REV. 945 (1928); Zechariah Chafee, Jr., *The Music Goes Round and Round: Equitable Servitudes and Chattels*, 69 HARV. L. REV. 1250 (1956); *see also* Thomas M.S. Hemnes, *Restraints on Alienation, Equitable Servitudes, and the Feudal Nature of Computer Software Licensing*, 71 DENV. U. L. REV. 577, 579–81 (1994). Hemnes predicted that courts would shortly have to come to grips with the "feudal" nature of what amounts to servitudes on chattels that embody software, but the prediction has not come to pass. If anything, the Internet has accelerated the "feudal" nature of digital information production and consumption. *See* Alfred C. Yen, *Western Frontier or Feudal Society?: Metaphors and Perspectives of Cyberspace*, 17 BERKELEY TECH. L.J. 1207, 1232–48 (2002) (characterizing legal relationships on the Internet in terms of medieval feudalism). In the analog world, the law is clearer. A book publisher cannot enforce *in copyright* a restriction on resale prices by making the resale price a condition of the initial sale. *Bobbs-Merrill Co.*, 210 U.S. at 350–51; *cf.* RCA Mfg. Co. v. Whiteman, 114 F.2d 86, 87–90 (2d Cir. 1940) (refusing to enforce restrictive legend on phonograph record).

A different rule appears to apply in patent law, though the Federal Circuit has not explained why it should. *See* B. Braun Medical, Inc. v. Abbott Laboratories, 124 F.3d 1419 (Fed. Cir. 1997); Mallinckrodt, Inc. v. Medipart, Inc., 976 F.2d 700 (Fed. Cir. 1992) (finding that the violation of a single-use restriction accompanying a patented item may be enforceable in suit for patent infringement); Richard H. Stern, *Post-Sale Patent Restrictions After Mallinckrodt—An Idea in Search of Definition*, 5 ALB. L.J. SCI. & TECH. 1, 7 (1994) (characterizing *Mallinckrodt* as "simply fiat, judicial legislation" in contravention of decades of precedent). The Federal Circuit recently extended the point in holding that a holder of a patent on engineered soybean seeds could enforce a "seed wrap" or "bag tag" license that accompanied acquisition of a batch of seeds by a farmer, under which the seeds were merely "licensed" to the farmer (for use during a single season), rather than sold. *See* Monsanto Co. v. McFarling, 302 F.3d 1291, 1298–99 (Fed. Cir. 2002) (holding that assent of "buyer" to license trumped the patent law doctrine of exhaustion, corresponding to copyright's doctrine of first sale). The *McFarling* decision suggests that the concerns expressed in this Article regarding governance of electronic information may extend to governance of biotechnology products. *See* Dan L. Burk, DNA Rules: Legal Implications of Biological "Lock-out" Systems (Oct. 2003) (unpublished manuscript, on file with author), *available at* http://www.innovationlaw.org/pages/DNARules.pdf (last visited Dec. 31, 2003).

useful life of the code has expired. Yet code never wears out (although it may obsolesce), and there is often no term associated with the license. Precedent suggests that this view would not be accepted. Most courts dealing with commercial law issues affecting licensed computer programs almost uniformly have examined the substance of the "license" transaction and decided that it was a sale, or at least a transaction sufficiently analogous to a sale that Article 2 of the Uniform Commercial Code should apply.[108]

A "license" might be a bailment (the "licensor" as bailor, "licensee" as bailee), or sufficiently tantamount to a bailment that the law of bailments should apply. That seems doubtful, since a bailee at common law assumes a variety of duties regarding the bailed material (that is, the chattel) that are inconsistent with a software user's ordinary use of the program.[109] Also, and more important, the bailee is usually expected to return the bailed material to the bailor upon demand, and in the software context, that almost never happens and is never expected to happen. The "license" could be a conditional gift.[110] The personal property correlates to the conditional fee for real property, that is, a voluntary gift of the chattel itself on condition that the recipient comply with certain conditions associated with the copyright interest. The fee or royalty associated with the software would be associated economically only with the right to use the program (the copyright interest), which is logical since the economic value of the bits and the media that constitute the program copy itself is negligible. What users pay for is the content, not the copy. But then we are back in the land of equitable servitudes; even for conditional gifts, the donee retains the right to alienate the chattel so long as the donee has indicated its willingness to comply with the condition.[111] A non-transferability clause in a software license, attached to the chattel itself, could not stand as the relevant condition since that is the term that precisely conflicts with anti-alienation policy. The condition would presumably concern some facet of the restrictions on use of the copyright interest, but that is the land of copyright, and efforts to use the doctrine of conditional gift to enforce a

108. *See, e.g.*, Specht v. Netscape Communications Corp., 306 F.3d 17, 28–29 & n.13 (2d Cir. 2002); M.A. Mortenson Co. v. Timberline Software Corp., 998 P.2d 305, 310 (Wash. 2000).

109. *See* D. Gordon Smith, *The Critical Resource Theory of Fiduciary Duty*, 55 VAND. L. REV. 1399, 1451 & n.211 (2002) (describing bailments in terms of the duty of care imposed on the bailee, but distinguishing them from fiduciary obligations).

110. *See* Rebecca Tushnet, *Rules of Engagement*, 107 YALE L.J. 2583, 2599–607 (1998) (noting that a conditional gift can be returned due to one party's fault, or on a no-fault basis).

111. *See id.* at 2599–600.

use restriction via termination of access to the copy itself should be preempted under either § 109(a) or § 202.[112]

The fact that the law has not or has only incompletely recognized the form of ownership of chattel that enables software "licensing" does not mean automatically that this form should not be recognized today, but it does suggest that we should proceed with caution rather than simply accepting as inevitable the validity of licensing-as-governance.[113] It may well be the case that we can develop the means, legally, to sustain the governance benefits that the licensing model appears to generate for information itself, without the governance costs that prohibitions on restraints on alienation are designed to avoid. Before considering alternatives to licensing, however, the next two Parts consider alternative sources for licensing legitimacy.

IV. LICENSING CUSTOMS

A. Law and Custom

The positive legal framework on which licensing depends might have shaky conceptual foundations, but it might be supportable, nonetheless, if its historical and customary pedigree is sufficiently robust. The standard software licensing model might represent an enforceable legal form simply because licensing has become the customary form of

112. 17 U.S.C. §§ 109(a), 202 (2000).

113. The universe of forms of property rights has historically been limited, a fact that only now is receiving theoretical attention. The fact that such limitations are welfare-enhancing is well-established, though the nature of the benefits is debated. *Compare* Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1, 49–51 (2000) (arguing that the standardization of forms of property rights across a small number of defined types reduces information costs associated with transactions in property), *and* Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773, 777 (2001) (noting that the standardization of property forms limits externalities associated with "customizing" a two-party property transaction), *with* Henry Hansmann & Reinier Kraakman, *Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights*, 31 J. LEGAL STUD. 373, 374–75 (2002) (arguing that limitations of forms of property rights reduce information costs associated with verifying ownership of property by limiting the possibility of divided interests). Both perspectives rely on the implicitly bounded "thingness" of property, *see* Michael A. Heller, *The Boundaries of Private Property*, 108 YALE L.J. 1163, 1193–94 (1999) (noting inadequacies of the "bundle of rights" metaphor for property), and in so doing simplify evaluation of arguments that state that excessive "control" of intangible property, such as copyright interests, does or does not enhance social welfare, *see* R. Polk Wagner, *Information Wants To Be Free: Intellectual Property and the Mythologies of Control,* 103 COLUM. L. REV. 995, 997 (2003) (making an argument about the connection between "control" of intellectual property rights and production of creative works that assumes the scope and content of those rights themselves).

dealing in computer software.[114] This could be manifested in arguments concerning the enforcement of a particular license; it also could be manifested in arguments concerning adoption of the licensing norm as positive law. In either sense, for a customary practice to be adopted and enforced legally requires, among other things, that the custom be both broad and durable, that it emerge voluntarily, and that the custom be efficient or otherwise desirable as a normative matter.[115] Such a custom may regulate informally. It has no positive legal effect until and unless the custom is recognized as such by legislation or validated by judicial decision, though in principle, if all of these conditions are met, there is often little reason not to proceed to enact the custom as positive law.[116] There are significant exceptions. The "custom" may be inefficient, in the sense that it inflicts significant costs on some other community, or the custom may conflict with some other broader and more important public policy.[117]

In any event, one could argue that the customary pedigree of software licensing mandates positive legal recognition of the practice. Advocates of the proposed Uniform Computer Information Transactions Act ("UCITA"), which would enforce software licenses according to the standard model,[118] explicitly adopted this argument,[119] and a handful of judicial decisions enforcing software licenses have echoed this argument as well.[120] Having been adopted in part in two states and

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114. A different framing of this point would suggest that the positive legal framework described in Part III is legitimate as the product of common-law recognition of established legal practice over an extended period of time.

115. *See, e.g.*, Ghen v. Rich, 8 F. 159 (D. Mass. 1881) (holding, in accordance with customary practices in Provincetown's fin-backed whaling industry, that property rights in the whales vested in the fishing crews that had killed them at sea); Joseph Levie, *Trade Usage and Custom Under the Common Law and the Uniform Commercial Code*, 40 N.Y.U. L. REV. 1101, 1113 (1965). *But see* Dale Beck Furnish, *Custom as a Source of Law*, 30 AM. J. COMP. L. 31, 50 (Supp. 1982) (claiming that custom as a source of law and distinct from trade usage has virtually evaporated).

116. *See* Lisa Bernstein, *The Questionable Empirical Basis of Article 2's Incorporation Strategy: A Preliminary Study*, 66 U. CHI. L. REV. 710, 711 (1999) (arguing that adopting trade custom as positive law prevents merchants from realizing efficiencies via tailored agreements); Richard A. Epstein, International News Service v. Associated Press: *Custom and Law as Sources of Property Rights in News*, 78 VA. L. REV. 85, 124–28 (1992) (discussing the relationship between custom, law, and property).

117. In both cases it could be said that no "custom" exists in the first place. *See generally* Stephen L. Carter, *Custom, Adjudication, and Petrushevsky's Watch: Some Notes from the Intellectual Property Front*, 78 VA. L. REV. 129 (1992) (discussing the role of customs and norms in the adjudicative process).

118. *See supra* note 64 (quoting UCITA draft).

119. *See* Nimmer, *Through the Looking Glass*, *supra* note 64, at 304–05 (stating that UCITA follows the traditions of the UCC and contract law of the United States).

120. *See* M.A. Mortenson Co. v. Timberline Software Corp., 998 P.2d 305, 314 (Wash. 2000); Adobe Sys., Inc. v. One Stop Micro, 84 F. Supp. 2d 1086, 1091 (N.D. Cal. 2000) (noting that

formally rejected in four others,[121] UCITA is a stalled project at best.[122] The argument from custom, however, remains active.

Rather than rehash arguments raised during UCITA debates about conflicts between "customary" software licensing and injured third party communities or conflicts with the public interest,[123] I suggest that the most effective objection to this argument may lie in the absence of evidence that software licensing constitutes a qualifying custom in the first place. It has neither the qualifying durability and breadth of acceptance nor the normative pedigree. The balance of this Part explains why, by reviewing briefly the history of the software license.

B. A History of the Software License

Software licensing, like "software" itself, is a relatively recent phenomenon. Before the introduction of affordable small computers for home and small business use in the late 1970s, the term "computer" generally referred to "large mainframe computer" or "minicomputer" for institutional use. Basic computer programs, mostly for data

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"evidence of trade usage demonstrates that it is commonplace for sales terminology to be used in connection with software licensing agreements"). In what I refer to as "the strange career of UCITA," advocates of this proposed and mostly unenacted model law have persuaded a number of courts to cite it favorably for the proposition that software licenses ordinarily are binding legal forms. *See* Specht v. Netscape Communications Corp., 306 F.3d 17, 29 & n.13 (2d Cir. 2002); Rhone Poulenc Agro, S.A. v. DeKalb Genetics Corp., 284 F.3d 1323, 1330–31 & nn.4–5 (Fed. Cir. 2002); ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1452 (7th Cir. 1996) (relying on UCITA predecessor, proposed Article 2B of the UCC); AGT Int'l, Inc. v. Level 3 Communications, LLC, No. 02 CV 684, 2002 WL 31409879, at *5 (S.D. Ohio July 29, 2002); I. Lan Sys., Inc. v. Netscout Serv. Level Corp., 183 F. Supp. 2d 328, 332 (D. Mass. 2002); *M.A. Mortenson*, 998 P.2d at 313 & n.10. *But cf.* Klocek v. Gateway, Inc., 104 F. Supp. 2d 1332, 1338 & n.7 (D. Kan. 2000) (distinguishing sales of computers from coverage of UCITA).

121. UCITA has been adopted wholly or partly in Maryland and Virginia. Iowa, North Carolina, Vermont, and West Virginia have adopted anti-UCITA "bomb shelter" legislation, which denies enforcement of contracts governed by UCITA against residents of those states.

122. In August 2003, the National Conference of Commissioners on Uniform State Laws ("NCCUSL") announced that it was abandoning its efforts to promote UCITA in state legislatures. *See UCITA Drafters Ditch Licensing Act as Ahead of Its Time, Politically DOA*, 8 ELECTRONIC COM. & L. REP. (BNA) 771 (2003); Press Release, NCCUSL, UCITA Standby Committee Is Discharged (Aug. 1, 2003), *available at* http://www.nccusl.org/nccusl/desktopmodules/newsdisplay.aspx?ItemID=56 (last visted Nov. 8, 2003). The full text of the NCCUSL announcement is available at http://www.nccusl.org/nccusl/ucita/KKB_UCITA_Letter_8103.pdf.

123. This theme dominated an academic symposium examining the predecessor of the UCITA proposal, proposed Article 2B of the UCC. *See generally* Symposium, *Intellectual Property and Contract Law in the Information Age: The Impact of Article 2B of the Uniform Commercial Code on the Future of Transactions in Information and Electronic Commerce*, 87 CAL. L. REV. 1 (1999); Symposium, *Intellectual Property and Contract Law in the Information Age: The Impact of Article 2B of the Uniform Commercial Code on the Future of Transactions in Information and Electronic Commerce*,13 BERKELEY TECH. L.J. 809 (1998); *see also* Symposium, *Licensing in the Digital Age*, 36 HOUS. L. REV. 1 (1999) (symposium generally sympathetic to Article 2B).

processing, generally were supplied with and custom-designed to run on those machines.[124] As a result, issues of infringement of the copyright in these programs rarely arose to the extent they have over the last twenty-five years,[125] since both ownership and authorized use of the program closely tracked ownership and authorized use of the physical machine.

The technological and legal landscape began to change in the early 1970s. In 1969, the Justice Department filed its antitrust lawsuit against the industry giant, IBM, arguing that IBM's bundling of hardware and software was anticompetitive.[126] IBM responded later that year by unbundling its charges for hardware, typically leased to customers, and software "services," now offered under separate pricing.[127] Separate pricing for these "services" began as month-to-month leasing of the software, designed to avoid the implication that IBM was "selling" its code. For administrative reasons, this evolved into paid-up "licensing" of the software.[128]

Functionally the code still was supplied with the machine, and initially the "licensing" business strategy was aimed primarily at responding to criticism of IBM's alleged anticompetitive marketing practices, not at nurturing protection for computer software as an

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124. *See* PAUL E. CERUZZI, A HISTORY OF MODERN COMPUTING 109–73 (1998); Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329, 1332–36 (1987).

125. Skepticism in the Copyright Office over the registrability of computer programs effectively delayed any significant amount of infringement litigation concerning programs themselves until after passage of the Copyright Revision Act of 1976, which formally recognized the copyrightability of computer software. *See* 17 U.S.C. § 101 (1976) (modifying the fixation requirement to encompass computer software).

126. IBM was already the subject of a 1956 consent decree requiring that it sell as well as lease its mainframe computers, among other things. *See* United States v. Int'l Bus. Machs. Corp., No. 72-344, 1956 U.S. Dist. LEXIS 3992 (S.D.N.Y. Jan. 25, 1956), *aff'd dissolving consent decree*, 163 F.3d 737 (2d Cir. 1998). The consent decree required that IBM make information about its computers available to third party maintenance firms, but did not require that IBM independently price what we now think of as "software." *See* Emerson W. Pugh, *Origins of Software Bundling*, 24 IEEE ANNALS HIST. COMPUTING 57, 57–58 (2002). IBM's hardware leases themselves were derivative of a much older effort to require its customers to use what today we would conceptualize as IBM "software" (punch cards used in data processing operations) together with IBM "hardware" (IBM punch card machines, sorters, and tabulators). *See* Int'l Bus. Machs. Corp. v. United States, 298 U.S. 131, 140 (1936) (holding that a requirement that machine lessees purchase and use only IBM-produced cards constituted an antitrust violation).

127. IBM's unbundling decision was made in anticipation of the Justice Department's suit, but did not take effect until after the suit was filed. *See* Burton Grad, *A Personal Recollection: IBM's Unbundling of Software and Services*, 24 IEEE ANNALS HIST. COMPUTING 64, 65 (2002).

128. *See* Watts S. Humphrey, *Software Unbundling: A Personal Perspective*, 24 IEEE ANNALS HIST. COMPUTING 59, 60–61 (2002).

independent economic sector. Customers paid for use of the computer technology, both hardware and software that they acquired either directly or indirectly from IBM.[129] The lease was often really a disguised sale or a so-called "financing lease," so that at the end of the "lease" the purchaser, which often was not the end user, "owned" the code that ran the machine and the machine itself. If the lease was not a disguised sale, the customer "rented" the software as part of the rented computer system; at the end of the lease, the system as a whole would be returned to its owner, which might then lease it to another customer. Under both "financing lease" and "true lease" models, however, title to the code itself typically remained with the lessor as much for tax reasons as for copyright law reasons. Owning the code meant carrying it as an asset; leasing (or licensing) the code meant expensing the monthly "service" payments. Hybrid arrangements were possible, of course, but for present purposes, the key was that intellectual property considerations followed the business practice. They did not drive it.

Technological and business changes eventually brought copyright concerns to the forefront. Charging separately for software "services" significantly helped to create a market of independent software developers.[130] The popularization of "personal" computing in the late 1970s and early 1980s accelerated the growth of the software industry. Alongside the development of the personal computer, an industry of independent software developers arose to supply standalone computer programs that could be and were distributed independently of computers themselves. Time and experience (and the need to save money) helped end users develop their own data processing staffs to handle programming chores. "Leasing" or "licensing" software in order to acquire the manufacturer's or lessor's data processing skills proved less important. From a functional standpoint, customers were increasingly happy to effectively own the code. But "licensing" as a substitute for leasing remained critical from an accounting standpoint, and the

129. The 1956 consent decree effectively created a third-party leasing industry comprised of purchasers of IBM computers that leased systems (hardware, software, and services combined) to customers. CERUZZI, *supra* note 124, at 159–61; Humphrey, *supra* note 128, at 62. Owners of these systems were frequently not end users. *See* Thomas Haigh, *Software in the 1960s as a Concept, Service, and Product*, 24 IEEE ANNALS HIST. COMPUTING 5, 8–9 (2002) (discussing "time sharing" of computing services, rented by data processing firms to customers, and leasing of hardware, software, and services as integrated packages as standard computing business models of late 1960s).

130. *See* CERUZZI, *supra* note 124, at 169; Haigh, *supra* note 129, at 10–11; Luanne Johnson, *Creating the Software Industry: Recollections of Software Company Founders of the 1960s*, 24 IEEE ANNALS HIST. COMPUTING 14, 14 (2002).

contrast between form and function helped to clarify the developer's independent interests in intellectual property rights in software itself.

During the 1960s and into the early 1970s, neither the courts nor Congress had finally settled whether computer programs could be protected by copyright law. Computer system developers had relied on trade secret law to protect computer programs, alongside copyright law of uncertain scope.[131] Protecting their trade secrets while simultaneously distributing their products to the public meant either ensuring that the trade secret was not revealed in the product itself[132] or ensuring that each customer entered into a valid confidentiality agreement with the computer manufacturer, or both. Not revealing the trade secret was accomplished, to the extent possible in an era of comparatively simple programming, by distributing programs only in object code format. Source code versions of programs were rarely released to the public. Just in case distributing object code versions of computer programs were considered distribution of secrets embedded in those programs, contract forms were developed to confirm that software customers were entering into "confidentiality" agreements with developers.[133]

In a world of few software developers, by contemporary standards, and mostly institutional customers, little of this was truly problematic from a legal standpoint. In a world of mass-marketed software, however, developers needed a mechanism to protect both copyright

131. *See, e.g.*, Cybertek Computer Prods., Inc. v. Whitfield, 203 U.S.P.Q. 1020, 1022 (Cal. App. Dep't Super. Ct. 1977) (noting virtually universal availability of trade secret protection for computer programs); Glenn J. MacGrady, *Protection of Computer Software—An Update and Practical Synthesis*, 20 HOUS. L. REV. 1033, 1045 (1983) (noting the trade secret law provided the principal means of protecting computer programs). Professor Peter Menell has noted that although the Copyright Office began accepting registrations for computer programs in the early 1960's (under its Rule of Doubt, by which the registrations themselves carried no weight in determining validity of the copyrights), only 1205 programs were registered between 1964 and January 1, 1977—and three-quarters of those came from the leading mainframe computer manufacturers IBM and Burroughs. *See* Peter S. Menell, *Envisioning Copyright's Digital Future*, 46 N.Y.L. SCH. L. REV. 63, 76 (2002–03). Confirmation of the copyrightability of computer programs finally arrived in 1980. Anticipating the comprehensive revision of copyright law in the 1976 Copyright Revision Act but unable to resolve the software problem, Congress appointed CONTU (National Commission on New Technological Uses of Copyright Works) in 1974 to study the problem of copyright on computer programs. *See* FINAL REPORT, *supra* note 101, at 40. In 1980, Congress enacted the recommendations of that commission by modifying the Copyright Act, adding a definition of "computer program" to section 101 and amending section 117 (owner's right to use a copy of a computer program) of the statute. *See* 17 U.S.C. § 101 (2000 & West Supp. 2003); 17 U.S.C. § 117 (2000); Menell, *supra*, at 77.

132. *See* Menell, *supra* note 131, at 74 (confirming that courts recognized that object code distribution of computer programs preserved their trade secret status).

133. *See* Mark A. Lemley, *Intellectual Property and Shrinkwrap Licenses*, 68 S. CAL. L. REV. 1239, 1244–45 (1995).

interests and their confidential information while simultaneously sharing these products with the world at large. Accounting considerations receded into the background; intellectual property law came to the forefront.

The mechanism consisted of two parts. First, developers of software for mainframe computers had a ready-made legal form—the "license" carried forward from IBM's earlier marketing strategy—under which the developer retained title to the code and granted specified uses to the customer. Second, mass-market software developers, who could not rely on a signed license agreement with end users who purchased copies of programs from intermediaries, invented the shrinkwrap form. Initially referred to as the "box top" or "tear-me-open" license, the shrinkwrap form has now devolved into the click-wrap and click-through license. By opening a package of software, installing it, or clicking on an "I Agree" or "I Accept" screen icon during installation, the customer manifests assent to be bound to terms offered not necessarily by the vendor of the software (which may be a third-party distributor) but by the owner of the copyright and of any trade secrets embodied in the object code.[134] Central among those terms was and is the provision that the developer retains title to—that is, licenses and does not sell—the individual copy of the program itself.

These commercial developments dovetailed with a technological accident. The dominant design of modern computing requires that a computer processor cause copies of all or parts of computer programs that the processor needs from the computer's nonvolatile or "permanent" storage (what personal computer users today refer to as the computer's hard drive) to be loaded temporarily into the computer's volatile storage (what we today refer to as the computer's memory, or RAM).[135]

The architects of the Copyright Act of 1976 were aware that this design technically required making what plausibly could be referred to as "reproductions" of copyrighted works, in the sense in which that term is used in the Copyright Act.[136] The "reproduction" of the copy of the

134. *See* Madison, *Legal-ware*, *supra* note 4, at 1057–58.

135. This is the "Von Neumann" processor architecture, after the designer of the first stored program computer. *See* CERUZZI, *supra* note 124, at 24; NANCY B. STERN, FROM ENIAC TO UNIVAC: AN APPRAISAL OF THE ECKERT-MAUCHLY COMPUTERS 181–246 (1981) (reprinting the text of Von Neumann's "First Draft of a Report on the EDVAC," originally distributed in 1945).

136. *See* Aymes v. Bonelli, 47 F.3d 23, 26 (2d Cir. 1995). Section 106(1) of the Copyright Act reserves to the copyright owner the exclusive right to reproduce the work in copies. *See* 17 U.S.C. § 106(1) (2000 & West Supp. 2003). The question of copyright for computer programs was deferred to CONTU, which concluded that "[t]he introduction of a work into a computer

program is deemed a "reproduction" of the copyrighted work of authorship as that term is defined under law. Section 117, as amended in 1980, reflected that awareness indirectly. Section 117 grants the user of a copyrighted computer program what appear to be only limited rights to use that program.[137] The *owner* of a copyrighted computer *program* is entitled to make a copy of that program in the course of using a particular machine. That is, that owner may use that program as the program is ordinarily used, which requires making a temporary copy. Limiting that right to the *owner* of the program meant, under the strictest reading of the statute, that software companies that merely *licensed* individual copies of their programs to customers could avoid having those copies made subject to the Copyright Act. The license, not the Act, would define the scope of user rights.[138]

Licensing of computer software had become ubiquitous by the mid-1990s, but its status as "custom" remained in doubt since there was no obvious way to determine whether the software-using public regarded the licenses as valid, useful, and beneficial as they were typically regarded by the software industry itself. Judicial decisions analyzing shrinkwrap licenses were infrequent and skeptical,[139] suggesting to some observers that the shrinkwrap form, if not the software license concept, might be illegitimate. The emergence of the Internet as an environment for commerce in the mid-1990s crystallized the polarity between licensing of "permitted uses" as a standard practice among software developers and information providers, on the one hand, and the arguably contrasting public character of copyright law, on the other.[140] Shrinkwrap licensing is mostly gone, replaced by click-through, click-on, and browse wrap licenses and terms of service and use for digital works of all kinds—offline and online, programs and data alike. Yet in the main, neither courts nor legislators have recognized end-user acquiescence as participation in a custom that acknowledges the licensor's ownership of the customers' copies of copyrighted works.

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memory would . . . be a reproduction of the work." FINAL REPORT, *supra* note 101, at 40. That conclusion was reflected in the statutory change to section 117, described *supra* at note 131.

137. *See* 17 U.S.C. § 117 (2000). It is worth emphasizing, again, that section 117 is framed as an exception to the exclusive rights of the copyright holder as provided in section 106. Correctly read, therefore, section 117 is not a cap on the scope of the rights of the user of a computer program, but an expansion of the scope of the user's freedom from liability.

138. *See* DSC Communications Corp. v. Pulse Communications, Inc., 170 F.3d 1354, 1360 (Fed. Cir. 1999); MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511, 518–19 (9th Cir. 1993).

139. *See, e.g.*, Step-Saver Data Sys., Inc. v. Wyse Tech., 939 F.2d 91 (3d Cir. 1991); Arizona Retail Sys., Inc. v. The Software Link, Inc., 831 F. Supp. 759 (D. Ariz. 1993).

140. *See supra* note 54 and accompanying text (discussing the notion that a privately acquired copyright substitute is a governance regime and thus each license is an extension of that idea).

Reported litigation is a poor barometer of user practices, but if the cases are any guide, it appears that copyright owners have succeeded in establishing the licensing norm despite, rather than abetted by, user understanding.[141] Moreover, the UCITA enterprise,[142] begun as an effort to rationalize the conventional practices regarding software and other digital information works, has stalled amid controversy, and momentum behind proposals for its adoption may be receding.

As custom, therefore, software licensing has a historical pedigree that stretches to a maximum of thirty years. The structure and purpose of software "licenses" that developed at that time, which had the effect (if not the intention) of opening the computer industry and facilitating competition, in fairness cannot be compared to contemporary licensing practice, which developers rely on to limit competition.[143] Customer acquiescence in initial licensing practice was motivated at least as much by business needs as by intellectual property considerations. Even today, software consumers participate in licensing transactions because they are effectively required to in order to acquire use of needed computer software. And the normative benefits of the alleged licensing "custom" have never been more questioned as a public policy matter.[144]

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141. In the consumer context, this is reflected indirectly in litigation under the anti-circumvention provisions of the DMCA. *See, e.g.*, Universal City Studios, Inc. v. Corley, 273 F.3d 429, 459 (2d Cir. 2001) (rejecting the argument that a consumer who has lawfully purchased an authorized copy of a motion picture on DVD may watch that motion picture on a device of the consumer's choosing); United States v. Elcom, Ltd., 203 F. Supp. 2d 1111, 1141 (N.D. Cal. 2002) (rejecting an argument that a consumer that has lawfully purchased an authorized copy of a literary work in an "electronic book" format may read that work on a device or in a format of the consumer's choosing). In the corporate and institutional context, where negotiated license agreements are more common, a well-drafted license typically provides that the licensee acknowledges the licensor's retention of title to the code. Whether this amounts to a user-ratified custom regarding rights to the code itself remains to be seen. It is more plausible that such a recital acknowledges that the user's rights to use the code are defined by the license. Litigation under section 117, for example, has characteristically involved claims by a "licensee" operating under the apparent belief that within the scope of the rights to use the code granted by the license, it may use the code itself as the licensee would like. *See DSC Communications Corp.*, 170 F.3d at 1362–63; Triad Sys. Corp. v. Southeastern Express Co., 64 F.3d 1330, 1337 (9th Cir. 1995). User understandings regarding digital works are especially difficult to parse because there are often three distinct property interests at stake: the physical media (disc, tape, cartridge, chip), if any, the copy of the work itself, and the copyright interest in the work.

142. *See supra* notes 118–23 and accompanying text (describing the status of the UCITA enterprise).

143. *See supra* notes 128–33 and accompanying text (noting that early leasing agreements were essentially financing agreements).

144. *See infra* notes 207–14 and accompanying text (arguing for a change in the normative baseline of existing law). Occasionally, even practitioners representing software companies themselves have recognized the normative limitations of software licensing. *See* Ian N. Feinberg, Shrink Wrap Licenses: Do They Cause Software Publishers More Harm Than Good? (Aug. 26, 1995) (manuscript on file with author) (noting that the chief benefit of shrinkwrap licenses stems

V. LICENSING AS PRIVATE ORDERING

We think of governance as "government"—as fundamentally public in character. Private government and governance tends to be suspect, but its existence should not be surprising. Private governance usually responds to some failure of the public government to supply some public good, such as public order or public schooling.[145] ("Public good" in this context refers both to the sense in which economists use that term[146] and to the sense that it is good, or at least traditional, that the public fisc supply these things.)[147] The private market cannot absorb that function as a whole (transaction costs or other political obstacles, such as a strong public tradition, might prevent this from occurring), but it can do so at a smaller scale and in a way that is consistent with, rather than at odds with, governance traditions.[148]

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from limitations on remedy and liability, which could be obtained equally effectively in sales transactions).

145. *See* JOHN D. DONAHUE, THE PRIVATIZATION DECISION: PUBLIC ENDS, PRIVATE MEANS 3–4 (1989); Ronald A. Cass, *Privatization: Politics, Law, and Theory*, 71 MARQ. L. REV. 449, 450–52 (1988); George L. Priest, *Introduction: The Aims of Privatization*, 6 YALE L. & POL'Y REV. 1, 2 (1988); Paul Starr, *The Meaning of Privatization*, 6 YALE L. & POL'Y REV. 6, 6 (1988).

146. An economist's "public good" is a nonrivalrous good, one whose consumption does not diminish its supply. That character leads to the provider's inability to set a meaningful price and thus to the likely underproduction of the good in a market economy. *See, e.g.*, Glynn S. Lunney, Jr., *Fair Use and Market Failure:* Sony *Revisited*, 82 B.U. L. REV. 975, 993 & n.84 (2002). Copyright law generally, then, is understood as a market intervention that enables producers to set prices based on legally synthesized rivalry "copies" of their works of authorship. In the licensing context, the comparable argument consists of the proposition that structured, privatized sharing via the open source license (and structured, privatized control via the closed source license) is superior to regulation via copyright law alone as a method of overcoming the market failure represented by the public-good character of creative computer programs. On the emergence of private cooperative social norms, see ELLICKSON, *supra* note 6, at 181–83; ROBERT SUGDEN, THE ECONOMICS OF RIGHTS, CO-OPERATION AND WELFARE 122–44 (1986); Benkler, *Coase's Penguin*, *supra* note 28, at 380; Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 343–51 (1997); Tim Wu, *When Code Isn't Law*, 89 VA. L. REV. 679, 720 (2003) (describing peer filesharing as a collective, private response designed to avoid the costs of copyright compliance). We need not necessarily look to novel forms of private ordering to supply structured sharing institutions in copyright law; they exist within its history and traditions. *See* Ann Bartow, *Libraries in a Digital and Aggressively Copyrighted World: Retaining Patron Access Through Changing Technologies*, 62 OHIO ST. L.J. 821, 822–31 (2001). The depth of practice represented in such institutions may help them to avoid some of the risks of norm-based coordination. *See* Carol M. Rose, *Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age*, 66 LAW & CONTEMP. PROBS. 89, 107–08 (2003) (describing the risks of norm-based coordination).

147. *See* Steven L. Schwarcz, *Private Ordering*, 97 NW. U. L. REV. 319, 324–29 (2002) (suggesting a taxonomy of private ordering regimes based on the scope of private versus public sources of authority and rule enforcement).

148. *See* Clark C. Havighurst, *Foreword: The Place of Private Accrediting Among the Instruments of Government*, 57 LAW & CONTEMP. PROBS. 1, 10 (1994) (describing regulatory pluralism).

"Private ordering" may simply be a label for bilateral contracting not enforced or managed centrally; that possibility was considered in Part III above. It may also characterize coordinated private arrangements untethered to formal, legal coercion. That possibility is the topic of this Part.

In that case, then, software licensing creates a valid institution of private ordering in information, so that both the licensing norm is legitimate and individual licenses are enforceable as an institutionalization of a set of privately developed rules, practices, and norms in some domain that would otherwise be subject to a blend of public rules.[149] Under this approach, the historical justifications for licensing practice are less important than several contemporary perspectives that validate roughly comparable institutions by which private parties arrange their affairs using a combination of legal and extra-legal tools.[150] This Part is concerned with private institutional arrangements that centralize or coordinate "private governance" in a relevant domain, that is, governments, of a sort.[151] It addresses three different dimensions of the governing process: whether the regime looks

149. A term from a related area, "privatization," captures my intent here perhaps better than "private ordering," but the former term comes freighted with specific institutional implications, including administrative law considerations, that do not apply, at least in their entirety, in this context. *See* Schwarcz, *supra* note 147, at 320 (using ICANN and the FASB as examples of private ordering); *infra* note 199 and accompanying and subsequent text (examining skepticism of privatization). The lack of a bright line between public law and private law is well-settled. *See* Duncan Kennedy, *The Stages of the Decline of the Public/Private Distinction*, 130 U. PA. L. REV. 1349, 1349 (1982); *cf.* Radin & Wagner, *supra* note 24, at 1314 (discussing the similarities in negative consequences of private and public contracts around copyright).

150. *See* Brian F. Fitzgerald, *Software as Discourse: The Power of Intellectual Property in Digital Architecture*, 18 CARDOZO ARTS & ENT. L.J. 337, 360–72 (2000) (describing software licenses as a species of private ordering with compelling public interest dimensions); McGowan, *supra* note 18, at 272 (recognizing open source licensing as a regime of private ordering); Dawn C. Nunziato, *Justice Between Authors*, 9 J. INTELL. PROP. L. 219, 271–82 (2002) (discussing DMCA and related DRM systems as a regime of private ordering); 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, 562–68 (1992); *cf.* Yochai Benkler, *Through the Looking Glass: Alice and the Constitutional Foundations of the Public Domain*, 66 LAW & CONTEMP. PROBS. 173, 207–08 (2003) [hereinafter Benkler, *Through the Looking Glass*] (distinguishing copyright policy choices from state action analysis of company towns); Radin & Wagner, *supra* note 24, at 1313–14 (drawing an analogy between private ordering online and private residential communities); Zittrain, *supra* note 54, at 1074–77 (drawing an analogy between ICANN as a hybrid public/private governing authority and company towns and gated communities).

151. The risk of "anticommons," frustration of innovation and development via fragmentation of private property interests, crystallizes the economic argument in favor of concentrating management of a privatized public function in the hands of a single governor. *See* Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transitions From Marx to Markets*, 111 HARV. L. REV. 621, 688 (1998).

and acts like a traditional government (a democratic theory argument), whether it delivers the goods that are expected from traditional government (an effectiveness argument), and whether it fills the institutional role that the traditional government fills (a symbolic argument).[152] A private governance regime might be critiqued or validated under any or all of these perspectives.

A. Constitutional and Democratic Principles

To the extent that the private regime looks and behaves like "government," and to the extent that the regime is as coercive as a traditional government, there may be an expectation that mechanisms of procedural and substantive due process and public accountability are in place. Public governance cannot be delegated to or shared with private regimes in ways that systematically subvert public values. One branch of "private governance" jurisprudence, dealing with the regulatory power of company towns, shopping malls, and gated communities, among other places, has tried to walk this line[153] by distinguishing between enforceable and unenforceable private regulation based on the state action doctrine.[154]

In these cases, private governance or private ordering is a problem of democratic theory. How have the regulators acquired their authority? Are the regulators accountable to those being regulated, and if so, how is that accountability implemented? Is there a risk of the sort of arbitrariness or coercion that procedural due process was intended to address, or is this the sort of activity that is or ought to be subject primarily to market discipline? Is there any kind of spillover or external effect on parties not able to effectively participate in the rule-making process or to opt out of the regulated domain? The democratic theory perspective risks imposing a formal "governance" structure or other "public" values on the production of what ought to be considered a private good. Yet democratic perspectives are called for precisely when private consensual activity affects non-parties to some substantial degree.

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152. *See* Radin & Wagner, *supra* note 24, at 1310–15 (describing the principal concerns with private ordering as a lack of voluntariness, a lack of accountability, externalities, and standardization of inequitable distributive patterns).

153. *See* Charles L. Black, Jr., *Foreword: "State Action," Equal Protection, and California's Proposition 14*, 81 HARV. L. REV. 69, 95 (1967) (concluding that the state action cases are a conceptual disaster area); Erwin Chemerinsky, *Rethinking State Action*, 80 NW. U. L. REV. 503, 504–05 (1985) (noting inconsistencies in the doctrine).

154. *See* John R. Thomas, *Liberty and Property in the Patent Law*, 39 HOUS. L. REV. 569, 592–606 (2002) (analyzing implications of state action doctrine for patent law).

The primary difficulty in applying the state action cases in any broad way derives from the inability to identify effectively the baseline from which the analysis should proceed. Is this really a "public" or a "private" domain? In *Marsh v. Alabama*,[155] the Supreme Court in 1946 overturned the conviction of a Jehovah's Witness for distributing literature door-to-door in contravention of the wishes of the company town's "owner," a local shipbuilding company. The Court saw no reason to distinguish between citizens of "private" towns and citizens of "public" towns for purposes of the First and Fourteenth Amendments since the *function* of the apparent town, derived from the experience of the people who lived there, was the same in both cases. This was so because of, rather than despite the property owner's professed interest in using its authority to maintain public order.[156]

The Court's emphasis on function generated by experience has been effectively reversed via recourse to an entirely different baseline, limiting *Marsh* both in the context of state action doctrine itself and as an analogical resource. Challenges to regulation by company towns, derivatives of the Industrial Revolution of the nineteenth century, have been displaced by challenges to regulation by shopping malls, derivatives of the automobile revolution of the twentieth century.[157] The mall is presumptively a form of private property. Its rules on expressive behavior by customers have the kind of formal public purpose seen in *Marsh*; they are needed to maintain the mall environment as a pleasant, shared cultural experience.[158] Yet as a

155. Marsh v. Alabama, 326 U.S. 501 (1946).

156. The point of the town owner's private law was to ensure that its workforce behaved in ways that were consistent with the industrial purposes of the organization as a whole. *Marsh* did not deal directly with the sociology of company towns, but the Court did not miss the implications of the opinion for labor organizing. In a footnote noting the extent to which merely invoking "private property" could not justify a departure from enforcing important public policy, Justice Black cited *Thornhill v. Alabama*, 310 U.S. 88 (1940), and other cases discussing and defending the working person's right to organize to bargain collectively. *See Marsh*, 326 U.S. at 504 n.1. The claim of the company's "private property" could not limit the individual's assurance of the power to better the conditions of his very existence.

157. The twenty-first century analog may be challenges to regulation by online service providers, ISPs, and various non-governmental regulatory bodies, such as ICANN (Internet Corporation for Assigned Names and Numbers), which is responsible for managing the domain name system on the World Wide Web, IETF (Internet Engineering Task Force), and W3C (World Wide Web Consortium). *See* Cyber Promotions, Inc. v. Am. Online, Inc., 948 F. Supp. 436, 453 (E.D. Pa. 1996) (rejecting First Amendment claims against America Online); Paul Schiff Berman, *Cyberspace and the State Action Debate: The Cultural Value of Applying Constitutional Norms to "Private" Regulation*, 71 U. COLO. L. REV. 1263, 1289–90 (2000) (suggesting that the extent to which state action doctrine should be applied in cyberspace depends in part on the cultural value of public adjudication of conflicting claims online).

158. City of Jamestown v. Beneda, 477 N.W.2d 830, 837–38 (N.D. 1991) (holding that a mall is a public forum where efforts to regulate speech are subject to First Amendment guarantees).

general matter, there is no state action even if mall regulation is not consistent with First Amendment norms. The Supreme Court hesitated and then finally abandoned the functional doctrine adopted in *Marsh* for any but the narrowest cases.[159] Formally designating the mall as private property seems to be decisive in these cases, even though shopping malls frequently substitute functionally for "traditional" downtown environments.[160]

If assumptions about whether a given resource is "public" or "private" demonstrate the broader problem of knowing where enforceable private governance starts, distributive difficulties with "private" regimes demonstrate the problem of deciding where it ends. The Court in *Marsh* may have been sensitive to the impact that its state action holding had on people who were economically trapped in these towns and thus foreclosed from changing their living conditions by the very rules that the town owners sought to enforce. "State action" cured a spillover problem. The company's interest in public order for its own benefit systematically externalized the cost of the rules onto both town residents and town visitors. Courts have not, on the whole, seen comparable problems with respect to shopping malls (where shoppers

159. The test for "state action" in these cases has been whether the private entity is exercising an "exclusive government function." *See* Hudgens v. NLRB, 424 U.S. 507 (1976) (overruling *Amalgamated Food Employees Union v. Logan Valley Plaza, Inc.*, 391 U.S. 308 (1968), which had extended *Marsh* to shopping centers because they served as the functional equivalent of the public square); *see also* Pruneyard Shopping Ctr. v. Robins, 447 U.S. 74, 88 (1980) (determining that the California state constitution permitted the state to require owners of shopping malls to permit reasonable leafleting on the premises, though finding the United States Constitution provided no such right); *cf.* Flagg Bros. v. Brooks, 436 U.S. 149, 161–63 (1978) (distinguishing between public functions of education, fire, and policing and private fields of dispute resolution and commercial law); Lloyd Corp. v. Tanner, 407 U.S. 551, 565–68 (1972) (finding that a shopping center was entitled to exclude anti-war protesters).

160. Some state courts have recognized a right of public access under state law that trumps a property owner's exclusive right of control. *See* Robins v. Pruneyard Shopping Ctr., 592 P.2d 341, 347 (Cal. 1979); N.J. Coalition Against the War in the Middle East v. J.M.B. Realty, 650 A.2d 757, 761 (N.J. 1994); Mark C. Alexander, *Attention, Shoppers: The First Amendment in the Modern Shopping Mall*, 41 ARIZ. L. REV. 1, 26–31 (1999); Jennifer Niles Coffin, Note, *The United Mall of America: Free Speech, State Constitutions, and the Growing Fortress of Private Property*, 33 U. MICH. J.L. REFORM 615, 625–33 (2000). Judicial review of private control of planned developments and common interest communities ("CICs") that effectively privatize planning and zoning decisions has been similarly deferential. Homeowners' associations, as governors of private property, are generally given wide discretion by courts. *See* Golden Gateway Ctr. v. Golden Gateway Tenants Ass'n, 29 P.3d 797, 809–12 (Cal. 2001) (distinguishing common areas of a townhouse development from a shopping mall); Paula A. Franzese, *Does It Take a Village? Privatization, Patterns of Restrictiveness and the Demise of Community*, 47 VILL. L. REV. 553, 572–73 (2002); Clayton P. Gillette, *Courts, Covenants, and Communities*, 61 U. CHI. L. REV. 1375, 1375–76 (1994); Mary Massaron Ross et al., *The Zoning Process: Private Land-use Controls and Gated Communities, the Impact of Private Property Rights Legislation, and Other Recent Developments in the Law*, 28 URB. LAW. 801, 806 (1996).

bear the costs but have the ability to opt out of the regulation) or planned communities (where the continuing voluntariness of the regime is assumed to be higher). Still, there is an unmistakable distributive effect in both, since the enforceability of the private regulation effectively favors the ability of the propertied to opt out of public regulatory regimes and to secure themselves and those who can afford to participate inside these "safe" enclaves. Only the relatively poor have to depend on the "free" market and public services. Spillover or external effects are an inevitable function of private governance regimes. Courts have not resolved when those effects become so troublesome that "state action" will be invoked as a mechanism to either enforce their internalization or permit public scrutiny.

Both baseline and distributive problems are evident in the licensing analog that, for now, concludes the sequence that begins with company towns and shopping centers: the open source model, in which appeals to the "information commons" echo the idea of open and undeveloped public resources in environmental law and policy.[161] Is software licensing a legitimate private system for defining and regulating some form of public "space"? For example, there is the suggestion that information licensing, and the open source model in particular, resembles the land trust model.[162] With land trusts, private property

161. *See* Boyle, *supra* note 30, at 60–62 (pointing out distinctions among scholars' conceptions of the "intellectual commons").

162. *See* Maureen Ryan, *Cyberspace as Public Space: A Public Trust Paradigm for Copyright in a Digital World*, 79 OR. L. REV. 647, 649 (2000); Molly S. Van Houweling, *Cultivating Open Information Platforms: A Land Trust Model*, 1 J. ON TELECOMM. & HIGH TECH. L. 309 *passim* (2002) (analogizing open source to land trusts). *But cf.* Eldred v. Reno, 74 F. Supp. 2d 1, 7 (D.D.C. 1999) (rejecting public trust analogy for copyright law purposes), *aff'd sub nom.* Eldred v. Ashcroft, 123 S. Ct. 769 (2003). Professor Carol Rose has written at length about the connections between common ownership structures in property law and the provision of public goods. *See, e.g.*, Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN. L. REV. 129, 139–44 (1998) (discussing problems of limited common property regimes); Carol M. Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 715–16 (1986) (discussing private ownership in light of uncertainty of public property rights). The problem of controlling the production of a good, the very essence of which is the unpredictable effects of shared experience, is highlighted in the real property context in JEROLD S. KAYDEN ET AL., PRIVATELY OWNED PUBLIC SPACE: THE NEW YORK CITY EXPERIENCE (2000) (inventorying and analyzing effects of a New York City zoning ordinance requiring skyscraper developers to dedicate real estate to public use). In some respects, a contemporary land trust does work very much like an open source license. An owner of real property, typically a large undeveloped parcel of land, encumbers the parcel with a conservation easement, limiting development of the land, and names a trustee, typically some private environmental organization, as the beneficiary of the easement. As a mechanism for preserving undeveloped land, this substitutes, functionally, for the owner's conveyance of the land to the government or retainer of it as undeveloped space itself, and it avoids the risk that the government or later generations of owners may commit to development instead. *See* David Farrier, *Conserving Biodiversity on Private Land: Incentives for*

rules structure a centrally managed, long-term preserve of real property commons, just as the open source license structures a managed commons of intangible property. The analogy can be inverted for conventional software licenses: uniform licensing terms for a given software product provide the software developer long-term consistency in how its product is consumed.[163]

From a democratic theory standpoint, the land trust analogy for licensing plays to the strengths of the shopping mall example.[164] This is private property, which should be managed by its owners; its distributive effects are either few (in the case of conventional software) or beneficial (in the case of the open source model). Yet the baseline problem here, too, is inescapable; the notion that "state action" is implicated by regulation of these trusts is not as far-fetched as it first appears.[165] Is a land trust "private" or "public"? The formalist position on the state action question, applied in most of the shopping mall cases, is easy to apply, but a functional or traditional perspective, which has not disappeared entirely from the cases,[166] is more difficult. As a society, we are still not quite sure what land dedicated to non-development is *for*.[167] If it has an affirmatively *public* purpose, then

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Management or Compensation for Lost Expectations?, 19 HARV. ENVTL. L. REV. 303, 343–350 (1995). On the other hand, the trust analogy does not account for the distinction between the trust's ownership of an interest in the land itself and the open source licensor's ownership of both code and copyright.

163. From the commercial developer's standpoint, this consistency enables better management of customer support costs and, in a competitive market, helps to limit software prices.

164. For these purposes, I set aside different conceptual structures for regulation of real and intangible property. *See* Mark A. Lemley, *Place and Cyberspace*, 91 CAL. L. REV. 521, 532–42 (2003).

165. This is not to say that a court has or likely would characterize creation or management of a land trust as "state action," only that the device illustrates the difficulty of untangling "private" and "public" values.

166. *See infra* notes 169–71 and accompanying text (addressing contract rights and constitutional standards).

167. *Cf.* Boyle, *supra* note 30, at 62–66 (discussing the distinction between "public domain" and the "commons"). The very idea of "public" land has a relatively short cultural pedigree, both in the sense of "land owned by the government" and "land reserved for public use." In the United States, the Progressive movement of the early twentieth century took the notion of the commons inherited from English law and developed in nineteenth-century American law and created a species of "commons" owned outright by the government. *See* Lynda L. Butler, *The Commons Concept: An Historical Concept with Modern Relevance*, 23 WM. & MARY L. REV. 835, 853–91 (1982) (reviewing the evolution of commons concepts in English law and early American law). Only in part was this for the betterment of the citizenry. *See* WITOLD RYBCZYNSKI, A CLEARING IN THE DISTANCE: FREDERICK LAW OLMSTED AND AMERICA IN THE 19TH CENTURY 258–59 (1999) (describing social welfare views of Olmstead, the architect of Central Park in New York (among other places), as applied to landscapes and open space). The conservation movement of

there should be something to the idea that a land trust's rulemaking should be subject to closer scrutiny, as a substitute for public land management. The distributive consequences of land trusts can be similarly analyzed; such trusts may not always be the self-evidently benign creatures of the private market that they appear to be.[168]

There are a variety of steps one might take here to escape from these conceptual problems. Addressing the baseline concern, one might separate the *purpose* of the private regime (are its benefits intended for third parties?) from its two-party *mechanism*, leaving the latter unregulated (and exempt from state action scrutiny) so long as it is ostensibly or credibly private (i.e., two-party). But as the shopping mall (and now copyright law) cases illustrate, the theoretical objections to such a distinction[169] have a way of manifesting themselves in the doctrine. What is initially characterized as a private means to a public end becomes an end in itself. Shopping malls and gated communities are unquestionably efforts to generate public benefits using private resources. They are also efforts to capture those benefits, privately, and in exercising that power to capture, they impose public costs. Yet they are both domains where the authority of private property is subject to little of the regulation that would accompany equivalent publicly-supplied efforts.

Copyright law is both "public" and "private" in the same sense. The Supreme Court recently reaffirmed that constitutional standards ("the Progress of Science") must guide copyright law, but that copyright's public purpose may (perhaps even must) be implemented by a celebration of individual profit.[170] In practice, copyright owners are surely celebrating the slow but sure erosion of doctrines (the idea/expression distinction, fair use, the limited term of copyrights) that assure the nominally public purposes of the law. This is not to suggest that enforcement of software licenses should be considered to be state action for constitutional purposes, but it *is* to suggest that the "commons" orientation of the open source model may not be enough, alone, to validate the model. The "private" sensibility of the

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the late ninteenth and early twentieth centuries was inspired largely by the prospect of the efficient and controlled exploitation of valuable commons resources.

168. *See infra* notes 189–90 and accompanying text (discussing the potential anti-competitive nature of land trusts).

169. *See* Radin & Wagner, *supra* note 24, at 1312–13 (distinguishing bilateral contracts and those that "run with" the object).

170. *See* Eldred v. Ashcroft, 123 S. Ct. 769, 784–85 & n.18 (2003).

conventional license ought not to be enough to insulate it entirely from public-regarding scrutiny.[171]

Addressing the distributive concern, one might distinguish between the kinds of procedural and participatory problems that were evident in *Marsh* and the absence of similarly oppressive conditions in the shopping mall cases, for example. Private governance regimes are problematic to the extent that they are more coercive than necessary to achieve the goals of the regime.[172] The rules of the company town in *Marsh* were needlessly and obviously oppressive regarding the working conditions of town residents. Shopping mall customers can avoid undesirable private regulation by walking out of the mall and choosing to shop elsewhere; residents of gated communities who dislike oppressive covenants can pick up and move elsewhere. Software licenses are, in form, similarly a matter of choice. Yet this analysis, too, is at least incomplete and perhaps altogether wrong. *Marsh* assumes the public character of the domain and therefore the right to be free of coercion. In the shopping mall cases, the courts tend to assume the private status of the domain that they seek to establish and thus assume that entry and exit is voluntary and that the domain internalizes its costs. The presence or absence of undue coercion is at least as much a function of the legal rule enforcing (or denying enforcement to) the legal regimes as it is the rule's determinant.

The licensing example provides a clear illustration. It is possible, in theory, to avoid information "licensing" as a whole and to avoid any particular license simply by acquiring the relevant information in some unlicensed way or by not acquiring the information at all. The court in *Universal City Studios v. Corley*,[173] which affirmed an injunction under the DMCA barring the distribution of a computer program that descrambled the code that permitted individuals to play authorized DVDs only on authorized DVD players, noted that the injunction was not improper on fair use grounds. A consumer has no "right" to make fair use of a copyrighted work in any format that the consumer

171. The scope of the scrutiny in either case would depend on how copyright is characterized in the first place. As a regime of positive rights, copyright supplies its own limits and ordinarily ought not to be supplanted by private equivalents. As a regime of regulation of antecedent interests, copyright is subject to whatever limits individuals choose to adopt, in addition to those supplied by the law.

172. *See* Dagan & Heller, *supra* note 30, at 590–602. Dagan and Heller rely heavily on Elinor Ostrom's research on successful models of commons ownership and management. *See* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990); Elinor Ostrom, *Community and the Endogenous Solution of Commons Problems*, 4 J. THEORETICAL POL. 343 (1992).

173. Universal City Sudios, Inc. v. Corley, 273 F.3d 429 (2d Cir. 2001).

chooses.[174] If the consumer wants to exercise the power of fair use, videotapes and other media are available. This sounds plausible, until one recalls that the DVDs at issue, and the copies of the movies they embody, are owned, in fee simple absolute, by the consumer. If the copy of the work is obtained legitimately, the Copyright Act guarantees the right to make fair use of that work.[175] Yet the Second Circuit appears to say otherwise.[176]

B. Efficiency and Effectiveness

A different line of inquiry looks at private ordering regimes primarily for their usefulness rather than for their allegedly "public"-ness, using effectiveness, if not always strict efficiency, as a criterion. The regime is private presumably because it has some competitive advantage over its public cousin. It should therefore deliver the goods and services that history, tradition, or law regard as features of public government at least as well as, and ideally better than, the government does on its own. In addition, focusing on effectiveness and or efficiency concerns enables us to embrace as potentially valid a variety of governance regimes that are neither strictly public nor strictly private in the state action sense.[177] Whether a regime should be enforceable or not has less to do with whether it is supplied by the public sector or the private sector, and more to do with whether it works better, so to speak. Does the regime provide a structure that produces the output in some way that is superior—in speed or cost of production or distribution, quantity, or quality of output—to public government modes of production?[178] Does the regime structure a market in the good or service that is more effective at building markets in follow-on goods or services, because transactions costs are reduced or certainty and predictability are enhanced?

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174. *See id.* at 459.

175. *See* 17 U.S.C. § 107 (2000).

176. *See Corley*, 273 F.3d at 459 (rejecting the argument that a DMCA anti-circumvention claim is subject to a fair use defense, and stating, "We know of no authority for the proposition that fair use, as protected by the Copyright Act, much less the Constitution, guarantees copying by the optimum method or in the identical format of the original.").

177. These sorts of private governance regimes are familiar to intellectual property lawyers and scholars. For a discussion of the merits of collective rights organizations in the copyright industries, see Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996).

178. *See* Benkler, *Coase's Penguin*, *supra* note 28, at 405–06 (discussing the attributes that make information production a potentially sustainable low-cost, low-return endeavor).

Analyses of private governance regimes, including private dispute resolution,[179] charter schools,[180] and private prisons,[181] depend in large part on this approach, where the intertwining of public regulators and private actors has typically been sufficient to address due process and democratic concerns without necessarily resorting to the vagaries of the state action doctrine. Other forms of private governance that are more typically analyzed with respect to efficiency or other effectiveness concerns include standard-setting organizations[182] and standard contract forms.[183]

For example, the governance implications of standard-setting organizations in the modern economy have increased both with the growth of the Internet—a community defined technically entirely by standards developed and "enforced" by private organizations such as the Internet Engineering Task Force and the World Wide Web Consortium[184]—and with recognition of the special value associated with ownership of intellectual property rights in technical standards that define economic markets characterized by "network effects."[185] Because technical standards by definition govern entry into and participation in a relevant market, whether as producer or as consumer, they inevitably raise questions of both process (how and by whom are

179. On contracts and private arbitration as creating a "private" law of contract, see Chris A. Carr & Michael R. Jencks, *The Privatization of Business and Commercial Dispute Resolution: A Misguided Policy Decision*, 88 KY. L.J. 183, 198–209 (2000); Charles L. Knapp, *Taking Contracts Private: The Quiet Revolution in Contract Law*, 71 FORDHAM L. REV. 761, 780–98 (2002).

180. *See generally* William Haft, *Charter Schools and the Nineteenth Century Corporation: A Match Made in the Public Interest*, 30 ARIZ. ST. L.J. 1023 (1998); Molly O'Brien, *Education and the Constitution: Shaping Each Other and the Next Century: Free at Last? Charter Schools and the 'Deregulated' Curriculum*, 34 AKRON L. REV. 137 (2000).

181. *See generally* David A. Sklansky, *The Private Police*, 46 UCLA L. REV. 1165 (1999); *Developments in the Law: The Law of Prisons: A Tale of Two Systems: Cost, Quality, and Accountability in Private Prisons*, 115 HARV. L. REV. 1868 (2002);.

182. *See generally* Mark A. Lemley, *Intellectual Property Rights and Standard-setting Organizations*, 90 CAL. L. REV. 1889 (2002) [hereinafter Lemley, *Intellectual Property Rights*].

183. By categorizing typical critiques of private governance institutions, I do not mean to suggest that there is not substantial overlap among the critiques.

184. Not to mention ICANN, though the scope of ICANN's role with respect to both technical and governance matters is controversial. *See, e.g.*, A. Michael Froomkin, *Wrong Turn in Cyberspace: Using ICANN to Route Around the APA and the Constitution*, 50 DUKE L.J. 17 (2000) (arguing that the character of ICANN's contractual relationship with the U.S. government and its involvement in matters beyond technical coordination means that it should be subject to rules of public accountability). *See generally* Symposium, *ICANN Governance*, 36 LOY. L.A. L. REV. 1087 (2003).

185. *See* Lemley, *Intellectual Property Rights*, *supra* note 182, at 1899; Mark A. Lemley, *Antitrust and the Internet Standardization Problem*, 28 CONN. L. REV. 1041 (1996) [hereinafter Lemley, *Antitrust*].

these standards defined?) and substance (are the standards consistent with some normative understanding of how the relevant market should be defined?) that are comparable to the questions raised in state action cases. Yet whether and how to regulate these structures has been treated primarily as a question of regulation of the markets defined by the standards themselves, that is, as a question of antitrust and competition policy, defined largely by efficiency and other social welfare considerations.[186] Form contracts standardized across an industry may have a similar governance effect but, like many technical standards, are widely recognized as economically beneficial.[187] The challenge for legal regulators has been to preserve the inherent value of form contracts while mitigating possible pernicious effects stemming from the use of contract forms to oppress, particularly in consumer contexts.[188]

The merits of particular analytical approaches to standards and forms aside, what these examples share is an approach to private governance characterized primarily by concern for the welfare effects of the regime from the point of view of those subject to it. A welfare-enhancing regime deserves broad, perhaps even comprehensive, regulatory deference. When the regime does or is likely to produce inefficient or welfare-limiting effects, regulatory intervention is appropriate, but only

186. *See* Lemley, *Antitrust*, *supra* note 185, at 1059–65 (discussing alternatives for regulating standard setting processes), 1079–92 (discussing application of antitrust principles to standard setting organizations); Lemley, *Intellectual Property Rights*, *supra* note 182, at 1957–71 (describing the design of optimal legal rules for standard-setting organization regulation).

187. *See* Henry T. Greely, *Contracts as Commodities: The Influence of Secondary Purchasers on the Form of Contracts*, 42 VAND. L. REV. 133, 166–69 (1989); Marcel Kahan & Michael Klausner, *Standardization and Innovation in Corporate Contracting (or "The Economics of Boilerplate")*, 83 VA. L. REV. 713, 719, 729 (1997).

188. *See* Robert A. Hillman & Jeffrey J. Rachlinski, *Standard-form Contracting in the Electronic Age*, 77 N.Y.U. L. REV. 429, 464–86 (2002); Russell Korobkin, *Bounded Rationality and Unconscionability: A Behavioral Approach to Policing Form Contracts*, 70 U. CHI. L. REV. (forthcoming 2003); Todd D. Rakoff, *Contracts of Adhesion: An Essay in Reconstruction*, 96 HARV. L. REV. 1173, 1248–83 (1983). Copyright scholars have noted that industry-wide standard license terms could amount to the private displacement of copyright norms entirely. *See* Charles R. McManis, *The Privatization (or "Shrink-wrapping") of American Copyright Law*, 87 CAL. L. REV. 173 (1999); Robert P. Merges, *Intellectual Property and the Costs of Commercial Exchange: A Review Essay*, 93 MICH. L. REV. 1570, 1611–12 (1995); 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 (1999); *cf.* Friedrich Kessler, *Contracts of Adhesion—Some Thoughts About Freedom of Contract*, 43 COLUM. L. REV. 629, 640–41 (1943) (offering "private legislation" interpretation of widespread standard form contracts). Both the software industry and some courts have responded that license terms matter not; consumers can choose among license/product combinations. *See infra* note 199 and accompanying text.

in order to maintain its basic effectiveness.[189] For example, the extent to which land trusts should be regulated has been framed, in part, by the question of whether such devices improperly undermine private markets.[190] Claims based on free speech interests for access to private shopping malls are reframed and then rejected by courts concerned with the ability of malls and stores to serve the commercial and social interests of their customers.[191]

As applied to licensing law, equivalent arguments about the existence of anticompetitive behavior by software companies and by software industries, and appropriate remedies for that behavior, have been explored at length.[192] As a basic justification for enforcing a regime of licensing as private governance, however, the efficiency/effectiveness argument is fatally indeterminate. We have thoughtful expositions of the view that licensing is essentially efficient and effective,[193] perhaps even more so than the regime of copyright law that it either enhances or displaces.[194] "Licensing" of the software tangible is asserted to be necessary to avoid the undermining of the software economy by uncontrolled "reproduction" of copyrighted computer programs by "unlicensed" software users. Arguably, licensing of the code is equally necessary to avoid the undermining of the open source economy via copyright's prohibition on unauthorized distribution of "copies." These arguments are matched by equally thoughtful analyses pointing out that narrowly instrumental justifications for licensing are either

189. *See generally* Hills, *supra* note 3 (arguing that anti-coercion concerns should receive less emphasis in the context of private governance organizations, which need broad deference to coercive powers over members in order to deliver benefits to their members).

190. Coordinators of land trusts have been accused of anti-competitive conduct consisting of conspiring to keep developable real property off the private market. *See, e.g.*, Va. Vermiculite, Ltd. v. Historic Green Springs, Inc., 307 F.3d 277 (4th Cir. 2002) (affirming summary judgment for defendants regarding plaintiff's allegation that the defendant environmental organization and a corporate landowner engaged in Sherman Act violations by conspiring to use land trust to prevent depletion of mineral resources), *cert denied*, 123 S. Ct. 1900 (2003).

191. *See, e.g.*, Waremart, Inc. v. Progressive Campaigns, Inc., 102 Cal. Rptr. 2d 392, 399 (Ct. App. 2000) (holding that "big box" retail store can prohibit expressive activity unrelated to its business).

192. For an interesting recent synthesis of academic analyses, see generally Daniel J. Gifford, *The Antitrust/Intellectual Property Interface: An Emerging Solution to an Intractable Problem*, 31 HOFSTRA L. REV. 363 (2002).

193. *See, e.g.*, ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996); Tom W. Bell, *Fair Use vs. Fared Use: The Impact of Automated Rights Management on Copyright's Fair Use Doctrine*, 76 N.C. L. REV. 557 (1998); Ginsburg, *supra* note 47, at 2.

194. *See, e.g.*, William W. Fisher III, *Property and Contract on the Internet*, 73 CHI.-KENT L. REV. 1203, 1232–34 (1998) (discussing the benefits and drawbacks of copyright protection).

incomplete[195] or miss the basic point of copyright altogether.[196] There is precious little empirical data on either side that confirms that the basic framework of copyright law is itself welfare-enhancing, let alone that a supplemental licensing regime improves social welfare.[197] From a systemic perspective, resorting to the private market cannot resolve disagreements about the baseline foundations of copyright law and, therefore, of the character of licensing-as-governance.[198]

C. *Social Meaning*

One alternative to both formal and functional approaches is a symbolic or values-oriented approach to private ordering. Governance regimes do more than merely regulate and produce goods. They embody the idea that certain activities are so important, to such a broad population, that they ought not to be manifested purely in private transactions.[199] The "government" becomes a symbol of entrusting those transactions, regulations, and decisions to the group as a whole, and the activity of the government reflects, in a highly abstracted way, the community's understanding of its ideals. Privatization regimes that undercut that symbolic function by becoming or expressing private,

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195. *See generally* Yochai Benkler, *An Unhurried View of Private Ordering in Information Transactions*, 53 VAND. L. REV. 2063 (2000) (arguing that the economic justifications espoused in favor of controlling individual uses of information are by their own terms undermined).

196. *See, e.g.*, Cohen, *supra* note 52, at 1808–19 (arguing that the price discrimination model fails to understand the phenomenon of copyright law in the digital age).

197. For example, the Supreme Court upheld Congress's recent extension of the term of copyright protection on the ground that implementing the incentive function of copyright in this way was within Congress's discretion under the Constitution, notwithstanding the absence of convincing empirical evidence that the function would work as Congress might anticipate. *See* Eldred v. Ashcroft, 123 S. Ct. 769, 782–83 (2003). Justice Breyer's dissenting opinion emphasizes the absence of empirical support for Congress's judgment and echoes his scholarly argument that empirical justifications for copyright protection are wanting. *Id.* at 801–14 (Breyer, J., dissenting); *see also* Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 290 (1970) (arguing that an author need not accept a system of copyright law to protect one's personal interests).

198. *See* Anupam Chander, *The New, New Property*, 81 TEX. L. REV. 715, 781–83 (2003) (arguing that when dealing with property rights in the digital environment, initial property entitlements as confirmed by public authority matter, not merely whether one market-dependent distribution is superior to another).

199. *See* Martha Minow, *Public and Private Partnerships: Accounting for the New Religion*, 116 HARV. L. REV. 1229, 1246–55 (2003) (sketching reasons for skepticism of privatization). On the expressive function of governing, see generally Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585 (1998); Dan M. Kahan, *What Do Alternative Sanctions Mean?*, 63 U. CHI. L. REV. 591 (1996); Jason Mazzone, *When Courts Speak: Social Capital and Law's Expressive Function*, 49 SYRACUSE L. REV. 1039 (1999); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021 (1996).

rather than public, ideals are presumptively offensive. Regimes that confirm public ideals are presumptively acceptable.

Private dispute resolution systems of one sort or another have been critiqued on this basis, at several levels. Private arbitration of civil disputes removes the raw material from a common-law system that evolves via public enunciation of legal principles by appellate courts. Displacement of the jury in resolving disputes undermines one of the few remaining ways in which the ordinary citizen connects to the process of democratic government. The release of private decision-makers from rules of accountability to rules of evidence and precedent undermines confidence in the legitimacy of the adjudicatory system. Pre-dispute agreements to arbitrate can be imposed unfairly in a variety of settings and can be used to systematically deprive injured parties of access to legal fora that the law otherwise would guarantee.

Applying these critiques to the licensing norm and to individual licenses again raises the notoriously difficult problem of definitions. As I asked above, what are "public" and "private" values in copyright law? If one assumes that the principal goal of copyright, and therefore of transactions in copyrighted works, is to maximize the ability of private actors to structure bilateral relationships in ways that maximize the returns available to both (and indirectly, to maximize the overall incentive to produce copyrighted material), then neither the social meaning nor the benefits of any given license can be doubted. In the case of the open source model, the licensing norm is designed to stimulate the production of public goods, in both instrumental and symbolic senses, but it necessarily depends on an underlying assumption about preferences for transactions defined by private rather than public norms.

The principle goal of copyright, it is said, is to affirm the normative value of shared information; the "public domain," including the idea/expression distinction and the doctrine of fair use, are normative goals to be pursued and enforced via application of the Copyright Act, rather than avoided via attention to carefully structured transactions. The social meaning of any given license, therefore, is that it presumptively offends this public policy and should, accordingly, be strictly construed. Even the open source model, which on its face tracks these public-regarding normative goals of copyright, does so by adopting the legal forms of privatization. As a form of private governance, on this score the open source model and the conventional licensing model are indistinguishable. As a source of private governance, the anti-circumvention provisions of the DMCA, too, are spectacularly ambiguous in social meaning terms. On the one hand, the

federal government undertakes specifically to encourage and sanction the use of technology in support of the public goals of the Copyright Act; on the other hand, the government specifically delegates the development and deployment of that technology to the private sector and to information proprietors in particular. From a symbolic standpoint as well as from democratic theory and effectiveness perspectives, licensing-as-private-ordering cannot be said to be clearly legitimate.[200]

VI. THE DEVELOPING WORLD OF INFORMATION GOVERNANCE

Recall that the basic problem is that the software licensing model takes two traditionally distinct concepts, control over a chattel and control over a work of authorship, and links them conceptually and formally, without good reasons derived from law or policy. This forces us to consider how to identify "public" and "private" elements of information governance that were only implicit in prior law. Is it possible to solve this problem given the doctrinal tools available in copyright, contract, and elsewhere in property law? Is it possible for a software developer to distribute copies of a computer program and to make conditions on its use enforceable against successive generations of downstream users while taking account of the public domain, fair use, and other features of public copyright law? Can the licensing norm govern legitimately as it proposes to do? With the existing, if troublesome, frameworks, a more imaginative copyright lawyer than I might design a software license so ingenious as to solve all of these problems. Within copyright law itself, section 117 offers a start, but even when read most generously (such that apparent "licenses" of copies of computer programs are properly interpreted as "sales" of those copies),[201] it offers protection only to those who would make further "copies" of computer programs for their own use, not to those who would distribute copies for others' use. The anti-circumvention provisions of the DMCA might even be invoked by open source developers who encode copies of an open source kernel in an effective access- and rights-protecting "technological measure," arguably assuring that rights in the code can be exercised only in conjunction

200. There is the possibility that it could be made so. To an extent that they do not today, courts and Congress could take seriously the public dimension of private activity in copyright and ensure that public norms are fully and fairly integrated into licensing of all types. *See* Jody Freeman, *Extending Public Law Norms Through Privatization*, 116 HARV. L. REV. 1285, 1301–10 (2003).

201. *See supra* note 101 and accompanying text (describing a better interpretation of section 117).

with certain technical forms, such as the source code itself. But there are complications, heightening the fragility of possible licensing-oriented solutions. In the future we may need alternative conceptual resources to deal with these questions.

The complications are two-fold. The contrast between the intangible and the tangible that drives copyright law has been getting ever less pronounced, making this linkage more difficult to discern.[202] Technology seems to be driving us not only toward easier technological implementation of license forms but also toward a world of information in which the "license" form itself is no longer easily understood as a legal category distinct from the information work itself.[203] The "software" to which the license applies is no longer identifiably distinct from the "hardware" on which the "software" is supposed to run, and the "technological measure" is no longer clearly distinguishable from the "work of authorship" that it is designed to protect. Copyright licensing assumes a given state of the world—the existence of a work of authorship, embodied in a computer program or other tangible medium—to which the rules of the licensing regime can be applied. If there is a regime of private "governance" at work, then there ought to be a set of rules and procedures, as well as a community of the governed and a population of objects whose use is regulated. In a world of technological plasticity,[204] the rules, the community, and the population of objects are merging. The thin edge of the law that now permits us to draw the kinds of distinctions suggested in Parts III and IV (a given license as a contract or property construct) and V (licensing as systems

202. For legal commentary on the phenomenon, see Madison, *Legal-ware*, *supra* note 4, at 1045 & n. 69; David Nimmer, *Brains and Other Paraphernalia of the Digital Age*, 10 HARV. J.L. & TECH. 1 (1996). Technical commentary includes Michael Barr, *Programmable Logic: What's It to Ya?*, EMBEDDED SYS. PROGRAMMING, June 1999, at 75, *available at* http://www.netrino.com/Articles/ProgrammableLogic/ (last visited Nov. 11, 2003).

203. This idea is manifest in the reconstruction of software licenses as part of the products to which they relate. *See* ProCD, Inc. v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996); Robert W. Gomulkiewicz, *The License Is the Product: Comments on the Promise of Article 2B for Software and Information Licensing*, 13 BERKELEY TECH. L.J. 891 (1998) (arguing that proposed UCC Article 2B affirms industry standard licensing practice); Margaret Jane Radin, *Humans, Computers and Binding Commitment*, 75 IND. L.J. 1125, 1126 (1999) (describing conflicts over enforcement of online contracts as conflicts over models: contract-as-product versus contract-as-assent). The contract-as-thing metaphor was introduced by Arthur Leff in Arthur Leff, *Contract as Thing*, 19 AM. U. L. REV. 131 (1970).

204. Professor Lawrence Lessig refers to the world of computer technology using Roberto Unger's sense of "plasticity," in the sense that digital technology can be relatively quickly and relatively cheaply changed to suit the needs of information producers, of the law, or of any suitably demanding interest. *See* Lawrence Lessig, *The Path of Cyberlaw*, 104 YALE L.J. 1743, 1747 (1995); Lawrence Lessig, Note, *Plastics: Unger and Ackerman on Transformation*, 98 YALE L.J. 1173, 1179–80 (1989).

of private ordering) disappears. We no longer have a system that regulates. We have a universe of objects that simply behave as they are designed to behave. Governance is not something that occurs via licensing. Governance is simply built into the program.[205] The open source model may be a novel instantiation of a dying legal form.[206]

What does this have to do with licensing? If we expect to be able to draw effective "public" and "private" distinctions in copyright law and policy based on tangibility, the evolution of the licensing norm that already compromises that ability is about to erase it altogether. We need to be able to draw effective distinctions on some other basis, among valid and invalid forms, and (if appropriate) among "closed source" and "open source" models and DRM systems as forms of information governance. In the twenty or so years in which computer programs and other forms of digital information have been a significant part of the copyright landscape, licensing law itself has not developed any other vocabulary for doing so.

Professor Julie Cohen has suggested that a new licensing scheme, particularly one based on technological controls, should be assessed against a normative baseline supplied by existing law. She argues in favor of an implied right of consumer self-help, to escape from oppressive technological restrictions on access and use of copyrighted works.[207] If the design of the object is such that governance features are simply embedded in it, and those governance features deprive

205. This aspect of computer technology received broad attention through the work of William Mitchell and Lawrence Lessig. *See generally* LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999); WILLIAM J. MITCHELL, CITY OF BITS: SPACE, PLACE, AND THE INFOBAHN (1996). The idea that technologies and artifacts embed guides for behavior has an extended pedigree. *See* JEREMY BENTHAM, PANOPTICON (1791); JACQUES ELLUL, THE TECHNOLOGICAL SOCIETY (1967); BRUNO LATOUR, WE HAVE NEVER BEEN MODERN (1993); LEWIS MUMFORD, TECHNICS AND CIVILIZATION (1934); Thomas F. Gieryn, *What Buildings Do*, 31 THEORY & SOC'Y 35–74 (2002); Langdon Winner, *Do Artifacts Have Politics?*, 109 DÆDALUS, Winter 1980, at 121. The communicative function of artifacts and technology is understood to be mediated by cognitive structures. *See, e.g.*, Madison, *Rights of Access, supra* note 35, at 486–89 (describing research on cognitive understandings of the built environment). The legal role of "scripts" and other cognitive processes that influence our interpretation of the world is beginning to receive needed attention from legal scholars. *See, e.g.*, Manuel A. Utset, *Reciprocal Fairness, Strategic Behavior & Venture Survival: A Theory of Venture Capital Financed Firms*, 2002 WISC. L. REV. 45.

206. *Cf.* Randal C. Picker, *From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright*, 70 U. CHI. L. REV. 281 (2003) (arguing that copyright policy debates should not be too fixed to particular technologies).

207. *See* Julie E. Cohen, *Copyright and the Jurisprudence of Self-help*, 13 BERKELEY TECH. L.J. 1089, 1142 (1998) [hereinafter Cohen, *Self-help*]; Julie E. Cohen, *Some Reflections on Copyright Management Systems and Laws Designed to Protect Them*, 12 BERKELEY TECH. L.J. 161, 178 (1997). Her point is offered in connection with DRM systems, but it extends logically to licensed controls on code itself.

consumers of important rights (such as a right of private consumption or a right to share) that background law previously provided, then consumers should have the legal right to hack the designed object in order to make what history and tradition would treat as consumers' "natural" right.[208] Public interests in copyright and other information law cannot be excluded from regulation solely on the basis of product design decisions.

The proposal draws a helpful distinction between conventional licenses (the right to hack is forbidden, but it should not be) and the open source model (the right to hack is assured by license). But it cannot overcome copyright's difficulty with the tangible/intangible distinction, and it suggests that the "traditional" design of the creative environment (i.e., a population of tangible objects and a legal system for regulating them) is a normatively appropriate baseline for legal and policy analysis.[209] Changes to that baseline become challengeable solely on account of their design. But books (paper books) may not be normative; they merely may be accidents of technology and political economy.[210] And stepping into the design studio is an approach that information law and public policy usually shy away from, and with good reason.[211] How is a judge or a legislator to know that "the state of things" that copyright historically assumed or that now exists is the "right" state of things, and that he or she should follow that instinct with a legally-protected privilege to resist change?[212] Consumer

208. *See* Cohen, *Self-help*, *supra* note 207, at 1141 (explaining "right to hack").

209. *See* Ann Bartow, *Electrifying Copyright Norms and Making Cyberspace More Like a Book*, 48 VILL. L. REV. 13 (2003); Joseph P. Liu, *Owning Digital Copies: Copyright Law and the Incidents of Copy Ownership*, 42 WM. & MARY L. REV. 1245 (2001). If one reimagines "the book" as a technology platform, it becomes clear that a rule that never requires competition for, as opposed to within, that platform may not be the right or best rule. *See* Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534 (2003) (advocating "competitive platforms" model of intellectual property regulation on the Internet). Neither of these approaches may be entirely correct; putting too little emphasis on consumer expectations may as problematic as putting too much emphasis on them.

210. *See generally* ADRIAN JOHNS, THE NATURE OF THE BOOK: PRINT AND KNOWLEDGE IN THE MAKING (1998). The author argues that the development of the printed book as intrinsically reliable, free of textual piracy, was not inevitable; rather, the printed book is the product of a "complex set of social and technological processes." *Id.* at 2–5.

211. *See, e.g.*, United States v. Microsoft Corp., 253 F.3d 34, 65 (D.C. Cir. 2001) (stating that courts generally view with skepticism claims of anticompetitive behavior based on product innovation); *cf.* Bleistein v. Donaldson Lithographing Co., 188 U.S. 239, 251–52 (1903) (noting that judges' opinions as to whether lesser works of art (posters and lithographs) have enough aesthetic value to warrant copyright protection should be avoided).

212. An interesting contrast here is takings jurisprudence, in which the Supreme Court has wrestled (frequently without success) with the question of what counts as a property right for Fifth and Fourteenth Amendment purposes. *See* Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302 (2002); Penn Cent. Transp. Co. v. City of New York, 438 U.S.

expectations are important, and a reconstructed model of information transactions should be concerned with the relational interests of consumers at least as much as with the ownership claims of producers.[213] But consumer interests are not everything. They can be manipulated both rhetorically and substantively. In a different sense, excessive deference to consumer expectations might justify unconditional acquiescence to the licensing norm.[214]

A second solution is to draw on that other regime of intellectual property rights, patent law. The patent world offers a number of advantages over the copyright world. A patent need not concern a tangible thing, and a patent, unlike a copyright, may cover a process or method. Moreover, patent law does not take the world as it is found; patent law defines the world for itself. The patenting process starts with some technological artifact, such as a machine, a process, or a composition of matter. The inventor submits a patent application that characterizes the invention in patent-ese, hoping to have some of that description of the invention allowed as "claims." In effect, the patenting process transforms the artifact-as-found into an artifact-in-law, giving the invention a legal identity and defining the scope of what is "found" (private) and what is "free" (public) without relying on copyright's difficult tangible/intangible or idea/expression distinctions.[215] Doctrinally, the end product is protected by a legal

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104 (1978); Frank Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165, 1192 (1967) (observing that the definition of "property" is not a given, for takings purposes); Margaret Jane Radin, *The Liberal Conception of Property: Cross-currents in the Jurisprudence of Takings*, 88 COLUM. L. REV. 1667, 1674–78 (1988).

213. Proposals to steer information regulation more explicitly in the direction of unfair competition are correct to recognize this point, though they, too, tend to take the world of protected works as a given and re-work liability rules from that baseline. *See* JESSICA LITMAN, DIGITAL COPYRIGHT: PROTECTING INTELLECTUAL PROPERTY ON THE INTERNET 171–86 (2001); J.H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data?*, 50 VAND. L. REV. 51 (1997); *cf.* L. Ray Patterson, *Copyright in the New Millennium: Resolving the Conflict Between Property Rights and Political Rights*, 62 OHIO ST. L.J. 703 (2001) (exploring the conflicts between First Amendment rights of access and the property rights conferred by copyright).

214. For the same reason I exclude "the commons" as a normative proposition, as opposed to a political or rhetorical strategy. *Cf., e.g.*, Heller, *supra* note 113, at 1183–85 (noting that common interest communities illustrate the difficulty of distinguishing good from bad fragmentation of private property rights; costs of CIC control of planning include lock-in of suboptimal uses because of the inflexibility of the form).

215. In addition, by contrast with software licensing and its efforts to include trade secrecy protections for software developers, *see supra* notes 131–33 and accompanying text, patent law comes with an express policy admonition favoring public disclosure of new technology and discouraging reliance on trade secrecy. *See* Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 151 (1989).

regime that does not depend on a chain of privity between the rights holder and the accused infringer. Copyright infringement requires copying, which means that there must be some link between the rights owner's creation of the work and the defendant's infringement. If the defendant independently creates a work identical to the plaintiff's work, there is no liability. Patent infringement requires only an invasion of what the patent itself has declared to be "private"; the patent holder need not prove the existence of any comparable chain. Moreover, the inside/outside boundary is not defined by the artifact itself, or by the parties creating or consuming the invention, but by the operation of the legal system (theoretically acting on behalf of the public), negotiating with the inventor.[216] The scope of the "private governance" exercised by the patent instrument is not unilaterally declared by the inventor (at least, this is the way the system is supposed to work) but is itself a process that proclaims and is informed by the public interest.

The notion of patent law as redeeming digital information governance may be alarming.[217] I do not suggest that software should be patentable, at least not in terms of the contemporary patent system, and the patent system's focus on owned and ownable interests is discomfiting as well. What I suggest is simply that the creation of the patent itself represents a negotiation over the scope of downstream relationships among further inventors and consumers of the relevant technology[218] in a way that resembles the negotiation among the interests now represented in software licenses.[219] The process of patenting is accompanied by a vocabulary of public and private considerations that even the most inveterate promoters of strong patents

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216. This model is complicated by the canons of claim construction, which largely incorporate traditions and custom in the relevant industrial practice. *See* KIMBERLY PACE MOORE ET AL., PATENT LITIGATION & STRATEGY 206–13 (1999).

217. *See, e.g.*, LESSIG, *supra* note 27, at 205–15.

218. *See* Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1529–36 (Fed. Cir. 1995) (Newman, J., concurring), *rev'd on other grounds*, 520 U.S. 17 (1997). The idea of a legal instrument as motivated primarily in these relational terms is not limited to patents. *See* Henry Hansmann & Ugo Mattei, *The Functions of Trust Law: A Comparative Legal and Economic Analysis*, 73 N.Y.U. L. REV. 434, 469–72 (1998) (arguing that trust law should be understood primarily in property terms, and not in contract terms, as defining relationships between trust participants and third parties). Nor, one might say, should the trust idea be marginalized in copyright law, as it has been to date. *See supra* note 162 and accompanying text (analogizing open source licensing to land trusts).

219. Just as the open source model is designed to support a form of structured collaboration, *see* Vetter, *supra* note 22, it has been suggested that favoring patent protection over copyright protection for computer software would have a comparable and beneficial effect, *see* Mark A. Lemley & David W. O'Brien, *Encouraging Software Reuse*, 49 STAN. L. REV. 255 (1997) (arguing that reliance on software patents may encourage licensing among developers and thus more innovation in the software industry).

recognize as legitimate. The software licensing system currently includes no coherent mechanism for taking account of the public interest. For all of its myriad flaws,[220] patent law does. The right scheme for managing legal rights regarding software and digital information might begin from a patent-style premise, rather than from a copyright-style premise.[221]

The beginnings of a third approach, which relies on neither tradition nor function (the right to hack) nor form (the issued patent), may be seen in cases that evoke the state action problem discussed in Part V. In determining the extent to which they will defer to private governance arrangements for real property environments, some recent courts have focused on the characteristics of the environment itself, as those characteristics are interpreted by the public. Thus, recent claims by the public for access to technically private but apparently public spaces have been analyzed not based on the "traditional" function of the space in question or the formal designation of the property as "public" or "private," but on the basis of social understandings of its contemporary physical attributes. In *First Unitarian Church of Salt Lake City v. Salt Lake City Corp.*,[222] the Tenth Circuit Court of Appeals ruled that The

220. *See* Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 588–91 (1999); *see also* Thomas, *supra* note 154, at 592 (discussing federal regulations and critics of the patent system).

221. I do not mean to rehash debates about the proper intellectual property rights regime for computer programs. *See, e.g.*, Menell, *supra* note 124; Richard Stern, *The Bundle of Rights Suited to New Technology*, 47 U. PITT. L. REV. 1229 (1986). There are numerous ways in which the presumptions of patent law do not apply here. One of the most important is the presumption that an "invention" (or in copyright, a "work") can have only one or a handful of "inventors." Neither patent law nor copyright is comfortable with the concept of ongoing creative collaboration. *See* Margaret Chon, *New Wine Bursting from Old Bottles: Collaborative Internet Art, Joint Works, and Entrepreneurship*, 75 OR. L. REV. 257 (1996), although that is one essentially accurate characterization of an open source project. One solution might be adaptation of a flexible collective "moral rights" concept for works produced in a collective or collaborative environment. *See* Benkler, *Through the Looking Glass*, *supra* note 150, at 209; Susan Scafidi, *Intellectual Property and Cultural Products*, 81 B.U. L. REV. 793, 839–40 (2001); Vetter, *supra* note 22. On the compatibility of moral rights theories and American intellectual property law, see Edward J. Damich, *The Right of Personality: A Common-law Basis for the Protection of the Moral Right of Authors*, 23 GA. L. REV. 1 (1988); Roberta Rosenthal Kwall, *Copyright and the Moral Right: Is an American Marriage Possible?*, 38 VAND. L. REV. 1 (1985); Neil Weinstock Netanel, *Copyright Alienability Restrictions and the Enhancement of Author Autonomy: A Normative Evaluation*, 24 RUTGERS L.J. 347 (1993). Such a solution might redeem what some might consider an important conceptual flaw in the patent-related proposal in the text: that it reinforces the tendency in American copyright law to artificially segregate the author's "work" from its aesthetic framework. *See* Justin Hughes, *The Line Between Work and Framework, Text and Context*, 19 CARDOZO ARTS & ENT. L.J. 19, 24–25 (2001).

222. First Unitarian Church of Salt Lake City v. Salt Lake City Corp., 308 F.3d 1114 (10th Cir. 2002).

Mormon Church, though technically the owner of Main Street Plaza in Salt Lake City, could not enforce conduct restrictions on the behavior of citizens strolling on its sidewalks.[223] The city had retained an easement stipulating that the block remain open to the public, and there was no indication visible to those citizens that what by all accounts appeared to be a public sidewalk was not, in fact, "public."[224] In *Hotel Employees v. City of New York Department of Parks and Recreation*,[225] union organizers lost their bid for access to Lincoln Center Plaza in New York City. In ruling that the plaza was not a public space, a panel of the Second Circuit leaned heavily on the fact that its physical characteristics distinguished it and separated it from the neighboring sidewalks and connoted a "private" rather than a "public" space.[226] Such a cognitive approach to the public or private distinction has some intriguing potential applications in the information environment.[227] Digital information fails to do much, on its own, to signal its inherently "public" or "private" character.[228] A legal regime that relies on and therefore recursively encourages the development of equivalent demarcations in cultural artifacts—whether tangible or intangible or some combination—might provide a useful starting point for matching private interests in information development and distribution with interests in access and the creation and maintenance of a public information sphere.[229]

VII. CONCLUSION

The last twenty years may not have taught software lawyers much about how to talk about licensing law in coherent terms, but it has taught them that licensing is the right language to speak. The information-creating and information-consuming public may be on its way to the same condition. But the conceptual vocabulary of software and information licensing is fundamentally flawed. The effort to draft and enact UCITA, arguably an effort to create precisely the kind of vocabulary that I suggest we still need, floundered in large part on its

223. *Id.* at 1121.

224. *Id.*

225. Hotel Employees v. City of New York Dep't of Parks & Recreation, 311 F.3d 534 (2d Cir. 2002).

226. *Id.* at 544.

227. *See* Dan Hunter, *Cyberspace as Place and the Tragedy of the Digital Anticommons*, 91 CAL. L. REV. 439, 458–72 (2003); Madison, *Rights of Access*, *supra* note 35.

228. *See* Michael J. Madison, *Complexity and Copyright in Contradiction*, 18 CARDOZO ARTS & ENT. L.J. 125, 139–141 (2000).

229. *See* Madison, *Rights of Access*, *supra* note 35.

premise that "licensing" itself constituted a valid vocabulary for both the tangible and intangible, one that simply needed to be encoded into positive law. The DMCA is controversial and flawed for the same reason. Yet the open source model does not fight the licensing norm. Open source depends on it. On those terms open source might not succeed. In the information environment, at the end of the day the task of governing is the task of distinguishing "public" from "private." But the licensing norm that does so comes from worlds of tangibility and intangibility, and as those worlds collapse into one, we are left only with licensing that is tangible, which is not the world that copyright anticipates, even in its most optimistic, public-oriented version. In the words of the sage Roseanne Roseannadanna, "My Uncle used to say . . . it's always some*thing*. If it's not one *thing*, it's some*thing* else."[230] The licensed open source world is then conceptually equivalent to the licensed closed source world.[231] What I suggest here is that if the open source model wants to govern, to produce and preserve an information commons, then it may be better off abandoning the discourse of copyright licensing and finding an alternative, perhaps in copyright law and legislation, perhaps elsewhere. The current legal forms of copyright do not sustain the goals of the open source model any more than they sustain the DMCA or information licensing generally.

230. Emphasis added, of course. If this cultural reference is too obscure, well, never mind. For a more conventional scholarly argument that contemporary property theory generally fails to give sufficient weight to the perception that property rights are bound up with *thing*-ness, see Heller, *supra* note 113, at 1193–94.

231. *See* Gomulkiewicz, *supra* note 24, at 193–94.