

# CULTURAL ENVIRONMENTALISM AND THE CONSTRUCTED COMMONS

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## I

### INTRODUCTION

The public domain is to the world of innovation and creativity what the environment is to the physical world. Concern with the public's ability to build upon a body of intellectual works that are freely available as raw material for new generations of creativity and innovation echoes environmentalists' concern with the public's ability to enjoy healthy air, water, and open spaces. Skepticism about expanding intellectual property rights that impoverish the public domain echoes environmentalists' skepticism about strong tangible property rights that limit the public's access to open spaces and threaten to derail regulation aimed at protecting natural resources.<sup>1</sup> In the work that this symposium commemorates and builds upon, James Boyle recognized these parallels and

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I serve on the Board of Directors of Creative Commons, an organization discussed below. The views expressed about Creative Commons are my own.

1. Compare, e.g., James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 *LAW & CONTEMP. PROBS.* 33, 38 (Winter/Spring 2003) ("The old limits to intellectual property rights—the anti-erosion walls around the public domain—are . . . under attack."), with Joseph L. Sax, *Using Property Rights to Attack Environmental Protection*, 19 *PACE ENVTL. L. REV.* 715, 715 (2002) ("My subject is how a quarter century of development in environmental protection is jeopardized by ill-conceived legislative proposals that purport to protect property rights.").

called for the emergence of “cultural environmentalism”—a politics of public domain protection analogous to the politics of environmental protection.<sup>2</sup>

Ten years later, advocates for the value of open access to cultural raw materials are borrowing not just the politics of the environmental movement, but also specific techniques that environmentalists have used to protect important natural resources. Ironically, in both the physical and cultural contexts, environmentalists are increasingly harnessing property rights—so often in apparent tension with environmental goals—to promote the public’s interest in protecting and providing access to important resources.<sup>3</sup>

One way this phenomenon has emerged in the physical world is in the form of non-possessory property interests called “conservation easements.”<sup>4</sup> A landowner who sells or donates a conservation easement, typically to a government entity or a non-profit organization devoted to conservation, remains in possession of her land but is required, along with successive owners,

2. Boyle called for a politics of the public domain in SHAMANS, SOFTWARE, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY 168–73 (1996). In *A Politics of Intellectual Property: Environmentalism for the Net?*, 47 DUKE L.J. 87, 108–14 (1997), he repeated the call and added an analogy to the environmental movement.

3. On “property thinking in environmental law,” see generally Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folktales, Emissions Trades and Ecosystems*, 83 MINN. L. REV. 129, 163 (1998) (“In spite of [the traditional] strain of skepticism about property within environmentalism, the last several years have seen an astonishing burst of property thinking in environmental law.”).

On the historic tension between property law and environmental goals, see generally CAROL M. ROSE, PROPERTY AND PERSUASION 19–20 (1994) (“To be sure, we may admire nature and enjoy wildness. But those sentiments find little resonance in the doctrine of first possession. Its texts are those of cultivation, manufacture, and development.”); Joseph L. Sax, *Property Rights and the Economy of Nature: Understanding Lucas v. South Carolina Coastal Council*, 45 STAN. L. REV. 1433, 1442 (1993) (“Traditional property law treats undeveloped land as essentially inert. The land is there, it may have things on or in it (e.g., timber or coal), but it is in a passive state, waiting to be put to use. Insofar as land is ‘doing’ something—for example, harboring wild animals—property law considers such functions expendable.”); John G. Sprankling, *An Environmental Critique of Adverse Possession*, 79 CORNELL L. REV. 816, 816 (1994) (arguing that one specific property doctrine, adverse possession, is “dominated by a prodevelopment nineteenth century ideology that encourages and legitimates economic exploitation—and thus environmental degradation—of wild lands.”).

On the use of property rights to protect the public domain in intellectual property, see generally Robert P. Merges, *A New Dynamism in the Public Domain*, 71 U. CHI. L. REV. 183, 185–86 (2004); R. Polk Wagner, *Information Wants to be Free: Intellectual Property and the Mythologies of Control*, 103 COLUM. L. REV. 995, 1029–33 (2003).

On the tension between the public domain and intellectual property, see generally Boyle, *supra* note 2, at 111 (observing that in both environmental policy and intellectual property “opposition to expansionist versions of stakeholders’ rights can be off-puttingly portrayed as a stand against private property”).

4. Other examples of property-based environmental protection include tradable emissions schemes, which have been deployed to control air pollution. Similar tradable-rights approaches have been used or proposed to deal with water pollution, fisheries management, and other problems of pollution, resource conservation, and habitat preservation. See generally Peter S. Menell, *Introduction to ENVIRONMENTAL LAW*, at xiii–xx (Peter S. Menell ed., 2002) (surveying literature); James Salzman & J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN L. REV. 607, 609–10 (2000) (surveying developments and observing that “[m]arkets for environmental commodities represent the new wave of environmental protection and, despite critiques both subtle and shrill, they are still building”).

to use the land only in ways that are consistent with the terms of the easement.<sup>5</sup> For example, a conservation easement might require that land be maintained as a wildlife habitat, or that it be open for outdoor recreation by the public, or that it be preserved as open space, free of buildings that might interfere with the public's scenic enjoyment of an area. The goal is to promote specific conservation purposes<sup>6</sup> by severing the right to possess land from the right to use it in ways that disserve those purposes.

In the cultural context, advocates for a rich and expanding public domain are increasingly deploying voluntary intellectual-property-based techniques to achieve their goals.<sup>7</sup> Most notable to date have been the efforts of the Free Software Foundation (FSF) to promote the use of the GNU General Public License (GPL), a software license that allows free copying and adaptation of copyrighted computer software, but only on the condition that resulting copies and adaptations are licensed on the same generous terms and accompanied by their source code.<sup>8</sup> Thousands of software programs, including the Linux operating system, are licensed under the GPL.<sup>9</sup> Recently, the nonprofit Creative Commons has promoted similar licenses for other types of creative works—photos, film, music, et cetera.<sup>10</sup>

In essence, these licenses separate the right to copy and adapt copyrighted works from the right to exclude others from the benefits of further copying and adaptation—much as conservation easements separate the right to possess and enjoy land from the right to deny the public its potential conservation benefits. Although works covered by the GPL or Creative Commons licenses are not technically in the public domain (at least as narrowly defined to include only those works that are not subject to any intellectual-property-based

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5. See generally ELIZABETH BYERS & KARIN MARCHETTI PONTE, *THE CONSERVATION EASEMENT HANDBOOK* 14–25 (2005).

6. For purposes of identifying those conservation easements that qualify a donor for beneficial tax treatment, the Internal Revenue Code defines “conservation purposes” to include “the preservation of land areas for outdoor recreation by, or the education of, the general public”; “the protection of a relatively natural habitat of fish, wildlife, or plants, or similar ecosystem”; “the preservation of open space (including farmland and forest land) where such preservation is—for the scenic enjoyment of the general public, or pursuant to a clearly defined Federal, State, or local governmental conservation policy, and will yield a significant public benefit”; or “the preservation of an historically important land area or a certified historic structure.” I.R.C. § 170(h)(4)(A) (2000).

7. See generally Merges, *supra* note 3, at 183–84 (observing that “we have been witnessing massive growth in private initiatives to expand the public domain”); Wagner, *supra* note 3, at 1029–33 (“To the extent that the control of intellectual property allows owners to coordinate the uses of their works to restrict access, it also enables those owners to coordinate in such a way as to enhance access.”).

8. Free Software Foundation, *GNU General Public License v. 2*, 1991, <http://www.gnu.org/licenses/gpl.html> [hereinafter GNU General Public License]. GNU stands for “Gnu’s Not Unix,” the software project with which Richard Stallman launched the free software movement. See Richard Stallman, *The GNU Manifesto*, <http://www.gnu.org/gnu/manifesto.html> (last visited Feb. 10, 2007).

9. A search for GPL-licensed projects on the software development site Freshmeat currently yields over 22,000 projects. Freshmeat, <http://freshmeat.net/browse/15/> (last visited Feb. 10, 2007).

10. Creative Commons, “Some Rights Reserved”: Building a Layer of Reasonable Copyright, <http://creativecommons.org/about/history> (last visited Feb. 10, 2007).

restrictions),<sup>11</sup> they are available to the public for many uses that copyright law would otherwise forbid, just as works covered by conservation easements may be open to the public—or at least dedicated to purposes that ultimately benefit the public—in ways that private property typically is not.<sup>12</sup>

Conservation easements have been praised for “conform[ing] to the general American desire for non-compulsory, voluntary solutions to land use problems . . . .”<sup>13</sup> Efforts to harness intellectual property rights to promote open access to creative and innovative works have similarly been lauded as “invigorating the public domain with a new dynamism stemming from private action.”<sup>14</sup> But there have long been critics of conservation easements,<sup>15</sup> and the recent property turn in cultural environmentalism has begun to encounter criticism of its own.<sup>16</sup>

Conservation easements typically violate several common-law rules governing the formation and enforceability of non-possessory interests in land. Although the common-law obstacles have been eliminated by state statutes authorizing conservation easements, some critics have challenged the wisdom of those statutory authorizations, arguing that the common-law rules served important purposes. Two justifications for the common-law rules are central to this discussion: first, ensuring notice to future landowners and affected third parties; and second, preserving the flexibility necessary to make wise resource-use decisions in the future. These justifications resonate, more generally, with a growing literature praising standardization and consolidation of property rights.<sup>17</sup> Conservation easements—which complicate and fragment property

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11. On the question how to define the public domain, see Pamela Samuelson, *Mapping the Digital Public Domain: Threats and Opportunities*, 66 LAW & CONTEMP. PROBS. 147 (Winter/Spring 2003).

12. On the mix of motives and benefits associated with conservation easements, see generally Susan F. French, *Perpetual Trusts, Conservation Servitudes, and the Problem of the Future*, 27 CARDOZO L. REV. 2523, 2526–27 (2006) (“Conservation servitudes . . . are designed to serve primarily public ends. They are used to protect the environment and historic land uses and structures from the ills caused by logging and resource extraction and by urban and suburban development. The values promoted are protection of life and health for people, plants, and wildlife. They protect historical and cultural resources as well as natural resources for enjoyment by future generations.”).

13. National Conference of Commissioners on Uniform State Laws, *Uniform Conservation Easement Act Summary*, [http://www.nccusl.org/nccusl/uniformact\\_summaries/uniformacts-s-ucea.asp](http://www.nccusl.org/nccusl/uniformact_summaries/uniformacts-s-ucea.asp) (last visited Feb. 10, 2007) [hereinafter *Uniform Conservation Easement Act Summary*].

14. Merges, *supra* note 3, at 184.

15. See, e.g., Gerald Korngold, *Privately Held Conservation Servitudes: A Policy Analysis in the Context of in Gross Real Covenants and Easements*, 63 TEX. L. REV. 433 (1984).

16. See, e.g., Niva Elkin-Koren, *What Contracts Cannot Do: The Limits of Private Ordering in Facilitating a Creative Commons*, 74 FORDHAM L. REV. 375 (2005).

17. See, e.g., Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773, 800 (2001) [hereinafter Merrill & Smith, *The Property/Contract Interface*]; Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1, 18 (2000) [hereinafter Merrill & Smith, *The Numerus Clausus Principle*]; Michael Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 666 (1998).

rights in land—are in tension with those ideals. Critics argue that the GPL and Creative Commons licenses are as well.<sup>18</sup>

This article considers these tools of cultural environmentalism in light of objections to conservation easements and more general concerns with complicated and fragmented property rights. It concludes that the cultural context does present problems analogous to those encountered by conservation easements, but that the problems stem in large part from the background law of copyright. The lessons gleaned from the conservation easement experience can usefully be applied to improve and shape the future development of the GPL and Creative Commons licenses. But they might also help to solve some of the problems caused by copyright law itself.

## II

### LAND CONSERVATION EASEMENTS

Conservation easements are non-possessory property rights typically held by government entities or by charitable organizations called “land trusts.”<sup>19</sup> There are over 1600 land trusts operating in the United States,<sup>20</sup> including well-known national organizations like the Nature Conservancy<sup>21</sup> and the Trust for Public Land.<sup>22</sup> When a landowner sells or donates a conservation easement to one of these organizations, the landowner maintains possession of the land but must use it only in ways that are consistent with the terms of the easement. As William Whyte, an early proponent of conservation easements pithily explained, “what we do is buy away from the owner his right to louse [the property] up.”<sup>23</sup>

A conservation easement might provide, for example, that the covered land “shall be used only for conservation and for noncommercial outdoor recreation

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18. See, e.g., Elkin-Koren, *supra* note 16, at 407–22; see also discussion *infra* notes 94–97 and accompanying text.

19. The Uniform Conservation Easement Act defines a “conservation easement” as a nonpossessory interest of a holder in real property imposing limitations or affirmative obligations the purposes of which include retaining or protecting natural, scenic, or open-space values of real property, assuring its availability for agricultural, forest, recreational, or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural, archaeological, or cultural aspects of real property. UNIF. CONSERVATION EASEMENT ACT § 1(1), available at <http://www.cals.ncsu.edu/wq/LandPreservationNotebook/PDFDocuments/uniform.pdf> (last visited Feb. 10, 2007); see also RESTATEMENT (THIRD) OF PROP.: SERVIDUTES § 1.6 (2000) (defining “conservation servitude”).

20. LAND TRUST ALLIANCE, 2005 NATIONAL LAND TRUST CENSUS REPORT (2006), available at [http://www.lta.org/census/2005\\_report.pdf](http://www.lta.org/census/2005_report.pdf).

21. The Nature Conservancy, About the Nature Conservancy, <http://www.nature.org/aboutus> (last visited Feb. 10, 2007) (“The Nature Conservancy is the leading conservation organization working to protect the most ecologically important lands and waters around the world for nature *and* people.”).

22. The Trust for Public Land, About TPL, [http://www.tpl.org/tier2\\_sa.cfm?folder\\_id=170](http://www.tpl.org/tier2_sa.cfm?folder_id=170) (last visited Feb. 11, 2007) (“The Trust for Public Land (TPL) is a national, nonprofit, land conservation organization that conserves land for people to enjoy as parks, community gardens, historic sites, rural lands, and other natural places, ensuring livable communities for generations to come.”).

23. WILLIAM H. WHYTE, THE LAST LANDSCAPE (1968), reprinted in THE ESSENTIAL WILLIAM H. WHYTE 159, 161 (Albert LaFarge ed., 2000).

by the general public,” or that no “industrial, mining, or commercial activities, and no residential or other building development are permitted.”<sup>24</sup> These limitations run with the land, binding not only the landowner but her successors in interest as well.<sup>25</sup> The land trust or other entity that holds the easement has the right to enforce its terms.<sup>26</sup>

Landowners have been crafting conservation easements in the United States since the late nineteenth century,<sup>27</sup> but their use has exploded in recent years. As of the Land Trust Alliance’s 2005 census, over six million acres of land in the United States were covered by conservation easements—almost 1.5 times the acreage protected just five years earlier.<sup>28</sup>

Part of the growth in the use of conservation easements is likely due to increased certainty about their legal validity.<sup>29</sup> Until the second half of the twentieth century, the meaning and enforceability of conservation easements was unclear in many states. The common law governing servitudes imposed a number of limitations that conservation easements typically violated.<sup>30</sup> Most important, the common law disfavored servitudes whose benefits were “in gross” (as opposed to “appurtenant”), meaning that their benefits did not attach to or “touch and concern” a dominant estate in land.<sup>31</sup> Conservation

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24. This is boilerplate language provided in BYERS & PONTE, *supra* note 5, at 322.

25. This is a fundamental feature of “servitudes,” the category of non-possessory property rights that includes conservation easements, other types of easements, real covenants, and equitable servitudes. A servitude is defined by the current Restatement as “a legal device that creates a right or an obligation that runs with land or an interest in land.” “Running with land means that the right or obligation passes automatically to successive owners or occupiers of the land or the interest in land with which the right or obligation runs.” RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 1.1 (2000).

26. See generally BYERS & PONTE, *supra* note 5, at 156 (“An easement holder must be ready to both enforce the terms of the easement’s restrictions and defend an easement if the landowner sues to challenge it.”); Land Trust Alliance, What is a Conservation Easement?, <http://www.lta.org/conserv/easement.htm> (last visited Feb. 11, 2007) (“When you donate a conservation easement to a land trust, you give up some of the rights associated with the land. For example, you might give up the right to build additional structures, while retaining the right to grow crops. Future owners also will be bound by the easement’s terms. The land trust is responsible for making sure the easement’s terms are followed.”).

27. Julie Ann Gustanski, *Protecting the Land: Conservation Easements, Voluntary Actions, and Private Lands*, in PROTECTING THE LAND: CONSERVATION EASEMENTS PAST, PRESENT, AND FUTURE 9, 9 (2000) (identifying the first American conservation easement, “written in the late 1880s to protect the parkways in and around Boston designed by renowned landscape architect Frederick Law Olmstead”); see also 4 RICHARD R. POWELL, POWELL ON REAL PROPERTY § 34A.02 (Michael A. Wolf ed., 2000) (“Use of easements to preserve sensitive lands and scenic views dates back more than one hundred years.”); WHYTE, *supra* note 23, at 164 (noting that the easement “is an ancient [device], and its application to conservation goes back many years”).

28. Land Trust Alliance, *supra* note 20, at 5, 15.

29. The conservation easement movement has also been spurred by tax policy, including a provision of the Internal Revenue Code that makes the value of a donated easement tax deductible. I.R.C. §§ 170(f)(3)(B)(iii), 170(h) (2000).

30. POWELL, *supra* note 27, § 34A.02[3] (noting that the “absence of a firm statutory foundation for these easements had left the precise meaning of the property interests they conferred somewhat unclear”).

31. See Andrew Dana & Michael Ramsey, *Conservation Easements and the Common Law*, 8 STAN. ENVTL. L.J. 2, 14 (1989) (“Conservation easements held by land trusts are almost invariably held in gross . . . . Thus, at common law, conservation easements would be neither transferable nor perpetual in

easements typically are in gross, because they give their benefit—that is, the right to limit development—to a governmental entity or conservation-oriented non-profit organization without regard to that recipient’s ownership of land.<sup>32</sup>

Beginning in the 1950s, proponents of conservation easements advocated statutory reform to overcome the obstacles imposed by the common law.<sup>33</sup> States began adopting legislation authorizing conservation easements in the late 1950s and early 1960s,<sup>34</sup> a movement that was later encouraged and standardized to some extent by the 1981 promulgation of the Uniform Conservation Easement Act (UCEA). The Act “enables durable restrictions and affirmative obligations to be attached to real property to protect natural and historic resources. Under the conditions spelled out in the Act, the restrictions and obligations are immune from certain common-law impediments which might otherwise be raised.”<sup>35</sup> Every U.S. state has now adopted either the UCEA or similar legislation authorizing conservation easements.<sup>36</sup>

By sweeping away arcane common-law distinctions and limitations, these statutory changes have helped the conservation easement movement flourish, allowing thousands of landowners voluntarily to partner with government and non-profit organizations to serve the public interest in conservation. Conservation easements have been praised as “contribut[ing] to a truly revolutionary environmental ethic in which landowners willingly protect the environment on their lands,”<sup>37</sup> and as “a means for protecting and preserving ecological diversity, open space, and other environmental qualities on private lands without relying on government regulation.”<sup>38</sup>

### III

#### CULTURAL ENVIRONMENTALISM’S PROPERTY TURN

Like the environmentalists who have championed conservation easements, some activists who worry about the negative implications of increasing prioritization of intellectual and creative works have begun to harness property

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most jurisdictions.”); Uniform Conservation Easement Act Summary, *supra* note 13 (noting that one of the “problems with the common law” is that it “has not favored interests ‘in gross’”).

32. See Dana & Ramsey, *supra* note 31, at 14; Uniform Conservation Easement Act Summary, *supra* note 13.

33. See WHYTE, *supra* note 23, at 164–66 (describing early legislative efforts); see generally Jean Hocker, *Foreword* to JULIE ANN GUSTANSKI & RODERICK H. SQUIRES, *PROTECTING THE LAND: CONSERVATION EASEMENTS PAST, PRESENT, AND FUTURE*, at xvii (2000).

34. POWELL, *supra* note 27, § 34A.02; Hocker, *supra* note 33, at xvii–iii.

35. UNIF. CONSERVATION EASEMENT ACT pmb., available at <http://www.law.upenn.edu/bll/ulc/fnact99/1980s/ucea81.pdf> (last visited Feb. 11, 2007); see also POWELL, *supra* note 27, § 34A.02[3] (discussing impact of the Act).

36. POWELL, *supra* note 27, § 34A.01.

37. Peter M. Morrisette, *Conservation Easements and the Public Good: Preserving the Environment on Private Lands*, 41 NAT. RESOURCES J. 373, 396 (2001).

38. *Id.* at 421; see also, e.g., John L. Hollingshead, *Conservation Easements: A Flexible Tool for Land Preservation*, 3 ENVTL. L. 319, 322 (arguing that conservation easements “present an appealing addition” to “traditional land protection measures” in part because “conservation easements are voluntary”).

rights to serve their goals. The most prominent example of this technique is the GNU General Public License, which was developed in the late 1980s by Richard Stallman and his non-profit Free Software Foundation.<sup>39</sup> The GPL has since been adopted by thousands of computer programmers to govern their copyrighted software.<sup>40</sup>

The GPL is a document that grants permission to copy, distribute, and modify the computer software programs to which it applies, provided that certain requirements are satisfied. Namely, any copies or modifications that are distributed must be accompanied by their source code<sup>41</sup> and must be available on the GPL's terms.<sup>42</sup> The license announces that any recipient of these copies or modifications "automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions."<sup>43</sup> So if all goes as provided in the GPL, everyone who receives a copy (or modified version) of the software also receives a license, and their use of the software is subject to the license terms.

Just as a landowner who donates a conservation easement creates an anti-development encumbrance that binds future generations who possess his land, a programmer who attaches the GPL to his software leverages copyright to create an encumbrance that binds future generations who build upon the software.<sup>44</sup> Someone who acquires a copy of software covered by the GPL, like a landowner who acquires land covered by a conservation easement, has the right to do many things with her acquisition (use it, copy and adapt it so long as the GPL's conditions are observed) but not other things (publicly distribute copies or adaptations without their source code or licensed under non-GPL terms). In both cases the idea is to leverage private property rights to serve the public's interest in resources that might otherwise be undersupplied, be they wildlife habitats, pretty views of open spaces, or accessible raw materials for future intellectual activity.

One might object at this point that the two mechanisms are fundamentally different: the conservation easement is a property right; the obligations it

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39. See GNU General Public License v. 1, <http://www.gnu.org/copyleft/copying-1.0.html> (last visited Feb. 11, 2007) [hereinafter GNU General Public License v. 1]. For history, see STEVEN WEBER, *THE SUCCESS OF OPEN SOURCE* 46–49 (2004); Brian W. Carver, *Share and Share Alike: Understanding and Enforcing Open Source and Free Software Licenses*, 20 BERKELEY TECH. L.J. 443, 447–48 (2005).

40. See *supra* note 9.

41. Computer programmers use various programming languages to write source code, which is then compiled into machine-readable ones and zeros ("binaries"). As Steven Weber helpfully explains, "[t]he source code is basically the recipe for the binaries; and if you have the source code, you can understand what the author was trying to accomplish when she wrote the program—which means you can modify it. If you have just the binaries, you typically cannot either understand or modify them." WEBER, *supra* note 39, at 4.

42. See GNU General Public License v. 2, *supra* note 8, paras. 1–3, <http://www.gnu.org/licenses/gpl.html> (last visited Feb. 11, 2007).

43. See *id.* para. 6.

44. I have compared and contrasted the GPL and conservation easements elsewhere. See Molly Shaffer Van Houweling, *Cultivating Open Information Platforms: A Land Trust Model*, 1 J. TELECOMM. & HIGH TECH. L. 309 (2002).

imposes “run with the land” and thereby bind every successive owner of the burdened parcel. The GPL, by contrast, can be interpreted as series of bilateral contracts.<sup>45</sup> In return for permission (a “license”) to copy, adapt, and publicly distribute the covered software, the first recipient agrees not to violate the terms of the GPL and to pass the terms along to the next recipient of a copy of the software or any adaptations.<sup>46</sup> The next recipient enters into her own agreement with the copyright holder, and so on down the line. On this contractual view, if recipient *A* fails to pass along the terms to recipient *B* and *B* thereafter violates the GPL, the original licensor’s remedy is against *A* for failure to comply with the full terms of the agreement—not against *B*, who is not in contractual privity with the licensor.<sup>47</sup> Note, however, that unencumbered ownership of a copy of the software gives *B* no right to copy, adapt, or distribute the software itself—rights that the Copyright Act grants exclusively to the copyright holder.<sup>48</sup> So if the original licensor in this example wants to enforce the terms of the GPL against *B* because, for example, *B* has distributed copies of the software without its source code, she can simply bring a copyright infringement suit based on *B*’s unauthorized exercise of the exclusive right of reproduction and public distribution.<sup>49</sup> As a practical matter, then, the

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45. Compare Jason B. Wacha, *Taking the Case: Is the GPL Enforceable?*, 21 SANTA CLARA COMPUTER & HIGH TECH. L.J. 451, 456 (2005) (“It is likely that a court, in the U.S. or abroad, would recognize the GPL as a contract.”), and Margaret J. Radin & R. Polk Wagner, *The Myth of Private Ordering: Rediscovering Legal Realism in Cyberspace*, 73 CHI.-KENT L. REV. 1295, 1313 (1998) (describing GPL as a “‘running’ contract”), with Pamela Jones, *The GPL is a License, Not a Contract, Which Is Why the Sky Isn’t Falling*, GROKLAWS, Dec. 14, 2003, <http://www.groklaw.net/article.php?story=20031214210634851> (quoting Free Software Foundation General Counsel Eben Moglen for the proposition that “[b]ecause the GPL does not require any promises in return from licensees, it does not need contract enforcement in order to work”), and Eben Moglen, Keynote Address at the University of Maine Law School’s Fourth Annual Technology and Law Conference: *Freeing the Mind: Free Software and the Death of Proprietary Culture* (June 29, 2003) (transcript available at <http://emoglen.law.columbia.edu/publications/maine-speech.html>) (asserting that the GPL “requires no acceptance” and “requires no contractual obligation”), and Eben Moglen, *Free Software Matters: Enforcing the GPL*, I, Aug. 12, 2001, available at <http://emoglen.law.columbia.edu/publications/lu-12.html> (discussing the difference between licenses and contracts). The license versus contract question is discussed in detail in LAWRENCE ROSEN, OPEN SOURCE LICENSING, SOFTWARE FREEDOM AND INTELLECTUAL PROPERTY 53–66 (2004).

46. See GNU General Public License v. 2, *supra* note 8, para. 5.

47. Robert Merges applies a comparable contractual analysis to Creative Commons Licenses. See Merges, *supra* note 3, at 198 (“From a legal perspective, the Creative Commons is a copyright license. Thus the entire scheme operates by virtue of contract. Because the terms of use are linked tightly to the content, including at the technical level, the hope is that the contract terms ‘run with the content.’ Despite the perhaps optimistic labeling of the shorthand notices as ‘deeds,’ for content to stay in the semicommons envisioned by the Creative Commons device, there must be an unbroken chain of privity of contract between each successive user of the content.”).

48. The Copyright Act makes clear that ownership of a copy of a copyrighted work does not imply any right to exercise the exclusive rights of a copyright owner with regard to the intangible work of authorship embodied by that copy; buying a book does not give the buyer the right to publish it. 17 U.S.C. § 202 (2006).

49. See generally David McGowan, *Legal Implications of Open-Source Software*, 2001 U. ILL. L. REV. 241, 256–59 (describing various legal claims that could arise from violation of the terms of the GPL).

obligations imposed by the GPL run with the software, just as the terms of a conservation easement run with the land.

One might also observe that conservation easements are different from the GPL and similar licensing techniques because conservation easements are fundamentally restrictive (*vis à vis* landowners who acquire burdened land), whereas the GPL is fundamentally, if conditionally, permissive (*vis à vis* people who acquire software licensed under the GPL). There is something to this distinction, which is addressed more fully below, but it should not be overstated. Consider a potential landowner who is contemplating the purchase of land burdened by a conservation easement that forbids non-agricultural use of the land. At this point the would-be owner has no rights to the land. He does not have the right to use it for agricultural purposes or for industrial purposes; he does not have the right to set foot on it without the current owner's permission. These activities would all amount to trespass under property law. When he purchases the land he gains many rights that he did not have before and that he could have been denied altogether. Even though there are things he cannot do because they are forbidden by the terms of the easement, the transaction as a whole can be viewed as fundamentally permissive. Someone with no rights to use land has gained some rights, albeit not every right that might come in a typical landownership bundle. Similarly, someone who acquires a piece of software governed by the GPL goes from having no rights to copy, adapt, and publicly distribute that software (all activities that would amount to infringement under the background law of copyright) to having limited rights to do those things.

The correspondence between the two mechanisms is not exact, but for now suffice it to say that there are clear parallels between conservation easements and the GPL, the methodology of which has now been adopted for other types of creative works. Creative Commons is a non-profit organization (founded by Boyle, among others<sup>50</sup>) that promotes licenses designed to be applied to a variety of copyrightable works, including text, images, movies, et cetera.<sup>51</sup> Like the GPL, these licenses permit copying, distribution and, in some cases, modification of covered works, but subject to certain conditions that copyright holders choose from a menu of terms.<sup>52</sup> Among these is a "share alike" provision, which, like the GPL, requires that derivative works be licensed on the same terms.<sup>53</sup> That is, the creator of a derivative work based upon a work licensed under a Creative Commons share-alike license must give other people permission to copy and modify that derivative work (subject to the condition that they do the same with their derivative works, and so on). Again, the license

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50. I am a past staff member and current member of the Board of Directors.

51. Creative Commons, <http://creativecommons.org> (last visited Feb. 11, 2007).

52. See Creative Commons, Creative Commons Licenses, <http://creativecommons.org/about/licenses/meet-the-licenses> (last visited Feb. 11, 2007).

53. *Id.*

leverages copyright to create an anti-exclusion encumbrance that binds future generations who build upon the copyrighted work.

Like conservation easements, these tools for cultural environmentalism have been widely adopted and praised—both for their potential to improve the environment for software innovation and cultural creativity, and for their reliance on voluntary, property-based mechanisms.<sup>54</sup>

#### IV

#### QUESTIONING CONSERVATION EASEMENTS

Despite the initial success of the property turn in cultural environmentalism, advocates should consider objections that have dogged their predecessors in the conservation easement movement. These objections have increasingly been raised in the cultural context as well.

There have long been critics of conservation easements.<sup>55</sup> These critics represent part of a broader dialogue about the value of restrictive common-law rules governing servitudes,<sup>56</sup> and a still broader dialogue about the value of standardization and consolidation of property rights.<sup>57</sup>

To simplify a rich and nuanced literature: critics of conservation easements, defenders of restrictions on the subject matter and enforceability of servitudes, and advocates of standardization and consolidation of property rights all argue to various degrees that the law should not recognize an infinite variety of property bundles. Allowing individual property rights to be idiosyncratically divided up and rearranged is associated with several problems in this literature.<sup>58</sup> For the purposes of this discussion, it is useful to focus on two concerns: inadequate or costly notice of the nature of idiosyncratic property rights to buyers and affected third parties, and limitations on the flexibility that future generations retain to put resources to their best uses after the various rights related to those resources have been redistributed in novel ways.

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54. See generally Merges, *supra* note 3, at 183–84; WEBER, *supra* note 39, at 114–15 (2004); Carver, *supra* note 39, at 447–48 (describing and explaining the success of GPL); Ariana Eunjung Cha, *Creative Commons is Rewriting Rules of Copyright*, WASH. POST, Mar. 15, 2005, at E01.

55. See, e.g., Gerald Korngold, *supra* note 15, at 457. For a more recent critique, see Julia D. Mahoney, *Perpetual Restrictions on Land and the Problem of the Future*, 88 VA. L. REV. 739 (2002).

56. See, e.g., Susan F. French, *The Touch and Concern Doctrine and the Restatement (Third) of Servitudes: A Tribute to Lawrence E. Berger*, 77 NEB. L. REV. 653, 659 (1998) [hereinafter French, *The Touch and Concern Doctrine*]; James L. Winokur, *The Mixed Blessings of Promissory Servitudes: Toward Optimizing Economic Utility, Individual Liberty, and Personal Identity*, 1989 WIS. L. REV. 1, 4–5 (1989); Gregory S. Alexander, *Freedom, Coercion, and the Law of Servitudes*, 73 CORNELL L. REV. 883, 894 (1988); Stewart E. Sterk, *Freedom from Freedom of Contract: The Enduring Value of Servitude Restrictions*, 70 IOWA L. REV. 615, 617 (1985); Richard Epstein, *Notice and Freedom of Contract in the Law of Servitudes*, 55 S. CAL. L. REV. 1353 (1983); Susan F. French, *Toward a Modern Law of Servitudes: Reweaving the Ancient Strands*, 55 S. CAL. L. REV. 1261, 1264 (1982) [hereinafter French, *Ancient Strands*]; Uriel Reichman, *Toward a Unified Concept of Servitudes*, 55 S. CAL. L. REV. 1179, 1183 (1982).

57. E.g., Merrill & Smith, *The Numerus Clausus Principle*, *supra* note 17; Heller, *supra* note 17.

58. I explore these problems more fully in other work. See Molly Shaffer Van Houweling, *The New Servitudes*, 96 GEO. L.J. (forthcoming 2008).

### A. Notice and Information Costs

Courts and commentators seem to agree that servitudes—including conservation easements—should not generally bind purchasers who acquire land with no notice of the encumbrance and no reasonable opportunity to acquire notice.<sup>59</sup> The importance of notice is often identified as a rationale for the common law’s limitations on servitudes.<sup>60</sup> For example, by requiring (for some purposes) that servitudes have some connection to land that they burden, and to a (typically neighboring) benefited parcel, the touch and concern doctrine helps to ensure that servitudes will be relatively easy to discover upon physical inspection, and that the owner of the beneficial interest will be relatively easy to identify and locate.<sup>61</sup> By limiting the subject matter of servitudes, the doctrine also shapes and reinforces expectations in a way that limits surprise.<sup>62</sup>

The touch and concern requirement and other traditional common-law limitations on servitudes inform a recent debate about the role that standardization of property rights plays in reducing notice and other information costs. In an influential 2000 article, Thomas Merrill and Henry Smith observe that “the law will enforce as property only those interests that conform to a limited number of standard forms.”<sup>63</sup> In civil-law countries, this standardization of property forms is explicitly recognized and referred to as the *numerus clausus* principle.<sup>64</sup> Merrill and Smith argue that it operates consistently in common-law systems as well, reflected in cases like *Keppell v. Bailey*, which famously insisted that “[i]t must not . . . be supposed that incidents of a novel kind can be devised and attached to property at the fancy and caprice of any owner.”<sup>65</sup>

Only certain types of property interests are recognized by law, according to Merrill and Smith, because infinite variety would raise the information costs associated with every property transaction (or potentially infringing activity).<sup>66</sup>

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59. *But see* POWELL, *supra* note 27, § 34.21[2] (citing cases enforcing easements by prescription even against bona fide purchasers without notice).

60. *See, e.g.*, French, *Ancient Strands*, *supra* note 56, at 1283–86.

61. *See generally* Henry Hansmann & Reinier Kraakman, *Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights*, 31 J. LEGAL STUD. 373, 402 (2002) (“Servitudes that meet this [touch and concern] requirement are much easier to verify by physical inspection of the property and its surroundings . . .”).

62. *See generally* French, *Ancient Strands*, *supra* note 56, at 1290 (“The touch and concern requirement tends to assure that parties will be bound only to the obligations which a reasonable purchaser would expect to have incurred, and will acquire only the benefits which a reasonable purchaser would expect to have gotten.”).

63. Merrill & Smith, *The Numerus Clausus Principle*, *supra* note 17, at 3.

64. *Id.* at 4.

65. 39 ENG. REP. 1042, 1049 (Ch. 1834); *see generally* A.W.B. SIMPSON, *A HISTORY OF THE LAND LAW* 256–60 (1986) (discussing cases). *But see* *Tulk v. Moxhay*, 41 ENG. REP. 1143 (Ch. 1848) (taking a broader view than *Keppell* of restrictive covenants enforceable in equity).

66. Unlike some defenders of the common-law restrictions on servitudes, Merrill and Smith worry less about notice to buyers of idiosyncratically configured property than about bystanders. Merrill & Smith, *The Numerus Clausus Principle*, *supra* note 17, at 31–35.

They explain, “The existence of unusual property rights increases the cost of processing information about all property rights. Those creating or transferring idiosyncratic property rights cannot always be expected to take these increases in measurement costs fully into account, making them a true externality.”<sup>67</sup> Merrill and Smith go on to observe that the various rules limiting servitudes—and other doctrines that limit idiosyncratic property rights—keep these information costs in check. They point to the touch and concern requirement as an example of a doctrinal technique that standardizes servitudes and thus limits the information costs they impose.<sup>68</sup>

It is hardly surprising, then, that some critics worry that notice and information-cost problems will plague conservation easements now that the common-law limitations have been removed.<sup>69</sup> One critic complains, for example, that “[c]alling something a conservation easement tells one nothing about what protections it affords or even what legal boilerplate it includes.”<sup>70</sup>

On the other hand, concerns with notice and information costs have been addressed to some extent by the advent of land-recording and marketable-title acts, which facilitate public recording of servitudes and other records of land ownership and which protect bona fide purchasers from unrecorded encumbrances and title problems.<sup>71</sup> The promulgators of the UCEA dismissed common-law obstacles to conservation easements as “artificial and archaic” in light of these mechanisms for providing would-be acquirers of land with the terms of any relevant servitudes and the identities of their holders.<sup>72</sup> Indeed, the recent Restatement (Third) of Property: Servitudes eliminates the touch and concern requirement altogether, for both conservation easements and other types of servitudes. Even some critics of conservation easements concede that land-recording systems address the problem of notice and information costs that triggered some of the common-law limitations.<sup>73</sup>

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67. *Id.* at 8.

68. *Id.* at 17.

69. *See, e.g.*, Jeff Pidot, Lincoln Inst. of Land Policy, *Reinventing Conservation Easements*, LAND LINES NEWSLETTER, Apr. 2005, available at <http://www.lincolninst.edu/pubs/pub-detail.asp?id=1010>.

70. *Id.*

71. Merrill & Smith, *supra* note 17, at 40 (“As the costs of standardization to the parties and the government shift, we expect the optimal degree of standardization to rise or fall. Consider the rise of registers of interests in real property, that is, recording acts. This device lowers the costs of notice; it is an alternative method of lowering information costs.”); Hansmann & Kraakman, *supra* note 61, at 407 (noting that recordation of servitudes “avoid[s] many of the additional . . . costs that effective verification of these rights would otherwise require”); Epstein, *supra* note 56, at 1358 (“[W]ith notice secured by recordation, freedom of contract should control.”). On recording acts generally, see POWELL, *supra* note 27, § 82.01. On marketable title acts, see *id.* § 82.04.

72. Uniform Conservation Easement Act Summary, *supra* note 13.

73. Soon after promulgation of the UCEA, in the midst of the movement to authorize conservation easements under state law, Gerald Korngold published a powerful critique. But he agreed with the proponents of conservation servitudes that land recording acts address the problem of notice, which had justified some of the traditional limitations on servitudes. As he acknowledged, “[b]ecause the holder of a servitude must record it or risk losing it to a bona fide purchaser, a potential purchaser easily can identify outstanding claims . . . .” Korngold, *supra* note 15, at 456.

In sum, concern with providing adequate notice about the nature of property rights and minimizing information costs for both acquirers of property and third parties is an important theme in the literature explaining the common-law restrictions on servitudes and other limitations on idiosyncratic property rights. Some critics of conservation easements worry that unrestrained and idiosyncratic conservation easements will impose costly confusion on future landowners and others.<sup>74</sup> But most commentators—even those critical of conservation easements and other violations of the common-law rules governing servitudes—recognize that the notice problem is ameliorated somewhat by the U.S. land-recording system.<sup>75</sup> It is important, nonetheless, to flag the issue of notice and its historical role in the debate about conservation easements and other servitudes because the notice and information-cost savings provided by land recording are not necessarily replicated for other types of resources. Copyright, as explained below, lacks a similar mechanism for addressing these problems.

## B. The Problem of the Future

Assuring adequate notice and minimizing information costs are not the only justifications for standardizing property rights and restricting servitudes. There is another constellation of concerns usefully categorized using Julia Mahoney's term "the problem of the future."<sup>76</sup> Included within this constellation are a number of related issues regarding the extent to which enforcement of unorthodox types of servitudes and other idiosyncratic property rights undesirably limits the freedom of future generations to manage resources wisely and autonomously.<sup>77</sup> The theme is excessive control by one generation over the freedom and flexibility of the next. The specific concerns are that excessive control will limit autonomy and recreate feudal incidents, impose inefficient land-use choices, and threaten freedom of alienation. These problems arise not only from manipulation of property rights by an earlier generation but also from the transaction costs that make that manipulation difficult to undo.

Mahoney raises the problem of the future specifically in the context of perpetual conservation easements.<sup>78</sup> She observes,

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74. See *infra* notes 69–70 and accompanying text.

75. E.g., Gerald Korngold, *Reply: Resolving the Flaws of Residential Servitudes and Owners Associations: For Reformation Not Termination*, 1990 WIS. L. REV. 513, 518 (1984) (“[T]he recording acts can be enforced strictly, and rules of inquiry notice can be interpreted closely to prevent a purchaser without notice from being bound by a servitude.”).

76. Mahoney, *supra* note 55; see also French, *supra* note 12, at 2523. See generally Merrill & Smith, *The Numerus Clausus Principle*, *supra* note 17, at 7 (surveying the literature and observing that “[t]he primary candidate for an economic explanation [for the numerus clausus] has been the suggestion that the numerus clausus is a device for minimizing the effects of durable property interests on those dealing with assets in the future . . .”).

77. See generally MARGARET JANE RADIN, *REINTERPRETING PROPERTY* 112–19 (1993).

78. Note that Mahoney's concerns are tentative. As she concedes, “Because conservation easements have been imposed on land in large numbers only since the 1980s, it is impossible to know

Conservation easements . . . impose significant potential costs on future generations by deliberately making non-development decisions hard to change. This means that future generations either will be stuck with their forbearers' land preservation choices, which will almost certainly fail to reflect contemporary cultural values and advances in ecological science, or will have to expend resources to extinguish (or at the very least renegotiate or have declared invalid) the conservation servitudes that constrict their options.<sup>79</sup>

Mahoney's concern with the problem of the future echoes earlier critiques of conservation easements, which complained about the dead-hand control they exert over future generations.<sup>80</sup> These concerns about the problem of the future and the danger of dead-hand control in turn resonate with the larger jurisprudence and literature on servitudes. Various courts and commentators have defended common-law restrictions on servitudes on the grounds that servitudes can give previous generations too much control over the resource-use decisions of future generations.

A classic statement on dead-hand control comes from Lewis Simes, who argued in his lectures on "Public Policy and the Dead Hand," that "[i]t is socially desirable that the wealth of the world be controlled by its living members and not by the dead."<sup>81</sup> Simes went on to quote Thomas Jefferson, who insisted in a letter to James Madison that "[t]he earth belongs always to the living generation. They may manage it then, and what proceeds from it, as they please during their usufruct."<sup>82</sup>

This preference for the living over the dead is often justified in terms of autonomy and contrasted with feudal serfdom.<sup>83</sup> In this view, controlling people who are distant in time and space—not family members or contractual privies—is a power associated with government (or with undesirable feudal hierarchy). Such control should not be unilaterally imposed by private parties merely on

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for certain how difficult it will be to modify or terminate these instruments." Mahoney, *supra* note 55, at 779.

79. *Id.* at 744 (footnotes omitted).

80. *E.g.*, Korngold, *supra* note 15, at 440, 457.

81. LEWIS M. SIMES, PUBLIC POLICY AND THE DEAD HAND 59 (1955).

82. *Id.* (quoting Letter from Thomas Jefferson to James Madison (Sept. 6, 1789), in 5 WRITINGS OF THOMAS JEFFERSON at 121 (Paul Leicester Ford ed., 1895)).

83. As Uriel Reichman puts it in his discussion of servitudes, "Private property is sanctioned by society not only to promote efficiency, but also to safeguard individual freedom. Servitudes are a kind of private legislation affecting a line of future owners. Limiting such 'legislative powers' . . . eliminates the possibility of creating modern variations of feudal serfdom." Reichman, *supra* note 56, at 1233. For a skeptical view, see Gregory S. Alexander, *The Dead Hand and the Law of Trusts in the Nineteenth Century*, 37 STAN. L. REV. 1189, 1258 (1985) ("The appeal of this view [limiting dead-hand control] lies not in its logic but in the emotive content of the dead hand as a symbol. The appeal to a struggle against the dead hand has historically been an effective rhetorical strategy . . . because reference to the dead hand evokes images of aristocracy and wealth inequality based on feudal-like hierarchy."). Alexander points out elsewhere the indeterminacy of autonomy and freedom of choice criteria for enforcing or limiting servitudes: "Reichman's interpretation seeks to maximize the liberty interest of all owners, present and future. Epstein's interpretation maximizes the freedom of the only owner at the time the servitude is created. The choice between these two contradictory interpretations cannot be based on an abstract commitment to freedom of choice itself; both choices are simultaneously freedom-enhancing and coercive." Alexander, *supra* note 56, at 891.

the basis of their property ownership and informed only by their “whim and caprice.”<sup>84</sup>

The concern with dead-hand control is also often discussed in utilitarian terms: the land-use choices of previous generations may turn out to be inefficient ones in light of changed circumstances. Mahoney’s reference to “advances in ecological science,” for example, reflects a concern that conservation servitudes that bind future landowners may compel ultimately undesirable land uses (or, more likely, forbid desirable ones).<sup>85</sup>

Where voluntary termination of conservation easements is allowed by law (as it typically but not always is<sup>86</sup>) the mechanism by which dead-hand control limits autonomy or efficiency requires further explanation. The potential problem is that transaction costs may block a negotiated solution—even when all affected parties would, in theory, agree to extinguish the unwanted servitude. The current holders of the servitude’s beneficial interest may be difficult to identify and locate, and they may be so numerous as to make contact and negotiation infeasible. Defenders of limitations on servitudes often point to this specter of transaction-cost-insulated servitudes as a justification for policies that either constrain the subject matter of servitudes or enable judges to terminate the detrimental ones.<sup>87</sup> In fact, the UCEA and most state statutes acknowledge the possibility of judicial modification or termination of conservation easements on the basis of changed circumstances.<sup>88</sup> But seeking judicial intervention might itself be difficult or uncertain enough to inefficiently constrain some desirable land uses.<sup>89</sup>

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84. *Copelan v. Acree Oil Co.*, 290 S.E.2d 94, 96 (Ga. 1982) (“It is the general rule that the owner of land has the right to use it for any lawful purpose, and restrictions upon its use must be clearly established and strictly construed. Doubt as to restrictions and use will be construed in favor of the grantee. Underlying this rule is the sound policy that land use must be governed by its present owners, and should be subjected only in severely restricted circumstances to control by former owners. Were this not the law, any whim and caprice, once set down by deed, could diminish or destroy the utility of real property for fully two decades [the term at issue in the case].”) (internal citations omitted).

85. Mahoney, *supra* note 55, at 744; *see also* Korngold, *supra* note 15, at 457 (arguing that “[t]he market response of a future property owner to the future needs of society is likely to be more effective than a past owner’s fixed blueprint”).

86. In some states, statutes make it difficult to terminate a conservation easement even if the easement holder agrees. But usually conservation easements, like other types of servitudes, can be voluntarily extinguished by negotiation with the holder of the non-possessory interest. *See generally* BYERS & PONTE, *supra* note 5, at 195–96.

87. *See, e.g.*, Reichman, *supra* note 56, at 1233 (“[O]bligations not related to actual property use are highly individualized. They tend, therefore, to become inefficient in the short run following a transfer. Consensual termination of such rights might not occur because of prohibitive transaction costs. The best way to insure efficient termination of such arrangements is to shift the burden of negotiation; instead of making the transferee negotiate for a release, the aspiring beneficiary will have to reach agreement with each new owner.”); French, *The Touch and Concern Doctrine*, *supra* note 56, at 1314–15 (explaining that “the difficulty of locating all the parties with interests in servitudes and the need for unanimous consent” presents “obstacles to privately negotiated releases and modifications of servitudes . . .”).

88. *See* UNIF. CONSERVATION EASEMENT ACT, § 3, cmt. (1982).

89. *See* Mahoney, *supra* note 55, at 777–79.

Inefficient but transaction-cost-insulated servitudes represent a species of the anti-commons problem described by Michael Heller with regard to fragmentation of property interests more generally. Conservation easements and other servitudes divide rights in a single parcel of land among multiple owners. If it is later desirable to consolidate those rights in order to put the resource to its best use, fragmentation of the property bundle (and the transaction costs involved in re-bundling) can make consolidation difficult. Heller cites restrictions on servitudes among “numerous restraints [that] limit an individual’s capacity to break up property bundles too much.”<sup>90</sup>

Heller’s concern with fragmentation offers an interesting way to think about the classic but under-theorized concern with restraints on alienation, which is also often cited as a rationale for limiting servitudes. Many legal mechanisms that are criticized for restraining alienation—including conservation easements and other novel servitudes—do not in fact directly restrain transfer. They merely limit the rights that can be acquired from any single owner. So a subsequent user who wants to reassemble property rights into a useful bundle must tackle the transaction costs involved in multiple negotiations. Often the problem is not so much restraint on alienation as restraint on acquisition: every individual stick in the property can be sold; the difficulty is in buying a bundle that is useful to own.

The various concerns associated with “the problem of the future” have long motivated common-law restrictions on servitudes. And contemporary property theorists point to them to justify a variety of doctrines that serve to standardize and consolidate property rights. To date, these concerns have not undermined enforcement of (statutorily authorized) conservation easements generally, but they have been used to justify judicial modification or termination in some cases. And some critics contend that they justify a more thorough reassessment of the conservation easement mechanism. Critics of the recent property turn in cultural environmentalism suggest that these same concerns counsel caution in that context as well.

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90. Heller, *supra* note 17, at 666 (“An owner can decompose her bundle by granting multiple rights of exclusion in an object: for example, by creating restrictive covenants enforceable by each owner in a residential land subdivision. Again, however, American law provides mechanisms that over time usually operate to restore a core private property bundle to a single owner. Indeed, there are relatively few cases in the American law of property in which multiple owners of privileges of inclusion or rights of exclusion in an object cannot escape from each other over time.”); *see also* Mahoney, *supra* note 55, at 785 (“Conservation servitudes make use of property rights to achieve preservation goals, but in doing so, they engineer the fragmentation of the rights associated with a particular tract of land, thereby reducing flexibility for later landowners. In essence, conservation easements ensure that a given tract of land will not have a single owner, thereby foregoing the powerful advantages of single ownership.”). *See generally* Ben W.F. Depoorter & Francesco Parisi, *Fragmentation of Property Rights: A Functional Interpretation of the Law of Servitudes*, 3 GLOBAL JURIST FRONTIERS 1 (2003), <http://www.bepress.com/gj/frontiers/vol3/iss1/art2>; Francesco Parisi, *Entropy in Property*, 50 AM. J. COMP. L. 595 (2002).

## V

## CULTURAL CONSERVATION EASEMENTS REVISITED

Where do the GPL and Creative Commons licenses fit in this ongoing debate about conservation easements, idiosyncratic servitudes, and the malleability and fragmentation of property rights? These tools of cultural environmentalism bear at least facial similarity to conservation easements.<sup>91</sup> Several observers have noted this similarity,<sup>92</sup> some suggesting that common-law limitations on servitudes could or should stand in the way of the enforcement of these licenses—much as the common-law rules once threatened conservation easements.<sup>93</sup> And critics have raised concerns about information costs and dead-hand control that echo criticism of conservation easements and other novel servitudes.<sup>94</sup> For example, Niva Elkin-Koren has criticized Creative Commons licenses for lacking the standardization associated with the *numerus clausus* principle.<sup>95</sup> Zachary Katz has suggested that certain Creative Commons licenses “may . . . cause dead-hand control problems.”<sup>96</sup> And Richard Epstein has complained colorfully about the “creeping imperialism of the GPL.”<sup>97</sup> Indeed, problems with information costs and dead-hand control do pose challenges to these tools of cultural environmentalism. But on close examination the root cause of these problems seems to be copyright law itself.

## A. Notice and Information Costs

One rationale commonly offered for various restrictions on the creation and enforceability of servitudes is that subsequent purchasers (and affected third parties) may have inadequate notice of the burdens or limitations that come with ownership of the encumbered asset. And one criticism of conservation easements in particular is that they come in so many varieties and impose so many different restrictions that even with formal notice landowners and easement holders may not understand their rights and responsibilities.

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91. See discussion *supra* Part III.

92. See *supra* notes 39–54 and accompanying text. The comparison is usually drawn to servitudes generally, not to conservation easements in particular. See, e.g., Michael J. Madison, *Reconstructing the Software License*, 35 LOY. U. CHI. L.J. 275, 306 (2003); Margaret Jane Radin, *Humans, Computers, and Binding Commitment*, 75 IND. L.J. 1125, 1138–39 (2000); Mark Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 121, 148 (1999); William W. Fisher III, *Property and Contract on the Internet*, 73 CHI.-KENT L. REV. 1203, 1211 (1998). See generally Thomas M.S. Hemnes, *Restraints on Alienation, Equitable Servitudes, and the Feudal Nature of Computer Software Licensing*, 71 DENV. U. L. REV. 577 (1994).

93. Margaret Jane Radin, for example, describes the GPL as an “attempt to make commitments run with a digital object”—suggesting perhaps that the GPL should be unenforceable as an invalid attempt to impose a servitude on personal property. Radin, *supra* note 92, at 1132, 1139–40.

94. Elkin-Koren, *supra* note 16; Zachary Katz, *Pitfalls of Open Licensing: An Analysis of Creative Commons*, 46 IDEA 391, 393–94 (2006).

95. Elkin-Koren, *supra* note 16, at 408–15.

96. Katz, *supra* note 94, at 409.

97. Richard Epstein, *Why Open Source is Unsustainable*, FIN. TIMES, Oct. 21, 2004, available at <http://news.ft.com/cms/s/78d9812a-2386-11d9-ae5-00000e2511c8.html>. Ironically, Epstein is elsewhere a defender of the dead hand. See, e.g., Epstein, *supra* note 56.

As discussed above, concerns with notice are somewhat less pressing in light of the modern system of land recording in the United States (although confusion over the meaning of terms within a known servitude might remain).<sup>98</sup> When servitude-like restrictions are imposed on resources other than land, however, notice problems can loom larger. In fact, the traditional rule is that servitudes are not permitted on personal property,<sup>99</sup> a distinction that some observers attribute to the absence of a comprehensive recording system for chattels.<sup>100</sup>

Even when notice is provided, it may not be effective. The Supreme Court was clearly skeptical about the effectiveness of the notice provided for the chattel servitude attempted in *Straus v. Victor Talking Machine Co.*,<sup>101</sup> in which the Court refused to enforce a use restriction printed on a plate attached to record players: “[I]t must be recognized that not one purchaser in many would read such a notice, and that not one in a much greater number, if he did read it, could understand its involved and intricate phraseology, which bears many evidences of being framed to conceal rather than to make clear its real meaning and purpose.”<sup>102</sup>

Some observers argue that in the context of servitude-like restrictions on digital copies of creative works—the typical subject matter of both the GPL and Creative Commons licenses<sup>103</sup>—the notice problems that might otherwise plague chattel servitudes are not so serious, because it is relatively easy to attach detailed notice to digital objects via link, pop-up window, et cetera.<sup>104</sup> The concern from *Victor Talking Machines* about inattentive or uncomprehending purchasers still seems relevant here, however.

Although the GPL and Creative Commons licenses (or a URL pointing to their text) are typically embedded within the source code of software or posted

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98. And recording systems are themselves confusing and difficult to navigate. See generally Hansmann & Kraakman, *supra* note 61, at 402.

99. Merrill & Smith, *The Numerus Clausus Principle*, *supra* note 17, at 18.

100. Hansmann & Kraakman, *supra* note 61, at 407 (citing the absence of registries as one reason the law “makes it much simpler to establish partial rights in real property than in personal property”). But see Glen O. Robinson, *Personal Property Servitudes*, 71 U. CHI. L. REV. 1449 (2004) (criticizing the distinction).

101. 243 U.S. 490 (1917).

102. *Id.* at 501.

103. Creative Commons licenses have also been attached to books and other analog manifestations of copyrighted works. For examples, see YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2006), available under a Creative Commons license at [http://www.benkler.org/wealth\\_of\\_networks/index.php/Main\\_Page](http://www.benkler.org/wealth_of_networks/index.php/Main_Page); CORY DOCTOROW, *DOWN AND OUT IN THE MAGIC KINGDOM* (2003), available under a Creative Commons license at <http://craphound.com/down/download.php>; LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY* (2004), available under a Creative Commons license at <http://www.free-culture.cc/freeccontent/>.

104. See, e.g., Robert P. Merges, *The End of Friction? Property Rights and Contract in the “Newtonian” World of On-line Commerce*, 12 BERKELEY TECH. L.J. 115, 122 (1997) (“While the efficacy of third-party notice in markets for real property interests is debatable, cyberspace seems entirely different. Unlike an easement (or servitude), evidence of which does not normally appear on the face of the land, digital content is quite capable of providing notice concerning the ownership rights retained by its creator or other parties.”).

prominently on the website where licensed digital content is available, these methods may not guarantee effective notice in every case.<sup>105</sup> One complication is that there are many varieties of Creative Commons licenses<sup>106</sup> and many permissive software licenses in addition to the GPL.<sup>107</sup> Just as the wide variety of conservation easements has caused some confusion among landowners and easement holders,<sup>108</sup> the variety of licenses promulgated by cultural environmentalists has surely caused some confusion among copyright holders and licensees.<sup>109</sup> Cultural environmentalists themselves seem to have recognized this problem, acknowledging that “license proliferation” increases information-processing costs for people trying to figure out what they may do with creative works.<sup>110</sup>

Any potential shortcomings in the notice provided by the GPL and Creative Commons licenses should be understood against the background law of copyright, however. Part of the notice problem associated with servitudes (at least in the absence of a recording system) is that they are bundled with possession of land in a way that upsets ingrained expectations about a lawful possessor’s rights to use her possessions. But the same background assumption of freedom is not possible in the context of copyright, which creates nonpossessory rights that do not require notice—rights whose owners can be near or distant, single or multiple, known or unknown.

After a series of amendments to the Copyright Act starting in 1976, federal copyright protection is now triggered simply by fixation of an original work in “any tangible medium of expression”<sup>111</sup>—by scribbling words on a napkin or typing them onto a computer, for example. In a departure from prior law, notice, deposit, and publication are not required to secure protection and no renewal registration is required to take advantage of the longest possible copyright term.<sup>112</sup> Those barriers have been removed and copyright protection is

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105. I explore the issue of ineffective notice provided by licenses attached to intangible works more fully in other work. See Van Houweling, *supra* note 58.

106. See *supra* note 52.

107. See, e.g., Free Software Foundation, *Various Licenses and Comments About Them*, [http://www.fsf.org/licensing/licenses/index\\_html](http://www.fsf.org/licensing/licenses/index_html) (last visited Feb. 11, 2007).

108. See *supra* notes 69–70 and accompanying text.

109. See Katz, *supra* note 94, at 393 (“[T]he increasing variety of CC licenses may give rise to user confusion as licensors struggle to determine which license is best suited to their needs and licensees fail to understand the precise rights and obligations that attach to a licensed work. The transaction costs resulting from these uncertainties affect the open source software community and are potentially substantial obstacles to broader and more rapid adoption of CC licenses.”); see generally Elkin-Koren, *supra* note 16, at 407–15; Matthew D. Stein, Comment, *Rethinking UCITA: Lessons from the Open Source Movement*, 58 ME. L. REV. 157 (2006).

110. See Stephen Shankland, *Open-Source Overseer Proposes Paring License List*, ZDNET NEWS, Mar. 3, 2005, [http://news.zdnet.com/2100-3513\\_22-5596344.html](http://news.zdnet.com/2100-3513_22-5596344.html); Open Source Initiative, Charter for License Proliferation (LP) Committee of the Open Source Initiative (OSI), <http://www.opensource.org/docs/policy/lpcharter.php> (last visited Feb. 11, 2007).

111. 17 U.S.C. § 102(a) (2000).

112. *Id.* § 408.

now automatic.<sup>113</sup> This means that when someone comes upon what appears to be an original work of expression fixed in a tangible medium—an old photograph, for example—she does not know how the work is encumbered by copyright.<sup>114</sup> It could be in the public domain because it was published without notice during a time when copyright could be lost that way; it could be in the public domain because its copyright has expired; or it could be under copyright, held by an unknown copyright holder. Without more information, the only safe assumption is that all of those activities that implicate the exclusive rights granted by copyright (reproduction, public distribution, preparation of derivative works, et cetera) are forbidden.

Against this background of potentially hidden restrictions, the GPL and Creative Commons licenses do not appear to impose additional and surprising constraints. Although some of the conditions imposed by these licenses differ in substance from copyright law, they are all triggered by activities that are within the copyright holder's exclusive rights.<sup>115</sup> For example, all Creative Commons licenses require that publicly distributed copies and derivative works properly attribute the original author.<sup>116</sup> Attribution is not, per se, an exclusive right of a copyright holder.<sup>117</sup> But reproducing the copyrighted work and making derivative works based upon it are exclusive rights. A license that waives those exclusive rights on the condition that copying and adaptation are accompanied by attribution does not impose a surprising new limitation when measured against the background assumption that copying and adaptation are forbidden altogether.

Of course, in the land context one could say that a servitude that limits the uses of land merely imposes on a landowner a less-restrictive subset of the limitations that would be already be imposed upon her by the law of trespass if she had not acquired any rights to the land in the first place. Courts and commentators nonetheless worry about enforcing servitudes with insufficient notice. But the law of real property has conditioned land buyers to expect that once they acquire a piece of land, the restrictive background law of trespass is

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113. See generally Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485, 494 (2004).

114. See generally UNITED STATES COPYRIGHT OFFICE, REGISTER OF COPYRIGHTS, REPORT ON ORPHAN WORKS 15 (January 2006), available at <http://www.copyright.gov/orphan/orphan-report-full.pdf>; William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 477 (2003) (attributing “tracing costs” involved in determining the ownership of copyrighted works to “the absence of registration”).

115. But see discussion *infra* notes 123–24 and accompanying text (noting the caveats to this assertion with regard to the GPL).

116. E.g., Creative Commons Attribution-NonCommercial-NoDerivs 3.0 License § 4(c), <http://creativecommons.org/licenses/by-nc-nd/2.5/legalcode> (last visited May 1, 2007). The author or licensor can also “designate another party or parties (e.g. a sponsor institute, publishing entity, journal)” to receive attribution. *Id.*

117. But see 17 U.S.C. § 106A (2000) (establishing limited attribution rights for “the author of a work of visual art”).

no longer relevant to their use of that land.<sup>118</sup> Copyright law, by contrast, does not give the same solicitude to people who acquire books, computer programs, and other creative works; with a few exceptions and limitations,<sup>119</sup> it imposes proprietary limitations upon their use of those works without regard to notice. In light of that background, licenses that conditionally remove limitations and attempt to give notice (albeit possibly imperfect) to licensees seem to alleviate rather than impose notice problems.

The notice problem would be more serious if these licenses imposed conditions on behavior that was outside the scope of copyright's exclusive rights—if, for example, Creative Commons licenses required attribution even on adaptations of the covered work that were too dissimilar to the original to count as “derivative works” under copyright law, or on reproductions of the covered work that amounted to non-infringing “fair use.”<sup>120</sup> It seems unlikely that Creative Commons licenses would ever be interpreted so broadly, since they borrow language directly from the Copyright Act (to define “derivative work,” for example) and expressly provide that “[n]othing in this license is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.”<sup>121</sup>

There is some controversy on this point in the context of the GPL.<sup>122</sup> The GPL imposes conditions on copying and distribution of a covered computer program and “work based on the Program,” which is in turn defined as “either the Program or any derivative work under copyright law—that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language.”<sup>123</sup> Although this language refers directly to copyright law, its definition of “work based on the Program” is arguably broader than the legal definition of “derivative work,” at least under U.S. law. Not every program that contains “a portion of” a GPL-licensed program will be similar enough to the original to constitute a derivative work. If the GPL were interpreted nonetheless to impose conditions on preparing,

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118. Like most arguments based on expectations, this one is somewhat circular. If servitudes of all sorts were enforceable without notice to the purchaser of the burdened land, the land purchasers' expectations would be much different. But circularity notwithstanding, arguments from expectations play a central role in the law of property. *See, e.g., Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1027–28 (1992) (“[O]ur ‘takings’ jurisprudence . . . has traditionally been guided by the understandings of our citizens regarding the content of, and the State’s power over, the ‘bundle of rights’ that they acquire when they obtain title to property.”).

119. For example, the “first sale doctrine,” codified at 17 U.S.C. § 109(a), provides that notwithstanding a copyright holder’s exclusive right of public distribution, an owner of a lawfully made copy of a copyrighted work may “sell or otherwise dispose of the possession of that copy.”

120. Niva Elkin-Koren raises this possibility without endorsing it. Elkin-Koren, *supra* note 16, at 404.

121. *E.g., Creative Commons Attribution-NonCommercial-NoDerivs 3.0 License*, *supra* note 116, § 2.

122. *See generally* ROSEN, *supra* note 45, at 114–21 (discussing ambiguity and dispute about the coverage of the GPL).

123. GNU General Public License v. 2, *supra* note 8, para. 0.

copying, and distributing such a program, those conditions would be more restrictive than the background law of copyright—and thus potentially surprising to someone who did not receive adequate notice.<sup>124</sup>

A lesson for cultural environmentalists that emerges from the conservation easement experience—and from the history and jurisprudence of servitudes more generally—is that property-based restrictions on the use of a resource can cause unfair surprise and confusion where those restrictions are inconsistent with baseline assumptions about what it means to acquire that resource. Where the baseline is defined by the law of copyright, many restrictions will not in fact be unfairly surprising or confusing—so long as they limit or impose conditions upon only activities that would otherwise be prohibited. But when a license attempts to limit or condition behavior that is not within the exclusive rights of the copyright holder, the problem of notice becomes more serious. This does not appear to be an issue for the current Creative Commons licenses, or for the GPL as narrowly interpreted; but broader readings that extend restrictions beyond the copyright baseline would raise more serious notice problems.

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124. This potential problem would have been exacerbated by terms in the first, and now superseded, draft for the GPLv3, released in early 2006 by the Free Software Foundation. GNU, Draft General Public License, v. 3, available at <http://gplv3.fsf.org/gpl-draft-2006-01-16.html> (last visited Feb. 11, 2007) (first discussion draft). Among other new and modified provisions, the draft included the following: “This License gives unlimited permission to privately modify and run the Program, provided you do not bring suit for patent infringement against anyone for making, using or distributing their own works based on the Program.” *Id.* § 2. This language was a significant departure from prior versions of the GPL in that it quite expressly purported to place a condition on activity not otherwise within the exclusive rights of the copyright holder, at least under U.S. law. Of course, the Copyright Act does not give copyright holders exclusive rights to bring suit for patent infringement. 17 U.S.C. § 106 (listing exclusive rights in copyrighted works). Neither does the Copyright Act give copyright holders an exclusive right to “run” software. *Id.* And to the extent that exercise of some genuine exclusive right, e.g. reproduction, is a necessary step in running the software, that step does not trigger liability because of 17 U.S.C. § 117(a), which allows the owner of a copy of a computer program to copy that program as necessary to use the program on his computer. Because neither running nor patenting software is within the exclusive rights of the copyright holder, the GPLv3’s purported limitation on a patent litigant’s right to “run” the software could have been surprising and confusing to a user who had received inadequate notice of the GPL’s terms.

The FSF released a new version of the draft, in which this troubling language has been modified. GNU, Draft General Public License, v. 3, available at <http://gplv3.fsf.org/gpl-draft-2006-07-27.html> (last visited Feb. 11, 2007) (second discussion draft). The language quoted above has been replaced by the following: “This License permits you to make and run privately modified versions of the Program, or have others make and run them on your behalf. However, this permission terminates, as to all such versions, if you bring suit against anyone for patent infringement of any of your essential patent claims in any such version, for making, using, selling or otherwise conveying a work based on the Program in compliance with this License.” *Id.* § 2. Although the difference is extremely subtle, this language is better because it only purports to condition rights to make and run modified versions of the program. If modified versions amount to derivative works under copyright law, the preparation of which is an exclusive right of the copyright holder, then this provision arguably only limits behavior that was within the exclusive rights of the copyright holder in the first place. (Although “running” still is not an exclusive right of the copyright holder, running a modified version may involve copying and adaptation beyond the bounds of 17 U.S.C. § 117.)

## B. The Problem of the Future

Imagine that a piece of GPL-licensed software is, decades from now, preserved only in an obsolete and somehow fragile format. The one entity interested in going to the trouble and expense of preserving it by transferring it to a modern format is a commercial software company that insists on subsequently distributing copies of the software without its source code and without a copy of the GPL attached. That behavior would be outside the terms of the GPL and would violate the exclusive reproduction rights of the copyright holders unless they gave their permission; yet it might be socially valuable if otherwise the creativity and innovation embodied in the software would be lost.

This looks like the problem of the future translated into the context of cultural conservation easements. One generation of creators has made choices about resource use that constrain the choices of a subsequent generation, under circumstances in which society might benefit from revisiting those choices. In theory, those choices could be reconsidered—the copyright holders could give permission. In reality, it may be impossible, or at least prohibitively costly, to successfully identify, locate, and bargain with all of the individuals who have contributed to a single software project. Transaction costs, exacerbated by fragmented rights, could result in powerful dead-hand control. Indeed, some programmers who want to maximize the use and longevity of their projects choose more permissive licenses instead of (or in addition to) the GPL for the express purpose of preserving the flexibility of subsequent generations of contributors.<sup>125</sup>

Again, however, the problem seems less a consequence of the GPL than of the law of copyright, which gives copyright holders rights that last long into the future, controlling how people may use copies of creative works they have acquired and often dividing rights among many separate contributors.<sup>126</sup> Without the GPL, the commercial software developer who wanted to rescue the obsolete software would have to negotiate with each copyright holder before distributing copies of it; the GPL provides the additional option of avoiding negotiations by staying within the license terms.

There are, however, at least two ways in which the operation of the GPL, Creative Commons licenses, and other cultural conservation easements may in practice exacerbate the problem of the future. First, the open and accessible

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125. See, e.g., Open Source Applications Foundation, Chandler Licensing Plan, [http://www.osafoundation.org/Chandler\\_licensing\\_plan\\_4-2003.htm](http://www.osafoundation.org/Chandler_licensing_plan_4-2003.htm) (last visited Feb. 11, 2007) (explaining that the “Chandler” calendar software will be available under a commercial license in addition to the GPL because “[w]e want to encourage commercial use and distribution of Chandler since these activities may provide a wider market, additional functionality, more choices, and broader benefit for end users”).

126. This fragmentation of rights occurs, for example, when a copyright holder authorizes preparation of a derivative work. The resulting work cannot be copied without permission from both the original copyright holder and the owner of the subsequent contributions. Copyright does have some doctrines that consolidate rights, however. Consider, for example, the work-for-hire doctrine. 17 U.S.C. §§ 101, 201(b) (consolidating copyrights in an employer under certain circumstances).

nature of GPL- and Creative Commons-licensed works makes them amenable to iterative collaboration by many independent individuals. The participation of so many collaborators creates the risk that an intractable thicket of fragmented and overlapping copyrights will make revisiting the original license restrictions impossible.<sup>127</sup> Although the problem is even worse in theory under standard copyright, it may be the case that few works governed by standard copyright have as many owners (who are often difficult to track down and negotiate with) as GPL and Creative Commons works often do.

As it turns out, the organization that created and promotes the GPL—the Free Software Foundation—has adopted a strategy for its own software projects that may alleviate this fragmentation problem: the FSF encourages all contributors to assign copyright in their contributions to the Foundation.<sup>128</sup> The FSF explains that this makes enforcement of the GPL easier; of course, it would also make it easier to re-license the software in light of unforeseen changed circumstances.<sup>129</sup> Creative Commons has raised the possibility of addressing the problem of the future not by minimizing fragmentation, but by reducing transaction costs by embedding copyright-holder contact information into Creative Commons license documentation.<sup>130</sup> These efforts illustrate a broader phenomenon, noted in the institutional law and economics literature, whereby the transaction-cost problems caused by fragmented property rights are addressed voluntarily by private actors or institutions.<sup>131</sup>

Another potential problem of the future involves license incompatibility.<sup>132</sup> Both the GPL family of licenses and Creative Commons' "share-alike" licenses

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127. On the prospect of underuse of intellectual resources subject to fragmented ownership, see generally Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698 (1998).

128. See GNU Project, Frequently Asked Questions About the GNU GPL, <http://www.gnu.org/copyleft/gpl-faq.html#AssignCopyright> (last visited Feb. 11, 2007). The following statement on the GNU Project's website addresses the question why contributors to Free Software Foundation licensed programs are encouraged to assign their copyrights to the Free Software Foundation:

Our lawyers have told us that to be in the best position to enforce the GPL in court against violators, we should keep the copyright status of the program as simple as possible. We do this by asking each contributor to either assign the copyright on his contribution to the FSF, or disclaim copyright on it and thus put it in the public domain. . . . If you want to make an effort to enforce the GPL on your program, it is probably a good idea for you to follow a similar policy.

*Id.*

129. Elsewhere I have suggested, for somewhat different reasons, that trusted third parties could serve a role akin to land trusts in the conservation easement context by managing intellectual property rights. See Van Houweling, *supra* note 44.

130. See Lawrence Lessig, CC in Review: Lawrence Lessig on CC Licenses, <http://creativecommons.org/weblog/entry/5704> (Nov. 23, 2005, 12:48 PST).

131. See generally Merges, *supra* note 3, at 189 ("Private action may offset some of the effects of an anticommons, making it less necessary to act on the normative agenda of anticommons theory, an agenda that involves restricting property rights and carries obvious risks and costs."); Robert Merges, *Intellectual Property Rights and the New Institutional Economics*, 53 VAND. L. REV. 1857, 1864–67 (2000).

132. See generally Elkin-Koren, *supra* note 16, at 412–14 (describing how "[t]he absence of standardization may lead to inconsistencies and incompatibilities between different free-content contracts").

raise the specter of license incompatibility by requiring that derivative works prepared by the licensee be licensed under the same terms as the licensed work.<sup>133</sup> That means that derivatives based upon GPL-licensed software can only be licensed under the GPL; other licenses—including other licenses that similarly seek to promote the model of open and non-proprietary software development—are incompatible.<sup>134</sup> As for Creative Commons, no two share-alike works can be combined into a new derivative work unless the terms of their respective licenses match. This causes incompatibility even within the Creative Commons system, which offers licensors the choice of different (non-matching) share-alike licenses.<sup>135</sup> And there are many other non-Creative Commons licensing possibilities that are similarly incompatible with Creative Commons share-alike licenses. Again, in theory these incompatibilities pose no more difficulty than the baseline of copyright, which allows no unauthorized derivative works at all.<sup>136</sup> But the numerosity of licensors involved in collaborative CC- and GPL-licensed works—and the resulting transaction costs—may make this frustrating form of dead-hand control especially powerful in practice.

## VI

### CONCLUSION: COPYRIGHT AND CULTURAL CONSERVATION

Conservation easements and other types of novel servitudes are controversial in part because they upset settled assumptions about what it means to possess and own land. Purchasers of servitude-encumbered land may thus be unfairly surprised to learn about limits and conditions on their rights. This concern with notice has been alleviated to some extent by the advent of land-recording systems, but another concern remains—that servitudes will limit the autonomy of future generations and constrain their land use choices in ways that no longer seem desirable in light of changed circumstances.

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133. See discussion *infra* notes 42 & 53 and accompanying text.

134. See ROSEN, *supra* note 45, at 246–47 (“The GPL license is widely considered to be the most restrictive in this respect. . . . Derivative works of contributions submitted under the GPL *must* be distributed under the GPL, and you can’t add any further restrictions. Once a chain of title is started for a contribution under the GPL, the GPL is the only license that can be used for subsequent derivative works.”); *id.* at 252 (“For some of us, the problem of combining software under different licenses into derivative works is a frustration. License incompatibilities prevent software from being freely used and combined. And with the proliferation of open source licenses, the problem is getting worse, not better.”).

135. Zachary Katz describes conflict in detail. Katz, *supra* note 94, at 401–02; see also Elkin-Koren, *supra* note 16, at 413–14.

136. See Katz, *supra* note 94, at 409 n.41 (“Compared to the copyright default . . . CC licenses enable a tremendous amount of re-creation that would not otherwise occur. Any unforeseen drag on future creation is best seen as a small though potentially significant counter-effect of the CC licenses. Moreover, this effect can be partially overcome by would-be licensees negotiating with copyright holders for uses unauthorized by CC licenses. This effect is thus particularly likely to occur only where transaction costs prevent individual negotiations from occurring, that is, where a large number of would-be creators of derivative works each seek to use content from multiple previous creators who released their works under different CC licenses.”).

Cultural analogs to conservation easements have begun to trigger similar controversy and criticism. But there is a fundamental difference between conservation easements that constrain real property and cultural conservation easements that constrain copyrighted works in the way that the GPL and Creative Commons licenses do. Real property is characterized by background assumptions about the rights that come with ownership of land—including rights to use and to exclude; conservation easements and other servitudes are potentially confusing and constraining because they limit those rights. When the relevant background law is copyright, by contrast, the default assumption is that—insufficient notice notwithstanding—ownership of a book or a piece of software does not necessarily entail unlimited rights to use the creative work embodied in it, nor to exclude others from using it. Cultural conservation easements, therefore, generally alleviate confusion and liberate users of cultural works, vis à vis the default of copyright.

Nonetheless, the lessons that emerge from the conservation easement movement and from longstanding debates about servitudes and other novel property forms can usefully shape cultural conservation easements by stressing the importance of clear notice and by highlighting the dangers to future flexibility posed by fragmented and incompatible property rights. More importantly, however, these lessons might inform copyright policy itself by reminding us of the costs imposed by a system that creates property rights without a mechanism for ensuring notice of those rights and that preserves those rights long into the future, across boundaries of space and time that can make voluntary negotiation difficult.

There are some signs that copyright policy makers are beginning to grapple with these costs. The Copyright Office's 2006 Report on Orphan Works recognizes that copyright can unduly constrain desirable uses of creative works because of transaction costs and notice problems. The Report observes that "a productive and beneficial use" of a copyrighted work can be forestalled "not because the copyright owner has asserted his exclusive rights in the work, or because the user and owner cannot agree on the terms of a license—but merely because the user cannot locate the owner."<sup>137</sup> The Report thus acknowledges that the problems traditionally associated with conservation easements and other unconventional servitudes—namely, the problems of assuring notice, minimizing information costs, and retaining flexibility for future generations to make their own choices about resource exploitation—are also problems for copyright. Cultural conservation easements should be informed by an awareness of these problems and structured to minimize them. On the whole, however, these innovative mechanisms for constructing an information commons help to solve—not exacerbate—the problems that copyright law causes. The persistence of those problems suggests the continued need for

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137. UNITED STATES COPYRIGHT OFFICE, *supra* note 114, at 15.

cultural environmentalism through copyright reform in addition to voluntary efforts at cultural conservation.