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FOREWORD: THE OPPOSITE OF PROPERTY?

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I

INTRODUCTION

In November of 2001, Duke University School of Law held a conference on the public domain; the “outside” of the intellectual property system, the material that is free for all to use and to build upon.¹ So far as we could tell, this was the first conference on the subject, which is surprising when one realizes the central role of the public domain in our traditions of speech, innovation and culture. In many ways, this imbalance—the hundreds of conferences, centers and initiatives that have intellectual property as their focus, and the comparative dearth of attention on the public domain—provided the best explanation for the event.

The conference was organized at Duke by my remarkable colleagues on the intellectual property faculty, Jerry Reichman and David Lange, and by me. The conference announcement set forth our goal:

The last fifteen years has seen a rise in both the importance and the strength of intellectual property rights in the world economy; rights have expanded in areas ranging from the human genome to the Internet and have been strengthened with legally backed digital fences, lengthened copyright terms and increased penalties. Is this expansion of intellectual property necessary to respond to new copying technologies,

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1. The Conference was generously supported by a major grant from the Center for the Public Domain.

and desirable because it will produce investment and innovation? Must we privatize the public domain to avoid a “tragedy of the commons,” or can the technologies of cheap copying and global networks actually make common pool management more efficient than legal monopolies? Questions such as these have thrown attention on the “other side” of intellectual property: the public domain. What does the public domain do? What is its importance, its history, its role in science, art, and in the building of the Internet? How is the public domain similar to and different from the idea of a commons? This conference, the first major meeting to focus squarely on the topic of the public domain, will try to answer some of these questions in areas ranging from the human genome to appropriationist art, from the production of scientific data to the architecture of our communications networks.²

To begin to answer these questions we brought together scientists and historians; environmental systems scholars and artists; lawyers and software engineers; film-makers, musicians and archivists. A number of framing papers were commissioned before the event to get the discussion going. The results were striking.

Running a conference is rather like organizing a dinner party. You are the person least likely to enjoy the food yourself. The fact that even *I* noticed the energy the conference unleashed was thus a testament to the cast of characters we had assembled. At first, I thought this was simple bias on my part. Media coverage of the event, however, confirmed the same impressions.³ (The entire conference was webcast and has been archived so that anyone with an Internet connection can judge for themselves.⁴) The webcast, of course, cannot capture everything; my own favorite image from the conference was a moment of earnest methodological agreement between the Home Secretary of the National Academy of Sciences, Stephen Berry, Distinguished Professor of Chemistry at the University of Chicago, and Mark Hosler, a member of the appropriationist group, Negativland, who had just finished showing a video called “Free the Mermaid.” Mertonian science and appropriationist art, it seemed, share something deeper than previously imagined.

The conference began with panels on the history and theory of the public domain and proceeded through a “state of the public domain” report in three subject areas—the digital realm, culture, and science. A more detailed analysis of each area was presented, followed by an examination of the “constitutionalization” of the public domain, and finally an open-ended discussion of future directions for scholarship, research, and action. With minor rearrangements and omissions,⁵ that is the structure of the essays in this volume.

2. Conference on the Public Domain, About the Conference, available at <http://law.duke.edu/pd/about.html> (last visited February 3, 2003)

3. See, e.g., Seth Shulman, *What Tree Huggers Can Teach us About the Public Domain of Ideas*, TECHNOLOGY REVIEW, March 2002, at <http://www.technologyreview.com/articles/shulman0302.asp>; Patti Waldmeir, *A Case of Creative Block*, FIN. TIMES, February 27 2002, at 16.

4. Conference on the Public Domain, at <http://www.law.duke.edu/pd/realcast.htm> (last visited February 3, 2003)

5. Most notably, three papers that were originally included in the conference materials are not included here, but luckily are not lost to the world. At our earnest pleading, Yochai Benkler graced us with not one, but two papers. The first, on the constitutionalization of the public domain appears in this volume, the second in the Yale Law Journal. See Yochai Benkler, *Through the Looking Glass*:

II

THE HISTORY AND THEORY OF THE PUBLIC DOMAIN

The first article, *The Second Enclosure Movement and the Construction of the Public Domain*, is a study of the theory and history of the public domain, which offers a framework for the themes of the volume.⁶ Part I, *Enclosure*, traces the rationales behind the “second enclosure movement,” recent expansions in intellectual property rights, and compares them to the rationales for the first enclosure movement—the enclosure of arable land. I conclude that the move to expand intellectual property rights is both empirically and theoretically questionable and quite possibly harmful to the very goals it attempts to serve. Interestingly, this conclusion is strengthened rather than weakened by the transformations wrought by the new digital media and the Internet.

Part II, *Against Enclosure*, offers an historical sketch of three types of ‘resistance to enclosure’ or skepticism about intellectual property: the anti-monopolist sentiments of the Framers of the U.S. Constitution, the emergence of affirmative arguments for the public domain, and the use of the language of the commons to defend the possibility of distributed methods of non-proprietary production (open source software being an obvious example). Apart from clarifying the relationship between the multiple definitions of the “public domain” and “the commons,” the article offers a framework—built on the model of the environmental movement—within which to understand the various intellectual and political projects being pursued under the banner of the public domain.

Mark Rose is one of the foremost scholars of the history of literary property. His book, *Authors and Owners*, is a fascinating and deeply readable account of another period of ferment over intellectual property rights—the period immediately before and after the passage of the first true copyright statute, the Statute of Anne.⁷ For this volume, we persuaded him to write about the other side of the coin. His essay here, *Nine-Tenths of the Law: The English Copyright Debates and the Rhetoric of the Public Domain*, presents a fascinating early history of the interaction between authorial property claims and those of

Alice and Constitutional Foundations of the Public Domain, 66 LAW & CONTEMP. PROBS. 173 (Winter/Spring 2003) [hereinafter Benkler, *Looking Glass*]; Yochai Benkler, *Coase's Penguin: Or Linux and the Nature of the Firm*, 112 YALE L.J. 369 (2002). An earlier version of Larry Lessig's article, *The Architecture of Innovation*, was delivered as the Frey Lecture at Duke University School of Law. See Lawrence Lessig, *The Architecture of Innovation*, 51 DUKE L.J. 1783 (2002). The webcast is available at <http://www.law.duke.edu/webcast/lessig.ram> (last visited February 3, 2003). David Lange and Jennifer Lange Anderson's paper on fair use is being revised as David prepares a larger work on the constitution and the public domain. We do, however, have the pleasure of an essay from David. See David Lange, *Reimagining the Public Domain*, 66 LAW & CONTEMP. PROBS. 463 (Winter/Spring 2003) [hereinafter Lange, *Reimagining*]. The original papers can be found at <http://www.law.duke.edu/pd/papers.html> (last visited February 3, 2003).

6. James Boyle, *The Second Enclosure Movement*, 66 LAW & CONTEMP. PROBS. 33 (Winter/Spring 2003).

7. MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* (1993).

the public domain and of civil society.⁸ Rose rightly reminds us that talk of an enclosure movement could conjure up an erroneous idyllic pre-history in which all literary property was held in common. This idyllic tale of the time before enclosure would be an inaccurate account even regarding the English “open fields” system. It most certainly does not apply to the world of copyright. The pre-history of copyright was not total freedom, but rather a set of guild publishing privileges that produced a framework of pervasive regulation. Instituting a copyright system with statutory time limits, particularly after the House of Lords rejected the author’s claim of a perpetual common right, enabled a much freer and more open literary environment. It is only after the Statute of Anne, Rose points out, that certain classic works became available for any publisher to print in a competitive market.⁹ Not only did copyright law make many works more freely available, its structure and rationale invited the first, albeit faint, reflections on the countervailing claims of civil society. In both practice and in rhetoric, as Rose puts it neatly, “[c]opyright and the public domain were born together.”¹⁰

But if they were born together, Rose believes that one child was considerably healthier than the other. To paraphrase Rose, in the early debates over copyright we can see that the rhetoric of property is both familiar and powerful but that the affirmative case for the claims of civil society and the public domain is comparatively weak. There are certainly fascinating examples of writers who argue for the need to circumscribe copyright (including a little-known Memorandum from John Locke, whose theory is generally used to argue the countervailing view) but there are few freestanding defenses of the idea of a public domain.¹¹ (This is consistent with the pattern I describe in the first essay.) In fact, Rose suggests, this is a weakness that continues to the present day. What might such a defense look like?

Rose argues that a review of copyright’s history suggests one important warning: The search for a rhetoric of the public domain is one that can too easily turn into the dead end of diatribes against the “meanness of writing for money,” as in the case of Lord Camden’s argument in *Donaldson v. Becket*.¹²

8. See Mark Rose, *Nine Tenths of the Law: The English Copyright Debates and the Rhetoric of the Public Domain*, 66 LAW & CONTEMP. PROBS. 75 (Winter/Spring 2003).

9. This is a point that cannot be made too often. Property regimes can feed the public domain as well as deplete it. The feudal practice of protecting systems of innovation by guild privileges and secrecy was hardly an open system marked by the free flow of information. Replacing guild secrecy with a statutory patent law system, in which disclosure of the invention is required and the term eventually expires, feeds the public domain in a way that the “intellectual property-less” system does not. Increasing the realm of property can sometimes expand the functional public domain; the relationship is a complex, multi-variant one, not a simple linear function.

10. See Mark Rose, *supra* note 8, at 76.

11. It is important to note, however, that Rose finds early analogues to the notion of the public domain in a combination of the free trader’s anti-monopolistic language and the Enlightenment defense of the free circulation of ideas. Both this point, and Rose’s broader argument are important correctives to the idea that the public domain was invented out of whole cloth in 1966 by the Supreme Court in the case of *Graham v. John Deere*, 383 U.S. 1 (1966).

12. 1 Eng. Rep. 837 (H.L. 1774).

But these diatribes fail to convey the importance or the function that the public domain has. What are the alternatives? In a conclusion that is, from my point of view, both encouraging and sobering, Rose discusses my proposal of an “environmentalist rhetoric” for the public domain.

At the present moment, as we attempt to argue for the value of the public domain, we need to understand that we are fashioning a rhetoric as well as a politics of the public domain. Casting a defense of the public domain on the model of the environmental movement seems promising. As Boyle notes, before the movement, the environment was in effect invisible. Likewise, one element of the task today is to make the public domain visible—to develop an affirmative discourse that will make it a positive and prominent part of the social and cultural landscape. Part of the rhetorical strength of such an environmental model is that it draws on a metaphor that is already deeply embedded in copyright thought. Rhetoric is crucial. And the English copyright debates of the eighteenth century illuminate both the difficulties and the importance of the rhetorical task.¹³

Mark Rose’s article is immediately followed by a piece from another Rose, Carol Rose, the distinguished property scholar from Yale Law School.

In *Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age*, Carol Rose turns a new light on the question of the public domain by considering the arguments for common property in the material world; there the concept must swim against the tide of two powerful arguments in favor of exclusive rights: the danger of overuse and depletion, and the need to encourage investment and development.¹⁴ In “Intellectual Space,” by contrast, she believes the overuse argument is lacking.¹⁵

The long and short of it, then, is that exclusive property rights come up long in Tangible Space but rather short in Intellectual Space. This means that although there is still a case for property in the intellectual realm, the commons or the public domain is relatively more thinkable.

In this paper, I am going to leverage this point of the comparative advantage of

13. Mark Rose, *supra* note 8, at 87.

14. Carol Rose, *Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age*, 66 LAW & CONTEMP. PROBS. 89 (Winter/Spring 2003).

15. Some intellectual property theorists would disagree. For example, one of the arguments supporting literary property (and trademark) is “stewardship”—that a single proprietor must police the meaning of the intellectual creation in order to maintain its integrity and meaning. If works or marks can be “played to death,” diluted, tarnished or turned into clichés, then meaning can actually be depleted or destroyed. Signs lose their meaning, not from some post-modernist decay, but from inconsistent use, or simply overuse. Words can be overgrazed. This argument, however, is quite problematic, particularly for copyright cases. First, it is unclear how it fits into the American constitutional tradition, since both the Copyright Clause and the First Amendment seem opposed to the idea that, in the copyright context, Congress has a the power to police signs in order to preserve their meaning—even through a private party intermediary. “Promote semiotic stability” is not the same as “promote the progress of science,” and claiming that works must be protected from others who attempt to transform their meaning obviously implicates the freedom of speech to which the First Amendment refers. The *Wind Done Gone* case is a nice example. See *SunTrust Bank v. Houghton Mifflin Co.*, 268 F.3d 1257 (11th Cir. 2001); cf. *San Francisco Arts & Athletics, Inc. v. U.S. Olympic Comm.*, 483 U.S. 522 (1987). Second, the semiotic stewardship claim is empirically questionable; would private property rights produce the desired result? Both sides use *It’s a Wonderful Life* to support their arguments. One side suggests that the film gained its enormous contemporary popularity only when it fell (or so it seemed) into the public domain and was made widely available. The other side counters that, in the process, the film lost its meaning—becoming first a feel-good Christmas cliché and then simply a cliché. See *IT’S A WONDERFUL LIFE* (Liberty Films 1946).

publicness in Intellectual Space. To do so, I will turn to the other side, to Tangible Space, to ask whether there is a case to be made even here for the public domain. One would think that if the public domain is at all attractive in Tangible Space, where there is such a strong argument to the contrary based on the potential waste of resources, then the arguments for the public domain should be even more compelling in Intellectual Space, where the counter-arguments for exclusivity are cut in half.¹⁶

Rose concludes that while there are arguments for common property even in Tangible Space, that they come with limitations and qualifications, some of which may also apply to Intellectual Space. In the most fascinating part of the article she notes the relative lack of interest in the concept of common property over the last three hundred years of the Anglo-American legal tradition. She turns instead to Roman law and its various categories of “public property”: *res nullius*, *res communes*, *res publicae*, *res universatitit*, and *res divini juris*; respectively, things that are unowned and open to all by their nature, things that are publicly owned and made open to the public by law, things owned by a public group in its corporate capacity, and things “unownable” because of their divine or sacred status. Implicit in her remarks is that each of these categories reflects a consistently recurring pattern of empirical necessities and normative claims about the world. Each corresponds to a recurring pattern in human affairs, each suggests both potential solutions and problems, and each conjures up a characteristic set of claims about justice and utility. These patterns are not confined to the Institutes of Justinian, they are “paradigmatic” for certain situations in which norms of public property are likely to be deployed.

Rose offers some fascinating reflections on the possible applications of these notions to Intellectual Space. Intellectual property scholars, I think, will immediately see still others. For example, as Rose notes, the category of *res publicae* (things publicly owned and made open to the public by law) has interesting resonance for network protocols, which she analogizes to the Roman roads of the information age. Indeed, critics of Microsoft’s monopoly on operating systems have sought to use antitrust law to impose *res publicae*-like openness on certain portions of the Windows Application Programming Interfaces, or API’s,¹⁷ while leaving the program itself as private property. This pattern is not an unusual one. As Rose notes, the goal of most of these categories of public property is not to undermine private property but to support it. Private land is worth more when served by public roads. Innovation on the Internet may flourish best when certain components of the communicative infrastructure are “open.” The same point, of course, is repeatedly made about the public domain in intellectual space. In one sense it is intellectual property’s antithesis, in another, its handmaid.

However, the categories of public property do not *always* serve those of private property. The category of *res divini juris* seems to demarcate the commodifiable, less to increase the efficiency of the property system than because “some

16. Carol Rose, *supra* note 14, at 90-91.

17. For a definition, see Windows API, at <http://msdn.microsoft.com/en-us/vbdef98/html/vbdefwindowsapi.asp> (last visited January 31, 2002).

things are sacred.” For me, this section of *Roman Roads* conjured up the debates about ownership of the human genome, even more so than Rose’s own example of the sanctity of Shakespeare, Mozart and—tongue-in-cheek—Mickey Mouse. Beyond the particular point-to-point comparisons, the most interesting aspect of the Roman categories is the subtle shading in the meaning of “publicness” or “openness” or “non-private-propertyness” each represents. As I argue in *The Second Enclosure Movement*, this is a subtlety and shading that we sorely need.

As the earlier articles point out, any discussion of intellectual property or the public domain proceeds in the shadow of the “the tragedy of the commons,” the phrase coined in Garret Hardin’s classic article on the environmental dysfunctions of overuse and underinvestment found in the absence of a private property regime.¹⁸ Consequently, when organizing the conference we thought immediately to invite those who had advanced this debate since Hardin’s article was first published. Carol Rose had done so through her work on “the comedy of the commons”—the occasions when collective management of a resource is socially more efficient than individual ownership.¹⁹ No work, though, has brought more attention to the limitations and qualifications of the tragedy of the commons argument than Elinor Ostrom’s classic book *Governing the Commons*.²⁰ Ostrom’s work makes two vital points.

First, the absence of individualized legal control under a private property scheme is *not* the same as the absence of control altogether. When one actually looks at the practices of groups that “manage” a commons, one finds multiple informal and formal methods of regulation, many of which work to avoid the problems supposed to attend the commons.²¹ In short, Hardin’s schematic was too simplistic:

The growing evidence from many field studies of common-pool resources conducted by anthropologists and historians called for a serious rethinking of the theoretical foundations for analysis of common-pool resources. The cumulative impact of the extensive empirical studies does not challenge the empirical validity of the conventional theory *where it is relevant*, but rather questions its presumed, universal generalizability.²²

18. Garret Hardin, *The Tragedy of the Commons*, SCIENCE, Dec. 13, 1968 at 1243.

19. Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711 (1986).

20. ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (1990).

21. This work has been developed in very interesting ways by Margaret McKean and Bob Keohane, colleagues of mine at Duke. See Margaret McKean, *Management of Traditional Common Lands (Iriachi) in Japan*, in *MAKING THE COMMONS WORK: THEORETICAL, HISTORICAL, AND CONTEMPORARY STUDIES* (Bromley et al. eds., 1992); *LOCAL COMMONS AND GLOBAL INTERDEPENDENCE: HETEROGENEITY AND COOPERATION IN TWO DOMAINS* (Elinor Ostrom & Robert Keohane eds. 1994). Robert Ellickson’s classic work on the ranchers of Shasta County is the single best extended examination of the ways that informal methods of resource management work with, beside, and instead of legal rules. ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991).

22. Charlotte Hess & Elinor Ostrom, *Ideas, Artifacts, and Facilities: Information as a Common-Pool Resource*, 66 LAW & CONTEMP. PROBS. 111, 118 (Winter/Spring 2003) (footnotes omitted).

Second, an empirical focus on the actual practices of successfully managed commons should not be seen as a rejection of formal modeling; rather it points to a more nuanced set of categories in an analysis that tries to match the type of commons with the type of formal or informal, collective or individual regime that could manage it successfully. Since most of the major issues in environmental policy are built exactly around this question, it would be hard to imagine a more important set of theoretical tools.

Increasingly, intellectual property scholars and information economists have turned to the theorists of the commons in trying to understand innovation. In the process, as I point out in *The Second Enclosure Movement*, something very important happens. In the debates over intellectual property policy, we have been familiar with a conceptual scheme that portrays “intellectual property” as a monopoly,²³ and “the public domain,” as its conceptual opposite—a realm of vaguely defined “freedom.” In contrast, the commons literature gives us a conceptual scheme in which property, seen as a regime of individual, legal, market-based control is juxtaposed to its conceptual opposite—the well-run commons, a realm of collective, and sometimes informal, controls that avoids the tragedy of the commons without a need for single party ownership. The former juxtaposes monopolies against freedom, the latter juxtaposes individual formal controls against collective, and often informal, ones. Both give us a realm of property and a realm in which its opposite, or alternative, are offered. Despite these similarities, the two are by no means identical. Yet the two terms, public domain and commons, are often used as if they were interchangeable.

One of our goals in organizing the conference was to turn Ostrom and her distinguished collaborator Charlotte Hess loose on the intellectual commons with the goal of discussing the applicability of their ideas to this new realm, and perhaps of producing a similar matrix of types of commons and strategies of

23. Though this point is sometimes, appropriately, challenged: “Rights to exclude are not monopolies just because the property involved is an intangible rather than something you can walk across or hold in your hand.” Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL’Y 108, 118 (1990). The classic statement of this proposition was made by Edmund Kitch. See Edmund W. Kitch, Patents: Monopolies or Property Rights?, 8 RES. L. & ECON. 31, 33 (1986); Edmund W. Kitch, The Nature and Function of the Patent System, 20 J.L. & ECON. 265, 274-75 (1977). These articles make the point that the ability successfully to extract monopoly rents depends on market factors, not merely legal endowments, and that “substitute goods” may bring the price of a good protected by an intellectual property right below that of classic monopoly pricing. Both of those points are well taken. Still, no one may sell, copy or manufacture Viagra, Windows, or *Gone With the Wind* without the authorization of the owner of the respective intellectual property rights over those goods; but for those rights there would be competition in delivery of that good. Thus, the economic conditions under which these non-rival and largely non-excludable goods are distributed look considerably more similar to a monopoly than the economic conditions under which the owner of Blackacre sells his farm. Kitch and Easterbrook are right to stress that there are similarities between tangible and intangible property rights. There are. Both Gates and the farmer rely partly on their legal right to exclude to set a price. In one sense the farmer does have a monopoly over *that farm*. There are substitute operating systems just as there are substitute farms, and the existence of both may affect pricing. But there are also differences between the cases that I cite—differences rooted in the non-rival nature of the goods and the importance of the intellectual property right as opposed to other modes of exclusion. Both economists and lay people feel these differences are nicely grasped by the word “monopoly.”

management. Could environmental policy in fact provide hints for the nurture and management of the public domain? Could the commoners of intellectual space ever successfully manage their open fields of the mind without the state coming in, turfing them off, and handing the resultant package over to a single landholder? If so, under what conditions?

Ostrom and Hess produced a *tour de force*. Focusing on the world of scholarly publishing and archives, they attempted to develop a clearer understanding of the language, methodology and outcomes of commons-based solutions.²⁴

To develop a broader and empirically verifiable theory that encompassed the dominant “tragedy of the commons” theory as a special case, scholars learned that they had to make some key distinctions between concepts that had previously and casually been treated as the same. Because we feel that a similar effort is needed for the intellectual public domain, we will discuss these distinctions in some depth. There are four basic confusions that need to be untangled. The source of confusion relates to the differences between (1) the nature of the good (common-pool *resources*) and a property regime (common-property *regimes*), (2) resource systems and the flow of resource units, (3) common property and open-access regimes, and (4) the set of property rights involved in “ownership.” All four sources of confusion reduce clarity in assigning meaning to terms and retard theoretical and empirical progress.²⁵

Ostrom and Hess’s account has the great virtue of being a view from the outside. Some distinctions they suggest that legal scholars might be slurring, such as those based on the “rivalrousness” or “subtractability” of a good versus the ease of “exclusion” are, in my view, fundamental to thinking about intellectual property and have been for some time.²⁶ Other lines in the common pool resource literature may be even more finely calibrated in the legal literature. For example, they say,

In a now classic article, Ciriacy-Wantrup and Bishop clearly articulated the difference between property regimes that are *open-access*, where no one has the legal right to exclude anyone from using a resource, and *common property*, where members of a clearly defined group have a bundle of legal rights including the right to exclude non-members from using that resource. Legal doctrine has long considered open-access regimes (*res nullius*)—including the classic cases of the open seas and the atmosphere—to involve no limits on who has authorized use.²⁷

To this analytic division, legal scholars would add another—regimes where the owner (individual or collective) has a right to receive a revenue stream from those who wish access, but cannot refuse access.²⁸ In some situations, this is

24. Given their background in the more formalized tradition of the study of common pool resources, it is unsurprising that they echo my comments about the looser and more inconsistent ways in which the terms commons and public domain are thrown around by legal scholars!

25. Hess and Ostrom, *supra* note 22, at 118-119 (emphasis added).

26. Harold Demsetz, *The Private Production of Public Goods*, 13 J.L. & ECON. 293 (1970).

27. Hess and Ostrom, *supra* note 22, at 121-122 (emphasis in original).

28. This point also comes up in Ostrom and Hess’s categorization of the interests incident to property, where they stress the ability to alienate as the most fundamental stick in the property bundle. In the post-legal-realist world, it is not clear that legal thought recognizes any *sine qua non* of property rights, but after Calabresi and Melamed’s article legal scholars have tended to associate a property rule regime with the right to name the price at which access will be granted, and thus to exclude if desired. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). Thus they may put more stress on the right of exclusion, rather than on alienation, in defining the central attributes of property.

referred to as a liability rule regime,²⁹ rather than a property rule regime. Depending on the particular vocabulary used by the scholar in question, this could describe a broad range of situations:

- The ability of a maker of compilation CD's to reproduce sound recordings produced by others under a compulsory license with statutory royalty fees.
- A cement company having a legally protected interest to continue polluting so long as it pays actual damages for the costs imposed on the neighboring landowners (as opposed to the injured party having an entitlement to an injunction to shut down the pollution).
- The right of an owner of an important standard or protocol to receive flat fees for usage if the standard is open to all to use.

Interestingly, it is exactly this separation of the right to withhold access at will, from the right to receive payment that undergirds Larry Lessig's work on the commons. If one is worried about monopolistic choke-holds on innovation, rather than concerned about the cost of access to the resource, this distinction is an important one.

In the second part of their article, Hess and Ostrom turn their analysis of common pool resources to the world of scholarly publishing. After an extensive review of the methods and institutions involved in the generation of scholarship, they conclude that the "research commons" can be continued only through the pursuit of collective strategies by scholars for the production of knowledge. Here, too, it seems a well-managed commons may be superior to a regime relying purely on private property.

III

SPECIFIC SUBJECT AREAS

Following the first four foundational articles on the history and theory of the ideas of the public domain and the commons, the symposium turns to particular subject areas where those issues are applied. The conference focused particularly on three realms: the digital (including the role of the public domain in the architecture of the Internet), art and culture, and scientific and technical data. At the same time, across all realms we considered the extent to which the public domain is constitutionally protected in the United States, either by the First Amendment or by the limitations imposed by Congress's copyright and patent power in Article 1, Section 8, Clause 8.

We begin with Pamela Samuelson's lucid and thoughtful mapping of the public domain in the digital realm. Next we consider the role of fair use in art and culture, with articles by David Nimmer on the application of the four factors of the fair use test in a wide range of recent cases, followed by a provocative essay by two members of the appropriationist group *Negativland* on the

29. See *id.* See generally J.H. Reichman, *Of Green Tulips and Legal Kudzu: Repackaging Rights in Subpatentable Innovation*, 53 VAND. L. REV. 1743 (2000) [hereinafter Reichman, *Green Tulips*].

intersection of music and technology, proposing the role that fair use should play in the process. In two fascinating articles, William Van Alstyne and Yochai Benkler use very different methods of constitutional interpretation to give us sharply contrasting ways to understand the constitutional limits around intellectual property legislation and the constitutional significance of the public domain. The final section of this volume focuses on the relevance of the public domain to science and technology. Arti Rai and Rebecca Eisenberg discuss the “increasingly proprietary” nature of university scientific research and propose a series of reforms of the Bayh-Dole Act to give agencies greater discretion in determining whether information should go into the public domain. Finally, Jerome Reichman and Paul Uhlir offer a sweeping account of current and looming problems in contemporary scientific and technical data collection and utilization. They then suggest public and private strategies to avoid what they see as a fundamental threat to the American system of science and innovation by creating a flourishing “e-commons” of scientific data. The volume ends with an essay from my colleague David Lange, which reflects on his own contributions to the field over the last twenty-five years.

A. The Digital Realm

Pamela Samuelson is one of the best-known scholars of digital intellectual property, a longstanding participant in public policy debates on the regulation of the Internet, and the founder of the Samuelson Law, Technology and Public Policy Clinic at Berkeley. We asked her to provide an overview of the digital public domain, and to highlight emerging issues. She provided a “map” of the public domain, defining it mainly in terms of the legal status of the digital material involved, while focusing heavily on factual accessibility. The result is a composite image of fact, law and technological feasibility:

Although I define the public domain as a sphere in which contents are free from intellectual property rights, there is another murky terrain near the boundaries of the public domain consisting of some intellectual creations that courts have treated as in the public domain for some, but not all, purposes.

Across the border from the public domain are several categories of content that are so widely usable that, for practical purposes, they seem to be part of the public domain. This includes, importantly, much content that is technically protected by copyright law but is widely available to the public, as when it is posted on publicly accessible websites available to all comers without fee or apparent restrictions on use. Also outside the public domain in theory, but seemingly inside in effect, are such things as open source software; a penumbra of privileged uses under fair use, experimental use, and other copyright rules that permit unlicensed uses and sharing of information to take place; and standards that are licensed without payment of royalties. Also at the perimeter of the public domain are works whose intellectual property rights are on the verge of expiring and, arguably, some creations that are about to be made—such as a new computer programming language or the solution to a long-standing mathematical problem—that, once they exist, will be part of the public domain.³⁰

30. Pamela Samuelson, *Mapping the Digital Public Domain: Threats and Opportunities*, 66 LAW & CONTEMP. PROBS. 147, 149 (Winter/Spring 2003) (footnotes omitted). Even in this list of examples,

One of the most compelling aspects of Samuelson's article is its extremely measured tone. She remarks that neither intellectual property law nor access restrictions can correctly be seen as a necessary impoverishment of the public domain. The relationship between the public domain and the restrictions around it is a complex dynamic equilibrium, not a simplistic binary choice. She points out that, in many cases, it is the incentives provided by intellectual property that allow the material first to be created, and later to flow into the public domain.³¹ She also discusses the multiple ways in which physical access restrictions can *aid* the effective availability of information. For example, without the effective ability to exclude, she argues, high-quality services such as LEXIS would probably not be available, even though the service includes considerable material already in the public domain. Finally, when she turns to existing and pending regulations of digital intellectual property, she offers a particularly nuanced account of their effects on the public domain. For example, the Digital Millennium Copyright Act ("DMCA"),³² for many the "bête noir" of recent expansions of digital intellectual property, has comparatively little effect. Other laws, such as Uniform Computer Information Transactions Act ("UCITA"), which claims not to regulate intellectual property at all, could in many ways have more serious implications.³³ Partly because of the carefully measured tone of her analysis, Samuelson is particularly convincing in describing how the greatest dangers may lie, not in individual pieces of legislation, but in the conjunction of three different types: increased scope of intellectual property protections, such that provided by a "database right";³⁴ greater legal protection for technical protection measures, such as that provided by the DMCA and proposed by the Hollings Bill; and greater enforceability of shrinkwrap contracts, such as that provided by UCITA. The whole, in this case, is greater than the sum of its parts, and Samuelson's topological metaphor enables her to lay out with some precision the likely effects of this tripartite approach.³⁵

the "effective access component" of the areas contiguous to the public domain would depend on the uses one was imagining. For example, if I posted an MP3 file of my song on my website with no indication as to its legal status or any desired restrictions on use, you would clearly think you had (and, because of implicit license, statutory exception, fair use, or estoppel, would legally enjoy) a privilege to make a copy for personal use. It is unlikely however that you would feel free, or would in fact be legally free, to make a commercially distributed derivative work from the music, to include it on a mass-market CD, or to turn it into a sound-track for a Disney movie.

31. See *id.* at 168; *supra* note 8.

32. Digital Millennium Copyright Act (DMCA), 17 U.S.C. §§ 512, 1201-1205, 1301-1332, 28 U.S.C. § 4001 (2000).

33. The Uniform Computer Information Transactions Act, creates a uniform commercial code for computer information transactions. The drafting body for UCITA, approved and recommended UCITA for enactment in all fifty states in July 1999. See UNIF. COMPUTER INFO. TRANSACTIONS ACT (UCITA) (2001), available at <http://www.ucitaonline.com/> (last visited February 3, 2003).

34. See, for example, recent database bill proposals H.R. 354, 106th Cong. (1999); H.R. 1858, 106th Cong. (1999). See also EU Database Directive 96/9/EC, art. 4(1), 1996 O.J. (L 77) 20. For a thoughtful discussion of the issues, see J. H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data?*, 50 VAND. L. REV. 51 (1997). See also Reichman, *Green Tulips*, *supra* note 29.

35. In the conference itself, Samuelson's article was a perfect introduction to a fascinating panel, *From Anarchist Software to Peer2Peer Culture: the Public Domain in Bandwidth, Software and Content*. The panel dealt with the role of the public domain (and the commons) in the attributes of our commu-

After this careful review, Samuelson's conclusion is all the more powerful, and could serve as the conclusion for the conference itself:

It is possible to construct a new politics of intellectual property that has regard for the public domain and fair uses. To be successful, a new public-regarding politics of intellectual property must have a positive agenda of its own. It cannot just oppose whatever legislative initiatives the major content industry organizations support (although it almost certainly will need to do this as well). It should be grounded on the realization that information is not only or mainly a commodity; it is also a critically important resource and input to learning, culture, competition, innovation, and democratic discourse. Intellectual property must find a home in a broader-based information policy, and be a servant, not a master, of the information society.³⁶

B. Creativity, Appropriation, Culture and The Public Domain

Is copyright a cultural policy?³⁷ Does intellectual property involve or promote a particular aesthetic?³⁸ Does it exist as an aesthetic form itself, such that the modernist love of genre-trashing might portray the violation of intellectual property rights as a type of artistic activity in its own right?³⁹ Or is it simply that copyright is unnecessarily hostile to the appropriationist aesthetic and the technologies which enable it? Does the conjunction of the idea/expression distinction and the fair use privilege allow copyright to promote expression without restricting it? How does the fair use doctrine actually operate? Two papers presented here⁴⁰ approach these issues from very different perspectives, which nevertheless appear to have some interesting common points.

David Nimmer is one of the most distinguished copyright scholars in the United States, and author, with his late father, of one of the most authoritative treatises on the subject.⁴¹ In his article, "*Fairest of Them All*" and *Other Fairy Tales of Fair Use*, he explores the actual operation of the fair use doctrine.⁴² In theory, at least, the four factors laid out in section 107 play an important role in determining whether or not a use is "fair."⁴³ Superficially, judicial practice

nications networks, and in the types of creativity they make possible—or at least easier. It can be found at <http://realserver.law.duke.edu/ramgen/publicdomain/public%20domain%20panel%205.rm>

As I mentioned earlier, papers for that panel by Larry Lessig and Yochai Benkler can be found elsewhere. See *supra* note 5.

36. Samuelson, *supra* note 30, at 170-71.

37. See Neil Weinstock Netanel, *Market Hierarchy and Copyrights in Our System of Free Expression*, 53 VAND. L. REV. 1879 (2000) [hereinafter Netanel, *Market Hierarchy*]; J.H. Reichman, *The Duration and the Limits of Cultural Policy*, 14 CARDOZO ARTS & ENT. L.J. 625 (1996).

38. JAMES BOYLE, *SHAMANS, SOFTWARE AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY* (1996); cf. Alfred C. Yen, *Copyright Opinions and Aesthetic Theory*, 71 S. CAL. L. REV. 247 (1998).

39. Negativland, *Tenets of Free Expression*, at <http://www.negativland.com/riaa/tenets.html> (last visited February 3, 2003) [hereinafter Negativland, *Tenets*].

40. As noted earlier, because of timing, David Lange and Jennifer Lange Anderson chose not to include their framing paper within this volume. The original version can be found at <http://www.law.duke.edu/pd/papers/> (last visited February 3, 2003).

41. MELVILLE B. NIMMER & DAVID NIMMER, *NIMMER ON COPYRIGHT* (1976).

42. David Nimmer, "*Fairest of Them All*" and *Other Fairy Tales of Fair Use Factors*, 66 LAW & CONTEMP. PROB. 263 (Winter/Spring 2003).

43. See 17 U.S.C. § 107 (2000).

seems to support this. As Nimmer points out, courts that find a use to be fair normally find three or more of the factors in favor of the alleged offender, while courts that find against fair use do the reverse. When Nimmer revisited the fifty-nine cases decided since the Supreme Court's last major fair use decision and assessed each independently, however, he found a very different pattern. The overall correlation of a positive or negative decision on the four factors to a corresponding decision on fair use was 52.1%:⁴⁴

Basically, had Congress legislated a dartboard rather than the particular four fair use factors embodied in the Copyright Act, it appears that the upshot would be the same.

This conclusion is not to say that judges enter findings as to the four factors in support of their ultimate fair use determination only half the time. Perusal of fair use cases would reveal that the figure actually approaches ninety percent. In other words, judges who uphold fair use almost always find that three, if not four, of the factors incline in its favor; judges who deny the fair use defense almost always find that three, if not four, of the factors incline against it. The difference between the chart's figure, showing virtually a dead heat, and the actual figure pushing ninety percent, stems from the malleability of the fair use factors.⁴⁵

He concludes, in classically legal realist fashion, that judges' findings on the factors are the result of, not the reason for, their findings on the merits.

In the ultimate analysis, my review of the cases convinces me that the high correspondence in judicial opinions between the individual fair use factors and courts' ultimate disposition, as opposed to the absence of any meaningful correspondence in the chart, reflects an important insight into how judges actually resolve fair use cases: Courts tend first to make a judgment that the ultimate disposition is fair use or unfair use, and then align the four factors to fit that result as best they can. At base, therefore, the four factors fail to drive the analysis, but rather serve as convenient pegs on which to hang antecedent conclusions.

. . . .

By now, we have come far enough to realize that, pious words notwithstanding, it is largely a fairly tale to conclude that the four factors determine resolution of concrete fair use cases.⁴⁶

Interestingly, Nimmer concludes that this result was foreordained when Congress injected "such a high degree of subjectivity and imprecision into each factor and into their cumulative application."⁴⁷ Of course, there are other areas of law—antitrust, for example—in which apparently subjective and imprecise statutory injunctions, based on older common law tests, nevertheless become

44. Nimmer, *supra* note 42, at 280. To be sure, it must be stressed that this is based on Professor Nimmer's rating of the factors in the cases, and not that found by the courts. Still, given the role that Professor Nimmer's treatise plays in copyright litigation, and his influence as a scholar, this fact is a fairly significant one. At the very least, it suggests that well-regarded members of the relevant interpretive community find a very high degree of interpretive "openness" in the application of section 107.

45. *Id.*

46. *Id.* at 281-282. Nimmer concludes that the openness is so great that it is possible to fail to have fair use even when all four factors, correctly interpreted, point in your favor and vice versa. He uses a number of cases to illustrate this point including a fascinating discussion of the reproduction of a card written by Anne Frank.

47. *Id.* at 281.

court-interpreted schemes that are from year-to-year, *relatively* coherent and predictable. So perhaps the problem, if problem it is, lies deeper. Perhaps it is that fair use continues unabashedly to serve multiple and potentially contradictory goals—from encouraging transformational reworkings of original materials, to securing raw material for future creators, to reducing transaction costs, to avoiding network effects with strong negative externalities, to policing the boundaries of exclusive rights when equitable intuitions suggest that those would convey unduly great monopoly power in economic or expressive terms. Under the promptings of a number of commentators,⁴⁸ antitrust’s original diverse goals have been “rationalized” into the injunction to serve the overriding goal of maximizing consumer welfare. No such rationalization has yet taken place in copyright law. Though some have suggested “master narratives” for fair use, none has yet come close to securing overwhelming acceptance. For many of us, this has seemed like a good thing. It is hard to see how a rationalized, limited fair use doctrine would have been able to deal with decompilation, and parody, and classroom copying, and sampling, and search engine thumbnail pictures, and so forth and so on. Indeed, judges have sometimes pointed out that in the changing economic conditions of network economics, the limitations on intellectual property law may need to evolve and perhaps increase still further.⁴⁹ The price of fair use’s protean ability to reassess and readapt to a changing world has been a certain fuzziness around the edges. But is that an acceptable price?

At the end of his article, Nimmer offers an interesting, and perhaps optimistic conclusion. He quotes Harper and Row, where the Supreme Court is in turn quoting his late father:

Professor [Melville] Nimmer notes: Perhaps no more precise guide can be stated than Joseph McDonald’s clever paraphrase of the Golden Rule: Take not from others to such an extent and in such a manner that you would be resentful if they so took from you. This equitable rule of reason permits courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster.⁵⁰

David Nimmer concludes his article thus: “Father knows best. More exacting explanations for the four factors seem, in the end, to be naught but fairy tales.” Now if this quotation is meant to remind us not to rely mechanically on the four factors, or to point out that moral intuitions of the “do as you would be done by” variety, are often important in fair use cases, then it is a point well taken. But if it is supposed to represent an actual “equitable rule of reason” that will allow citizens and lawyers to “know fair use when they see it” then it, too, seems nothing but a fairy tale, and a deeply misleading one at that. My guess is that had one gone to Nimmer *père* or *filis*, presented the fifty-nine cases in the

48. See, e.g., ROBERT H. BORK, *THE ANTITRUST PARADOX* (1978).

49. See the concurring opinion of Judge Boudin in *Lotus Development Corp. v. Borland International, Inc.*, 49 F.3d 807, 815 (1st Cir. 1995)(Boudin, J concurring).

50. *Harper & Row, Publ’rs, Inc. v. Nation Enters.*, 471 U.S. 539 (1985). Quoted in Nimmer, *supra* note 42, at 287 (alteration in original).

table and asked for a prediction in each case *based on this paraphrase of the Golden Rule*, the results would not have been *that* much better than the performance of the four factors. Better, perhaps, because the very amorphousness of the “rule” would allow full scope to the intuition and gestalt pattern-recognition of a brilliant lawyer, well-versed in the assumptions of his own professional speech community, to predict the behavior of his colleagues on the bench. But how much better? Certainly Professor Nimmer’s tone in his discussion of several of the cases suggests that he finds little equity, or reason, in their result. The “surprises” seem relatively frequent.

Is that good enough? That is a question Nimmer does not answer for us. But as I read his article, my faith in the protean power of fair use took a beating, even though I cling to it still. When copying and distribution were hard, the entities directly affected by copyright law were mainly firms who were well represented, and who had fairly consistent experience as repeat players in a familiar legal terrain. The global network changes that fact, completing a change begun with the photocopier, video-recorder and cassette tape recorder. Now anyone connected to the network is directly affected by copyright every day. It is wound into their daily acts of consumption, creation, distribution, and communication. These new citizen-subjects of copyright—the amateur film-makers and web site operators and backroom musicians and open source programmers and bloggers—these folk are not well-versed in copyright law, nor can they afford to hire David Nimmer. If the four factors perform in the way Nimmer’s chart suggests, is fair use “working” for them? Can they know the limits on the exclusive rights of copyright holders? Can they create and consume and rework, and educate in the free space that section 107 is supposed to grant them?⁵¹ Does the “equitable rule of reason” do any better? Would or should we trade some of fair use’s protean quality, its attempt to serve many goals at once, for some more definite boundaries on exclusive rights? My answer in the past has been “no.” Paradoxically, David Nimmer’s relatively optimistic conclusion, implicitly supporting my preference for the equitable openness of the fair use doctrine, made me wonder if I was the one spinning fairy tales. Is fair use working adequately for the citizen-publishers, the consumer-artists of cyberspace?

A partial answer to that question may be given by Negativland’s article in this volume, *Two Relationships to a Cultural Public Domain*.⁵² I first encountered members of the appropriationist group Negativland about ten years ago. I was fascinated by the legal struggles within which they were embroiled, interested by their extremely readable manifestoes,⁵³ and enlightened by their book *Fair Use*.⁵⁴ I also really liked their music.⁵⁵ More importantly, I got the strong

51. For a wonderful organization that tries to make sure that they can, see <http://www.chillingeffects.org> (last visited February 4, 2003).

52. Negativland, *Two Relationships to a Cultural Public Domain*, 66 LAW AND CONTEMP. PROBS. 239 (Winter/Spring 2003) [hereinafter Negativland, *Two Relationships*].

53. Negativland, *Tenets*, *supra* note 39.

54. Negativland, *Fair Use: The Story of the Letter “U” and the Numeral “2”* 1995 (including a Negativland CD) (1995); James Boyle, *A Sense of Belonging*, Times Literary Supplement, July 4, 1997,

sense that *they did too*. They weren't doing this just because it was the today's station on the grand railway line of avant garde art, or because it was supposed to be a vital blow against world capitalism—even if they had a strong sense of their work's place in a rich history of collage art, and strong opinions about the role of intellectual property in inhibiting criticism of mass corporate culture. They were doing it because they enjoyed it, because they loved the music. The conceptual schema did not subsume the art:

We've continued to work this way because we like the sound of it. We like the results. We get inspired by what we find out there, it's simply *fun* to do, and we sense we are not alone in these perceptions. In continuing to pursue collage and found-sound as elements in our music, we have set our work out as public examples of how appropriation from our media surroundings is neither culturally harmful nor dangerous to anyone else's business. Instead, it hopefully does represent some interesting art perspectives, as well as cultural commentary and criticism which are well worth having around whether or not our work happens to be "authorized" by our subjects and sources. We consider it to be a matter of free speech.⁵⁶

Negativland see the technologies of digital reproduction giving new life to the old concept of the public domain. While they are perfectly willing to criticize commercial, wholesale, unauthorized reproduction of complete songs, and are skeptical about the harm caused by non-commercial digital "file sharing" on sales in other media, they believe that the technologies and art of partial appropriation and reworking need encouragement and legal support. Where some see the aesthetic of appropriation as somehow new—spawned by postmodernism or digital technology—Negativland see it as part of a much longer tradition. For most of history, they write:

[T]he natural human approach to our own culture was to participate in it by not only absorbing it as an individual, but also by remaking it—adding to it, removing from it, recombining it with other elements, reshaping it to our own tastes—and then redistributing the adjusted results ourselves. Virtually the whole history of human culture consisted of altering, reusing, and copying from the universal public domain in various re-imagined ways . . . until copyright came along.⁵⁷

This tendency of remaking can be found in everything from folk music and folktales to the early history of musical forms such as blues and jazz. To Negativland, the advent of copyright is also the advent of closed, frozen, culturally stabilized art—art that it was illegal to rework, to add to, to subvert, to modify. It is almost as though intellectual property is a layer of shellac over expressive content, sealing it off and separating the world into active artists (or content companies) on one side and passive consumers on the other. In their view, the Internet allows and dramatically encourages resistance to this dichotomy, promoting instead a cultural "public domain," a domain where the recipients of cultural material can also rework that material. They do not want, however, to

reviewing PAUL GOLDSTEIN, COPYRIGHT'S HIGHWAY (1996) available at <http://www.law.duke.edu/boylesite/tlscopy.htm>.

55. See, e.g., (or in this case, *listen to*, e.g.) *The Letter U and the Numeral 2*, on U2 (1995) available at <http://www.negativland.com/audio/tlun2-2-cd.ra> (last visited February 4, 2003).

56. Negativland, *Two Relationships*, *supra* note 52, at 240 (emphasis in original).

57. *Id.* at 242.

confine this idea to the post-Internet world:

But the human urge towards a public domain is nothing new. Long before, and still continuing outside the Internet, this philosophical ideal concerning our cultural environment has been evident in the evolution of modern art. And that can form a historical basis from which to consider the desirability of all of today's forms of free cultural reuse in general.⁵⁸

They argue for an understanding of fair use that would stretch expansively to cover most uses other than complete, verbatim copying. In a passage that I found quite striking, they note the spread of their term “culture jamming” and the reality that it represents in both mainstream and independent media:

Observing this now generally culture-wide acceptance of collage's appropriation methodologies, one would think that sympathetic laws of allowance would also emerge to encourage the practice and assure that it is able to proceed legally. But that has not yet happened. What's wrong with this picture?⁵⁹

C. The Constitutional Status of the Public Domain

When we organized the conference, we did not set out to demonstrate the range of interpretive approaches in constitutional thought. Indirectly, we did so anyway. In *Through the Looking Glass: Alice and the Constitutional Foundations of the Public Domain*, Yochai Benkler offers an holistic interpretation of two provisions of the U.S. Constitution relevant to the constitutional status of the public domain: the “Exclusive Rights Clause,” his preferred appellation for Article 1, Section 8, Clause 8 of the U.S. Constitution; and the First Amendment.⁶⁰ He begins by illustrating the stakes involved in the public domain's status, and elucidating current judicial attitudes:

Alice Randall, an African-American woman, was ordered by a government official not to publish her criticism of the romanticization of the Old South, at least not in the words she wanted to use. The official was not one of the many in Congress and the Administration who share a romantic view of the Confederacy. It was a federal judge in Atlanta who told Randall that she could not write her critique in the words she wanted to use—a judge enforcing copyright law.⁶¹

Through this example, and the stories of Dmitri Sklyarov, the Russian programmer prosecuted under the DMCA “because he wrote software that lets people read books that they are not allowed to read,”⁶² and of Edward Felten, the Princeton computer scientist who after writing a paper on encryption schemes “received a threatening letter from the Recording Industry Association of America (“RIAA”),”⁶³ Benkler offers some deliberately stark portrayals of the potential speech-restricting effects of intellectual property rights. He does so, at least in part, because in the eyes of a number of scholars, the courts have not given adequate attention to the constitutional issues presented by

58. *Id.* at 250.

59. *Id.* at 240.

60. Benkler, *Looking Glass*, *supra* note 5.

61. *Id.* at 173. The Court of Appeals subsequently overturned the injunction as a prior restraint.

62. *Id.*

63. *Id.*

intellectual property rules.⁶⁴ Some, in fact, liken the treatment of intellectual property to the handling of free speech issues posed by libel before *New York Times v. Sullivan*.⁶⁵

Benkler argues that the Exclusive Rights Clause, as interpreted by the Court in cases such as *Graham v. John Deere*⁶⁶ and *Feist Publications v. Rural Telephone Service Co.*,⁶⁷ imposes substantial restrictions on congressional power. Among other restrictions it provides that an exclusive right must at least plausibly encourage information production and free access to materials already in the public domain. What's more, according to Benkler, these restrictions extend beyond the boundaries of the exclusive rights clause to burden congressional power whenever Congress attempts to enact exclusive rights to information, whatever the ostensible source of its authority.⁶⁸

The First Amendment poses additional limitations on congressional power, beyond those imposed by the exclusive rights clause. Benkler posits that the First Amendment "requires that the government justify its regulation of the use of information and cultural goods in terms that are largely understood to be the 'intermediate' level of scrutiny applied in *Turner Broadcasting System v. FCC*."⁶⁹ There is, in other words, no copyright exemption to the First Amendment.

While this is a somewhat breathless summary of an already compressed version of a much broader body of work (both by Benkler and others), it suffices to give a broad sense of the analysis. The argument given this far is in one way completely internal to the constitutional materials. Benkler considers the two constitutional provisions, the Supreme Court decisions interpreting them, the First Amendment doctrine represented by *Turner*, and the Court's communications law decisions, and from all of this argues that there is a two-part constitutional filter through which "exclusive rights in information" must pass. But in another sense this, like any legal argument, has an irreducible external, normative dimension. The political experience and normative aspirations from which the constitutional provisions arose, the cases which interpret those provisions, the rationales supporting those interpretations, and the dystopias and utopias conjured up in Congressional Hearings and court decisions—all have complex historical and political provenances from which they can never be fully insulated. Norms seep both ways. Differences of opinion exist over how much

64. Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U.L. REV. 354 (1999); BOYLE, SHAMANS, *supra* note 38; Lawrence Lessig, *Copyright's & First Amendment*, 48 UCLA L. REV. 1057 (2001); Neil Weinstock Netanel, *Locating Copyright Within the First Amendment Skein*, 54 STAN. L. REV. 1 (2001).

65. James Boyle, *The First Amendment in Cyberspace: The Clinton Years*, 63 LAW & CONTEMP. PROBS. 337 (Winter/Spring 2000), available at <http://www.law.duke.edu/journals/63LCPBoyle>.

66. 383 U.S. 1 (1966).

67. 499 U.S. 340 (1991).

68. *Id.*; see also, Yochai Benkler, *Constitutional Bounds of Database Protection: The Role of Judicial Review in the Creation and Definition of Private Rights in Information*, 15 BERKLEY L. & TECH J. 535 (2000).

69. Benkler, *Looking Glass*, *supra* note 5, at 178 (footnotes omitted).

seepage is inevitable, necessary, or desirable. Differences of opinion also arise over which “contexts” should legitimately be part of our interpretive practice. What is relevant to interpreting the Exclusive Rights Clause, or the First Amendment? The beliefs of the framers? The historically contemporaneous definitions of words used in legal documents? Supreme Court cases that are analogous, whether on semantic, structural or instrumental grounds? An economic analysis of information or innovation? The current political economy of cultural industries, or factual characteristics of modern communications media? Philosophical teachings about normative claims underlying the value of self-expression? These questions of method are generally answered only implicitly by the pattern of selections, and unexplained absences, in a constitutional argument.

Benkler takes a different approach. While his legal argument can presumably stand alone as an interpretation integral in the legal materials, he also offers an explicit political and normative grounding. My sense is that this argument is not intended to *prove* his constitutional interpretation correct, but rather to render it more plausible by showing the political ideals to which it gives effect. He describes this portion of his work as an attempt to explain “abstractly how one might understand the implications of exclusive private rights in information on democracy and autonomy—values at the core not only of the U.S. constitutional protection of freedom of expression, but of expressive freedom in modern liberal democracies more generally.”⁷⁰ Dealing first with democracy, Benkler argues that intellectual property rights benefit certain organizations and groups, while disfavoring others. More generally, intellectual property rights tilt in favor of a particular industrial organization of information production:

The conflict seen today regarding the scope of the public domain and the extent of exclusive private rights in information is a battle over the shape of the institutional ecology in which two very different modes of information production compete. The first mode is the increasingly industrial model of production that one sees in mass-mediated culture. Disney, AOL Time-Warner, Viacom, and News Corporation are some of the most visible examples. These are increasingly large organizations that control ever-larger inventories and integrate new production with reutilization and recycling of inventory. They aim to capture ever-larger audiences both nationally and internationally. Less well known, and quite poorly understood, is the emergence on the Internet of nonproprietary production as an increasingly important source of information and cultural materials. Over the past decade, with the widescale use of the Internet, the reach and scope of nonproprietary information production by nonprofit actors or by individuals—both amateur and professional—has expanded dramatically.⁷¹

The question for Benkler then becomes: “What can democratic theory tell us about the choice between commercial proprietary production, increasingly organized in large enterprises and whose products are sold as finished goods, and nonproprietary production, both peer-production and professional produc-

70. *Id.* at 180.

71. *Id.* at 181.

tion on a traditional nonprofit model?”⁷² Benkler considers a number of arguments on these issues, including the very interesting reflections of Neil Netanel on the importance of copyright in encouraging and maintaining large, powerful and wealthy press organizations to act as a counterweight to other powerful groups in society.⁷³ He concludes nonetheless that “[t]o the extent one values active, engaged individual participation in defining and expressing political values in a polity as central to the democratic enterprise, one should strengthen peer-based models of information production and exchange, even if this requires policies that weaken proprietary production based on a sale of goods model.”⁷⁴ The constitutional significance of this preference is obviously subject to debate, but for Benkler it is a considerable one.

The autonomy section, with its strong resonance in the Millian tradition of free expression, should be even more familiar to First Amendment thinkers. To the extent that human beings need access to certain information both to form and to exercise autonomous decisions, autonomy mandates the free flow of information. Again Benkler suggests that a widely dispersed information economy promotes autonomy in a way that has considerable normative significance, and should be considered as we structure the information environment through the rules of intellectual property law. Given the contours of the legislative process and the boundaries imposed by the double constitutional filter on exclusive rights, Benkler argues that traditional notions of institutional competence make it particularly appropriate for the courts to exercise their constitutional authority in ways that promote, rather than detract from, the values of democracy and autonomy.

Benkler concludes with a review of six pressure points on the constitutional framework. I shall not attempt to summarize the entire discussion here. Suffice it to say that I believe that, out of those points, the possible objections he raises to his claims about constitutional limitations from the First Amendment, and his discussion of “neo-Lochnerism and the Moral Inversion of the First Amendment” present some of the strongest reasons to believe that the constitution both does and should exercise significant control over the creation of private exclusive rights in information. Indeed the “six pressure points” section of the piece makes a fascinating freestanding article in its own right.⁷⁵

My colleague William Van Alstyne is both one of the nation’s leading First Amendment scholars and a constitutional thinker whose readings of Article 1, Section 8 have transformed academic thinking on the powers of Congress. It is hard to imagine a more appropriate person to comment on the extent to which the First Amendment limits the power of the federal government to create exclusive rights to authors’ writings.

Interestingly, Van Alstyne does not begin by arguing that the First Amend-

72. *Id.* at 182.

73. Netanel, *Market Hierarchy*, *supra* note 37.

74. Benkler, *Looking Glass*, *supra* note 5, at 187.

75. *See id.* at 197-222.

ment, as an amendment, clearly limits the power of Congress under the copyright Clause. “Of course, the First Amendment is later in time. But nothing on the face of the First Amendment purports to affect the power granted to Congress pursuant to the Copyright Clause. So, again, one may say that whatever is *properly* done by Congress within the permission of the Copyright Clause ought not be said at the same time to be *forbidden* by some other part of the Constitution, at least unless that ‘other part’ so declares, or unless its express provisions are simply incompatible with an earlier part it necessarily displaces and amends.”⁷⁶

He begins his argument instead from an interpretive stance that seems almost to equate the two provisions, as if they were simply two simultaneously passed statutory provisions with an apparent tension between them. In fact, at the beginning of his argument, the Copyright Clause is almost given precedence because of its more specific nature. “It would seem again, on this basis as well, puzzling to declare that the First Amendment may forbid something the more specifically ‘targeted’ clause empowers Congress to do. One may well suggest that this is another clear case where the useful maxim, *expressio unius, exclusio alterius est*, appropriately applies.”⁷⁷ This is a provocative interpretive approach. If the question is 1) historical and 2) all-or-nothing—Was the First Amendment understood at the time of its adoption to preclude Congress completely from securing exclusive rights to authors?—then surely this answer is correct. If the question is instead historical and more nuanced—Given the type and extent and duration of exclusive rights for authors handed out by the Congress in the early years of the Republic, and the contemporary understanding of the First Amendment, was anyone likely to have considered whether portions of statutes passed by Congress in the future under the copyright power could run afoul of the First Amendment?—then the answer is harder to discern. If the question is a-historical, merely a matter of dueling interpretive maxims and devoid of a particular interpretive context, then it is hard to know why the jurisprudential maxim “*expressio unius*,” would trump the jurisprudential assumption that later in time is greater in effect: amendments amend. If the question is: How has the First Amendment been interpreted by the courts to limit certain exercises of the copyright power? or, Which theory of the relationship between the Copyright Clause and the First Amendment best expresses the political projects that structure the U.S. Constitution?, then, again, the answer is a very different one.

These interpretive options are not mere fancies; they are real ones, among and between which courts will begin to select. Benkler seeks answers by turning first to the Court’s jurisprudence in copyright and communications law cases, then attempting to “confirm” the structure he unearths by examining its relationship on the political values of democracy, and autonomy as realized in the media economy of the Internet. Van Alstyne proceeds in the grand struc-

76. William W. Van Alstyne, *Reconciling What the First Amendment Forbids With What the Copyright Clause Permits*, 66 LAW & CONTEMP. PROBS. 225, 226 (Winter/Spring 2003).

77. *Id.* at 226.

tural tradition: He looks abstractly at the structure of the clauses and attempts to define a coherent interpretive perspective by proposing and rejecting different relationships between them. The history of the clauses, or the question of how they have been interpreted by the courts, is thus of subordinate importance to his argument. Other approaches make history,⁷⁸ or the likely dysfunctions of interest group politics,⁷⁹ considerably more relevant to the analysis.

Given this disparity of interpretive style, it is particularly interesting that Benkler and Van Alstyne agree on a number of points. Most importantly, they both believe that Article I, Section 8, Clause 8 provides no exception to, sanctuary from, or preemption of the First Amendment. Despite his skeptical interpretive baseline, Van Alstyne concludes that the Copyright Clause “‘pre-empts’ nothing within the protection of the First Amendment. . . and any feature of any portion of any act Congress has, or may in the future, provide under sanction of this clause, may always be brought into question respecting whether, on its face or as applied, it offends against the larger freedom of speech and of the press provided constitutional sanctuary in the First Amendment still unfolding in the United States.”⁸⁰ This is a vital point and should be an obvious one, though the DC Circuit, at least, has held otherwise.⁸¹

But though they agree on this point, Benkler and Van Alstyne seem to disagree, at least in emphasis, on a number of others, both in substance and methodology. Benkler sees the “Exclusive Rights Clause” as providing boundaries on congressional power. By contrast, Van Alstyne sees the clause largely as one designed to ensure uniformity across the United States, replacing the patchwork of state schemes offering varying degrees of protection with a single Federal scheme. This does, indeed, seem to have been one justification for the clause (though from my point of view, only one of many), and one that also lies behind the first Copyright Act.⁸² Seeing the clause largely as an attempt to ensure Federal uniformity, Van Alstyne believes that it should be read generously. A Federal law, for example, which contained no exceptions for fair use, would not on that ground be outside the boundaries of congressional power. However, the First Amendment would “shield” a critic who chose to copy a portion of a copyrighted work in a critical review. So far so good. Any differences here are largely in the reach of the First Amendment, rather than in the choice of the First Amendment over the copyright clause as being the relevant constitutional provision. Most scholars, I believe, would say that it is the First

78. Tyler T. Ochoa, *Patent and Copyright Term Extension and the Constitution: A Historical Perspective*, 49 J. COPYRIGHT SOC'Y U.S.A 19 (2002); Malla Pollack, *Purveyance and Power, or Overpriced Free Lunch: The Intellectual Property Clause as an Ally of the Takings Clause in the Public's Control of Government*, 30 SW. U. L. REV. 1 (2000).

79. See Pollack, *supra* note 78.

80. Van Alstyne, *supra* note 76, at 238.

81. See *Eldred v. Reno*, 239 F.3d 372, (D.C. Cir. 2001). Sadly this misimpression was only partially corrected by the Supreme Court. *Eldred v. Ashcroft*, 123 S. Ct. 769, 789-90 (2003).

82. Ochoa, *supra* note 78, at 28; Edward C. Walterscheid, *To Promote the Progress of Science and Useful Arts: The Background and Origin of the Intellectual Property Clause of the United States Constitution*, 2 J. INTELL. PROP. L. 1, 1 (1994).

Amendment that would make a copyright statute lacking fair use unconstitutional, not the Copyright Clause. Van Alstyne would say that the First Amendment at least offers a constitutional defense to an alleged “infringer” who was making a “fair use.” Difference of emphasis and reach arise, but not differences about the relevant clause or amendment.

It would be very interesting to know how far this logic takes Van Alstyne when considering other issues. Was the Supreme Court correct to interpolate the requirement of originality into the copyright clause, or to say in the context of the patent power, that Congress may not remove articles from the public domain or impede access thereto? A “thin” account of the clause, which sees it largely as a device to promote federal uniformity and believes that the powers it gives Congress should be read generously, does not necessarily take one to that position. Leaving aside any First Amendment limitation, would Congress have the power to create exclusive rights over unoriginal compilations of factual material, by recourse to the Commerce Clause? In other words, would the Copyright Clause have any negative precatory power, as Benkler and others have suggested? To the extent that there was any negative pregnant in limiting Congress’s power under other clauses, the court in *United States v. Moghadam*⁸³ suggested that such a limitation would be restricted to those portions of the Copyright Clause that were fundamental, and suggested that the fixation requirement, for example, was not. But to have some sense about which limitations are “fundamental” and which not, one must have a theory about the substantive goals of the Copyright Clause that goes beyond the achievement of uniformity. Again, under the Copyright Clause, could Congress continually retrospectively extend copyright terms, without offering any plausible account of how this would aid in the production of original works? Are the “promote the progress” and “limited times” portions of the clause any kind of limitation on congressional power? Does the First Amendment inflect our reading of the copyright clause so that certain provisions have greater importance and weight?

Whatever the answer to these questions, it is both instructive, and important, to see the unequivocal rejection of the idea that copyright is somehow immune from or above the First Amendment. That notion of “copyright immunity” had a powerful opponent in Melville Nimmer,⁸⁴ but his arguments, as well as the other powerful criticisms of such a notion, have been trivialized in recent years so that they barely seem to have relevance beyond a ritualistic invocation of the idea-expression distinction.⁸⁵ It will be interesting to see

83. 175 F.3d 1269 (11th Cir. 1999).

84. Melville B. Nimmer, *Does Copyright Abridge The First Amendment Guarantees Of Free Speech and Press?*, 17 UCLA L. REV. 1180 (1970); see also Lawrence Lessig, *Copyright's First Amendment*, 48 UCLA L. REV. 1057 (2001).

85. Indeed, as noted earlier, the D.C. Circuit in *Eldred* appeared to go still further, suggesting that copyright was categorically immune from First Amendment scrutiny.

whether the Supreme Court, in *Eldred v. Ashcroft*,⁸⁶ revitalizes Nimmer's line of reasoning and, if so, whether it portrays the First Amendment as having any power beyond ensuring that the idea-expression distinction and the fair use privilege stay in the statutory scheme.

D. The Public Domain in Scientific Research and Discovery

There is no area in which public concern about intellectual property and the public domain has been greater than in scientific and technical research. Whether it is the controversy over the patenting of and access to the human genome, or pluripotent stem cell lines, the appropriate role of intellectual property in university research, or the use of ethno-botany and traditional herbal knowledge in pharmaceutical patenting, the coexistence of science and property rights has been a fairly constant concern over the last fifteen years. There have been important studies on access to scientific and technical information, such as the National Academies of Science's *Bits of Power*,⁸⁷ and proposals for a dramatic reshaping of the intellectual property environment surrounding scientific research—including a so-called “database right” that allows ownership of unoriginal compilations of factual data.⁸⁸ For these reasons we expected, and received, a particularly thought-provoking pair of papers from our two sets of authors.

Rebecca Eisenberg and Arti Rai are two of the most thoughtful scholarly commentators on the intellectual property issues involved in genetic research and innovation. For those interested in the interplay between the public domain and intellectual property protection, few subjects could be more appropriate. The sequencing of the human genome started as a government-funded basic science project, and gained impetus (and competition) from privately funded efforts, partly fueled by the prospect of expansive gene patents. The subject matter, the institutional settings where research was pursued, the attempt to move from fundamental scientific discovery to useful medical treatment, the questions of the appropriate thresholds for, and exceptions to, exclusive rights, each presented a series of conflicts between the norms of public science and private property. It is on the specific institutional manifestations of that tension, and their implications for the public domain that we asked these authors to write:

Although the development of pharmaceutical end products has long been a proprietary enterprise, biomedical research comes from a very different tradition of open science. Within this tradition, longstanding norms call for relatively unfettered access to fundamental knowledge developed by prior researchers. The tradition of open science has eroded considerably over the past quarter century as proprietary claims have

86. *Eldred v. Ashcroft*, 123 S. Ct. 769 (2003), was handed down as this issue went to press. The answer to my questions was a partial “yes” (copyright is not somehow above the First Amendment) and a partial “no” (but normally all First Amendment issues are dealt with through fair use, etc.).

87. NATIONAL RESEARCH COUNCIL, *BITS OF POWER: ISSUES IN GLOBAL ACCESS TO SCIENTIFIC DATA*, COMMITTEE ON ISSUES IN THE TRANSBORDER FLOW OF SCIENTIFIC DATA (1997), available at <http://www.nap.edu/readingroom/books/BitsOfPower/>.

88. See Samuelson, *supra* note 30.

reached further upstream from end products to cover fundamental discoveries that provide the knowledge base for future product development.⁸⁹

In this context, Rai and Eisenberg address the operation of Bayh-Dole,⁹⁰ and Stevenson-Wydler,⁹¹ the Federal laws designed to make sure that publicly funded discoveries are converted into commercially viable products. These Acts did not deal with the classic public goods problem of intellectual property policy, in which the inability to exclude others from valuable innovations leads to inadequate returns on research and development, and fails to encourage research in the first place. Instead these Acts address the fear that promising publicly funded research would never be converted into useful finished products. The market dysfunction these acts sought to correct was the uncertainty of entrepreneurs about whether they could recover their investments if their innovations built upon publicly funded, and thus potentially public domain, science. While both Rai and Eisenberg are supportive of many of the features of the statutory structure, they feel that its operation in the current world of intellectual property policy leaves some things to be desired.

As a number of the articles in the Symposium note, innovation can suffer both from leaving too little and from leaving too much in the public domain. The hard question, obviously, is deciding which aspects of science, culture and technology should be controlled through intellectual property rights and which should be open to all. Rai and Eisenberg's approach is to attempt to identify the body or entity that can best make that decision, rather than to identify a particular subject matter and argue that it is appropriately in one sphere or another:

Although intellectual property rights may sometimes be necessary to motivate private firms to develop and disseminate university-based discoveries, the trend towards assertions of intellectual property rights by universities might also impede the progress of science. The challenge lies in distinguishing discoveries that are better developed and disseminated through open access from discoveries that are better developed and disseminated under the protection of intellectual property rights. Under the Bayh-Dole Act, institutions that perform funded research enjoy largely unfettered discretion to determine when intellectual property rights are appropriate. We argue, however, that it is the funding agencies that will often have a more appropriate combination of knowledge and incentives to make these determinations in furtherance of the overall public interest in research and product development. The Bayh-Dole Act should therefore be reformed to give funding agencies greater discretion to determine when to require that publicly-funded research discoveries be dedicated to the public domain.⁹²

In reaching this conclusion, Rai and Eisenberg discuss a number of recent cases, including the controversy over pluripotent primate stem-cell lines, and the NF-kB cell-signaling pathway. In each case, patent rights were given over funda-

89. Arti K. Rai & Rebecca S. Eisenberg, *Bayh-Dole Reform and the Progress of Biomedicine*, 66 LAW & CONTEMP. PROBS. 289, 289 (Winter/Spring 2003) (footnotes omitted).

90. Act of Dec. 12, 1980, Pub. L. No. 96-517, § 6(a), 94 Stat. 3015, 3019-28 (1980) (codified as amended at 35 U.S.C. §§ 200-212 (2000)).

91. Stevenson-Wydler Technology Innovation Act of 1980, Pub. L. No. 96-480, 94 Stat. 2311-2320 (codified as amended at 15 U.S.C. §§ 3701-3714).

92. Rai & Eisenberg, *supra* note 89, at 291 (footnotes omitted).

mental discoveries relatively far upstream in a field of science with little prior art, and with low possibility of “workarounds” for biological reasons; the human genome, is after all, the *human* genome. Thus, they present a more significant danger of blocking or impeding future innovation. The standard response to such a danger is to assume that it will be resolved by licensing. But as Rai and Eisenberg note, the patent literature is replete with examples of patent holders in new areas of technology bargaining to impasse or otherwise delaying innovation, or other examples, such as the early history of the aircraft industry, in which only government intervention allowed the technology to develop.

There are a number of possible responses to this kind of danger. The requirements for patentable subject matter can be applied more strictly, or the crabbed U.S. research exemption—one that the Court of Appeals for the Federal Circuit has recently limited still further⁹³—could be expanded. Rai and Eisenberg believe that there is merit in these approaches. Their paper, however, focus on Bayh-Dole, arguing that when the statute was passed, university attitudes and patenting and licensing strategies were very different. The norms of “open science” predominated, perhaps to the extent that they hampered the development of commercially viable products by outside entities. In that world, they argue, it may have made sense to give discretion on patenting to the entities that were performing the funded research. Nowadays, however, with university “Transfer of Technology Offices” carefully managing the university’s patent portfolio, the universities have strong incentives to extract rent from their discoveries and much weaker ones to keep certain fundamental scientific advances in the public domain, even if that would be socially beneficial in the long run. Hence Rai and Eisenberg argue for a revision of Bayh-Dole that gives a much greater role in the patenting decision to the funding agency, which has an interest in the development of the field as a whole, rather than to a university involved in one particular piece of funded research.

Rai and Eisenberg’s theme is echoed in the final article in this volume. My colleague Jerry Reichman, and Paul Uhlir of the National Academy of Sciences, have together authored a mammoth work—effectively a book—on threats to the dissemination of scientific and technical data. We are proud to publish such a piece as part of this symposium and believe that it will come to be seen as the seminal statement of both the current problems in access to scientific data, and the possible avenues for preserving and enhancing the public domain in science while maintaining the system of incentives which intellectual property is designed to provide. The article was finished too late for this introduction to provide a proper summary, but the following snapshot attempts to lay out some of the key points from earlier drafts.

In *A Contractually Reconstructed Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment*, Reichman and Uhlir argue that

93. *Madey v. Duke Univ.*, 307 F.3d 1351 (Fed. Cir. 2002).

there are a number of present and impending threats to the free public exchange of scientific information.⁹⁴ These include: underfunding of public data collection and distribution; increasing use of private patent rights to drive fundamental research; the move of universities further into the world of commerce; the rise of legally validated contracts of adhesion; the broadening and deepening of conventional intellectual property rights; and, above all, the threat (in the United States) and the reality (in the European Union) of a “database right” that covers unoriginal compilations of fact. Reichman and Uhler have sympathy for some of these developments, such as the inducements provided by Bayh-Dole for universities to commercialize the output of their research. They believe, however, that the pendulum has swung too far, and that these developments will likely produce a series of undesirable social outcomes that risk upsetting a fragile and imperfectly understood ecology of information exchange.

One possible solution is legal reform of various kinds: the rejection or weakening of the database regimes,⁹⁵ the tightening of subject matter requirements for patentability, the rejection of contracts of adhesion as “privately legislated intellectual property rights,”⁹⁶ and the use of alternative intellectual property regimes which rely on “liability rules” rather than property rules.⁹⁷ In this article, however, Reichman and Uhler lay great stress on “private” solutions aimed at reconstructing a commons of scientific information and avoiding the downward spiral of excessive protectionism. Through a variety of contractually constructed “commons” of scientific information, each aimed at a different type of public goods problem, and an electronic architecture of peer-to-peer data systems, Reichman and Uhler believe that the worst effects of balkanization and overprotection can be avoided.

At the end of the collection, David Lange provides a fascinating afterword in which he reconceives the public domain as a status, something like citizenship.⁹⁸ That article, too, arrived too late for me to incorporate fully in this foreword, but, in any case, David’s mellifluous prose is always best experienced first hand.

IV

CONCLUSION

The remarkable essays gathered here cover topics ranging from the history and theory of the public domain; to its role in culture, in science, and in the

94. J.H. Reichman & Paul Uhler, *A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment*, 66 LAW & CONTEMP. PROBS. 315 (Winter/Spring 2003).

95. Reichman & Samuelson, *supra* note 34.

96. J.H. Reichman & Jonathan A. Franklin, *Privately Legislated Intellectual Property Rights: Reconciling Freedom of Contract with Public Good Uses of Information*, 147 U. PA. L. REV. 875, 967 (1999).

97. Reichman, *Green Tulips*, *supra* note 29.

98. Lange, *Reimagining*, *supra* note 5.

structure of the digital environment; to the constitutional status of the public domain, and the possible interpretive approaches through which that question could be addressed. It would be impossible to tie all of those threads together here.

It is possible, however, to draw a few terminological and analytical conclusions, some of which I will develop in the next essay and others of which might point the way towards future research.

1. The terms “public domain” and “commons” are used widely, enthusiastically, and inconsistently.
2. In the context of innovation policy, they are generally used to refer to the “outside” or the “opposite” of intellectual property, in two broad ways—each with a number of sub-varieties. The most useful way to understand these terms and the ways they are used, I believe, is in relationship to the implicit fear or concern about intellectual property that each attempts to alleviate and the implicit ideal of the information ecology that each attempts to instantiate. For example, we might have as our principal concern that intellectual property rights raise the cost of access to some informational resource, with the public domain correspondingly a realm of costless access traced tightly around the limits, in duration, extent, and scope, of the minimum intellectual property rights necessary to provide incentives. Alternatively, our concerns might center not on price but on single-entity control—choke points on innovation created by intellectual property rights, particularly when those are in the hands of an entity controlling a vital resource, such as a dominant operating system, or a fundamental genetic technology with no easy “work arounds.” We might believe that intellectual property rights themselves could, in certain conditions, be used to create a distributed, decentralized and non-commodified form of innovation that was both efficient and democratically desirable. Here, the emphasis is not on whether there is control, but on the type of control exercised. More interestingly, we might share all of these concerns and hopes, but with greater emphasis on one or other. It is the varied form and proportion of these concerns and aspirations that explains the marked differences in usage and definition. Why does Jessica Litman say the public domain is a commons? Why does Larry Lessig use the term commons to refer to any resource protected by a liability rule rather than a property rule? Why does he refer to open source software as a commons, though it is in fact protected by a property rule? Why do some scholars stress that open source software is not in the public domain, others refer to it as “a commons,” while Pamela Samuelson calls it something that is outside the public domain in theory but seemingly inside it in effect? The answer, I argue in the next essay, lies in the particular functions and dysfunctions of property on which the theorist is implicitly concentrating while creating their image of property’s outside, property’s antonym. This is all to the good, but surely the various projects need to be better labeled, analyzed,

distinguished.

3. The term “public domain” is generally used to refer to material that is unprotected by intellectual property rights, either as a whole or in a particular context, and is thus “free” for all to use—a term that is itself susceptible to multiple meanings in this context, ranging from costless access, through political liberty, to free trade. The key axes of variation here are the granularity of the definition on the one hand and the extent to which the “freedom” referred to is formal or substantive on the other. By granularity, I mean the scope of the legal freedom required; do we only refer to complete works which are completely free as constituting the public domain, or is our definition more granular, including aspects of works and particular types of privileged usages, such as the fair use privilege to criticize or parody, as constituting part of the public domain? By formal or substantive freedom, I mean whether the definition of the public domain focuses on actual ability to obtain access, or on formal legal status under intellectual property laws. Definitions can vary between those that have a low degree of granularity (only complete works, completely free) and a high degree of concern with form (legal status is determinative, whatever the practical difficulties of access), to the reverse, where usages protected by fair use are in the public domain and practical access is a necessary precondition, whatever the formal legal status. Intermediate combinations are also possible. These definitions are often bandied around with only implicit suggestions as to the criteria being applied, let alone the reasons for adopting those criteria. When one reads that this work of art is not *really* in the public domain one must guess that the author believes that the difficulties of physical access to it preclude such a label. If one is told that fair use rights are not *really* part of the public domain, one must guess that the public domain consists only of complete works, completely free—more granular privileges do not qualify. And even after these guesses, *one must then intuit the intellectual project in the context of which such a definition makes sense.*
4. As the foregoing paragraph indicates, while the term “property” has largely lost its conceptualist and essentialist connotations in the richly pragmatist and legal realist tradition of contemporary American culture, the same is not necessarily true of the “public domain.” The legal scholar will likely use the term “property” in four or five distinct and well-understood ways, depending on the context: a property interest as any legally cognizable condition of market advantage; those rights protected by a “property rule” rather than a “liability rule”; a variable bundle of rights of interest in things (and a bundle subject to almost unlimited state regulation and reformulation); any collection of privileges that includes market alienability, “sole, absolute and despotic dominion” and so on. Yet the same scholar is unlikely to have easy access to similarly varied, and contextually well understood conceptions of the public domain. One conclusion of my essay, and the collection as a whole, is that we need a “legal realism for the public

domain” to juxtapose to our legal realism about property. A second conclusion is that we need a better analytic process of definition—not to determine whether one definition is the essential, true public domain, but the reverse—to focus on whether each is well-suited for the tasks for which it was created. This point holds true as we turn to the next term.

5. “The commons” is *generally* used in the intellectual property literature to refer to material that is not subject to individual control; rather it is controlled, if at all, by some larger group. The articles by Carol Rose, and Ostrom and Hess, in this volume, and by Larry Lessig elsewhere, show how broad and variegated a terrain this term can cover. The axis of variation here is *not* the “owned” versus the “free,” as it was in the discussion of the public domain. Rather, it is individual versus collective control or sometimes, more confusingly, the presence or absence of an individual right to *exclude*. If there is a single trend in the contemporary intellectual property literature, it is to replace the ubiquitous image of Hardin’s tragic commons with the possibility of various comedic commons. Since the key to the well-run commons is frequently that it has informal systems of collective control that mitigate the inevitability of Hardin’s tragedy, those who use the term “commons” are more likely to celebrate forms of control than those who write about the public domain. The point is perhaps clearest in writing about open source software development. It is both the fact that the creativity is exercised collectively on a resource workable by all *and* the fact that the GPL does not allow those who modify the software to conceal the source code or to restrict reproduction that causes theorists such as Lessig to refer to this as a “commons.”
6. The various projects carried on under the banner of ‘the public domain’ or ‘the commons’ do not always run in parallel, any more than the various projects carried on under the banner of “nature” or “the environment.” The person who is worried about the negative effects of monopolistic control over choke points of innovation may well settle for a “commons” built around non-discriminatory access for a fee under liability rules or compulsory licenses. The person who wishes to encourage peer-to-peer production over a distributed network will often insist that resources need to be both free of control and free of cost. Nevertheless, both concerns and resultant definitions overlap substantially, so that it is understandable to find them conflated.
7. From my biased perspective, at least, this volume presents an extraordinarily rich range of offerings—from the essays on the history of the public domain, and the types of public property, through musings on the need for a cultural public domain and a reconstructed commons of scientific and technical data. If there is a thread that links this work together it is this: Property is important. Our analytically rich and historically variegated love affair with the concept demonstrates just why it is important. Yet “the opposite of property”—its outside, its limitations, negations, inversions and

correctives—this is important too. If the papers in this collection can spur us to look at the opposite of property with the same historical care, analytical precision, and occasional utopian romanticism that we display when looking at property, they will have accomplished all that we could have hoped.

ENVOI

As this volume went to press, the Supreme Court handed down its decision in *Eldred v. Ashcroft*,⁹⁹ a challenge to the Copyright Term Extension Act (“CTEA”).¹⁰⁰ Over two strong dissents, the Court upheld the constitutionality of the Act against both First Amendment and Copyright Clause challenges. The dead can have their copyrights extended yet again. Expect a surge of creativity from Hollywood’s graveyards. The greatest legal restriction of speech in the history of the Republic—putting off-limits every book, poem, film, song and sculpture for another twenty years—can proceed without significant First Amendment review. Does this decision mean the task this symposium undertakes—to take seriously the contributions of the public domain to innovation, culture and speech—is ultimately one which, whatever its intellectual merits, is doomed to face a hostile or uncomprehending audience? Even though *Eldred* was focused specifically on two particular constitutional claims, the attitude of the majority towards the importance of the public domain—whether in the textual limitations on Congress’s power, or in application of the First Amendment—can hardly be cause for optimism. And yet. . . . The media reaction was remarkable. *The New York Times* declared that the “decision makes it likely that we are seeing the beginning of the end of public domain and the birth of copyright perpetuity.”¹⁰¹ *The Washington Post*, though more inclined to agree that retrospective extension might be constitutional, declared the copyright system to be “broken”—in that it “effectively and perpetually protects nearly all material that anyone would want to cite or use. That’s not what the framers envisioned, and it’s not in the public interest.”¹⁰² The protection of the public domain, a topic that was culturally invisible when the CTEA was passed, and which even attracted incomprehension from some non-lawyers when we circulated the invitation to our conference, is now on the editorial pages of the nation’s newspapers of record. It is hard to think of a more timely moment for the publication of this symposium.

99. 123 S. Ct. 769 (2003).

100. Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified as amended in scattered sections of 17 U.S.C.).

101. Editorial, *The Supreme Court Docket; The Coming of Copyright Perpetuity*, N.Y. TIMES, Jan. 16, 2003, at A28.

102. Editorial, *Free Mickey Mouse*, WASH. POST, Jan. 21, 2003, at A16 .