

# The Public Domain

Enclosing the Commons of the Mind



James Boyle

## The Public Domain

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It has been pretended by some (and in England especially) that invent-  
-ors have a natural and exclusive right to their inventions; & not merely  
for their own lives, but inheritable to their heirs. but while it is a moot question  
whether the origin of any kind of property is derived from nature at all, it  
would be singular to admit a natural, and even an hereditary right to  
inventions. it is agreed by those who have seriously considered the subject,  
that no individual has, of natural right, a separate property in an acre of  
land; for instance, by an universal law indeed, whatever, whether fixed or  
movable, belongs to all men equally and in common, is the property, for the  
moment, of him who occupies it; but when he relinquishes the occupation  
the property goes with it. stable ownership is the gift of social laws, and is given  
later in the progress of society. it would be curious that if an idea, the fu-  
-gitive fermentation of an individual brain, could, of natural right, be  
claimed in exclusive and stable property. if nature has made any one  
thing less susceptible, than all others, of exclusive property, it is the action  
of <sup>the</sup> thinking power called an Idea; which an individual may exclusively  
possess as long as he keeps it to himself; but the moment it is divulged,  
it forces itself into the possession of every one, and the receiver can-  
-not dispossess himself of it. it's peculiar character too is that that no  
one possesses the life, because every other possesses the whole of it. he who  
receives an idea from me, receives instruction himself, without lessening  
mine; as he who lights his taper at mine, receives light without dark-  
-ening me. that ideas should freely spread from one to another and  
the seeds for the moral and mutual instruction of man, and improve-  
-ment of his condition, seems to have been peculiarly and benevolently  
designed by nature, when she made them. like fire, expandable over  
all space, without lessening their density, in any point; and like the air  
in which we breathe, move, and have our physical being, incapable of  
confinement, or exclusive appropriation, inventions then cannot in

Thomas Jefferson to Isaac McPherson, August 13, 1813, p. 6.

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# Contents

	Acknowledgments, vii
	Preface: Comprised of at Least Jelly?, xi
1	Why Intellectual Property?, 1
2	Thomas Jefferson Writes a Letter, 17
3	The Second Enclosure Movement, 42
4	The Internet Threat, 54
5	The Farmers' Tale: An Allegory, 83
6	I Got a Mashup, 122
7	The Enclosure of Science and Technology: Two Case Studies, 160
8	A Creative Commons, 179
9	An Evidence-Free Zone, 205
10	An Environmentalism for Information, 230
	Notes and Further Readings, 249
	Index, 297



# Acknowledgments

The ideas for this book come from the theoretical and practical work I have been doing for the last ten years. None of that work has been done alone. As a result, the list of people to whom I am indebted makes Oscar night acknowledgments look haiku-terse by comparison. Here I can mention only a few. I beg pardon for the inevitable omissions.

First and foremost, my family has tolerated my eccentricities and fixations and moderated them with gentle and deserved mockery. “Want that insignia torn off your car, Dad? Then it would be in the public domain, right?”

My colleagues at Duke are one of the main influences on my work. I am lucky enough to work in the only “Center for the Study of the Public Domain” in the academic world. I owe the biggest debt of gratitude to my colleague Jennifer Jenkins, who directs the Center and who has influenced every chapter in this book. David Lange brought me to Duke. His work on the public domain has always been an inspiration to mine. Arti Rai’s remarkable theoretical and empirical studies have helped me to understand everything from software patents to synthetic biology. Jerry Reichman has supplied energy, insight, and a

spirited and cosmopolitan focus on the multiple ways in which property can be protected. Jed Purdy and Neil Siegel commented on drafts and provided crucial insights on the construction of my argument. Catherine Fisk, Jim Salzman, Stuart Benjamin, Jonathan Wiener, Mitu Gulati, Jeff Powell, Chris Schroeder, and many, many others helped out—sometimes without knowing it, but often at the cost of the scarcest of all resources: time. Amidst a brilliant group of research assistants, Jordi Weinstock and David Silverstein stood out. Jordi showed a dogged ability to track down obscure 1950s songs that was almost scary. Additional thanks go to Jennifer Ma, Tolu Adewale, Paulina Orchard, and Emily Sauter. Balfour Smith, the coordinator of our Center, shepherded the manuscript through its many drafts with skill and erudition.

Duke is the most interdisciplinary university I have ever encountered and so the obligations flow beyond the law school. Professor Anthony Kelley, a brilliant composer, not only educated me in composition and the history of musical borrowing but co-taught a class on musical borrowing that dramatically influenced Chapter 6. Colleagues in the business school—particularly Jim Anton, a great economic modeler and greater volleyball partner, and Wes Cohen, a leading empiricist—all left their marks. Dr. Robert Cook-Deegan, leader of Duke’s Center for Public Genomics, and my wife Lauren Dame, associate director of the Genome Ethics, Law and Policy Center, provided crucial support to my work with the sciences in general and synthetic biology in particular. I was also inspired and informed by colleagues and students in computer science, English, history, and political science.

But the work I am describing here is—as the last chapter suggests—something that goes far beyond the boundaries of one institution. A large group of intellectual property scholars have influenced my ideas. Most importantly, Larry Lessig and Yochai Benkler have each given far more than they received from me in the “sharing economy” of scholarship. If the ideas I describe here have a future, it is because of the astounding leadership Larry has provided and the insights into “the wealth of networks” that Yochai brings. Jessica Litman, Pam Samuelson, Michael Carroll, Julie Cohen, Peggy Radin, Carol Rose, Rebecca Eisenberg, Mark Lemley, Terry Fisher, Justin Hughes, Neil Netanel, Wendy Gordon, David Nimmer, Tyler Ochoa, Tim Wu, and many others have all taught me things I needed to know. Jessica in particular caught and corrected (some of) my many errors, while Pam encouraged me to think about the definition of the public domain in ways that have been vital to this book. Michael suggested valuable edits—though I did not always listen. Historical work by Carla Hesse, Martha Woodmansee, and Mark Rose

has been central to my analysis, which also could not have existed but for work on the governance of the commons by Elinor Ostrom, Charlotte Hess, and Carol Rose. Kembrew McLeod and Siva Vaidhyanathan inspired my work on music and sampling. Peter Jaszi was named in my last book as the person who most influenced it. That influence remains.

Beyond the academy, my main debt is to the board members and staff of Creative Commons, Science Commons, and ccLearn. Creative Commons, on whose board I am proud to have served, is the brainchild of Larry Lessig and Hal Abelson; Science Commons and ccLearn are divisions of Creative Commons that I helped to set up which concentrate on the sciences and on education, respectively. The practical experience of building a “creative commons” with private tools—of allowing creative collaboration with people you have never met—has shaped this book far beyond the chapter devoted to it. Hal Abelson, Michael Carroll, and Eric Saltzman were on the midwife team for the birth of those organizations and became close friends in the process. Since the entire Creative Commons staff has made it routine to do seven impossible things before breakfast, it is hard to single out any one individual—but without Glenn Brown at Creative Commons and John Wilbanks at Science Commons, neither organization would exist today. Jimmy Wales, founder of Wikipedia and another Creative Commons board member, also provided key insights. Finally, but for the leadership of Laurie Racine neither Creative Commons nor our Center at Duke would be where they are today, and thus many of the experiments I describe in this book would not have happened.

The intellectual property bar is a fascinating, brilliant, and engagingly eccentric group of lawyers. I owe debts to many of its members. Whitney Broussard told me the dirty secrets of the music industry. Daphne Keller—a former student and later a colleague—helped in more ways than I can count.

A number of scientists and computer scientists made me see things I otherwise would not have—Drew Endy and Randy Rettberg in synthetic biology, Nobel laureates Sir John Sulston and Harold Varmus in genomics and biology more generally, Paul Ginsparg in astrophysics, and Harlan Onsrud in geospatial data. Paul Uhler’s work at the National Academy of Sciences introduced me to many of these issues. The work of Richard Stallman, the creator of the free software movement, remains an inspiration even though he profoundly disagrees with my nomenclature here—and with much else besides.

Activists, civil rights lawyers, bloggers, and librarians have actually done much of the hard work of building the movement I describe at the end of this book. Jamie Love has touched, sparked, or masterminded almost every benign

development I write about here, and novelist Cory Doctorow has either blogged it or influenced it. I have worked particularly closely with Manon Ress, Fred von Lohmann, Cindy Cohn, Jason Schultz, and Gigi Sohn. John Howkins and Gilberto Gil have provided considerable leadership internationally. But there are many, many others. The entire community of librarians deserves our thanks for standing up for free public access to knowledge for over two hundred years. Librarians are my heroes. They should be yours, too.

Some of the work contained here has been published in other forms elsewhere. Portions of Chapters 2 and 3 appeared as “The Second Enclosure Movement and the Construction of the Public Domain”;<sup>1</sup> Chapter 7 shares little textually but much in terms of inspiration with an article I co-wrote for *PLoS Biology* with Arti Rai, “Synthetic Biology: Caught between Property Rights, the Public Domain, and the Commons.”<sup>2</sup> For several years now I have been a columnist for the *Financial Times*’s “New Economy Policy Forum.” Portions of Chapter 5 and Chapter 9 had their origins in columns written for that forum. Chapter 10 has its roots both in my article “A Politics of Intellectual Property: Environmentalism for the Net?”<sup>3</sup> and in the symposium, *Cultural Environmentalism @ 10*,<sup>4</sup> that Larry Lessig kindly organized for the tenth anniversary of that article.

Finally, I need to thank the institutions who have supported this study. The Rockefeller Center in Bellagio provided an inspiring beginning. The Ford, Rockefeller, MacArthur, and Hewlett Foundations have generously supported my work, as have Duke Law School’s research grants and Bost Fellowships. My work on synthetic biology and the human genome was supported in part by a CEER grant from the National Human Genome Research Institute and the Department of Energy (P50 HG003391-02). In addition, my thanks go out to the anonymous donor whose generous donation allowed us to found the Center for the Study of the Public Domain, and to Bob Young and Laurie Racine, whose work made the Center possible. Yale University Press were supportive and critical in all the right places. I would like to thank them for agreeing to release this work under a Creative Commons license. What could be more appropriate to the book’s theme?

I could go on and on. But I will not. This flurry of names and areas of knowledge signifies more than just the deep thanks of a dilettante. It signifies the emergence of an area of concern, the coming together of very different groups around a shared problem—an imbalance in the rules that define property in the information age. It is that problem, its history, philosophy, and politics that I try to sketch out in the pages ahead.

## Preface: Comprised of at Least Jelly?

Each person has a different breaking point. For one of my students it was United States Patent number 6,004,596 for a “Sealed Crustless Sandwich.” In the curiously mangled form of English that patent law produces, it was described this way:

A sealed crustless sandwich for providing a convenient sandwich without an outer crust which can be stored for long periods of time without a central filling from leaking outwardly. The sandwich includes a lower bread portion, an upper bread portion, an upper filling and a lower filling between the lower and upper bread portions, a center filling sealed between the upper and lower fillings, and a crimped edge along an outer perimeter of the bread portions for sealing the fillings there between. The upper and lower fillings are preferably comprised of peanut butter and the center filling is comprised of at least jelly. The center filling is prevented from radiating outwardly into and through the bread portions from the surrounding peanut butter.<sup>1</sup>

“But why does this upset you?” I asked; “you’ve seen much worse than this.” And he had. There are patents on human genes, on auctions, on algorithms.<sup>2</sup> The U.S. Olympic Committee has an

expansive right akin to a trademark over the word “Olympic” and will not permit gay activists to hold a “Gay Olympic Games.” The Supreme Court sees no First Amendment problem with this.<sup>3</sup> Margaret Mitchell’s estate famously tried to use copyright to prevent *Gone With the Wind* from being told from a slave’s point of view.<sup>4</sup> The copyright over the words you are now reading will not expire until seventy years after my death; the men die young in my family, but still you will allow me to hope that this might put it close to the year 2100. Congress periodically considers legislative proposals that would allow the ownership of facts.<sup>5</sup> The Digital Millennium Copyright Act gives content providers a whole array of legally protected digital fences to enclose their work.<sup>6</sup> In some cases it effectively removes the privilege of fair use. Each day brings some new Internet horror story about the excesses of intellectual property. Some of them are even true. The list goes on and on. (By the end of this book, I hope to have convinced you that this matters.) With all of this going on, this enclosure movement of the mind, this locking up of symbols and themes and facts and genes and ideas (and eventually people), why get excited about the patenting of a peanut butter and jelly sandwich? “I just thought that there were limits,” he said; “some things should be sacred.”

This book is an attempt to tell the story of the battles over intellectual property, the range wars of the information age. I want to convince you that intellectual property is important, that it is something that any informed citizen needs to know a little about, in the same way that any informed citizen needs to know at least something about the environment, or civil rights, or the way the economy works. I will try my best to be fair, to explain the issues and give both sides of the argument. Still, you should know that this is more than mere description. In the pages that follow, I try to show that current intellectual property policy is overwhelmingly and tragically *bad* in ways that everyone, and not just lawyers or economists, should care about. We are making bad decisions that will have a negative effect on our culture, our kids’ schools, and our communications networks; on free speech, medicine, and scientific research. We are wasting some of the promise of the Internet, running the risk of ruining an amazing system of scientific innovation, carving out an intellectual property exemption to the First Amendment. I do not write this as an enemy of intellectual property, a dot-communist ready to end all property rights; in fact, I am a fan. It is precisely *because* I am a fan that I am so alarmed about the direction we are taking.

Still, the message of this book is neither doom nor gloom. None of these decisions is irrevocable. The worst ones can still be avoided altogether, and

there are powerful counterweights in both law and culture to the negative trends I describe here. There are lots of reasons for optimism. I will get to most of these later, but one bears mentioning now. Contrary to what everyone has told you, the subject of intellectual property is both accessible and interesting; what people can understand, they can change—or pressure their legislators to change.

I stress this point because I want to challenge a kind of willed ignorance. Every news story refers to intellectual property as “arcane,” “technical,” or “abstruse” in the same way as they referred to former attorney general Alberto Gonzales as “controversial.” It is a verbal tic and it serves to reinforce the idea that this is something about which popular debate is impossible. But it is also wrong. The central issues of intellectual property are not technical, abstruse, or arcane. To be sure, the *rules* of intellectual property law can be as complex as a tax code (though they should not be). But at the heart of intellectual property law are a set of ideas that a ten-year-old can understand perfectly well. (While writing this book, I checked this on a ten-year-old I then happened to have around the house.) You do not need to be a scientist or an economist or a lawyer to understand it. The stuff is also a lot of fun to think about. I live in constant wonder that they pay me to do so.

Should you be able to tell the story of *Gone With the Wind* from a slave’s point of view even if the author does not want you to? Should the Dallas Cowboys be able to stop the release of *Debbie Does Dallas*, a cheesy porno flick, in which the title character brings great dishonor to a uniform similar to that worn by the Dallas Cowboys Cheerleaders? (After all, the audience might end up associating the Dallas Cowboys Cheerleaders with . . . well, commodified sexuality.)<sup>7</sup>

Should the U.S. Commerce Department be able to patent the genes of a Guyami Indian woman who shows an unusual resistance to leukemia?<sup>8</sup> What would it mean to patent someone’s genes, anyway? Forbidding scientific research on the gene without the patent holder’s consent? Forbidding human reproduction? Can religions secure copyrights over their scriptures? Even the ones they claim to have been dictated by gods or aliens? Even if American copyright law requires “an author,” presumably a human one?<sup>9</sup> Can they use those copyrights to discipline heretics or critics who insist on quoting the scripture in full?

Should anyone own the protocols—the agreed-upon common technical standards—that make the Internet possible? Does reading a Web page count as “copying” it?<sup>10</sup> Should that question depend on technical “facts” (for example,

how long the page stays in your browser's cache) or should it depend on some choice that we want to make about the extent of the copyright holder's rights?

These questions may be hard, because the underlying moral and political and economic issues need to be thought through. They may be weird; alien scriptural dictation might qualify there. They surely aren't uninteresting, although I admit to a certain prejudice on that point. And some of them, like the design of our telecommunications networks, or the patenting of human genes, or the relationship between copyright and free speech, are not merely interesting, they are important. It seems like a bad idea to leave them to a few lawyers and lobbyists simply because you are told they are "technical."

So the first goal of the book is to introduce you to intellectual property, to explain why it matters, why it is the legal form of the information age. The second goal is to persuade you that our intellectual property policy is going the wrong way; two roads are diverging and we are on the one that doesn't lead to Rome.

The third goal is harder to explain. We have a simple word for, and an intuitive understanding of, the complex reality of "property." Admittedly, lawyers think about property differently from the way lay-people do; this is only one of the strange mental changes that law school brings. But everyone in our society has a richly textured understanding of "mine" and "thine," of rights of exclusion, of division of rights over the same property (for example, between tenant and landlord), of transfer of rights in part or in whole (for example, rental or sale). But what about the opposite of property—property's antonym, property's outside? What is it? Is it just stuff that is not worth owning—abandoned junk? Stuff that is not yet owned—such as a seashell on a public beach, about to be taken home? Or stuff that cannot be owned—a human being, for example? Or stuff that is collectively owned—would that be the radio spectrum or a public park? Or stuff that is owned by no one, such as the deep seabed or the moon? Property's outside, whether it is "the public domain" or "the commons," turns out to be harder to grasp than its inside. To the extent that we think about property's outside, it tends to have a negative connotation; we want to get stuff out of the lost-and-found office and back into circulation as property. We talk of "the tragedy of the commons,"<sup>11</sup> meaning that unowned or collectively owned resources will be managed poorly; the common pasture will be overgrazed by the villagers' sheep because no one has an incentive to hold back.

When the subject is intellectual property, this gap in our knowledge turns out to be important because our intellectual property system depends on a

balance between what is property and what is not. For a set of reasons that I will explain later, “the opposite of property” is a concept that is much more important when we come to the world of ideas, information, expression, and invention. We want a lot of material to be in the public domain, material that can be spread without property rights. “The general rule of law is, that the noblest of human productions—knowledge, truths ascertained, conceptions, and ideas—become, after voluntary communication to others, free as the air to common use.”<sup>12</sup> Our art, our culture, our science depend on this public domain every bit as much as they depend on intellectual property. The third goal of this book is to explore property’s outside, property’s various antonyms, and to show how we are undervaluing the public domain and the information commons at the very moment in history when we need them most. Academic articles and clever legal briefs cannot solve this problem alone.

Instead, I argue that precisely because we are in the information age, we need a movement—akin to the environmental movement—to preserve the public domain. The explosion of industrial technologies that threatened the environment also taught us to recognize its value. The explosion of information technologies has precipitated an intellectual land grab; it must also teach us about both the existence and the value of the public domain. This enlightenment does not happen by itself. The environmentalists helped us to see the world differently, to see that there was such a thing as “the environment” rather than just my pond, your forest, his canal. We need to do the same thing in the information environment.

We have to “invent” the public domain before we can save it.

A word about style. I am trying to write about complicated issues, some of which have been neglected by academic scholarship, while others have been catalogued in detail. I want to advance the field, to piece together the story of the second enclosure movement, to tell you something new about the balance between property and its opposite. But I want to do so in a way that is readable. For those in my profession, being readable is a dangerous goal. You have never heard true condescension until you have heard academics pronounce the word “popularizer.” They say it as Isadora Duncan might have said “dowdy.” To be honest, I share their concern. All too often, clarity is achieved by leaving out the key qualification necessary to the argument, the subtlety of meaning, the inconvenient empirical evidence.

My solution is not a terribly satisfactory one. A lot of material has been exiled to endnotes. The endnotes for each chapter also include a short guide to further reading. I have used citations sparingly, but more widely than an

author of a popular book normally does, so that the scholarly audience can trace out my reasoning. But the core of the argument is in the text.

The second balance I have struggled to hit is that between breadth and depth. The central thesis of the book is that the line between intellectual property and the public domain is important in every area of culture, science, and technology. As a result, it ranges widely in subject matter. Yet readers come with different backgrounds, interests, and bodies of knowledge. As a result, the structure of the book is designed to facilitate self-selection based on interest. The first three chapters and the conclusion provide the theoretical basis. Each chapter builds on those themes, but is also designed to be largely free-standing. The readers who thrill to the idea that there might be constitutional challenges to the regulation of digital speech by copyright law may wallow in those arguments to their hearts' content. Others may quickly grasp the gist and head on for the story of how Ray Charles's voice ended up in a mashup attacking President Bush, or the discussion of genetically engineered bacteria that take photographs and are themselves the subject of intellectual property rights. To those readers who nevertheless conclude that I have failed to balance correctly between precision and clarity, or breadth and depth, I offer my apologies. I fear you may be right. It was not for want of trying.