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Inside Views: The Last Defence Of The IP System: An Interview With Jamie Boyle

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James Boyle is a leading thinker on copyright and knowledge access, and is author of a new book called *The Public Domain: Enclosing the Commons of the Mind* (available at thepublicdomain.org or here as a PDF). He is a law professor and cofounder of the Center for the Study of the Public Domain at Duke Law School. Boyle spoke recently with William New of Intellectual Property Watch on his book and recommendations for the new leadership of the World Intellectual Property Organization, European Union and the United States.

INTELLECTUAL PROPERTY WATCH (IPW): Your new book is likely to stir significant debate. What is the public domain, why is it shrinking, and what should be done about it?

JAMIE BOYLE (BOYLE): The public domain is the well of material that is free for all to use without commission or fee, so, $e = mc^2$, the works of Shakespeare, the works of Mozart. More broadly it's the boundary line on the other side of the intellectual property right. The thesis of the book is that it's not intellectual property alone that is responsible for encouraging innovation or creativity or even for serving the interest of creators, but the mix between, and the balance between intellectual property and the public domain. The entire thesis of the book is that we have to get the balance right, we have to figure out where we need rights and where those rights should stop [and] that we have to do so based on evidence. We have to look at the effects of intellectual property rights, and look at extensions and look at arguments that we need to extend this right or to expand that right or create a new right. And actually look to see if there is any empirical evidence to support that.

If we do extend the rights, then we have to check to see whether or not our intervention has been successful, just as we would in any other regulatory endeavour. If we were introducing a new environmental protection, for example.

We can in fact harm creativity, innovation, the advance of technology and science, new medicines, by getting that balance wrong, by putting the lines in the wrong places. I have argued that, for a variety of reasons which I lay out in the book, all of the pressures on intellectual property have been outward. We have only been expanding rights. If you look back at the development of treaties, if you look back at the development of new rights, we have moved rights only in one direction. And when we have harmonised internationally, we have harmonised almost always, with a few exceptions, upward rather than downward, making the rights larger, and stronger and bigger, in the absence of evidence. We haven't done careful reviews of the effects of this.

So basically mine is a clarion call to say we have worked as though we were assuming that increasing the rights automatically brought more innovation, but in fact that's wrong, as a simple analysis will suggest, since intellectual property needs - indeed builds - on raw material: scientists need gene sequences, coders need access to lines of code, novelists need access to genres, musicians to obviously build on the work of others. And if we get the balance wrong, as I think we are, and if we expand only outwards, as we are, and if we make exceptions and limitations optional but make the new rights mandatory, then we are going to systematically mess up our intellectual property system. And that is what I think we have been doing.

IPW: We hear a lot about the need for balance in the protection of rights in the policy community, at the World Trade Organization, the World Intellectual Property Organization, World Health Organization and the national or regional level. It seems the policymakers are grappling with where the balance needs to be. Where precisely does that balance lie? How do we measure it? And what policies do we need or need to happen in order to obtain it?

BOYLE: Well, first of all, I think we should start from a simple premise, which is intellectual property rights are limited monopolies which we create for various pressing social needs to encourage the development of drugs, to encourage and reward authors, inventors, musicians, computer programmers, and so forth, and the people who distribute their work, they serve an extraordinarily valuable function, and I am a great defender of them, I think they're extremely important. However, they are limited monopolies.

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So the first thing is that our presumption should be just as it is with any other governmentally created monopoly. Our presumption should be one of scepticism: make the case that this is necessary. So the … argument, which I develop, is that we need to start from the Jeffersonian or Madisonian or Macaulay baseline, which is these rights may well be necessary and may well be absolutely fundamental to a particular industry, as they are for example I believe in the case of patents on pharmaceuticals. But the burden of proof is on those who wish to create a new right or to extend it unless they can come forward with pressing evidence which consists of something other than anecdotes. Then I think that case fails, just as it would if I said I need you to give me a telephone monopoly or I need you to give me a telecommunications monopoly or I need you to give me a broadcasting monopoly. We'd say: "Why? Show me the evidence." I think we've failed to apply that basic test, and in the book I get into a lot of examples. But I think the database directive in the EU is one of the most glaring ones, I think the broadcast treaty that was considered by WIPO is another one. A complete absence of consideration of evidence, and when evidence isn't examined then we find that in fact not only is the proposed new right actually not necessary, as in the case of the database directive, but it's actually harmful.

IPW: You're based in the United States but you've cited a couple of examples internationally. Are these universal principles and how does any given government, whether least developed or most developed, take these into consideration at the national level and begin to implement them? What should they be looking for? What actions do they need to be taking if they accept that there is in fact a problem?

BOYLE: In terms of what a government should be doing, I really think that some of what they should be doing is just what they do in every other area. So if I come to you and I say: "I really need you to approve this new drug, and I think it will really help, and I have a friend who took some and he feels much better." That wouldn't pass the laugh test. If I came to you and said: "You know, I think the best way to regulate particulate emissions is to require that the level be, oh I don't know, 500 parts per million." That wouldn't pass the laugh test. But we do exactly the equivalent of that in the intellectual property arena.

If you look at the history of the database directive, [a study of other countries] was simply not done. The EU simply presumed that since the United States was doing very well with no protection for unoriginal compilations of fact, that they would clearly do much better if they had that protection. In other words, they made the assumption that more rights obviously leads to more innovation, to more investment. In other words, they focused only on the output side and not on the input side. That's a basic conceptual error. The first thing that our policymaker should do is realise that every time you protect somebody's output, their intellectual work, you extend their trademark, you give them control over some gene sequence, some line of code, you have extensive software patents, you are raising the costs of the inputs to another innovator further upstream. The very

first thing you do is look at that balance and say I want to get it right. The next thing you do is look at the evidence, and ideally you look comparatively and internationally to see what's worked. That's just the beginning of the inquiry. We actually have to get the balance right, look at inputs and outputs, and let's look at the evidence. [If not] you simply have no chance at making good policy at all.

IPW: Looking at the World Intellectual Property Organization and the broadcasting treaty, there is an example of something where ten years of energy and time and significant resources have been spent pursuing something that many argue the world moved past if there was ever a need. What could a body like that be addressing? What kinds of multilateral-level actions could be taken that could then trickle down to the national level and give some guidance - a piece of legislation, a treaty, maybe an access to knowledge treaty?

BOYLE: Well, I think access to knowledge is a very interesting set of initiatives. I think I'd start with limitations and exceptions. The debate around intellectual property right now is predominantly built around the need for harmonisation. Harmonisation has enormous plusses, for obvious reasons, in terms of trade, in terms of uniform investment expectations and so forth. It does have a significant minus, which is we're denying ourselves what the Americans call the laboratories for politics, in other words, multiple people having different approaches so that we can see what works. But it obviously has great advantages.

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If we are going to pursue uniformity, and that has been the claim, in order to facilitate trade and investment in innovative technologies, it makes absolutely no sense whatsoever - and I think this is self-evident as a basic economic truth - for us to harmonise the rights, but leave the exceptions optional. Because then you basically place someone who is investing in a technology or investing in a productive process in the awful situation of being at the mercy of the state with the most restrictive, the most limited set of limitations. For example, one area, decompiling software, that is to say taking software apart in order to see how it works in order to create a completely separate programme that competes with it. In United States, that's clearly fair use. In some other countries, it's not clearly fair use. In certain countries, quotation, certain forms of satire or parody may be fair use. In other countries it's more doubtful. If you have a situation where, particularly given the globalisation the internet brings to us, where I am constantly at the danger of the state

with the most restrictive set of limitations, then you've undone all of the benefits that uniformity was supposed to provide. And the fact that WIPO has failed to put significant enough resources, and the EU also has failed to put significant enough resources into harmonising and studying fully what limitations and exceptions we need, is really a fundamental flaw in both of the organisational strategies involved.

IPW: But what's wrong with the simple notion of protecting the rights to encourage innovation and reward creators? Why are you not arguing that in a multilateral context or national-level context, rightsholders should be protected first and foremost?

BOYLE: Well, I think, again, it comes back to the point that you have to look at the balance between protection, limitation in a state-controlled monopoly, and the other side, which is freedom, the freedom to build, the freedom to use without permission or fee.

If a scientist takes material, data which is in the public domain, and makes something of it, we say that's wonderful. Only in very limited set of circumstances, a particular original expression, in the case of copyright, original, useful, novel invention in the case of patents, do we create rights. And we say those rights need to be as limited as possible because every time we create a right, we are imposing two very large sets of losses on society. We're creating passive losses because people who would have purchased the good at its marginal cost can't because you've given a limited monopoly that allows a person to charge over marginal cost. And we're imposing active or dynamic losses because we're raising the cost of this, whatever it is, invention, a database, this line of code, [which] can't be used by the person further down the stream to create something new. Two large losses being imposed.

"Every time we create a right, we are imposing two very large sets of losses on society."

Now, it's often worth us doing that, for example in the case of pharmaceutical patents, or we wouldn't get the drugs developed in the first place. It's worth raising the cost of the drug, and it's worth, in some cases, restricting development, even though we actually, thankfully, craft patent rules to allow the second comer to come in and use the patent and build on it. So in that case, we know it's worth it because we've looked at the development and tried to study how the pharmaceutical patents work. Of course, they didn't work for the neglected diseases, where we need other approaches.

But that's a limited set of circumstances. It is simply not the case that if I increase intellectual property rights, if I gave you a patent over algebra or gave you a copyright over the alphabet, would this encourage protection, would this encourage innovation. No.

On the contrary, it would harm it, it would hurt it. The idea that by increasing rights we automatically increase innovation or invention is simply a fallacy. It's logically incoherent.

IPW: So you would say we've reached the point where we need the pendulum to swing backward. Can you give us an example of where we've gone awry?

BOYLE: Certainly. One of the things that intellectual property rights can do is that they can restrict cultural access. And that is obviously a negative effect, we only do it where it is absolutely necessary. So for example, if you're raising the cost of someone to read Shakespeare online or be able to use Shakespeare as the basis for a new story, we only want to do that if it's absolutely necessary in order to provide an incentive to Shakespeare or to his publishers.

We have gone around extending the term of copyright. And despite the fact that there is utterly clear evidence that it provides no meaningful incentive to creators - there is not a single reputable economist who will come to you and say that extending the copyright term from life plus fifty (50) years to life plus seventy (70), creates any incentive whatsoever. Discounted to present value is of such a tiny amount, the utility of that extra extension, that it basically has no social benefit, and I think the Cambridge study that was done for the Gowers review is a wonderful summary of the evidence. The Nobel Prize winners who produced a brief in the *Eldred* case also made this point clear. So we are getting no social benefit for these extensions and we make them retrospective. Now it's pretty hard to incentivise dead authors. So retrospective extensions are particularly odious.

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And, because copyright is a strict liability system, and because, for the majority of works in many cases, in particular in the case of films, for example, that are actually in our great National Archive, are orphan works, when we retrospectively extend protection, we are saying, these can only be reproduced, these can only be shown publicly, these can only be built on with the permission of the copyright holder, who isn't there and can't be found. So the vast majority of twentieth century culture is a) commercially unavailable, so you can't buy it even if you wanted to, and b) an orphan work. By retrospectively extending copyright over these works, we have meant that, not only are they locked up, and in the case of films, literally crumbling in the library, we can't get access to them, even if we were willing to pay, and we have done this in order to create no social benefit whatsoever. So on the downside, we lock up most of twentieth century culture, making it completely inaccessible except to those who have the resources to get to one of the great world

libraries. And on the upside, we get no benefit. That is a classic case of completely failed, dysfunctional policymaking. It's the kind of thing that people should be fired for.

IPW: You've invoked some of the classical thinking - American founding father Thomas Jefferson - for instance, among others, and in his case you found caution in his words. What's the importance of an historical perspective on IP and understanding how we got to where we are today?

BOYLE: I summarise what Jefferson says and I say that this is a warning which we should give to policymakers rather the same way Miranda warning is administered to suspects who are arrested in the United States [reminding them of their legal rights].

First, the stuff we cover with intellectual property rights has vital differences from the stuff we cover with tangible property rights. Partly because of those differences, Jefferson, like most of his successors in the United States doesn't see intellectual property as a claim of natural rights based on expended labour. Instead, it's a temporary state created monopoly given to encourage further innovation. There is no entitlement to have an intellectual property right, and rights may or may not be given as a matter of social will or convenience without claim or complaint from anyone.

Intellectual property rights shouldn't be permanent, in fact they should be tightly limited in time and scope and shouldn't last a day longer than necessary to encourage innovation in the first place. They have considerable monopolistic dangers and may produce more embarrassment than advantage. Since intellectual property rights potentially restrain the benevolent tendency of ideas freely to spread to one another across the globe and for the moral neutral instruction of man, they may in some case hinder rather than encourage innovation. And fifth, deciding to have an intellectual property system is only the first in a long set of choices. You then have to decide about scope, length and extent. As I point out in the book, it is simply not true that these concerns are limited to the Anglo American tradition. If you look at Condorcet, writing at the birth of the *droits d'auteur* tradition, you see the same thing.

I think Jefferson's basic point is that there is a fundamental confusion between intellectual property rights and tangible property rights. I do believe in intellectual property. I believe that authors should have a right to protect their works. I believe that inventors have a right that should be protected by the patent system. I believe that copyright, particularly the form of copyright that was current in the United States, say, around the mid- to late-1970s and in Europe at roughly the same time, is an utterly defensible system as is the basis of the patent system.

I view myself as one of the last defenders of the intellectual property system. Because what I am trying to defend is the core of excellent good sense at its heart, and to save it from what are effectively the steroids that have been pumped into it by the representatives of various content and other companies, who've decided that they need increasing rights on every scope. So I'm trying to defend intellectual property and I think that Jefferson helps us.

"*Intellectual property rights shouldn't be permanent, in fact they should be tightly limited in time and scope and shouldn't last a day longer than necessary to encourage innovation in the first place. They have considerable monopolistic dangers and may produce more embarrassment than advantage."*

Over the last fifty years intellectual property rights have only extended, only gone outward, in scope - which if you think about it is kind of remarkable, given that one would assume that getting the right level is a matter of titration, how could it be that we are constantly expanding the rights, only ever extending them. The most commonly given explanation is, new and cheaper forms of copying mean that as the copying gets cheaper, the rights need to get stronger. That may well be true in some cases, but if you think about it for a moment, which apparently policymakers don't, you'll find that there is a simple flaw in the logic. If I gave you a choice between a market of a million people in which you had total control over your recordings or your software, so that there is the zero illicit copying, and a market of a billion people, in which there is a twenty percent rate of illicit copying, which would you pick? Unless you were an idiot, you'd pick the second one. Would you then make the claim that since there is now twenty percent illicit copying, your rights need to be twenty percent stronger? Well, if you did, that would be an economic fallacy. In fact, it would probably be the case that if you were getting an adequate return in the small market, that you are getting a more than adequate return in the large market, since your scale has dramatically increased. And that point is one that we need to look at.

In a particular case, it may be that the internet is a great threat to the music industry and we need stronger rights, or a particular threat to software and we need stronger rights. I'm agnostic. I just want people to look at the data. And the fact that we're not looking at the data beyond people saying: "well, if everyone who bought with…who now pirates Windows bought a copy, we'd have 800 trillion dollars" - which isn't actually a statistic. If we're not looking at the data, how could we possibly be getting it right? It would be like me closing my eyes and stabbing at a particular directory, and saying whatever my finger hits will be the level of environmental protection that we'll have in the United States. That's insane.

IPW: You cast in a positive light, and you embody your own practice as your book is available through the Creative Commons licence, as our materials are. The benefits of open access, even of new creative works…

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BOYLE: Yes, and I think my publisher, Yale University Press, commendably, allowed me to make this available under Creative Commons, and the book is, so far at least, selling very well. I think open access and commercial forms of distribution are not incompatible. If you look at IBM, IBM is the largest patent holder in the world and they now make twice as much from Linux-related revenues, open-source software-related revenues, as they make through their patent portfolio. They're not doing it for charity, they're not doing it because they're ideologues, they're not even doing that because they love freedom, or they love the inventive possibilities which it creates worldwide. They're doing it because it helps their bottom line.

So, one of the other points I make in the book is there is a really sad tendency of the intellectual property establishment to assume that any new business method which doesn't use the rights and methods they're familiar with - that is to say use them to exclude - is automatically anti-intellectual property. This is just ridiculous. It's like saying that if you have a condominium with a shared stairwell, that that's anti-physical property. It's simply a method of employing it, a method of using the rights. I use my copyright in order to make it available online, but to limit commercial reproduction. Open source software people use their property rights over software to create a new ever-enlarging commons of software. That's a method that WIPO ought to be studying and embracing because it is a matter of human innovativeness to use intellectual property rights in new ways. It's not an attack, it's a use.

IPW: Do you have a sort of formula for a creator to benefit from a more open approach? Is preventing commercial reproduction enough?

BOYLE: My position is one of agnosticism, again. I think it works for some kinds of creators in some places. I think the set of creators for whom it works is probably larger than we imagine. In the book, I argue that we have something that I call "cultural agoraphobia," that we persistently underestimate the benefits of open approaches and overestimate the benefit of closed approaches, underestimate the dangers of closed

approaches and overestimate the dangers of open approaches. So I think that in lots of situations, probably more than we imagine, it might well be consistent with it. Cory Doctorow, the very successful science fiction author makes all of his commercial novels available under Creative Commons licences. He has no academic salary to fall back on, he's not merely a niche author dealing to a set of policy wonks, and he believes he does very well at it financially. We have lots of musicians, thousands of musicians who make their works available under Creative Commons licences and believe it brings notoriety to them. Most of those people use the non-commercial limitation as a way of allowing personal use, sampling and personal private sharing, but restricting commercial exploitation.

The number one best selling MP3 album of 2008 was Ghosts by Nine Inch Nails. It made Trent Reznor a lot of money. And it was completely available for free copying under a Creative Commons Non Commercial Licence.

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But in some cases, it may be that allowing a commercial use is a valuable option. So the General Public Licence, which is the licence covering much open and free software, imposes no limitation on commercial use. I can build on the code you wrote, and I can sell my services for profit. The one thing I can't do is close off the collected contributions that all of us, including me, made, and turn it private, and say no one can have access to it. How do people make money on that? They make money on tied services, on consulting, on hardware that uses it, on being the best in delivering the goods. Basically a set of services that run alongside the code, but don't seek to exclude people from it.

A lot of lawyers exclaim when they hear that, well that'll never work, it's absolutely impossible, you have to have proprietary control over the material that you generate. At which point I always ask them, "and you yourself as lawyers, do you have proprietary control over the arguments you make?" "Why no," they say. "I borrow freely from all who made arguments before me and I am in turn borrowed from in the future. I quote from cases, and I mix my stuff together, and I use it all to provide advice, create new causes of action, then other lawyers do it and I do very nicely at it, thank you very much, because I'm providing a service, not attempting to close off access to the law and the legal arguments that I'm creating." And that's the way open source works. In that case, no commercial limitation is necessary. So I think it's a case by case analysis, varying by the nature of the creation and the nature of the industry involved.

IPW: Some have praised the Google library effort for all of the reasons that it is obviously praiseworthy, but raised some questions about it, mainly related to the private sector nature of the initiative. You are, I think, pretty strongly supportive of the effort, of the concept of getting all of those works online in some way. Do you have any concerns about where things might be heading? Is that as far as it extends? What's your sort of vision for the future in our digital world?

BOYLE: Well, the cultural heritage of mankind is too important to entrust to a particular company. That seems obvious. In many ways, the types of access that Google seems to be allowing in many ways seem admirable, but I don't want a particular company to be a gatekeeper. We would be much better off if we had a rational copyright term policy, which we don't.

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A fairly reasonable one would be one that if you found the average commercial length of time that a copyright or work is commercially exploited for a particular form and then doubled it, and gave that to the author as an initial copyright term and then allowed an optional extension by the author, even for that amount of time again, let's say, in the case of books, twenty-eight plus twenty-eight worked extremely well in the United States. That would mean that most material that's not commercially available, about eighty-five percent by the end of twenty-five years, would go immediately into the public domain. And that would mean that the library that you were looking at, that would be capable of digitisation, would be everything that is produced starting before 1983 that are not commercially available and that were not renewed at the option of their copyright holder would be in the public domain.

That means we wouldn't have to rely on Google, that anyone could digitise that material, that it could be available for anyone and to anyone anywhere in the world with an internet connection. I'm not opposed to people maintaining their copyrights and extending them. If this work is still doing well in twenty-eight years, I might have renewed it under that system. Although of course, because I use a Creative Commons licence, you have no need of waiting until a copyright term expires. But I don't think we should be relying on Google, and I think that the settlement that Google has entered into has many positive features, but in the long run will be profoundly harmful to the law of fair use.

IPW: Yes. I'll save you from having to answer that. Well, is there anything else you would like to mention to us here, to policymakers. Perhaps WIPO and its technical assistance that it delivers on the ground around the world, or WTO, maybe you have a view on TRIPS.

BOYLE: I think the first thing that's extraordinarily harmful is the demonisation of alternative views of intellectual property. Most frequently the scare-mongering is done by the representatives of the content industries for obvious reasons because the best way of avoiding public focus on completely unjustifiable public policies is to demonise those who criticise them. But it's extremely unhelpful and it's something that WIPO has occasionally been drawn into and should seek to avoid. If WIPO were really to live up to its charter, and I'm not sure whether it's capable of doing that, it would actually be engaging in the kinds of studies that were done by the Gowers review, that were eventually done by the European Union on the database directive, after some prodding. It would actually be hiring people who are comparativists and economists. I know they're hiring a couple of economists, although their version of what empirical studies are strikes me as profoundly misguided.

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They would be looking at it not through the point of view of ideologues on either side, but actually in the point of view of respectable policymakers who are actually attempting to make the world a better place. And the point about making the world a better place is that faith-based policies are not a good way to do it. Doing it on the basis of faith, or an ideologically indefensible position that more rights are better, is simply indefensible. And what WIPO needs to do is basically acknowledge that it has at times been drawn into that way of thinking and that it has at times been captured, and instead dedicate itself to becoming a respected neutral voice which actually offers the kind of technical expertise that it should always have offered. Which doesn't mean a bunch of lawyers, like the people I train, who run around telling people: "Oh, well you can add a whole new set of super-duper Digital Millennium Copyright Act times three database protection and neighbouring rights too." It means studying empirically, without partiality or bias, the actual effects of the policies that they have so unwisely been forcing on the world over the last fifty years.

IPW: Would you advise the new US administration that the embracing of some of these concepts could help to spark innovative capabilities, etcetera, and help to turn around economies? Is it that kind of a chain of events?

BOYLE: Well, absolutely. Obviously enormous amounts of money have to be pumped into all of the developed economies over the next year and a half. Everyone agrees on that. There has to be some kind of massive Keynesian deficit spending. What should we be pumping it into? Right, that's the question. And under what conditions? I think there is an extremely strong case for pumping money into research that will lead to levels of innovation and technological growth and making that research available as a public good. It's a very complicated issue to talk about where that money should be directed and under what kinds of conditions, but I think that there is a fairly strong case that there's a good economic multiplier to the state as a provider of basic and, in some cases, of applied research, and that we now have a better understanding of where in the innovative chain it is best to start introducing intellectual property rights. And I think the answer is: as one gets close to the actual finished product that is going to market, then it is entirely appropriate to introduce intellectual property rights, but when they are introduced way downstream, they actually harm innovation. So if they were introduced at the very basis of the innovative process, that they hurt it.

So I think there is an argument that governments could do well by investing some of these billions or trillions of dollars into a large-scale ramp-up of their scientific research and technological research and technological education developments as well as in the - the examples that come to mind from the world of the twentieth century, which were generally investments in physical infrastructure, the infrastructure of roads, for example - in many cases we have not yet built the superhighways of the mind. We have not yet facilitated the flows of scientific knowledge in ways that I describe in the book that we could. We'vebizarrely made a world in which the internet works incredibly well for porn and for shoes, but doesn't work very well for the flow of scientific data. Much of scientific literature, in particular, which is often covered in copyrights and restrictions and digital rights management protections and so forth. And I think that changing course in that direction could actually have a powerful multiplier effect, and I give some examples in the book of places where free provision of government data has been an extraordinary method to prime the economic pump of activity.

IPW: Thank you.

IP-Watch intern Kiernan Murphy contributed to the preparation of this report.

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http://ip-watch.org/files/thepublicdomain1.pdf

The Public Domain: Enclosing the Commons of the Mind

By James Boyle

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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.1

"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.2 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.3 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.4 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.5 The Digital Millennium Copyright Act gives content providers a whole array of legally protected digital fences to enclose their work.6 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 here 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.)7

Should the U.S. Commerce Department be able to patent the genes of a Guyami Indian woman who shows an unusual resistance to leukemia?8 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?9 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?10 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,"11 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."12 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 a Preface xv author of a popular book normally does, so that the scholarly audience cantrace 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 freestanding. 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.

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http://www.guardian.co.uk/education/2005/oct/14/highereducation.uk

Protecting the public domain

By James Boyle

Guardian.co.uk

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Yesterday the Royal Society for the Arts, Manufactures and Commerce launched its IP charter which links intellectual property to the Declaration of Human Rights for the first time. James Boyle, one of the movers behind the charter, explains the background and principles behind it

If you stand in the Great Room of the Royal Society for the Encouragement of Arts, Manufactures and Commerce (RSA) you cannot help but look at James Barry's series of paintings from the 1770s and 1780s entitled The Progress of Knowledge and Culture.

The paintings, which have titles such as Crowning the Victors at Olympia and Commerce and the Triumph of the Thames feature a promiscuous mixture of Greek and 18th-century themes as well as many scantily clad young women whose main hope appears to be that The Progress of Knowledge of Culture is going to give them something more substantial to wear than a precariously secured bedsheet.

They hope in vain. It would be easy to dismiss this strange collage of hoplites and theodolites as complacent 18th-century classicism, were it not for one thing. The Barry paintings, like the society that hosts them, are devoted to the burning question: how do we encourage progress?

In fact, the painting The Distribution of the Premiums in the Society of the Arts, features what is surely the only significant artist's portrayal of an alternative intellectual property regime.

The RSA Premiums were a set of prizes given out for great innovations, which were then released to the public royalty-free. The Premiums were designed as an alternative to the patent system, which the society saw as having numerous drawbacks. Later in its history, the society supported reforms to the patent system. But at each stage its goal was to get the system right, to balance the tasks of encouraging innovation while distributing its products at the lowest cost possible.

In pursuing this goal, the RSA did not assume that more intellectual property was always better, nor that the current system was perfect. That is hard to believe today. The mantra "stop piracy by strengthening rights" is what passes for policy debate. Yet there was a time when even the proponents of intellectual property saw it as a necessary evil, something to be limited to the narrowest scope, and time necessary.

That was Thomas Jefferson's view, and Thomas Macaulay's. Jefferson, the architect of the American patent system, agonised over the issue. He wrote that "he knew well the difficulty of drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not."

Today's policymakers feel no such agony. In every field of law and area of technology, they have expanded intellectual property rights. Rights are longer. American copyright has gone from its Jeffersonian length of 14 years to the life of the author plus 70 years. They are wider. Europe has created a database right which covers unoriginal compilations of facts. And they are backed by more severe penalties.

What evidence has supported this wave of expansion? Which comparative studies of economic effects? Not every country has taken the same dosage of "rights steroids" after all. The USA's database industry has flourished without a database right. Indeed on most measures, it has outperformed the European database industry. The same is true of the so-called "broadcaster's right," of marginally shorter copyright terms and so on.

When this kind of data is released about the efficacy of a drug, it is pulled from the market. Heads roll at the agencies responsible. In intellectual property policy, data consists of anecdotes, just-so stories, and celebrity testimony.

The next statistical economist that the World Intellectual Property Organisation hires to run comparative studies on different levels of protection will be its first. Intellectual property policy is an evidence-free zone. We have forgotten the fundamental truth that Jefferson, and Macaulay understood so well. Property rights are only half of the system. Just as important is the realm of material that is not owned, the public domain, the raw material from which the next invention, novel or song will spring.

This debate has been an uneven one over the past few years. The impressive report of the UK Commission on Intellectual Property Rights, which the government seems to have forgotten already, marked a momentary departure from faith-based policy. There have been isolated victories, defensive levees raised here and there against the rising tide of monopoly rents. What has been missing is a positive statement of what good intellectual property policy is.

But perhaps things are changing a little. On October 13 in the Great Room of the RSA, a first stab at answering that question is due to be released. Called the Adelphi charter, it is an attempt to lay out those principles. Central among them are the ideas that policy should be evidence-based and that it should respect the balance between property and the public domain, not eliminate the latter to maximise the former.

Full disclosure: I was among those who came up with the idea for the charter even though I can claim scant authorship credit in the text that resulted: the steering committee's members ranged from a Nobel laureate who helped sequence the human genome, to an executive who worked in streaming media.

But somehow it seems fitting that the charter will be launched in a room that bears (and bares) eloquent testimony to the fact that these ideas are neither new nor radical. Perhaps Barry's shivering nymphs will approve.

James Boyle is a professor of law at Duke law school in North Carolina, a board member of Creative Commons and the cofounder of the Center for the Study of the Public Domain.

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http://www.law.duke.edu/boylesite/Intprop.htm#N_17_

A Politics of Intellectual Property: Environmentalism For the Net?

James Boyle[(1)]

Introduction: This Article argues that we need a politics, or perhaps a political economy, of intellectual property. Using the controversy over copyright on the Net as a case-study and the history of the environmental movement as a comparison, it offers a couple of modest proposals about what such a politics might look like -- what theoretical ideas it might draw upon and what constituencies it might unite.

I - "Code is Code" - The Logic of the Information Relation

Everyone says that we are moving to an information age. Everyone says that the ownership and control of information is one of the most important forms of power in

contemporary society. These ideas are so well-accepted, such cliches, that I can get away with saying them in a *law review article* without footnote support. (For those blessedly unfamiliar with law reviews, this is a status given to only the most staggeringly obvious claims; the theory of evolution,[(2)] and the orbit of the earth around the sun,[(3)] probably would not qualify.)

Beyond the claim that the information society exists, however, there is surprisingly little theoretical work. Sadly for academics, the best social theorists of the information age are still science fiction writers and, in particular, cyberpunks -- the originators of the phrase "cyberspace" and the premier fantasists of the Net. If one wants to understand the information age, this is a good place to start.

Cyberpunk science fiction succeeded as a genre largely because it combined a particular plot aesthetic with a particular conceptual insight. The plot aesthetic was simple; the bad boy/film noir world of the romantic lowlife. When juxtaposed to the 2-dimensional priggishness of the normal science fiction hero, the cigarette smoking, drugged-out petty outlaws and mirror-shaded ninja-chicks of cyberpunk seemed rebellious, cynical and just, well, *cool*. The character-type is a familiar one; James Dean could easily have played the hero of *Neuromancer*.[(4)] The conceptual insight is not so familiar. Cyberpunk is built on the extrapolation of two principal technologies, computers and the Web on the one hand, and genetic engineering on the other. The theme of cyberpunk is that the information age means the homologisation of all forms of information -- whether genetic, electronic, or demographic. I grew up believing that genes had to do with biology, petri dishes and cells and that computers had to do with punch cards and magnetic disks. It would be hard to imagine two more disparate fields. In contrast cyberpunk sees only one issue ~ code ~ expressed in binary digits or the C's,G's, A's and T's on a gene map.

II - Intellectual Property is the Legal Form of the Information Age

The cyberpunk writers also offer us a legal insight. The more one moves to a world in which the message, rather than the medium, is the focus of conceptual, and economic interest, the more central does intellectual property become. Intellectual property is the legal form of the information age. Like most property regimes, our intellectual property regime will be contentious, in distributional, ideological and efficiency terms. It will have effects on market power, economic concentration and social structure. Yet, right now, we have no politics of intellectual property -- in the way that we have a politics of the environment or of tax reform. We lack a conceptual map of issues, a rough working model of costs and benefits and a functioning coalition-politics of groups unified by common interest perceived in apparently diverse situations.

Why don't we have such a politics? One reason is that with a few exceptions, the mass media coverage of the information age has been focused firmly on "cyberporn" and its potential censorship. This is rather like thinking that the most important feature of the industrial revolution was that it allowed the mass-production -- and then the regulation -- of pornographic magazines. Given the magnitude of the changes occurring, and the relatively small differences between pornography on-line and pornography anywhere else, a more trivial emblematic concern would have been hard to find. It is intellectual property, not the regulation of cyber-smut, that provides the key to the distribution of wealth, power and access in the information society. The intellectual property regime could make -- or break -- the educational, political, scientific and cultural promise of the Net. Indeed, even if our *only* concern were censorship, it would be perverse to concentrate exclusively on the direct criminalisation of content by governments. The digital world gives new salience to *private* censorship -- the control by intellectual property holders of distribution of and access to information. The recent Scientology cases are only the most obvious manifestation of this tendency.[(5)]

The media were not the only ones to miss the boat. Lawyers and legal academics largely followed suit. With a few exceptions, lawyers have assumed that intellectual property was an esoteric and arcane field, something that was only interesting (and comprehensible) to practitioners in the field.[(6)] There is some question whether this attitude was ever defensible; it certainly is not now. In terms of ideology and rhetorical structure, no less than practical economic effect, intellectual property is the legal form of the information age. It is the *locus* of the most important decisions in information policy. It profoundly affects the distribution of political and economic power in the digital environment. It has impacts on issues ranging from education to free speech. The "value" protected[(7)] by intellectual property in the world economy is in the hundreds of billions of dollars and growing all the time.

There are structural reasons why these tendencies will continue. The first crucial aspect of the current information economy is the increasing homologisation of *forms* of information. Think of the many ways in which it now does not make sense to distinguish between electronic and genetic information -- any more than between red books or green books. Precisely because we conceive of them as (and have the capability to treat them as) information, both present the same issues of regulation -- privacy, access, public goods problems, and so on. As a result, they have literally begun to overlap -- think of the storing (and then the sale?) of the human genome on computer disk, or of the private gene databases which add value to information developed through publicly funded research and then demand patent options as the prerequisite for access by outsiders.[(8)] Read about the mathematical-biological/computer-science discipline of bio-informatics, a discipline which is premised on the belief that information is information, whether the medium is a double helix or an optical disk.[(9)]

We are now used to the idea that Microsoft retains rights over the lines of code sitting on computer hard drives around the world. We can even produce a utilitarian justification to explain why. It is a lot stranger to think that women all over the country may carry in their bodies a string of genetic information -- brca1, the so-called breast cancer gene -- that has been patented by Myriad Genetics or that the Commerce Department tried to patent the genes of a Guyami Indian woman who possessed an abnormal resistance to leukemia.[(10)] From the point of view of the information economy, though, the two cases are very similar; in each case, strings of code are subject to intellectual property rights granted in the belief that they will inspire further innovation and discovery. The fact that this can be done in the face of the profound shock most people feel at the ownership of human genes is a testament to the universalizing logic of the information relation. (Whether it is also a good thing is a different question.)

The process is not simply a legal one and the overlaps go in both directions. Scan the science pages and see articles about the possibility of using DNA sequences as incredibly powerful parallel processing "computers."[(11)] Think of the software designers who create electronic ecologies and then use those strings of computer code which have proved themselves as survivors -- harnessing a form of "natural" selection that Darwin would have recognised but could never have imagined.[(12)] Put it all together and then compare this "reality" to the way that we thought about computers on the one hand and biology on the other, just twenty years ago. In the international information economy, the medium is not the message. The medium is *irrelevant*.

The second crucial aspect of the information economy is a corollary of the homologisation of forms of information; the decreasing proportion of product cost and intellectual attention devoted to medium (diskettes, cell-lines) rather than message (software, decoded DNA sequences). A moment's thought will show that *both* of these aspects will give increased importance to intellectual property. Reconceiving new areas of science, commerce and research as "information issues" simply gives us more fields in which it is likely we will spy the public goods problems that intellectual property is supposed to solve. And the diminishing portion of product cost devoted to medium rather than message means that, within any given area, the public goods problems grow all the more salient; (The price of the program rises, at least relative to the falling price of the diskette onto which it can be copied.)

When I say that we lack a politics of intellectual property, I don't mean to imply that this is the only type of "information politics" -- more like the most neglected. Look at the recent past. From the net roots campaign against the Communications Decency Act to the titanic industry lobbying over the Telecommunication Bill in which the CDA was embedded, there have been many moments of political struggle and agitation over digital commerce and communications regulation.[(13)] There have been conferences, both Polyannish and despairing, over the use of the Net by non profit groups, and thoughtful warnings of the dangers posed by disparate access to information technologies. These are

serious points; the issue of access in particular. But in most cases, they are isolated applications to a new technology of a familiar political worldview or calculation of self-interest. Libertarians don't want newspapers censored; their attitude to the Net is the same (though the interactive quality of the technology, and the proprietary feeling that novelty gives first adopters have certainly given more people a stake in the protection of the system.) Non-profit groups have to adjust to changes in communications technology, just like changes in tax law, or the regulation of lobbying. Communications conglomerates have an attitude towards bandwidth that seems indistinguishable from most commercial entities' attitude towards publicly held real estate; rationally enough, they want more, they want it free (ideally, they want it subsidised) and they want to be able to exploit it without strings. The left sees a resource with new importance -- access to information technology -- and makes about it the points that it makes about access to health care or education.[(14)] I don't mean to minimise these concerns, and certainly don't want to make the claim that they are somehow less fundamental than the ones I describe here. But I do think that, precisely because of their comfortable familiarity, they miss some of the *differences* in the politics of the information age, the ideas we have not thought about so often or so well.

III - **The Conceptual Structure of an Intellectual Land-Grab**

Elsewhere, I have argued at unseemly length that there are structural tendencies in our patterns of thinking and discourse about intellectual property that lead us generally to "over" rather than "under-protect".[(15)] I will summarise, rather than attempt to justify those claims here. (A chart that might be helpful is provided in the table on page 13.)

One of the roots of the problem is a conceptual one. The economic analysis of information is beset by internal contradiction and uncertainty; information is both a component of the perfect market and a good that must be produced within that market. Under the former characterisation, information is supposed to move towards perfection -- a state in which it is costless, instantly available and so on. Under the latter characterisation, information must be commodified so as to give its producers an incentive to produce. But each property right handed out to ensure the production of information is a transaction cost when seen from the perspective of market efficiency.[(16)]

The most succinct encapsulation of the problem comes from an article co-written by the current head of the President's Council of Economic Advisors, who in a former life was one of the most distinguished scholars of information economics. "There is a fundamental conflict between the efficiency with which markets spread information and the incentives to acquire information."[(17)] This problem is often, though not always "solved" by ignoring it. A pre-theoretical classification is made, conventionally ascribing a certain problem to one or other realm and the discussion then continues on that basis. Thus for example, we tend to look at the field of intellectual property with a finely honed sensitivity to "public

goods" problems that might lead to under production, while underestimating or failing to mention the efficiency costs and other losses generated by the very rights we are granting. Some conventional ascriptions visibly switch over time. The contemporary proponents of legalising insider trading use the idea of the efficient capital market to minimise or defend the practice. The first generation of analyses saw the insider trade as the entrepreneur's incentive and reward for Faustian recombinations of the factors of production. An alternative method for smoothing over the tensions in the policy analysis is for the analyst to acknowledge the tension between efficiency and incentives, point out that there are some limitations imposed on intellectual property rights, to conclude that there are both efficiency-promoting and incentive promoting aspects to intellectual property law, and then to imply that an optimal balance has been struck.[(18)] (This is rather like saying that because fishermen throw some fish back, we can assume over-fishing is not occurring.)

In general, then, I would claim there is a tendency to think that intellectual property is a place to apply our "public goods/incentives theory" rather than our "anti-monopoly/free-flow of information" theory.[(19)] All by itself, this might push rhetoric and analysis towards more expansive property rights. The tendency is compounded, however, by two others.

First, courts are traditionally much less sensitive to First Amendment, free speech and other "free flow of information arguments" when the context is seen as private rather than public, property rather than censorship. Thus, for example, the Supreme Court will refuse to allow the state to ban flag burning, but is quite happy to create a property right in a general word such as "Olympic," convey it to a private party and then allow the private party selectively to refuse public usage of the word. Backed by this state-sponsored "homestead law for the language,"[(20)] the US Olympic Committee has decreed that the handicapped may have their "Special Olympics," but that gay activists may not hold a "Gay Olympics."[(21)] This, it seems, is not state censorship but private property. (Emboldened, Justice Rehnquist advocated privatizing the flag.)[(22)]

Second, intellectual property rights are given only for "original" creation. But the idea of the original author or inventor implicitly devalues the importance of the raw materials with which any creator works -- the rhetorical focus on originality leads to a tendency to undervalue the public domain. After all, the novelist who, as Paul Goldstein puts it, "craft[s] out of thin air" does not need a rich and fertile public domain on which to draw. The ironic result is that a regime which lauds and proposes to encourage the great creator, may in that process actually function to take away the raw materials which future creators need to produce *their* little piece of innovation. One interesting thought experiment is to wonder whether Bill Gates could have developed the *highly* derivative program of MS-DOS if, at the time that he developed it, the current set of expansive copyright and patent protections for software had been in place. My book provides a lengthy discussion of this tendency so I will not dwell on it here.

Tensions In an Intellectual Property System

I have arranged these tensions in two vertical sets. Each set is not a list of corollaries, indeed they are sometimes internally contradictory. Thinking of the subject of intellectual property as "information" rather than "invention," does not commit oneself to Northrop Frye's views about the nature of artistic creation. It certainly does not entail the idea that intellectual property should protect investment and labour--in fact, the "efficiency" perspective tends to eschew intellectual property rights altogether. Let me also acknowledge that any particular portion of information regime is likely to mix and match the columns, like a restaurant patron picking four from column B and one from column A. *Nevertheless*, the members of each column are most likely to be found in popular and scholarly discourse when linked to their vertical neighbours. **Under the guise of resolving these problems--the effect of the author vision is to make the items in the middle column either disappear or recede in importance.**

Tensions in an Intellectual Property System Subject Matter	Information	Innovation
Economic Perspective	Efficiency	Incentives
Paradigmatic *Conception* of Problems	Transaction Cost Problems. Barriers to the free flow of information lead to the inhibition of innovation/ inadequate circulation of information	Public Goods Problems. Inadequate incentives for future production leads to the inhibition of innovation/ inadequate circulation of information
Reward (if any) for..	Effort/Investment/Risk	Originality/Transformation
View of the Public Domain	Finite Resources for future creators	Infinite Resources for future creators
Vision of the productive process	Development based on existing material."Poetry can only be made out of other poems; novels out of other novels. All of this was much clearer before the assimilation of literature to private enterprise." (23)	Creation *ex nihilo*. "Copyright is about sustaining the conditions of creativity that enable an individual to craft *out of thin air* an ***Appalachian Spring***, a ***Sun Also Rises***, a ***Citizen Kane***."(24)
Normative Starting Point	Free speech/Free circulation of ideas and information.	Property rights -- the creator's "natural" right, the reward for past creation, the incentive to produce again.

So much for the background. Now a brief case study. The difficulty is not in finding an example of intellectual property expansion, but in knowing which one to pick. The last few years have seen the expansion of first copyright and then patent to cover software, the patenting of life-forms and human genes, the extension of copyright term limits. Speaking not to the level of protection, but to the current conception of intellectual property law, it is interesting to note that current legislation proposes that the Copyright Office and the Patent Office should cease to be part of the government -- being converted instead to government corporations or "performance based organisations" which would thus be forced to pay greater attention to their "users" and might even be funded through user fees.[(25)] The idea that the rights-holders are the true "users" or "clients" of the office is a striking one. On the international level we have seen the use of the GATT to turn intellectual property violations into trade violations, thus codifying a particular vision of intellectual property and sanctifying it with the label of "The Market."[(26)] The example I will pick, however, is the Clinton Administration's proposal for copyright on the Net, which is now hanging somewhere in legislative limbo.

IV - A Brief Case-Study: Copyright on The Net

If the information society has an iconic form (one could hardly say an embodiment) it is the Internet. The Net is the anarchic, decentralised network of computers that provides the main locus of digital interchange. While Vice-President Gore, the Commerce Department and the National Telecommunications and Information Administration were *planning* the "information superhighway" the Net was *becoming* it.

Accordingly, if the government produced a proposal that laid down the ground rules for the information economy, that profoundly altered the distribution of property rights over this extremely important resource and that threatened to "lock in" the power of current market leaders, one would expect a great deal of attention to be paid by lawyers, scholars and the media. Nothing could be further from the truth. The appearance of the Clinton Administration "White Paper"[(27)] on intellectual property on the National Information Infrastructure produced almost no press reaction. The same was true of the introduction and eventual stalling of the White Paper's legislative proposals in both the House and the Senate.[(28)] Given the potential ramifications of the legislation, this alone, it seems to me, would be strong evidence for the proposition that greater scrutiny of our intellectual policy making is needed. But the problem lies deeper.

Elsewhere I, and many others, have written about the problems with the White Paper's account of current law, its distressing tendency to misstate, minimise or simply ignore contrary cases, policy and legislative history, its habit of presenting as settled, that which

is in fact a matter of profound dispute.[(29)] There have also been thoughtful analyses some of the potential negative *effects* of the White Paper and its implementing legislation, particularly focusing on the consequences for libraries, for software innovation and for privacy.[(30)] Defenders of the White Paper have argued that its proposals are necessary to protect content on, and encourage fuller use and faster growth of, the Net.[(31)]

From my point of view, however, the really depressing thing about the report is that it fails to accomplish its stated goal; to examine what level of intellectual property rights would be necessary in cyberspace. It fails in a way that is both revealing and disturbing. The problem isn't simply the tendency to give a pro-author account of the existing law. Even if the White Paper's summary of intellectual property law were accurate, there might well be reasons why a different level of protection might be appropriate in the digital environment. For example, the global reach and ease of access that the Net offers clearly facilitate illegitimate copying. But they also cut down enormously on advertising and on the costs of distribution, potentially yielding a higher percentage return for a lower level of investment. Thus, with some products more intellectual property protection might be required while with others a lower level of protection would still produce an adequate return to encourage future production.

Some "digital products" require enormous investments of time and energy, are of lasting value, require no "tied" subsidiary services to make them work and can be copied for pennies. Others require little investment precisely because of their digital nature, do not require extensive research and development or can be protected by denial of access (databases and search engines), by preemptive release of "demo" or partially disabled shareware versions (DOOM), by being first to market, by "tying arrangements" such as help lines, technical assistance or paid advertising (Netscape) and so on. The point is that the digital environment is *complicated*; the same technical factors that make copying easier also yield other ways for producers to recover their investments, or to encourage further innovation. Rather than take these complexities seriously, the White Paper simply assumes that, on the Net, a right-holder needs all the rights available outside the Net, plus some new ones as well. To the point that there are multiple ways for producers to secure an adequate return on their investment of time and ingenuity, the White Paper opines weakly that not everyone will choose to enforce to the full, the rights the report proposes to give them. This is rather like responding to the argument that a capital gains tax cut is not necessary to stimulate investment, with the rejoinder that some investors may decide to give the extra money to charity. Yes, it may happen, but that doesn't go to the question of whether the change was necessary in the first place.

More important than the individual positions taken, however, are the logical fallacies and baseline errors with which the White Paper is loaded. Intellectual property rights are limited monopolies conferred in order to produce present and future public benefit -- for the purposes of achieving those goals, the "limitations" on the right are just as important as the grant of the right itself. To put it more accurately, since there is no "natural"

absolute intellectual property right, the doctrines which favor consumers and other users, such as fair use, are just as much a part of the basic right, as the entitlement of the author to prevent certain kinds of copying. Even the source of the Congress's authority in intellectual property matters --Article 1, Section 8, clause 8 of the Constitution -- mentions two limitations on intellectual property rights; one is functional "To promote the Progress of Science and useful Arts" and the other is temporal "by securing for limited times to authors and inventors." Thus, intellectual property is a particularly inappropriate area to talk about property rights as if they were both natural and absolute. Yet this the White Paper does with a dogged consistency and an unlikely passion. Observe in the following quotation how the White Paper first sets up its own inflated idea of intellectual property as the baseline, then implies that right-holders actually have an absolute property right *in the continuation of that level of protection*. Amazingly, the "limitations" that define intellectual property rights instead become a "tax" on right-holders.

Some participants have suggested that the United States is being divided into a nation of information "haves" and "have nots" and that this could be ameliorated by ensuring that the fair use defense is broadly generous [sic] in the NII context. The Working Group rejects the notion that copyright owners should be taxed -- apart from all others -- to facilitate the legitimate goal of universal access.[(32)]

Of course, given the goals of copyright law, it would have made just as much sense if the argument had been reversed, taking the fair use rights of users and consumers as the baseline. The White Paper wants to give expansive intellectual property rights because it believes, wrongly in my view, that this is the best way to encourage private companies to fund the construction of the information superhighway. In response, a more skeptical Working Group might have said;

Some reports have suggested that the difficulties of encouraging companies to develop the National Information Infrastructure could be ameliorated by ensuring that intellectual property rights are broadly generous and fair use rights curtailed in the NII context. The Working Group rejects the notion that consumers, future creators and other holders of fair use rights should be taxed -- apart from all others -- to facilitate the legitimate goal of encouraging investment in the information superhighway.

But the White Paper not only illustrates the pervasive power of baseline fallacies in information economics, it also shows how the "original author" vision downplays the importance of fair use and thus encourages an absolutist rather than a functional idea of intellectual property. In a footnote to the passage quoted above, the Working Group explains further. The laws of economics and physics protect producers of equipment and tangible supplies to a greater extent than copyright owners. A university, for example, has little choice but to pay to acquire photocopy equipment, computer paper and diskettes. . .

It may, however, seek subsidization from copyright owners by arguing that its copying and distribution of their works should, as a fair use, not be compensated."[(33)]

This completes the picture given above. Fair use rights are a "subsidy" sought by universities. But wait a minute. Even if the *only* goal of intellectual property law were to encourage future innovation and information production, this argument would be fallacious. Future creators need some raw material to work *with*, after all. Fair use is one important method of providing that raw material. It can also be seen as part of the implicit quid pro quo of intellectual property; we will give you this extremely valuable legal monopoly, backed with state power and enforced through the courts (and by the FBI.) In return, we will design the contours of your right so as to encourage a variety of socially valuable uses. The White Paper wants to give copyright holders the "quid" while claiming that the "quo" is a tax, or a forced subsidy.

Only the unfamiliarity of intellectual property conceals the ludicrousness of the argument. Its as if a developer had negotiated a fat package of cash grants and tax breaks as the price of building a new stadium in Washington D.C., but then wanted to claim the benefits of the deal while insisting that to making him fulfil his side of the bargain would be to confer a "subsidy" on the city.[(34)]

The press reaction to the White paper was respectful (and a little foggy around the edges.) Obviously at a loss to know whom to contact, the reporters got reactions from the Business Software Alliance, the recording industry and the publishers' lobbyists. Surprisingly enough, all these groups felt this was a fine document, the result of meticulous analysis and a good basis for the future. Only later did the press begin to contact those who would be negatively affected by the proposed changes: libraries, on-line service providers, teachers and so on. The coverage in the media demonstrated two vital things about the future of intellectual property.

First, it is still possible to get away with arguments which if made about any other area of regulation would arouse howls of derision -- or at least well-informed skepticism. Compare press reactions to proposals for a flat-tax or arguments that property owners should be compensated for the costs of complying with environmental regulation. Second, the press and the public simply have no idea of the likely "sides" or "interests" involved in such a decision. If a labour law is passed, the *Washington Post* doesn't only call the Chamber of Commerce, on environmental issues they don't only call the Sierra club. Yet on intellectual property issues, they call only the largest property holders. The idea that startup software developers, academics, librarians, civil libertarians and so on might have a distinct perspective on these issues, simply hasn't emerged into popular consciousness.

V - The Analogy to Environmentalism

Assume for a moment the need for a politics of intellectual property. Go further for a moment, and accept the idea that there might be a special need for a politics to protect the public domain. What might such a politics look like? Right now, it seems to me that, in a number of respects, **we are at the stage that the American environmental movement was at in the 1950's. There are people who care about issues we would now identify as "environmental" -- supporters of the park system, hunters, birdwatchers and so on. (In the world of intellectual property we have start-up software engineers, libraries, appropriationist artists, parodists, biographers, biotech researchers etc.) There are flurries of outrage over particular crises -- burning rivers, oil spills**. (In the world of intellectual property, we have disconnected stories about Microsoft's allegedly anti-competitive practices, the problematic morals of patenting human genes, the propriety of using copyright to shut down certain critics of the Church of Scientology.) **Lacking, however, is a general framework, a set of analytical tools with which issues should -- as a first cut -- be analysed, and as a result a perception of common interest in apparently disparate situations -- cutting across traditional oppositions. (Hunter vs. Birdwatcher, for example.)**[(35)] **What kinds of tools are we talking about?**

Crudely speaking, the environmental movement was deeply influenced by two basic analytical frameworks. The first was the idea of ecology; the fragile, complex and unpredictable interconnections between living systems. The second was the idea of welfare economics -- the ways in which markets can fail to make activities internalise their full costs. The combination of the 2 ideas yielded a powerful and disturbing conclusion. Markets would *routinely* fail to make activities internalise their own costs, particularly their own environmental costs. This failure would, *routinely*, disrupt or destroy fragile ecological systems, with unpredictable, ugly, dangerous and possible irreparable consequences. These two types of analysis pointed to a *general* interest in environmental protection and thus helped to build a large constituency which supported governmental efforts to that end. The duck-hunter's preservation of wetlands as a species habitat turns out to have wider functions in the prevention of erosion and the maintenance of water quality. The decision to burn coal rather than gas for power generation may have impacts on everything from forests to fisheries.

Of course, it would be silly to think that environmental policy was fuelled only by ideas rather by more immediate desires. As William Ruckelshaus put it, "With air pollution there was, for example, a desire of the people living in Denver to see the mountains again. Similarly, the people living in Los Angeles had a desire to see one another."[(36)] (Funnily enough, as with intellectual property, changes in communications technology also played a rôle. "In our living rooms in the middle sixties, black and white television went out and color television came in. We have only begun to understand some of the impacts of television on our lives, but certainly for the environmental movement it was a bonanza. A yellow outfall flowing into a blue river does not have anywhere near the impact on black and white television that it has on color television; neither does brown smog against a blue sky."[(37)])

Nevertheless, the ideas I mentioned, ecology and welfare economics, were extremely important for the environmental movement. They helped to provide its agenda, its rhetoric and the perception of common interest underneath its coalition politics. Even more interestingly, for my purposes, those ideas -- which began as inaccessible, scientific or economic concepts, far from popular discourse -- were brought into the mainstream of American politics. This did not happen easily or automatically. Popularising complicated ideas is hard work. There were brilliant books like *Silent Spring* and *A Sand County Almanac*, television discussions, documentaries on Love Canal or the California kelp beds, op-ed pieces in newspapers and pontificating experts on TV. Environmental groups both shocking and staid played their part, through the dramatic theatre of a Greenpeace protest, or the tweety respectability of the Audubon society. **Where once the idea of "The Environment" (as opposed to 'my lake', say) was seen as a mere abstraction, something that couldn't stand against the concrete benefits brought by a particular piece of development, it came to be an abstraction with both the force of law and of popular interest behind it**.

To me, this suggests a strategy for the future of the politics of intellectual property. **In both areas, we seem to have the same recipe for failure in the structure of the decision-making process**. Decisions in a democracy are made badly when they are primarily made by and for the benefit of a few stake-holders (land-owners or content providers). It is a matter of rudimentary political science analysis or public choice theory to say that democracy works badly when the gains of a particular action can be captured by a relatively small and well-identified group while the losses -- even if larger in aggregate -- are low-level effects spread over a larger, more inchoate group.[(38)] (This effect is only intensified when the transaction costs of identifying and resisting the change are high.) Think of the costs and benefits of acid rain producing power-generation or -- less serious,

but surely similar in form -- the costs and benefits of retrospectively increasing copyright term limits on works for which the copyright had already expired, pulling them back out of the public domain. There are obvious benefits to the heirs and assigns of authors whose copyright has expired, in having the Congress put the fence back up around this portion of the intellectual commons.[(39)] There are obviously *some* costs -- for example, to education and public debate -- in not having multiple, competing low cost editions of these works. But these costs are individually small and have few obvious stake-holders to represent them.

Beyond the failures in the decision-making process, lie failures in the way that we think about the issues. The environmental movement gained much of its persuasive power by pointing out that there were structural reasons that we were likely to make bad environmental decisions; a legal system based on a particular notion of what "private property" entailed, and an engineering or scientific system that treated the world as a simple, linearly related set of causes and effects. In both of these conceptual systems, the environment actually *disappeared*; there was no place for it in the analysis. Small surprise then, that we did not preserve it very well. I have argued that the same is true about the public domain. **The fundamental aporia in economic analysis of information issues, the source-blindness of an "original author" centered model or property rights, and the political blindness to the importance of the public domain as a whole (not "my lake," but "The Environment") all come together to make the public domain disappear, first in concept and then, increasingly, as a reality**.

I have said all of this in an attempt to show that there is something larger going on under the *realpolitik* of land grabs by Disney and campaign contributions by the Recording Industry of America. But it would be an equal and opposite mistake to think that this is just about a dysfunctional discourse of intellectual property. In this part of the analysis, too, **the environmental movement** offers some useful practical reminders. The ideas of ecology and environmental welfare economics were important, but one cannot merely write a *Silent Spring* or a *Sand County Almanac* and hope that the world will change. Environmentalists piggy-backed on existing sources of conservationist sentiment -- love of nature, the national parks movement, hikers, campers, birdwatchers. They **built coalitions between those who might be affected by environmental**

changes. They even discovered, though very slowly, the reality of environmental racism.

Some of these aspects, at least, could be replicated in the politics of intellectual property. The coalitions developed to combat the White Paper and its implementing legislation, offers some nice examples of the possibilities and pitfalls. Other strategies also come to mind. For environmental problems, some of the transaction costs of investigation and political action are overcome through expert agents, both public and private. I pay my taxes to support the EPA or my charity dollars to Greenpeace, and hope they do a good job of tracking environmental problems. (In the latter case, I know at least that the makers of Zodiac rubber boats will be given a boost.) **Right now there is not a single public or private organisation whose main task is to protect and preserve the public domain**. This should change.

Conclusion

I have argued that the idea of an information age is indeed a useful and productive concept, that there is a homologizing tendency for all "information issues" to collapse into each other as information technology and the idea of "information" move forward in reciprocal relationship. The range of information issues expands and the value of the "message" increases, at least in comparison to the diminishing marginal cost of the medium. This, in turn, gives greater and greater importance to intellectual property. Yet despite its astounding economic importance and its impact on everything from public education to the ownership of one's own genetic information, intellectual property has no corresponding place in popular debate or political understanding; The belief seems to be that information age politics means fighting censorship on the Web *too.*

Apart from the normal presumption in favour of informed democratic participation in the formation of entire property regimes, I argued that there are particular reasons why this comparative political vacuum is particularly unfortunate. Drawing on some prior work, I claimed that our intellectual property discourse has structural tendencies towards over-protection, rather than under protection. To combat that tendency, as well as to prevent the formation and rigidification of a set of rules crafted by and for the largest stakeholders, **I argued that we need a politics of intellectual property. Using the environmental movement as an analogy, I pointed out that a successful political movement needed both a set of (popularisable) analytical tools and coalition built around the more general interests those tools revealed**. Welfare

economics and the idea of ecology showed that "the environment" literally disappeared as a concept in the analytical structure of private property claims, simplistic "cause and effect" science, and markets that do not force the internalisation of negative externalities. Similarly, **I claimed the "public domain" is disappearing, both conceptually and literally, in an IP system built around the *interests* of the current stakeholders and the *notion* of the original author, around an over-deterministic practice of economic analysis and around a "free speech" community that is under-sensitized to the dangers of private censorship**. In one very real sense, the environmental movement *invented* the environment so that farmers, consumers, hunters and birdwatchers could all discover themselves as environmentalists. **Perhaps we need to *invent* the public domain in order to call into being the coalition that might protect it**.[(40)]

Is the environmental analogy of only rhetorical or strategic value, then? For my part, though I would be happy to acknowledge its imperfections, I would say that it also shows us some of the dangers inherent in the kind of strategies I have described. Right now, even under a purely instrumental economic analysis it is hard to argue that intellectual property is set at the appropriate level. Just as the idea of "activities internalising their full costs" galvanised and then began to dominate environmental discourse, the economic inadequacy of current intellectual property discourse has been emphasised by skeptics.[(41)] But the attraction of the economic analysis conceals a danger. The problems of efficiency, of market oligopoly and of future innovation are certainly important ones, but they are not the only problems we face. Aldo Leopold expressed the point powerfully and presciently nearly fifty years ago in a passage entitled "Substitutes for a Land Ethic."

One basic weakness in a conservation system based wholly on economic motives is that most members of the land community have no economic value... When one of these non-economic categories is threatened, and if we happen to love it, we invent subterfuges to give it economic importance... It is painful to read those circumlocutions today.[(42)]

I believe that there are powerful arguments why a Pay-as-you-read architecture on the Net would be economically inefficient even with minimal transaction costs. I can make arguments that point out the economic problems with our current treatments of "sources" of genetic information, or what have you. I can even say with complete truthfulness that I believe my arguments to be better than those on the "other side." But under Leopold's gentle chiding I am reminded of the dangers of embracing too closely a language that can express only some of the things that you care about.

Let me conclude by dealing with two particular objections to my thesis here. First, that my whole premise is simply wrong; intellectual property is not out of balance, the public domain is not systematically threatened, economic analysis is both determinate and clear in supporting the current regime, the general tendency both internationally and domestically has not been towards the kind of intellectual land-grab I describe, or -- if it has -- the tendency exists for some very good reasons. Elsewhere I have tried to refute those claims but to some extent the point is moot. Even if I was wrong, **the basic idea of democratic accountability over public disposal of *extremely* valuable rights would seem to demand a vastly more informed politics of intellectual property in the information age. If such accountability is to exist, the public domain should be more systematically discussed and defended than has heretofore been the case**.

The second objection is more fundamental. How can I compare the politics of intellectual property to the politics of the environment? For some, the difference in seriousness of the two problems robs the analogy of its force. After all, environmental problems could actually destroy the biosphere and this is just.., well, intellectual property. My response to this is partly that this is *an analogy*. I am comparing the form of the problems rather than their seriousness. Still, I have to say I believe that part of this reaction has to do with a failure to adjust to the importance that intellectual property has and is going to have in an information society. Again and again, one meets a belief that this is a technical issue with no serious human, political or distributional consequences. Yet a "bad" intellectual property regime of the kind that I am talking about could:

- Lead to extraordinary monopoly and concentration in the software industry, as copyright and patent trump antitrust policy. Right now the effects are mainly those that would concern the actual drafters of the antitrust laws, who worried about the effects that concentration of wealth and economic power had on the republic, rather than their more modern "consumer-welfare" oriented exegetes. There is some reason, however, to believe that there could be costs even a Chicago-school antitrust analysis would find distasteful.
- Extend intellectual property rights even further over living organisms, including the human genome, transgenic species and the like. This clearly has *some* ethical, medical and religious ramifications, while the spectre of a First world-dominated land grab over the human genome would surely be enough to shock those who believed that the *deep sea bed* was the common heritage of mankind.
- "Privatise" words, or aspects of images or texts that are currently in the public domain, to the detriment of public debate, education, equal access to information and the like.
- Impose a pay-as-you-read architecture on the Net without considering some of the costs resulting from that decision.

And so on, and so on. The list could be extended. Some of these things have not yet come to pass, and not all of them will. There are court and regulatory decisions that cut against the protectionist tendency I have described. Recent organising efforts around Net, cultural property, pharmaceutical and fair use issues have improved the discourse markedly. Nevertheless, I think that the current situation is enough to warrant what one might call precautionary alarmism. It would be a shame for the fundamental property regime of the information economy to be constructed behind our backs. We need a politics -- a political economy -- of intellectual property and we need it now.

Endnotes

1. © **James Boyle 1997**. This article draws on ideas first developed in my book, Shamans, Software and Spleens: Law and The Construction of the Information Society (1996). Those who study intellectual property will realize how extensive a debt this article owes to David Lange's classic piece "Recognizing the Public Domain," 44 *Law and Contemporary Problems* 147 (1981) Thanks are also due to to Keith Aoki, John Perry Barlow, Robert Gordon, Jessica Litman, Peter Jaszi, Bruce Sterling and to the Yale and Columbia Legal Theory Workshop Series. Please don't quote or cite 'til I get the bugs out.
2. *See* Charles Darwin, On the Origin of Species by Means of Natural Selection (1859) *but see Genesis* 1:1-29 c*ontra*.
3. *See* Nicolaus Copernicus, Concerning the Revolutions of the Celestial Spheres (1543) *but see* Claudius Ptolemaeus, Almagest (c. 170 A.D) *contra*.
4. *See generally* William Gibson, Neuromancer (1984).
5. Church of Scientology Int'l v. Fishman, 35 F.3d 570 (9th Cir. 1994); Religious Technology Center v. Netcom On-Line Communications Servs., 907 F. Supp. 1361, 1377-1378 (D.Cal. 1995). Religious Technology Center v. Arnaldo Pagliarina Lerma, 908 F. Supp. 1362, 1368 (E.D. Va. 1995) ("Although the RTC brought the complaint under traditional secular concepts of copyright and trade secret law, it has become clear that a much broader motivation prevailed--the stifling of criticism and dissent of the religious practices of Scientology and the destruction of its opponents"). The documents filed in the case have excited considerable comment on the Web. Declan McCullagh, Scientology, critics collide in Internet copyright case FOCUS, vol. 25, no. 1, October 1995, page 4.
6. This attitude is in marked contrast to lawyers' assumptions about, say, the jurisprudence of the First Amendment, or the Education Department's rulings on race-conscious scholarships. Though these are also complicated areas of law or regulation, many lawyers and laypeople feel that a basic understanding of them is a *sine qua non* of political consciousness. In many cases, in fact, the language of liberal legalism defines the central issues of public debate -- a fact that presents its own problems.
7. And, in an important sense, created.
8. *See, e.g.*, Karen Riley, *Rockville Biotech Firm takes Next Step in Genetics Journey*, Wash. Times., June 9, 1995, at B7.
9. For an introduction to the biological applications of information theory, see *Biological Information Theory and Chowder Society FAQ*, and the archives of the Usenet newsgroup bionet.info-theory.

10. "In the forests of Panama lives a Guyami Indian woman who is unusually resistant to a virus that causes leukaemia. She was discovered by scientific "gene hunters", engaged in seeking out native peoples whose lives and cultures are threatened with extinction. Though they provided basic medical care, the hunters did not set out to preserve the people, only their genes - which can be kept in cultures of "immortalised" cells grown in the laboratory. In 1993, the US Department of Commerce tried to patent the Guyami woman's genes - and only abandoned the attempt in the face of furious protest from representatives of indigenous peoples." Tom Wilkie, *Whose gene is it anyway?*, Indep., Nov. 19, 1995, at 75.
11. *See, e.g.*, Frank Guarnieri et al., *Making DNA Add*, Science, July 12, 1996, at 220.
12. *See, e.g.*, Julian Dibbell, *The Race to Build Intelligent Machines*, Time, Mar.25, 1996, at 56.
13. *See* Communications Decency Act of 1996, Pub. L. No. 104-104, 110 Stat. 133 (codified at various sections of 47 U.S.C and 18 U.S.C); *see also generally ALA-led Coalition Challenges CDA*, Am. Libr., Apr. 1996, at 13.
14. Given the fate of these arguments in the contemporary political arena, maybe I should reiterate them; Distribution of this good (education, health care, wired-ness) through a market system is going to have a lot of serious negative effects on those who cannot pay, effects that will track and actually intensify existing inequalities of class, race and gender. Given the importance of the resource in question, its relevance to the citizens' status *qua* citizen, and the corrosive effects of such inequalities on the well-being of the polity, something should be done to mitigate or eliminate the problem of access. All of this seems profoundly true, but it is hardly a new argument. In fact, subject matter aside, it would have been completely familiar to the authors of the Federalist Papers.
15. For the arguments behind this claim, see James Boyle, Shamans, Software and Spleens: Law and the Construction of the Information Society (1996). There are specific areas in which the situation might be reversed, such as "unoriginal" databases. These, however, are the exception rather than the rule
16. In the book, I explore the reasons that this problem is not "solved" when one moves to the reality of imperfect markets. The abstract idea of "trade-offs" also proves insufficient to generate the determinacy of result which most analysts claim for their work.
17. Sanford J. Grossman & Joseph E. Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 Am. Econ. Rev. 393, 405 (1980). I cannot here go into the full joys of this debate, but those who talk confidently about the economic efficiency of the fine details of intellectual property doctrine would do well to look at the absolutely basic disputes between information economists. For example, Kenneth Arrow argues that, without intellectual property rights, too *little* information will be produced because producers of information will not be able to capture its true value. (Even with intellectual property rights he believes that certain kind of information generation may need direct government subsidy on a 'cost-plus' basis.) Kenneth Arrow, *Economic Welfare and the Allocation of Resources for Invention*, *in* Rate and Direction of Inventive Activity: Economic and Social Factors, 609, 617 (National Bureau of Economic Research ed., 1962). Fama and Laffer, on the other hand, argue that, without intellectual property rights, too *much* information will be generated, because some information will be produced only in order to gain some temporary advantage in trading, thus redistributing wealth but not

achieving greater allocative efficiency. Eugene F. Fama & Arthur B. Laffer, *Information and Capital Markets*, 44 J. Bus. 289 (1971). In other words, in the absence of information property rights, there may be an inefficiently *high* investment of social resources in information-gathering activities, activities that merely slice the pie up differently, rather than making it bigger. Hirshleifer gives a similar analysis of patent law, ending up with the conclusion that patent law may be *either* a necessary incentive for the production of inventions *or* an unnecessary legal monopoly in information that overcompensates an inventor who has already had the opportunity to trade on the information implied by his or her discovery. Jack Hirshleifer, *The Private and Social Value of Information and the Reward to Inventive Activity*, 61 Am. Econ. Rev. 561 (1971). The difficulty of yielding definite results is compounded by the fact that some professional economists seem to have a naive, pre-realist understanding of law. They often talk as though there was a natural suite of property rights which automatically accompanied a free market. They make strong and unexplained assumptions that certain types of activities (for example, trading on a superior information-position) would "naturally" be allowed and involve no "harm" to others, but that certain others (for example, trading on coercion through superior physical strength) will not be. There is a fascinating study to be done on these remnants of classical economics still present in a supposedly neo-classical analysis. The same kind of error also creeps into the work of some lawyer-economists. *See, e.g., Saul Levmore, Securities and Secrets: Insider Trading and the Law of Contracts*, 68 Va. L. Rev. 117 (1982).

18. Some are more sophisticated. "In principle, there is a level of copyright protection that balances these two competing interests optimally...We shall see...that various doctrines of copyright law, such as the distinction between idea and expression and the fair use doctrine, can be understood as *attempts* to promote economic efficiency..." William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. Legal Stud. 325, 333 (1989) (emphasis added). Despite the qualifying phrases one leaves the article with the sense that the copyright law has hit the appropriate balance between efficiency and incentives. This level of comfort with the current regime is to be compared with the open skepticism displayed by an economist such as Hirshleifer. *See* Jack Hirshleifer, *The Private and Social Value of Information and the Reward to Inventive Activity*, 61 Am. Econ. Rev. 561, 572 (1971) (because of the possibility of speculation on prior knowledge of invention and the uncertainties of "irrelevant" risks, patent protection may or may not be necessary in order to produce an appropriate incentive to invention). It will be interesting to watch the Supreme Court's attitude towards these issues over the next few years, given the identity of one of the original skeptics. *See* Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs,* 84 Harv. Law Rev. 281 (1970).

19. In one sense, the current configuration of Federal bureaucracies mirrors the tensions I have been describing in this article; the FTC and the Justice Department tend to view information issues from within an efficiency perspective, accepting the need for economic incentives but more skeptical of the monopoly effects of extensive intellectual property rights. The Commerce Department -- and the administration, on the other hand -- take a strong incentive-focused approach to most issues. As a result, the battle to regulate the information economy is a fascinating fusion of organizational *persona*, economic theory and political turf war. *See, e.g.,* Federal Trade Commissioner Christine

A. Varney, Antitrust in the Information Age, Remarks before the Charles River Associates Conference on Economics, *in* Legal & Reg. Proc., May 4, 1995.
20. Felix Cohen's phrase. *Transcendental Nonsense and the Functional Approach*, 25 Colum. L. Rev. 809 (1935), *reprinted in* The Legal Conscience: Selected Papers of Felix S. Cohen (Lucy K. Cohen ed., 1970), at 33, 42.
21. San Francisco Arts & Athletics, Inc., et al. v. United States Olympic Committee, 483 U.S. 522.
22. "Only two terms ago in *San Francisco Arts and Athletics, Inc. v. United States Olympic Committee*, the Court held that Congress could grant exclusive use of the word "Olympic" to the United States Olympic Committee... As the Court stated 'when a word [or symbol] acquires 'value as the result of organization and the expenditure of labor, skill and money' by an entity, that entity constitutionally may obtain a limited property right in the word [or symbol].' Surely Congress or the States may recognize a similar interest in the flag." Texas v. Johnson, 491 U.S. 397, 429-30 (1989).
23. Northrop Frye, Anatomy Of Criticism: Four Essays, 96-97 (1957).
24. Paul Goldstein, *Copyright*, 38 J. Copyright Soc'y of the U.S.A. 109, 110 (1991) (emphasis added.)
25. Omnibus Patent Act of 1996, S. 1961, 104th Cong.; Morehead-Schroeder Patent Reform Act, H.R. 3460, 104th Cong. (1996).
26. Employing child labour or violating environmental regulations will give a nation's industry what might seem to be an unfair competitive advantage, but will not trigger trade sanctions. See, e.g., Robert Howse and Michael J. Trebilcock, The Fair Trade-Free Trade Debate: Trade, Labor, and the Environment, 16 Int'l Rev. L. & Econ. 61 (discussing the absence from the GATT/World Trade Organization framework of provisions for sanctions in response to other nations'environmental and labor practices); *but see* North American Agreement on LaborCooperation, Sept. 13, 1993, Can.-Mex.-U.S., ann. 1, 32 I.L.M. 1499 (1993). Refusing to accept and enforce our vision of intellectual property law, however, is cause for international action. *See generally* J. H. Reichman, *Compliance with the TRIPS Agreement: Introduction to a Scholarly Debate*, 29 Vand. J. Transnat'l L. 363 (1996).
27. Information Infrastructure Task Force, Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights (1995) [hereinafter White Paper]. *See also* James Boyle, *Sold Out*, N.Y. Times, Mar. 31, 1996*; Is Congress Turning the Internet into an Information Toll Road?*, Insight, Jan. 15, 1996, at 24. This section of the Article is a revised version of the analysis provided in Shamans and in those articles.
28. The relevant Bills are HR 2441 and S. 1284. Work on them will resume in January.
29. This tendency is to be contrasted unfavourably with the most thoughtful defense of the White Paper -- which argued that its protections would be necessary to put "cars on the Information superhighway" but was careful to acknowledge that some of the White Paper's legal theories were controversial, and then to defend them on their own terms rather than to offer them as propositions so obvious they needed no defense. Jane C. Ginsburg, *Putting Cars on the "Information Superhighway": Authors, Exploiters and Copyright in Cyberspace*, 95 Colum. L. Rev. 1466, 1476 (1995) [e.g. defending White Paper's embrace of the RAM copy theory but pointing that this approach has been

"questioned or even strongly criticized"]; *See also* Jessica Litman, *The Exclusive Right to Read*, 13 Cardozo Arts & Ent. L. J. 29 (1994).

30. *See* David Post, *New Wine, Old Bottles: The Case of the Evanescent Copy*, Am. Lawyer, May 1995; Niva Elkin-Koren, *Copyright Law and Social Dialogue on the Information Superhighway:* Pamela Samuelson, *Legally Speaking: The NII Intellectual Property Report*, Communications of the ACM, December 1994, at 21. *The Case Against Copyright Liability of Bulletin Board Operators*, 13 Cardozo Arts & Ent. L.J. 345 (1995). Evan St. Lifer and Michael Rogers, *NII White Paper Has Librarians Concerned About Copyright*, Library Journal News, Oct. 1, 1995. Vic Sussman, *Copyright Wrong*, U.S. News & World Report, Sept. 18, 1995; Andrea Lunsford & Susan West Schantz, *Who Should Own Cyberspace*, Columbus Dispatch, Mar. 26, 1996; Many of these points were also made in testimony. *Intellectual Property and the National Information Infrastructure: Public Hearing Before the White House Information Infrastructure Task Force*, Sept. 22, 1994 (testimony of Jessica Litman, Professor of Law, Wayne State Univ.). *Comments of Professor Mary Brandt Jensen, August 26th 1994*. *Comments of Professor Neil Netanel and Professor Mark Lemley, University of Texas School of Law, September 2, 1994.*

31. Jane C. Ginsburg, *Putting Cars on the "Information Superhighway": Authors, Exploiters and Copyright in Cyberspace*, 95 Colum. L. Rev. 1466 (1995).

32. White Paper at 84.

33. *Id* at n. 266.

34. Generally such arguments turns on disagreements over the current law baseline from which "subsidies" or "taxes" are calculated. The remarkable thing about occasional passages such as this in the White Paper is that they suggest that *any* fair use rights would be a subsidy to users. Not all of the White Paper's discussion is this extreme, however. Some of the debate still turns on differences of opinion about the meaning of fair use jurisprudence. Elsewhere I have given my account of the deficiencies in the White Paper's account of current law. *See* *The Debate on the White Paper*

35. Although this may be an oversimplification, it does not seem to be a *controversial* oversimplification. "First, the basic analytical approach and policy values underlying environmental law came from a fundamental paradigm shift born of Rachel Carson in 1961, perhaps assisted unwittingly by Ronald Coase, redefining the scope of how societal governance decisions should be made. What we might call the Rachel Carson Paradigm declared that, although humans naturally try to maximize their own accumulation of benefits and ignore negative effects of their actions, a society that wishes to survive and prosper must identify and take comprehensive account of the real interacting consequences of individual decisions, negative as well as positive, whether the marketplace accounts for them or not. Attempts to achieve such expanded accountings, as much as anything, have been the common thread linking the remarkable range of issues that we call environmental law." Zygmunt J.B. Plater, *From the Beginning, a Fundamental Shift of Paradigms: a Theory and Short History Of Environmental Law* 27 Loy. L.A. L. Rev. 981-2 (1994). *See also* Rachel Carson, Silent Spring (1961) I would replace Coase by Pigou, and mention Leopold as well as Carson, but otherwise agree. Focusing on Leopold also has another beneficial effect. It emphasises the extent to which environmentalism was driven in addition by a belief that the economic valuation, and

"commodification," of environmental resources was not only incomplete but actually *wrong*. *See* A. Leopold, A Sand County Almanac (1949).
36. William D. Ruckelshaus, *Environmental Protection: A Brief History of the Environmental Movement in America and the Implications Abroad*, 15 Envtl. L. J. 455, 456 (1985).
37. Id.
38. There are other, more context-specific, problems. Both environmental disputes and intellectual property issues are seen as "technical," which tends to inhibit popular participation. In both areas, opposition to expansionist versions of stake-holders' rights can be off-puttingly portrayed as a stand "against private property." This is a frequent claim in intellectual property disputes, where defenders of the public domain are portrayed as "info-commies" or enemies of "the free market." (The latter is a nicely ironic argument to make in favour of a state licensed monopoly.) Indeed, the resurgence of a non-positivist, property owners takings jurisprudence in the Supreme Court seems to indicate that this idea still has great force even in the environmental area.
39. Although it is beyond me how retrospective, and even post-mortem, copyright term extension is to be squared with the idea that intellectual property rights should be given only when they will stimulate the production of new work; barring the idea of sooth-saying or other worldly communication, the incentive effects would seem to be small.
40. For a path-breaking formulation see David Lange, *Recognizing the Public Domain*, 44 Law and Contemp. Probs. 147 (1981). I have also been influenced by Jessica Litman's work on the subject.
41. This economic skepticism links works otherwise very different in tone. Compare Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 Harv. L. Rev. 281 (1970); Pamela Samuelson, *The Copyright Grab* WIRED 4.01 (1996); Boyle, Shamans *supra*.
42. Aldo Leopold, A Sand County Almanac 210-211 (1949).