

Knowledge as a Public Good

From “Knowledge as a public good,” SPARC Open Access Newsletter, November 2, 2009.

<http://dash.harvard.edu/handle/1/4391171>

One of the most durable arguments for OA is that knowledge is and ought to be a public good. Here I don’t want to restate or evaluate the whole argument, which is complex and has many threads. But I do want to pull at a few of those threads.

What is a public good? In the technical sense used by economists, a public good is non-rivalrous and non-excludable. A good is non-rivalrous when it’s undiminished by consumption. We can all consume it without depleting it or becoming “rivals.” Radio broadcasts are non-rivalrous; my reception doesn’t block yours or vice versa. A good is non-excludable when consumption is available to all, and attempts to prevent consumption are generally ineffective. Radio broadcasts are non-excludable for people with the right equipment in the right area. Breathable air is non-excludable for this purpose even though a variety of barriers, from pollution to suffocation, could stop people from consuming it.

Knowledge is non-rivalrous. Your knowledge of a fact or idea does not block mine, and mine does not block yours. Thomas Jefferson described this situation beautifully in an 1813 letter to Isaac McPherson: “If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea. ... Its peculiar character ... is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening mine.” (See H.A. Washington, ed., *The Writings of Thomas Jefferson*, printed by the United States Congress, 1853–54, vol. VI, p. 180.)

George Bernard Shaw also described it: “If you have an apple and I have an apple and we exchange apples then you and I will still each have one apple. But if you have

an idea and I have an idea and we exchange these ideas, then each of us will have two ideas." (I can't find a source for the Shaw quotation and would appreciate any help.)

Knowledge is also non-excludable. We can burn books, but not all knowledge is from books. We can raise the barriers to knowledge, through prices or punishments, but that only creates local exceptions for some people or some knowledge. When knowledge is available to people able to learn it, from books, nature, friends, teachers, or their own senses and experience, attempts to stop them from learning it are generally unavailing.

The thesis that knowledge is a public good frequently shows up in critiques of copyright law for trying to privatize what is intrinsically public. But we should be more precise. Copyright law, even today in its grotesquely unbalanced form, recognizes that knowledge is a public good. It privatizes only the expression of ideas, and leaves the ideas themselves unprivatized, unregulated, and public.

Nonetheless, privatizing the expression of ideas, such as the texts which capture knowledge, seriously impedes the sharing of knowledge. But we should talk about that impediment clearly. It means that *texts* are not public goods, even if the knowledge they contain remains a public good. Hence, to remove impediments to knowledge-sharing, the job isn't to make knowledge a public good, which is already done. The job is to make texts into public goods as well.

Or the job is to make *some* texts into public goods. I want to focus on texts by authors who consent to make them public goods. One of the most important types will be royalty-free research articles. Because I believe that authors of royalty-producing monographs, novels, and journalism have a right to their royalties, I'm not interested in making *all* kinds of copyrighted texts into public goods or at least not without author consent.

Can we make *texts* into public goods?

Texts on paper, skin, clay, or stone are rivalrous material objects. Even when we use an inexpensive medium like paper and an inexpensive method of reproduction like xerography, the product is rivalrous. All texts were rivalrous before the digital age. But digital texts are non-rivalrous. With the right equipment we can all have copies of the same digital text without having to take turns, block one another, multiply our costs, or deplete our resources. This may be the deepest transformation wrought by the digital revolution. For the first time in the history of writing, we can record our non-rivalrous knowledge without turning it into a rivalrous material object. The same revolutionary liberation from rivalrous media affects sound, images, and video. No matter how we record knowledge today, the recording can be as non-rivalrous as the underlying knowledge itself, something new under the sun.

<http://www.earlham.edu/~peters/fos/newsletter/07-02-07.htm#problems>

Publishers sometimes object to the taxpayer argument for OA on the ground that public money supports many goods, such as buildings or wheat, which we cannot

readily provide to the public free of charge. The problem with these objections is that they pick out rivalrous material goods as examples. It's true that we can't give everyone free access to a building without making them take turns, or free access to wheat without rationing. But the taxpayer argument for OA is about free access to a strictly non-rivalrous good where there is no risk of depletion and no need to take turns or ration. In fact, it would cost more to discriminate among users, and make this non-rivalrous good available to some and not others, than to give it freely and indiscriminately to all.

<http://www.earlham.edu/~peters/fos/2005/09/another-critique-of-nih-policy-misses.html>

<http://www.earlham.edu/~peters/fos/2006/05/two-minds-about-frpaa.html>

Note that digital texts are non-rivalrous not because they are publicly-funded, scholarly, or carry author consent, but because they are digital. Hence the public good argument is not limited to publicly-funded goods, and in that respect (and a few others) differs from the taxpayer argument. Here, though, I am deliberately limiting it to scholarly texts that carry author consent.

Texts on paper, skin, clay, or stone are not only rivalrous; they are also excludable. As we know too well, even digital texts online behind price or password barriers are excludable. However, when we choose to put digital texts online without price or password barriers, they are not excludable, just as roads are not excludable when we choose to build them without toll booths.

If we choose, then, we can make texts, not just the knowledge expressed in texts, into true public goods that are non-rivalrous and non-excludable. Or we could if it were not for copyright law, the one restriction on would-be public goods that doesn't arise from the good's material form. Free online texts can be copyrighted. Forms of sharing facilitated by revolutionary new technologies may be obstructed by copyright, and users not excluded by practical or technical barriers may be excluded by legal barriers.

I put it this way in order to highlight the anomalous situation in which we find ourselves. We possess a revolutionary technology for knowledge sharing but are often restrained from using it by laws which (in the relevant respects) have not changed for more than two centuries. It's not just that legal change is slower than technological change. The desire for legal change is either not sufficiently widespread or is dispersed among the comparatively powerless and opposed by the comparatively powerful. Some of us want to seize the opportunities created by digital media and lift the legal restrictions on new kinds of knowledge sharing. But many others want to keep the restrictions in place and force us to forego the full benefits of our revolutionary technology. We're divided on whether to seize or fear the opportunities created by the internet.

This is a good moment to remember that copyright law originated in the 18th century when full-text copying of any lengthy text was a time-consuming and error-prone

job. When copyright arose, and for centuries after, it prohibited acts that were difficult to commit. But today it prohibits acts that are easy to commit. That doesn't invalidate copyright law, as law. But it reduces the law's effectiveness as a barrier of exclusion, even if it ought not to reduce its effectiveness. The compliance arising from the difficulty of violation is no longer quite so invisibly blended together with the compliance arising from respect for the law. Hence our understanding of the extent of respect for the law is not quite so distorted. In fact, compliance is down. Way down. Speaking for the US, I doubt that we've seen more widespread and conspicuous violation of any laws since Prohibition.

If the barriers that count against public goods are practical or technical, then digital goods of all sorts may already be public goods. But if legal barriers count as well, and they should, then we must address them as well.

Can we make *copyrighted* texts into public goods? Again, the answer is yes. With the copyright holder's consent, we can remove the legal barriers which obstruct free sharing. Without the copyright holder's consent, we can get the same or better result if we wait for the copyright to expire. But here I'll focus on methods that don't require delays of up to a century or more: the life of the author plus 70 years.

Both green OA and gold OA rely on copyright-holder consent. As a practical matter, the expiration of copyright is only a legal basis for OA when we are talking about digitizing old texts, not distributing new ones.

Authors are the copyright holders until they decide to transfer their rights away, for example, to a publisher. If they authorize OA while they are still the copyright holders, then authors can make their works into public goods. If they transfer their rights to an OA journal and the journal uses the rights to authorize OA, then the journal can make the works into public goods.

When journals don't provide OA on their own (gold OA), more often than not they are willing to let authors provide OA through a repository (green OA). When journals don't allow even that, authors can try to retain the right to authorize OA themselves.

Can we make copyrighted texts into public goods even when publishers are unwilling to authorize it and unwilling to let authors retain the right to authorize it?

Again the answer is yes. Even in this case there are several lawful ways to make texts into public goods. The most effective is the method pioneered by the Wellcome Trust and now used by the NIH and about a dozen other funding agencies. It rests on the simple fact that funders are upstream from publishers. Authors sign funding contracts before they sign publishing contracts. If the funding contract requires authors to retain key rights and use them to authorize OA, then the author's eventual publisher comes on the scene too late to interfere. Authors could always choose to avoid publishers unwilling to allow OA, but the Wellcome/NIH method tends to elicit publisher accommodation and therefore to keep all publishers within the circle of eligible destinations.

The trick is to keep the relevant rights in the hands of someone who will authorize OA. Publishers like to use the language of expropriation when protesting the NIH policy, as if publishers owned the relevant rights and the NIH seized them or blocked their exercise. But the beauty of the Wellcome/NIH method is that it prevents publishers from owning the relevant rights. Authors retain them, use them to authorize OA, and only transfer the rest of the bundle to publishers. Publishers have the right to refuse to publish work by Wellcome- or NIH-funded authors, but they choose not to exercise it. The NIH, for example, is putting publishers to the choice of accommodating the policy or refusing the publish NIH-funded research. This is hard bargaining, not expropriation. It's just what publishers have been doing to authors, in order to make research a private good, until some funders took the side of authors, in order to make research a public good.

Green OA mandates at universities represent one way to generalize the funder approach. Universities and funders are two different institutions, with different kinds of influence over publishing scholars, using their influence to make research texts into public goods. Instead of making OA a condition of funding, they can make it a condition of employment. Or faculty, seeing the benefits of OA, can self-impose this condition on themselves. At 16 universities, OA policies have been self-imposed by unanimous votes.

(In SOAN [SPARC Open Access Newsletter] for June 2009, I listed 12 universities where the relevant faculty bodies adopted green OA mandates by unanimous votes. Since then unanimous votes by the relevant bodies have occurred, or come to light, at University College London, Copenhagen Business School, the York University librarians, and Venezuela's Universidad de Oriente.)

<http://www.earlham.edu/~peters/fos/newsletter/06-02-09.htm#maryland>

But there's another way to generalize the funder approach, or a gold rather than green way: When you pay for something, insist on getting what you want. It's remarkable how little this method has been used by universities.

Roads are public goods which we generally succeed in treating as public goods. By contrast, knowledge is a public good whose most important embodiments and manifestations we treat as private commodities, despite the ease of taking a different course and despite the palpable harm our present course inflicts on research, health care, the environment, public safety, and every aspect of life which depends on research. How did we avoid this problem with roads? What can we learn from roads?

We treat roads as public goods when we don't require users to pay to use them, which would exclude drivers who can't afford to pay. (This, by the way, is what's wrong with the cost-recovery model for public data: it excludes people from access to something which is or ought to be a public good.) But we don't expect road builders to donate their labor and materials. Instead, we pay them upfront so that they don't have to decline the job, work as volunteers, or seek their compensation after the fact by

installing toll booths. If we want a toll-free road and offer to pay for one, we can find usually find a first-class road builder willing to make one for us.

Governments get the kinds of roads they want because they ask for them. They contract for them. It helps that governments are just about the only entities buying roads. That inclines road builders to listen when governments describe what they want. Universities should be just as specific in saying what kinds of journals they want. It should help that universities are just about the only entities buying peer-reviewed scholarly journals.

When I say that universities buy journals, of course I mean university libraries. But want to spotlight the larger institution in order to broaden the responsibility for change. If we are going to take any deliberate steps toward the road-building model for journals, the steps will be more successful if approved by university administrators, not just librarians.

There are some important differences between road builders and publishers, of course. For example, road builders concentrate on custom work. Every job is a one-off, built to the specs of a client. Road builders don't make many copies of a new road and hope to sell different copies to different buyers—a model which, where it exists, reduces the bargaining power of individual buyers. As a result publishers have more bargaining power with universities than road builders have with governments. A related difference is that there are often many road builders bidding for the same job. Governments commissioning roads enjoy the benefits of a buyer's market. If a road builder insists on an unacceptable condition, the government can usually deny the bid, look elsewhere, and get what it wants. Another difference is that when several governments with a common interest commission a road together, they face no anti-trust problems. A final difference—to cut the list short—is that governments tend to care only about the quality and price of roads and road builders, not their prestige.

These differences are reasons not to expect the same solution for scholarship. But they don't foreclose an analogous solution.

Universities and libraries could demand change as a condition of their enormous annual layouts for journals. "If we're going to pay for your services, then we want the following terms. ... "If universities want toll-free journals, they could specify that in the purchasing contract, as governments do when they want toll-free roads.

There's no contradiction, by the way, in "paying for" a "toll-free" journal. I'm imagining that universities, individually or collectively, would pay for the production of a journal but insist that the journal be OA, or free even for those who don't pay. The situation is the same for a government "paying for" a "toll-free" road.

Here we have to work through some of the differences between road builders and publishers. Universities won't have much bargaining power as long as publishers put out "must-have" journals and universities are unwilling to cancel. We're still in that epoch, but we're in the late stages. Decades of hyperinflationary price increases are pushing us past it. Every year universities cancel journals that were "must-have" just a few years earlier. The longer subscription journal prices rise faster than inflation, the

more universities will be forced to cancel valued titles, and the more realistically they can threaten to cancel others in the future. Though we're still moiling through this historical change, after a critical point universities will be able to tell publishers, "This is what we want. If you can't provide it, we'll find someone who will."

Today the converse is more common: publishers can tell universities, "This is what we're selling. If you don't want it, we'll sell to others who do."

Imagine a world in which for centuries all roads had been toll roads. The very idea of a toll-free road is new and unheard of. Then imagine a town trying to commission a toll-free road. The road builder might say, "No, sorry. That's not what I do. I can build you a toll road. Take it or leave it." Now imagine all the towns in a country or large region jointly commissioning a toll-free road.

It makes a huge difference who can say "take it or leave it" in a negotiation. Right now publishers tend to hold that privileged position. But as prices and cancellations keep rising, the positions are reversing. Even apart from the average balance of bargaining power, slowly shifting to universities, there is the bargaining power over specific titles. The desirability of journals is a matter of degree, despite the binary sound of "must-have." Some high-demand journals may be unthreatened by all recent developments. But the set of unthreatened journals is shrinking, and the set for which universities could modify basic terms to better serve research and researchers is growing. For a growing number of journals overall, universities could cancel, threaten to cancel, or bargain effectively, if they wanted to.

If we don't want to wait for slow processes to shift more bargaining power to universities, then concerted action could change the picture overnight. If anti-trust law blocks concerted action, universities could achieve much the same result by making individual, independent, convergent requests of publishers. This is feasible to the extent that universities really do have a common interest (say) in OA, and could start to demand what they want, separately and without coordination. In general, publishers have more bargaining power than universities today because they are more aggressive in acting on their own interests, not because they act as a cartel. Universities could be more aggressive in acting on their own interests and avoid any whiff of cartel.

(If concerted university action does raise anti-trust problems, on which I have no opinion, then note the irony that in this case anti-trust law would not block a private monopoly opposing the public interest but block a public good advancing the public interest.)

Universities that act alone for better terms from publishers are as unlikely to succeed as workers who ask for raises alone. But universities can act together without acting as a cartel if critical numbers of them become courageous about seeking their own interests at about the same time. Without critical numbers and critical timing, early requests will simply be rejected. But as soon as some large institutions or clusters of institutions start to win concessions, it will be easier for the next institutions to make the same requests and build on the momentum.

To adapt a point I made last December:

<http://www.earlham.edu/~peters/fos/newsletter/12-02-08.htm#predictions>

If it's tried too soon, [early universities will be rejected]. But after a point, when other OA initiatives have had their effect, and more TA [toll access] publishers have adapted to an OA world, universities will encounter fewer flat refusals and the [university demands for better terms] will trigger more publisher accommodation than publisher resistance. Enlightened [universities] will be watching for that moment and testing the waters. Because the odds of success soar as more universities adopt similar policies, or because followers take fewer risks than leaders, [university demands for OA from publishers] may spread quickly once they are adopted.

Finally, as I argued elsewhere in the same piece, the recession adds a new layer of opportunity:

[A]s the recession deepens, universities will face an opportunity similar to the one now faced by governments. It may sound strange to call the financial crisis an opportunity for governments. Certainly no government would mortgage its future with massive bailouts unless forced by the prospects of disaster. But the bailout of large banks and manufacturers is an opportunity to demand transformations from these banks and manufacturers that address long-term problems. Universities could seize the same opportunity. They could wake up to their power as buyers—virtually the only buyers—of scholarly journals and demand transformations that better serve the interests of the research community. ... They could offer to make future payments to publishers conditional upon friendlier access policies, and initiate a transition from reader-pays TA to institutionally-subsidized OA. ...

Another of the relevant differences is that a government would never reject a low bid, let alone relinquish its demand for a toll-free road, just because a certain road or road builder had prestige among drivers. There are no “must-have” roads that override a government’s specs for a needed new freeway. This is part of the imbalance of bargaining power between universities and publishers, but the existence of prestige adds a new element. Journal prestige attracts authors, readers, and subscribers, and it’s not changing as fast as the economics of library acquisitions. Universities may be increasing their cancellations of high-prestige journals, thanks to the price hikes instituted by the journals themselves, and this makes prestige less decisive at renewal time. But it doesn’t reduce journal prestige itself or its role in attracting authors and readers.

Even if roads had prestige, drivers would not demand prestige over quality and access. That kind of thing only happens in the demented world of scholarship, where authors, publishers, and tenure committees all routinely put prestige ahead of quality, when the two differ, and ahead of access.

<http://www.earlham.edu/~peters/fos/newsletter/09-02-08.htm#prestige>

Because prestige or brand is not a factor in road building, road builders tend to be fungible to governments. For road builders willing to build a given road according to spec, the most relevant difference among them will be their bids. If their reputations come into play, it will be their reputations for finishing jobs on time and under budget. Prestige, brand, and reputation are much more significant in publishing. We shouldn't expect that to change on its own. But universities could change it if they exerted themselves. Every year universities cancel more high-prestige titles, giving them more bargaining power over the titles they renew. If this gradual shift of bargaining power is too little, too slow, concerted action can always make change sudden. Universities don't have to pretend that prestige, brand, and reputation don't exist or don't matter. They only have to realize that they are just about the only buyers of these journals and have untapped power to demand better terms.

Part of the road builder model is that road builders are adequately paid. Their bids cover their costs and some margin, and a scholarly analog to the road builder model should do the same. If we could do that, then it should answer most publisher objections about the transition to gold OA, which have been based on financial risk.

As the PLoS analogy of publishers as midwives always suggested, the idea is to stop the midwife from keeping the baby, not to avoid paying for services rendered.

Of course adequate payment won't answer the objection that publishers deserve 30% profit margins, or the objection that it's demeaning for publishers to work on spec. But if we can separate the publishers who only object to financial risk from the others, and eliminate financial risk by offering adequate remuneration, then universities could work with the publishers who are ready to work with them. As for rest, we can take advantage of a further difference between universities and publishers. Nearly all authors, referees, and editors of scholarly journals work in universities, and the internet allows us to distribute perfect copies of non-rivalrous digital files to a worldwide audience at zero marginal cost. When publishers are not willing to help, even when adequately paid, then we can work around them. Unfortunately for governments facing recalcitrant road builders and a dearth of effective competition, disintermediation is not an option.

Postscript

Fortuitously, I had already chosen this month's topic and was well into my draft when the Royal Swedish Academy of Sciences announced that Elinor Ostrom had won the Nobel Prize for economics.

http://nobelprize.org/nobel_prizes/economics/laureates/2009/press.html

Ostrom's lifework has focused on showing that commons need not be tragic, even when they consist of rivalrous and depletable resources like fish stocks or woodlands, and need not be privatized to be well-managed. She has also written extensively on knowledge commons, which are not rivalrous or depletable.

For a quick sense of how her work on common property connects with the special case of an information or knowledge commons, see her video press conference at Indiana University the day the prize was announced. At minute 18:40 she says, "The work of Garrett Hardin we tested in the lab. If you ... are facing a problem like a fishery, and no communication is allowed, people overharvest *drastically*. Simply allowing people to communicate and discuss what they can do—*simply* communication—makes a huge difference [in avoiding overharvesting]. When in addition people can design in a lab the rules that they will follow in the future, then they get up to 92% of optimal."

http://www.indiana.edu/~radiotv/asx/npe_20091012.asx

Here's some of her work on the commons of information, knowledge, and scholarly communication, all of it on deposit in the Digital Library of the Commons, the OA repository launched by her institute at Indiana University.

<http://dlc.dlib.indiana.edu/dlc/>

—Charlotte Hess and Elinor Ostrom, *Artifacts, Facilities, and Content: Information as a Common-Pool Resource*, a conference presentation at Duke Law School, October 17, 2001.

<http://dlc.dlib.indiana.edu/dlc/handle/10535/1762>

—Charlotte Hess and Elinor Ostrom, *Ideas, Artifacts, and Facilities: Information as a Common-Pool Resource*, *Law & Contemporary Problems*, 66 (2003) pp. 111ff. See esp. Section V, *The Evolution of Scholarly Information*.

[http://www.law.duke.edu/shell/cite.pl?66+Law+&+Contemp.+Probs.+111+\(WinterSpring+2003\)](http://www.law.duke.edu/shell/cite.pl?66+Law+&+Contemp.+Probs.+111+(WinterSpring+2003))

—Charlotte Hess and Elinor Ostrom (eds.), *Understanding Knowledge as a Commons: From Theory to Practice*, MIT Press, 2006.

<http://mitpress.mit.edu/catalog/item/default.asp?ttype=2&tid=11012>

(These are the revised proceedings of a small workshop she and her research group sponsored at Indiana University in 2004, in which I had the pleasure of participating.)

—Charlotte Hess and Elinor Ostrom, *Introduction: An Overview of the Knowledge Commons*

<http://mitpress.mit.edu/books/chapters/0262083574intro1.pdf>

(Their introduction to the 2006 MIT book above.)

An excerpt from the introduction:

First, open access to information is a horse of a much different color than open access to land or water. In the latter case, open access can mean a free-for-all, as in Hardin's grazing lands, leading to overconsumption and depletion. With distributed knowledge and information the resource is usually nonrivalrous. ... In this instance, instead of having negative effects, open access of information provides a universal public good: the more quality information, the greater the public good.

—Elinor Ostrom and Charlotte Hess, *A Framework for Analyzing the Knowledge Commons*

<http://dlc.dlib.indiana.edu/dlc/handle/10535/632109/>

(Their contribution, as opposed to their introduction, to the 2006 MIT book above.)

—Charlotte Hess and Elinor Ostrom, Studying Scholarly Communication: Can Commons Research and the IAD Framework Help Illuminate Complex Dilemmas? A conference presentation at Oaxaca, Mexico, May 10, 2004.

<http://dlc.dlib.indiana.edu/dlc/handle/10535/2147>

For my contribution to the 2006 MIT book above, see: Peter Suber, *Creating an Intellectual Commons Through Open Access*.

<http://dash.harvard.edu/handle/1/4552055>

For the other contributions to the book, search by author in the Digital Library of the Commons.

<http://dlc.dlib.indiana.edu/dlc/>

Note that most of Ostrom's work on knowledge commons was co-authored by Charlotte Hess, formerly a colleague at Indiana University but since September 2008 the Associate Dean for Collections and Scholarly Communication at Syracuse University Library. Here are a few relevant pieces Hess wrote without Ostrom:

—Charlotte Hess, Dilemmas of Building a Sustainable Equitable Information Resource, a conference paper at IASCP, Vancouver, June 10–14, 1998.

<http://dlc.dlib.indiana.edu/dlc/handle/10535/559>

—Charlotte Hess, The Knowledge Commons: Theory and Collective Action; or Kollektive Aktionismus? A conference paper at the Wizards of OS 2, June 10–12, 2004.

<http://dlc.dlib.indiana.edu/dlc/handle/10535/2307>

—Charlotte Hess, Resource Guide for Authors: Open Access, Copyright, and the Digital Commons, *The Common Property Resource Digest*, March 2005.

<http://dlc.dlib.indiana.edu/dlc/handle/10535/3339>

Here are some of the better articles and blog posts on Ostrom's work since her prize was announced, highlighting the features most relevant to OA and the knowledge commons.

—David Bollier, Elinor Ostrom And The Digital Commons, *Forbes*, October 13, 2009.

<http://www.forbes.com/2009/10/13/open-source-net-neutrality-elinor-ostrom-nobel-opinions-contributors-david-bollier.html>

—David Bollier, Putting People Back into Economics, On the Commons, October 13, 2009.

<http://www.onthecommons.org/content.php?id=2540>

—Andy Kaplan-Myrth, Elinor Ostrom's Theories Applied to Copyright: This Commons Is Certainly Not Tragic, Myrth on a Blog, October 27, 2009.

<http://blog.kaplan-myrth.ca/elinor-ostroms-theories-applied-to-copyright?c=1>

—Mike Linksvayer, Nobel Prize in Economics to Elinor Ostrom "for her analysis of economic governance, especially the commons," Creative Commons blog, October 12, 2009.

<http://creativecommons.org/weblog/entry/18426>

—Daniel Moss, Nobel Prize in economics a big boost to commons and blow to corporate control, *Grist*, October 13, 2009

<http://www.grist.org/article/2009-10-13-nobel-economics-prize-a-big-boost-to-commons-and-blow-to-corpora/>

—Jay Walljasper, Tragedy of the Commons R.I.P., On the Commons, October 13, 2009.

<http://www.onthecommons.org/content.php?id=2542>

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Knowledge Unbound

Selected Writings on Open Access, 2002–2011

By: Peter Suber

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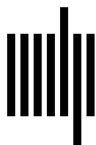
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