

Ostrom and the lawyers: the impact of *Governing the Commons* on the American legal academy

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Abstract: American legal academics began to cite Elinor Ostrom's *Governing the Commons* (GC) shortly after its 1990 publication, with citations peaking in the mid-2000s and with signs of a new peak in 2010 in the wake of Ostrom's Nobel Prize in Economics. The legal scholars most interested in GC have worked in three areas: general property theory, environmental and natural resource law, and since the mid-1990s, intellectual property. In all those areas legal scholars have found GC and its many examples a strong source of support for the proposition that people can cooperate to overcome common pool resource issues, managing resources through informal norms rather than either individual property or coercive government. Legal academics have also been at least mildly critical of GC, however. A number have tried to balance the attractive features of GC's governance model – stability and sustainability – with more standard legal models favoring toward open markets, fluid change and egalitarianism.

Keywords: Commons, environmental law, *Governing the Commons*, intellectual property, Ostrom, property theory

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1. Introduction

Lawyers are sometimes called “hired guns.” They have a reputation for willingness to argue any case, on any subject, on any side of the argument, and with any rhetorical tools they can find, mixed and matched in any way that advances their

positions. This is not to say that there are no such things as ethical standards for attorneys. There are, and lawyers take them seriously. But the profession as a whole requires a certain quality of argumentative flexibility.

Perhaps it is not surprising, then, that the academic branch of lawyering is also eclectic to a fault, borrowing ideas and concepts from any source that generates them. Like the lawyers in the profession, the academics mix and match ideas, and give them new twists and applications that may not be altogether comfortable to their original authors. Small wonder, then, that legal academics pounced on Elinor Ostrom's wonderful book *Governing the Commons* quite soon after its 1990 appearance – but small wonder as well that some have taken its ideas in directions that may be irksome to Ostrom and her closest adherents.

Having said that, however, *Governing the Commons* (Ostrom 1990; hereinafter GC) had and continues to have a broad appeal in the legal academy.¹ For one thing, Ostrom's relationship to economic scholarship has a familiar feel to lawyers. She now has a Nobel Prize in economics, but she is a political scientist by training, and her work is outside the mainstream of conventional microeconomics, being much more focused on institutions and the way that people think about them and make them work. Similarly, while economic thinking has a long (though sometimes contentious) pedigree in law,² legal thinking nevertheless often moves off on angles rather different from those of conventional microeconomics. Some legal academics have formal training in economics, but most do not even among those who are interested in economic approaches; and like Ostrom most are deeply concerned about the role of institutions and the ways that they function.

Moreover, GC has continually had an appeal to legal academics with quite different political positions. The book's focus on common institutions has been a tonic to legal scholars who bridle at the more relentless "rational actor" versions of self-interested individual economic maximization. GC's many examples showed that people can and do work together for common ends, devising systems that do not necessarily depend on private property on the one hand or coercive government on the other. At the same time, the more libertarian strand of the legal academy could rejoice as GC demonstrated that people can manage their own affairs without the intervention of formal government – and even better, that the intervention of government can thoroughly botch an otherwise well-functioning regime for resource management. Legal scholars ranging across a range of political camps have thus found GC a useful source of support. But of course, lawyers specialize in argument, and some have argued with GC as well, as they would with any other notably successful intellectual venture.

¹ In this essay I consider in large part only the influence of GC itself in the legal literature. For a nuanced discussion of Ostrom's broader corpus of writings in the legal academy, see Lee Anne Fennell, *Ostrom's Law: Property Rights in the Commons* (this volume).

² See, e.g. the conflicting opinions in two cases decided a very long time apart: *Chicago Board of Realtors v. City of Chicago*, 819 F.2d 732 (7th Circuit, 1987); *Pierson v. Post*, 3 Cai. R. 175, 2 Am. Dec. 264 (N.Y. Sup. Ct., 1805).

In the next section (2) of this essay, I will give a rough summary of the general reception of GC in academic legal literature. Then in the following three sections (3, 4, and 5 respectively), I will take up the influence that GC has had in the three major areas in which legal literature has most cited the book, namely general property theory, environmental law, and intellectual property. But in each of these areas I will note not only legal academics' adoption of GC's ideas, but also the explicit and implicit arguments that some have picked with GC – arguments that in many instances derive from the lawyers' appreciation of more formalistic kinds of rights structures than GC expounds. Finally, I will conclude with some remarks about the ways in which these differences may (or may not) be bridged.

2. GC's arc in the legal literature

Several aspects of American legal scholarship make it possible to gain a rough snapshot view of GC's influence. First, American legal academics gravitate to the article form rather than the book; second, legal research places great emphasis on classification and easy searchability; and third, law review articles are maniacally over-footnoted. Armed with those characteristics, it is easy for anyone to do a quick Boolean search of one or another of the major legal databases to sniff out references to GC. A search of Westlaw in early July 2010 showed that as of that time, GC had been cited in 464 law review articles since its appearance in 1990.³ The first few years after the book's publication showed a modest but growing citation count, but 1995 and 1996 acted as a turning point, when the book was cited in, respectively, 12 and 23 articles, including a number by well-known legal scholars. Thereafter the citation count grew at a more or less steady pace, with the number of law reviews articles citing it generally in the 20s or 30s, coming to a peak (46 articles) in 2003, then leveling off again to an annual count between 20 and 30. Just past the middle of 2010, however, the count was already over 20, however, suggesting that the Nobel Prize stirred new interest in Ostrom's work in general, and perhaps the foundational GC in particular.

The scholars who cited GC in the first few years generally fell into two categories. First were those whose basic interest was property theory, especially scholars who had already been interested in the ability of groups of people to manage shared resources without the intervention of coercive institutions.⁴ I was one of those. In the mid-1980s, I had already explored certain kinds of property that seemed to be consistently open to the general public, but that were in effect

³ The search was July 8, 2010, and the method was to look for "Ostrom" within four words of "Governing." While legal scholarship gravitates to the article form, Ostrom's work has also been cited in legal scholars' books as well; see, e.g. Cole (2002).

⁴ My search of the legal academic literature puts me somewhat at odds with a new essay by Elinor Ostrom and Daniel Cole, in which they state that property law scholars have paid too little attention to the empirical findings of Ostrom and others influenced by her work. See Ostrom and Cole, *The Variety of Property Institutions and Rights in Natural Resources: An Introduction* (2010) (available on SSRN, id1656418 [1]).

managed by longstanding customary practices (Rose 1986); and in the following few years I had become increasingly interested in the ways that resources were managed by more limited groups, some legally organized, some not (Rose 1990, 1991, 1993). For me, GC's discussion of the conditions for community rules was a very welcome addition to the scholarly literature, and I was quick to add it to my personal canon, becoming perhaps its most-frequent-citer among legal scholars. Undoubtedly much more important, though, were some early citations by Robert Ellickson. When GC came out, Ellickson had already published the opening salvo in his study of community norms among ranchers in Shasta County (Ellickson 1986), and the theory of norms that he developed there took on enormous influence with the 1991 publication of his book, *Order Without Law* (Ellickson 1991). Given the parallels between some of the themes of GC and Bob's own interests then and later – the possibilities for cooperation in what Bob called “close-knit groups”, the importance of informal norms to rein in free riding, the role of informal monitoring and enforcement – it is not surprising that he too soon read and cited GC (Ellickson 1993).

After the property-theory scholars, a second group of early GC cites fell to legal scholars whose primary interests lay in the environmental and resource-management aspects of the book. The very first writers to cite GC in a law review were not lawyers but rather a staff scientist and an economist at the Environmental Defense Fund, and they did so in a discussion of Western water institutions (Moore and Wiley 1991). Environmental law professors were soon to follow, however, including Barton Thompson, then a junior professor but now a highly respected natural resource law scholar, who cited GC in another influential study of California water institutions (Thompson 1993; see also Thompson 2000). Other well-known or soon-to-become-well-known environmental law professors citing GC included Lazarus (1992) and Blumm (1994).

By 1995, GC cites were starting to appear in new kinds of legal scholarly contributions – environmental and resource-related topics, to be sure, but now with some comparative and international environmental themes sprinkled into the mix (e.g. Caron 1995); ever-deeper property and norm theory (e.g. Krier and Schwab 1995); and even discussions of privatization and international trade (e.g. Seidman et al. 1995). The next year, 1996, was an especial breakthrough. More big name scholars, like Fred Bosselman and Eric Freyfogle, started to cite GC in environmental and resource-related legal literature (Bosselman 1996a,b; Freyfogle 1996). Meanwhile, thanks to a symposium in the University of Pennsylvania Law Review, GC showed up in the citations of a second wave of norm theorists like Eric Posner, Richard McAdams, and Richard Pildes (McAdams 1996; Pildes 1996; Posner 1996). But over the longer run, what was especially important for the future influence of GC in the legal literature was its 1996 appearance in some new articles on the internet and intellectual property, spearheaded by Robert Merges and (at least briefly) Margaret Radin (Merges 1996; Radin 1996).

By 1997, after this array of major American legal scholars had cited GC, the book had become a regular reference point in legal scholarship, particularly in the

areas in general property theory, and in the substantive areas of environmental and natural resource law on the one hand, and intellectual property on the other. This is not to say that all these citations have been anything close to deep considerations of Ostrom's theories of collective resource management regimes. Many are not. Quite a number simply name GC in a string of citations aimed at refuting the gloomy prognostications of Garrett Hardin's *Tragedy of the Commons*. But the regular footnote appearance of GC means that it has become one of the standard references in these areas of legal scholarship, as well as an occasional reference point in other areas.

The predominating clusters of GC citations, then, suggest that the book's greatest influence in the legal academy has been in the three areas of property theory, natural resource/environmental law, and intellectual property. For that reason, it is worthwhile to consider some of the ways that developments in these areas of legal scholarship have paralleled – and diverged from – GC's own positions.

3. GC and legal property theory

For legal academics interested in the theory of property and property institutions, GC's greatest achievement was simply to reinforce the point that the "tragedy of the commons" is not precisely a fable, but not a necessity either. Instead, GC teaches that there are numerous successful institutions for managing resources in common – institutions that fall somewhere between individually-held property and the commands of the state. This fact was not entirely news for legal scholars even in 1990, when some were already citing such work as James Acheson's description of on the Maine lobster fisheries (Acheson 1988; see also McCay and Acheson 1987) or Carl Dahlman's study of the medieval open field system (Dahlman 1980). But GC was a very strong reinforcement for the position that community-based management was possible, and it helped property law mavens to understand and investigate different kinds of arrangements for resource management.

Several ingenious developments came out of those investigations, particularly among the second wave of property law theorists who benefitted from GC. Perhaps none was more ingenious than Henry Smith's discussion of the "semicommons," using primarily the example of medieval open field agriculture. Smith, who was still in graduate school (linguistics) and not yet in law school when GC was published, has now taken his place as one of the legal academy's most profound and productive property scholars. In this early piece, Smith described a semicommons as a kind of property that is in part individually managed and in part held in common with others, and in which these divergent management practices interact to enhance value (Smith 2000). In a certain sense, to be sure, much ordinary modern property can be understood in this way; e.g. land: title owners have extensive rights over their land, but they also and simultaneously have obligations to the neighbors through nuisance law. But medieval agriculture,

like the irrigation systems and grazing areas that Ostrom used as examples in GC, is more obviously subject to the kind of management that Smith described as a semicommons regime. With particular attention to the organization of scattered fields (not to speak of manure spreading!) Smith explored the characteristics, incentives, and sanctions that governed the productive mixtures of individual and common usage; and he went on to point out the semicommons aspects of more modern types of organization, e.g. joint ventures in business. From the starting point of the semicommons, Smith soon progressed to a more general theory of resource management, dividing the entire territory into two types of strategies, which he called “exclusion” and “governance,” corresponding, very roughly speaking, to individual and group management (Smith 2002).

Another second-wave property theorist is Michael Heller, who developed the idea of the “Anticommons” – a resource with property claims so numerous or overlapping that it becomes unusable by anyone, because no one can assemble the rights necessary to make practical use of it (Heller 1998).⁵ Heller’s chief examples were the empty storefronts in Moscow in the mid-1990s. These were beset by multiple claims left over from Soviet days – in contrast to the small and flimsy but nevertheless thriving commercial kiosks on the streets in front of them. Like Smith, Heller cited GC, although not extensively; but his work was very much in line with GC’s skepticism about both governmental intrusion and overly-individualized property. Indeed, Heller’s dominating Moscow example combined the two. The anticommons gridlock in buildings there resulted from an overdeveloped efflorescence of individual claims, foisted on the populace by an overly intrusive state. From the Moscow storefronts Heller went on with his colleague Rebecca Eisenberg to patent law; in a 1998 *Science* article that has itself become canonical, they applied the Anticommons theory to genetic research, arguing that too much patenting of upstream scientific findings could freeze further research (Heller and Eisenberg 1998).

While these major contributions to property theory probably did not *require* GC as a predecessor, GC placed limited commons management on the table as an alternative to bureaucratic administration and individual private property, and the book’s presence certainly made it easier to conceive of parallel issues in property theory. On the other hand, GC has been the object of a certain modicum of criticism from property law theorists. Perhaps not surprisingly, this criticism tends to defend formal legal systems over against the types of informal community practices that GC depicted as most successful in managing common pool resources. From an early point, legal scholars noted uneasily that some of these communities, for all their appeal, had some unattractive features – sexism, for example, as well as other types of hierarchy (see, e.g. Bosselman 1996a; see also Rose 1999, 2000). In 2001, Heller and Israeli property scholar Hanoch Dagan

⁵ The “anticommons” was first described by Frank Michelman. See Ellickson (1993), at p. 1322, note 22.

put forth a more detailed version of some of these misgivings. In one of the most extensive discussions of GC in a property law theory article, they argued that the governance systems that GC applauded could easily suffer from a democratic deficit. While they chided GC relatively mildly – reserving their heaviest blasts for Michael Taylor’s more insular view of the small community – they argued that GC’s examples of successful common pool governance regimes often represent a kind of “illiberal commons” in which cooperation is attained at the expense of the possibility of “exit,” of which the most salient type is alienability, the ability to cash out one’s investment and leave (Heller and Dagan 2001). By contrast, they argued that formal legal regimes have the potential to facilitate more liberal commons regimes, because legal systems can induce cooperation while preserving a range of exit options that assure fairness to participants.

The cautions discussed by Heller and Dagan are particularly interesting because in defending more formal legal systems, they serve as a complement to another important but implicit critique of GC: the fact that GC played no role in one of the most important theoretical developments in property theory in the last few decades.⁶ This development took shape with the 2000 publication of Thomas Merrill’s and Henry Smith’s article reconsidering property law’s notoriously formal patterns, which they analyzed as a version of “optimal standardization” (Merrill and Smith 2000). Merrill and Smith took as their watchword the “Numerus Clausus” (“closed number”) of civil law, the doctrine according to which only a limited number of standard-form rights will be recognized as “property.” From the example of the Numerus Clausus, the authors argued that because property is bought and sold repeatedly over time, property law can only recognize a limited number of relatively simple categories; otherwise purchasers will be subject to overwhelming search costs to ferret out any “fancy” restraints that prior owners might have placed on any given property.

The driving force in the Merrill/Smith theory of property law is the alienability of property: it is easy alienability that makes property available to all newcomer owners, and it is easy alienability that necessitates the kind of information economization embodied in standard forms. But notice that this legal conception of property is what political scientist (and anthropologist *manqué*) James Scott would call High Modern: the ideal type is a kind of formal and legal property that anyone can buy from anyone else in vast global markets, and whose content is necessarily simplified, homogenized, and standardized for the sake of smooth and easy transactions among strangers (Scott 1998; see also Rose 2008).

Standard-form property unquestionably constitutes an enormous proportion of modern economies – stock markets, for example. But this is a type of property quite at odds with the property arrangements described in GC, where various members of communities enjoy complicated and overlapping entitlements –

⁶ This is particular noteworthy because Smith has regularly cited GC in other articles before and after this Numerus Clausus piece.

entitlements that are well understood and respected in local norms, but that are often far too sensitive and complex to alienate to strangers, except at great peril to the entire community management structure (see, e.g. Banner 1999).

Much of the property described in GC is thus at the antipodes from the ideal type of legal property in the *Numerus Clausus*. Legal scholars have been much attracted to GC's discussion of community-based resource management, with its patterns of commitment, sustainability, and stability. But many have still noted the attractions of the *Numerus Clausus* version of property: the quick movement of resources into valuable uses, the refreshing openness to all comers, the encouragement to change and innovation. Heller and Dagan's critique of the "illiberal commons" reflects that tension. It is telling that Heller and Dagan's major vehicle to turn the illiberal commons into a liberal one is what they call "exit," but exit is in practice another name for alienability – the central feature secured by the *Numerus Clausus*.

The tensions between these conceptions of property also run through the substantive areas in which GC has been most important in legal scholarship, that is, environmental law and intellectual property.

4. GC and the environmental law scholars

GC arrived just at the time when Congress passed the Clean Air Act Amendments of 1990, including the momentous statutory change that capped total emissions of sulfur dioxide, the predecessor gas to acid rain, but that also permitted polluters to meet their obligations by trading pollution entitlements among themselves. The 1990 Acid Rain cap-and-trade provisions constituted a major exception to the then-prevailing legal "command and control" requirements, which directed each polluting plant to maintain uniform emission control devices. Because they were such a sharp departure from earlier environmental control strategies, the Acid Rain provisions were highly controversial (see, e.g. Ackerman and Stewart 1985 vs. Latin 1985). But at a time when so much ink had been spilled in the environmental law world on the comparative virtues of state-centered command-and-control on the one hand, and property-rights cap-and-trade approaches on the other, GC seemed to open the door to an entirely new way of looking at environmental management. At the same time, it subtly reinforced consideration of a new set of environmental subjects and more holistic approaches.

It is not surprising, then, that environmental law scholars were among the first to refer to GC, though even they did not do so in large numbers at the outset. As the 1990s matured, however, environmentalists turned increasingly to ideas of ecosystem management, watershed-wide controls, and community forestry – areas where GC appeared to have special relevance. Sulfur dioxide, the main precursor to acid rain, is a relatively simple substance, and while devising exclusive property-like rights for tradable emissions is not an easy task, tradable emission allowances certainly are a conceivable form of resource management for this relatively homogeneous gas. Ecosystems, watersheds, and community

forests, on the other hand, present much more complex interactions among uses and users, and they would seem to call for complicated management systems that engage whole groups of stakeholders.

It was in that context that GC began to appear ever more frequently in environmental law scholarship. In an early example, the authors compared GC's approach to watershed management favorably to more conventional economic approaches (Miller et al. 1993). Over the next years, ecosystem proponents deployed GC in two important ways. First, they used GC as a source to illustrate that common management arrangements could be productive and valuable – even more so than private property for complex and overlapping resources (e.g. Breckenridge 1995; Freyfogle 1996; Rieser 1999; Hicks and Peña 2003). Second, and perhaps even more important, these same writers could turn to GC for its “design principles,” showing that there actually were identifiable techniques through which groups of people could organize themselves to manage important resources in common (See, e.g. Nicholsburg 1998; Rieser 1999; Goodman 2000; Freyfogle 2002; see also Boudreaux [not a lawyer] 2008).

Like the property theorists among legal scholars, however, the ecosystem and community-based environmental scholarship has not given GC a complete free pass, particularly in the context of novel ecosystem initiatives. One of the newer deployments of a community-based approach aims at the conservation of otherwise destructive wildlife, mostly for tourist viewing purposes. These projects differ from GC's many resource-extraction examples, in which communities draw on forests, streams, fishing grounds or pasturage, using these resources for their own purposes. Wildlife, on the other hand, can be a serious problem to local communities, competing with other community resource uses, wreaking destruction on crops and livestock, and sometimes causing injury or even death to the community members themselves (see, e.g. Greenough 2001). Some scholars have cited GC's design principles as relevant and helpful in the wildlife conservation context (see, e.g. Bordeaux 2008), but not all have been so sanguine. In 2000, three African wildlife specialists wrote in an American law journal that GC correctly illustrated that resources can be managed sustainably when communities support the management regime. But they observed that existing community wildlife management programs pitted community members against national governments, against other community members, and against the wildlife itself (Songorwa et al. 2000). This does not necessarily reflect on GC's design principles, but only suggests that they may not apply easily to every modern ecosystem conservation project. In particular, wildlife management suggested that state governments needed to be more effectively involved with community management, to provide or broker incentives for wildlife maintenance, and to make certain that compensation be allocated to the right participants.

Even more than wildlife management, pollution control would appear to have at most only a very tenuous relationship to most of GC's examples of community resource management. Here too, the issues are not those of sustainable production of resources that community members desire and share, but rather of dealing with

materials that constitute a negative that may well be externalized onto others, and where much of the pressure for better management comes from the outside. Indeed, pollutants can spread widely and inadvertently through the air or waterways, and may thus escape the physical control or even the knowledge of community-based resource management (Rose 1999).

Self-generated community management under these circumstances is less likely to emerge, and thus it is not surprising that GC's design principles have not played a large role on the "brown" (as opposed to the "green") side of environmental legal scholarship. One urgent current pollution issue, for example, is the control of greenhouse gases, but in the last few years, legal articles on climate change have generally made only a cursory nod – if any at all – to GC.⁷ One article that did discuss GC briefly dismissed its approach rather abruptly, as not relevant to large-scale problems like global warming (Ilg 2010, p. 661).

A more explicit objection appeared in an article by Brigham Daniels in 2007. Daniels argues that the GC management principles all tend toward stasis, and that commons institutions themselves can impede adaptation in ways that are themselves "tragic," particularly when they inflict costs on outsiders (Daniels 2007). His complaint of rigidity is somewhat reminiscent of Heller's and Dagan's concern that commons institutions may be "illiberal," and his prescription is also similar. Whereas Heller and Dagan particularly stress "exit," Daniels stresses competition; but competition is closely related to the possibility of exit, since through exit one can depart Situation A and enter into competing Situation B instead. And of course both exit and competition implicitly harken back to the Numerus Clausus version of property, where alienability is the key to a regime in which resources can flow freely toward their most valuable uses.

Some environmental law scholars, however, have attempted to straddle these differences between modernist and community-based regimes, just as Heller and Dagan did with their "liberal commons," and just as Daniels (reluctantly) does by proposing to introduce competition and other modifications into community-based management regimes. Alison Rieser made the very interesting suggestion that modernist cap-and-trade regimes might be combined with community management in the fishing context, that is, if "Individual Fishing Quota" (IFQ) could be allocated to entire communities; she suggested some of the Alaska native communities as models for this kind of community allocation (Rieser 1999).

⁷ One exception is Vandenberg and Cohen (2010). However, in the last few years there have been rather few references to GC in connection with climate change. In a search July 30, 2010, "climate change" yielded 3805 articles over the last three years, whereas the addition of "Ostrom/3 governing" pared the list to 33. Citations to Ostrom's other work, however, raised the total number to 52. This was a very rough search, because not all these articles were centrally concerned with climate issues. In any event, of course, GC was not aimed at this topic at all, and a similar search using Robert Ellickson's very influential *Order Without Law* yielded only 28 references. What is more significant is the dearth of commentary on GC's community-based approaches in almost all these articles, suggesting that most authors found these approaches not relevant to climate change issues. My own view is that this is an oversight that may change before long, however. See text below.

Similarly, emission trading is very much a part of existing schemes to control greenhouse gases; while carbon offsets through forestry and other ecosystem approaches achieved only very modest recognition in the first major rounds of climate change negotiations, the topic has attracted much more attention in the newer iterations of carbon trading. Some legal writers have begun to discuss the dangers and possibilities for community-based forestry or ecosystem management, as forestry moves into focus as a source of offsets in a global carbon trading regime (See, e.g. Danish and Ceronsky 2010). Although these writers are not (yet!) citing Ostrom's work, it seems inevitable that, given the subject matter, more consideration of GC is bound to follow.

Perhaps even more interesting is a development not much discussed by environmental law scholars: it appears that the modernist cap-and-trade regimes can themselves serve as the foundation for new community-based management regimes. One model is the Australian tuna fishery, where the recipients of tradable fishing rights have joined forces to protect and feed the tuna, and to manage the surrounding ecosystem for the healthful growth of the tuna (Rose 1999). As in the property theory literature, those efforts effectively combine modernist property rights with self-generated common management practices – a kind of semicommons, as Henry Smith would call it (Smith 2000). As such, they could offer an alternative vision of common ecosystem management, one that starts with strong but partial property rights, and then relies on the rights-holders to create their own common management regimes.

5. GC and intellectual property

Intellectual property (IP) and related topics – particularly related to information technology and the internet – would seem at first glance to have only a rather thin relationship to GC and its analysis and examples of community-based resource management. As Elinor Ostrom and Charlotte Hess were to acknowledge in 2003, GC generally dealt with relatively small, well-defined and longstanding institutions with highly motivated participants, rather than the free-floating and amorphous “ecologies” of information (Ostrom and Hess 2003, p. 132). Moreover, insofar as there are property rights in information at all, those rights are densely dominated by formal law. IP rights are almost entirely state-created, modernist rights, similar in that sense to statutorily-created emission entitlements in environmental law, and seemingly very far from the often-informal and self-generated, community-based entitlements discussed in GC. Indeed, one of the main objects of IP law is to promote the dissemination of ideas by creating a legal alternative to secrecy, whereas secrecy is one of the main guarantors of intellectual property in more traditional settings.

Perhaps even more important, the argument for any kind of property, be it private or common, is much attenuated in informational and intellectual matters. Intellectual productions, once created, would not seem to require any kind of exclusive rights to avoid resource decimation. An intellectual achievement is not

wasted when left in open access. The expressions in a book do not dissipate when copied; the innovative aspect of an invention is still helpful no matter how widely it is used; the secrets in a trade secret are still useful when the secret is out.

The case for property rights in expressions and inventions thus is quite far removed from concerns about the normal “tragedy of the commons,” where resources go to waste from overuse when open to the world. As GC would put it, “subtractability” is not at issue in information; copying subtracts nothing. But if the “tragedy of the commons” is not a concern, then it would seem that there is little case for community-based management either. What needs management? Perhaps because of this logic, IP scholars in the legal academy were rather slow to pick up on any relationship between their issues and GC.⁸

Putting resource dissipation to one side, however, there are other well-known property-theory arguments for IP. Property rights in intellectual accomplishment address what GC calls the “provision” issue: they serve to secure the proceeds of good work to those who do the work, and thus IP incentivizes creators to create intellectual works and to disseminate them (Lessig 2001, p. 95). It took some time for legal scholars to realize that community-based management might indeed have some relationship to these “provisioning” aspects of IP. But when they did, the results were quite striking.

Although property theorists and environmentalists were among the first to cite GC in the legal literature, the first *extensive* law review treatment of GC’s design principles occurred in connection with intellectual property. In an influential article in the 1996 *California Law Review*, Robert Merges spelled out how GC’s analysis of common pool resource institutions could apply as well to an array of private organizations that have emerged for the management of intellectual property rights (Merges 1996a). According to Merges, IP rights-holders are often in situations in which it is advantageous to use one another’s productions, and when they are in such situations, they have often been able to generate institutional structures and collective norms among themselves for valuing, monitoring, and enforcing entitlements, without the need for governmental intervention. Merges gave numerous examples – e.g. patent pools, performance rights associations, the 1930s Fashion Guild – and he used GC’s design principles as a central organizing theme in his extensive discussion of these and other IP rights-sharing organizations. In another move that is familiar to aficionados of GC, he cautioned against command-style governmental intrusion into IP rights – particularly ideas for forced sale of rights – on the theory that rights-holders could self-organize in ways that were effective both to incentivize and to disseminate their work.

In a somewhat less well-known article in the same year, Merges again deployed GC’s ideas to analyze a closely-related area, that is, scientific research. Here he argued that scientists do not operate in an open-access public environment, as it

⁸ For example, James Boyle, who in recent years has worked closely with Ostrom, did not cite GC or any of Ostrom’s other work in his 1996 breakthrough book, *Shamans, Software, and Spleens: Law and the Construction of the Information Society*.

has often been claimed (or wished), but rather work in situations closer to what he called “limited access commons,” with researchers pooling in different areas information among themselves but policing the informational boundaries against tyros and commercial interlopers (Merges 1996b).

After Merges’ 1996 articles, GC became an important touchstone for a substantial body of legal scholarship on IP. Most recently, for example, three co-authors have cited GC and Ostrom’s subsequent work on Institutional Development and Analysis (IAD) to analyze several different versions of what they call “cultural commons,” including patent pools, the Linux operating system, and the “jambands” that play at the concerts of established musicians (Madison et al. 2010). In the IP-related topic of communications, another author has used GC’s “design principles” to propose a shift from auction to commons in Federal Communications Commission’s allocation of the spectrum space – the space whose use has grown from Morse code through radio and television to the Internet and smart phones (Buck 2002; see also Benkler 2000; cf. Daniels 2007).

Another area in which a number of legal scholars have cited GC has been in the analysis of the intellectual property claims of indigenous or traditional communities (e.g. Chander and Sunder 2004; Ankersen and Ruppert 2006; see also Aoki 2009; see also Brush 2005 [not a law professor]) Formal IP in the past has been rather hostile to many of these claims. Patents, for example, were not available to such useful innovations as plants derived from traditional agricultural methods; nor has copyright extended to tales and artistic works coming from folk traditions. In neither case was there a sufficient element of novelty or an identifiable creator, both necessary for formal IP rights. These and other problems with formal IP have become grist for academic intellectual property lawyers, and for some (although by no means all), GC has been a support in arguing for alterations in IP law to account for traditional groups’ cooperative joint achievements.

Group claims to cultural and intellectual accomplishments are not without their dangers, however. As Madhavi Sunder has warned, group ownership of culture or intellectual achievements may facilitate unfair distribution within the group, assisting dominating factions to suppress voices that challenge their claims of cultural homogeneity (Sunder 2000, 2003). This kind of warning about group-based intellectual property echoes Heller and Dagan’s concerns about the “illiberal commons,” though to the best of my knowledge, the critique has not focused on GC in the legal literature on intellectual property.

Similarly muted, but potentially quite powerful, is the largely implicit critique that comes from another branch of IP scholarship. This branch, including influential scholars like Yochai Benkler, James Boyle, Lawrence Lessig, Pamela Samuelson, and more recently Amy Kapczynski, among others, is what I will somewhat inadequately call the “Copyleft” movement, by which I mean to include the “free culture” and “open source” wings, as well as those who would loosen IP controls on other intellectual products like pharmaceuticals.

The Copyleft scholars regard the intellectual world as over-proprietyzed, arguing that IP has skewed the incentives for intellectual activity and has

discouraged vastly more creativity than it has encouraged. Among other things, they argue, creativity has always depended on mixing, matching, and building on existing pools of ideas, and this spur to creativity can dwarf the incentives that derive from exclusive property rights. The Copyleft authors ramp up the issue posed by Heller and Eisenberg about over-patenting in scientific research: contrary to its stated rationale of incentivizing creative activity, they argue, overly aggressive IP results in monstrous transaction costs – and paralyzing monopolistic intimidation – for innovative artists, inventors, and researchers (e.g. Lessig 2001; Kapczynski et al. 2005). Computerized duplication and the internet offer vast new opportunities for mixing and matching, but according to the Copyleft, misguided governmental intrusions, working together with overly extensive propertization, can threaten the very sources of amazing creative enterprise.

Scholars in this school would seem to be among the best friends of GC, and indeed, several cite GC regularly, concurring with its rejection of both private property and heavy governmental intrusion (Benkler 2002; Boyle 2003, 2007). But at the same time, some also resist GC's fundamental ideas of group-based resource management. To these scholars, as Ostrom and Hess themselves have noted, the "commons" means open access rather than the more contained limited common pool resources (Ostrom and Hess 2003), even though some tread lightly over the differences between these meanings of "commons" (Boyle 2007; Kapczynski 2008; cf. Lessig 2006). But for the Copyleft, presumably community-based IP management is no more desirable than any other property, except possibly as a concession to traditionally disadvantaged groups like indigenous peoples – and even that may be controversial (Boyle 1996, pp. 126–30; Chander and Sunder 2004; Kapczynski 2008).

From the Copyleft perspective, the critical management questions for the "commons" in information and internet-related technologies are whether an open access regime – not a community-based common pool management regime, which implies exclusion of outsiders – can generate the kind of norms that GC celebrated. Those are the norms that encourage participation while discouraging free riding and patrolling for vandalism. In 1996, the same year that Merges published his two GC-based articles linking intellectual productivity to informal group management, Margaret Radin sounded a note of caution about the common pool approach to internet-related topics. Radin has been a leading property scholar since the 1980s, and since the 1990s her main work has focused on IP and related topics. But in a brief article on the evolution of property in cyberspace, she observed that while community-based norms might work well in the early phases of cyberspace development, she was doubtful whether such norms could survive successfully once large numbers of heterogeneous persons had been attracted to the internet (Radin 1996).

Radin's concerns have found something of an echo in the work of Yochai Benkler, whose particular interest has been in vast internet-based "distributed" and "granular" productions like Linux and Wikipedia, where large numbers of diverse, self-selected participants all provide small bits of information to the

larger work. Benkler is an optimist about norms, and he thinks that the far-flung participants in these free-flowing enterprises do manage to create governing norms for themselves, and indeed, his view is rather similar to that of Ostrom and Hess in their more recent analysis of researchers' databases. But Benkler implies that this kind of collaboration diverges from GC's original formulation. In one explicit criticism of GC (discreetly buried in a long footnote)⁹ Benkler argues that GC's analysis of limited commons is basically beside the point – too narrowly focused on limited resources and groups, too modest in its claims for stability rather than efficiency, and insufficiently challenging to more traditional economic views on incentives and productivity (Benkler 2004). The position that open-access commons can generate efficient norms among widely separated and disparate participants, Benkler says, is a far more radical matter.¹⁰ Norm creation in these contexts is not based on resource management of specific communities. Instead, the norms that Benkler envisions are more akin to those of a world-wide community of volunteers, dropping in and out at will, and each contributing some "grain" of novelty to the larger enterprise (Benkler 2004).

Despite Benkler's rejection of private property in the information economy, his volunteer or gift economy has certain affinities with the modernist theory of property laid out in Merrill and Smith's theory of the *Numerus Clausus*. Participants in this gift-based information economy contribute in "modular" forms, and alienability is totally free, loosed even from the constraints and costs of having to organize a trade. But insofar as rules are required beyond the self-generated norms of participants, Benkler turns to modernist, statist mechanisms. For example, while rejecting private property, he favors public legal directives for the use of the radio spectrum (Benkler 2000). Similarly, Amy Kapczynski stresses the role of law as a "frame" for the Copyleft's "Access to Knowledge" or A2K movement (Kapczynski 2008).

Other Copyleft prescriptions have even more striking overtones of Merrill and Smith's *Numerus Clausus*. For example, the Copyleft concedes that informal norms may not reach quite far enough to protect one important desideratum for creators: their wish for acknowledgment. But how to give away creative works while still demanding recognition – and not simply trusting informal norms? Property rights are again the answer. In a variation on formal copyright, Lawrence Lessig, James Boyle, and others have spearheaded Creative Commons, a site through which authors and others can license others to copy their work freely, on condition that the users acknowledge the original authorship and in most cases impose the same condition on anyone who copies the copy (Lessig 2006). The Creative Commons idea, however, is very much a modernist kind of property. It depends critically

⁹ Lessig (2006) made a similar but much more cryptic critique, also buried in a footnote.

¹⁰ I am flattered that Benkler cites my own 1986 work on "inherently public property" as a vision of the wide-open commons that Benkler contrasts with GC's common pool resources. My article, entitled *The Comedy of the Commons*, has had a revival in the internet literature, something that I certainly did not anticipate at the time.

on copyright (since without it authors could not control copying at all), and it also relies on covenants that “run” with the license to obligate future users, another borrowing from formal property law (Van Houweling 2008). There is even a version of the *Numerus Clausus* in the six standard open licensing templates.

Where, then is GC in the new world of legal IP scholarship? Perhaps where it was from the start. Clearly there are some areas where limited commons management – as opposed to the individual rights of IP or the wide-open commons of the Copyleft – is important in information management. These areas might well include indigenous and traditional claims, where conventional IP fits only uneasily (see, e.g. Brown 2003). Moreover, the patterns of pooling, sharing and exclusion that Merges described among scientists do continue to fit the GC model; these are not wide-open commons but rather common pools in the GC sense (Merges 1996b).

Perhaps most interesting is Merges’ take on the pooling practices – in music, patents, and others – that have emerged after the allocation of conventional IP rights to individuals. In Merges’ view, individual rights are not inimical to common management regimes – quite the contrary. Merges argues that conventional individual IP rights lie at the foundation of these common pool management organizations. Armed with individual rights, the participants have bargaining chips to enter into the common systems that manage general issues of exchange and compensation. Commons management along these lines resembles the commons management regimes that have emerged in some fisheries in the wake of ITQs: the fishers who have received quota have banded together to manage general ecosystem issues in an integrated way. These kinds of regimes combine features of modernist legal property with commons management, and they are important in straddling the divide between the two, acting as a modern version of Smith’s “semicommons”.

6. Conclusion

British legal historian and property theorist Joshua Getzler has remarked that “property theory today has largely escaped from Hardin’s intellectual trap,” and instead contemplates a variety of plural arrangements – and Getzler cites GC in the first footnote after this statement (Getzler 2009). In this essay I have tried to show that Getzler’s observation is correct, thanks in some considerable measure to GC. But I have also aired a number of divergences between the legal literature and the ideas of GC. If there is anything that is interesting about the legal scholars’ response to GC, it has been the manner in which academic lawyers are caught between the attraction of GC’s community-based norms on the one hand, and the legal conception of a High Modernist property on the other. The critiques that legal scholars have made of GC are basically products of a modernist sensibility, favoring transactional ease, openness, equality, and adaptability.

But the critiques based on these modernist desiderata are not news to Elinor Ostrom, and her thinking since GC has clearly evolved to take similar complaints

into account – perhaps most clearly in her newer work on intellectual property as well as IAD. It is worth mentioning too that GC itself was not necessarily hostile to formal law, even to modernist formal law. GC describes venerable irrigation systems that date from Muslim Spain, but these seamlessly overlapped with governmental institutions and even market transactions; and even more relevant, the book included an analysis stemming from Ostrom’s own work on California groundwater systems that were heavily influenced by law.

Moreover, despite the High Modern penchant for property’s alienability – a kind of benchmark for transactional ease, fungibility and impersonal equality – property law theorist Lee Anne Fennell reminds us that modern property law has room for several modes of restraints on alienation. She observes as well that these restraints function particularly in the context of public goods or common pool resources. In precisely those contexts, she argues, restraints on alienation can help weed out opportunists, reinforce commitment, police overuse, and induce contributions (Fennell 2009).

Fennell’s argument, taken together with those of friendly or implicit critics of GC like Heller and Dagan and the Copyleft writers, suggests that common pool management may often entail a certain institutional “stickiness,” as in the array of legal restraints on alienation that Fennell explores. But Fennell’s argument also suggests that just as GC was not in principle hostile to legal regimes, legal regimes are not in principle hostile to all the versions of the stickiness that can facilitate common pool management.

Some tension may be inevitable between the ideal types of GC’s common pool management on the one hand, and modernist rights on the other, as the stickiness of the former contrasts with the simplified categories and lightening-speed transactional capacity of the latter. GC was a very welcome reminder of the virtues of self-generated community-based property regimes for common pool management. But if there is any way that the legal academics can be helpful in bridging the gap to more modernist conceptions of property, it is in their mindfulness that modernist rights have virtues too – notably equal treatment, openness to the world, voluntariness, adaptability – and in their insistence that those virtues be weighed in the balance, even, or perhaps especially, in governing the commons.

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