

# **The Institution of Property\***

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The evolution of property law is driven by an ongoing search for ways to internalize what economists call externalities: positive externalities associated with productive effort and negative externalities associated with misuse of commonly held resources.<sup>1</sup> If all goes well, property law enables would-be producers to enjoy the benefits of productive effort. It also enables people to insulate themselves from external costs associated with activities around the neighborhood. Property law is not perfect. To further reduce external costs that neighbors might otherwise impose on each other, people resort to nuisance and zoning laws, regulatory agencies, and so on, all with a view to supplementing and perfecting the critical role that property law plays in minimizing external costs.

Philosophers speak of the ideal of society as a cooperative venture for mutual advantage. To be a cooperative venture for mutual advantage, though, society must first be a setting in which mutually advantageous interaction is possible. In other words, borrowing a term from game theory, society must be a positive sum game. What determines the extent to which society is a positive sum game? This essay explains how property institutions convert negative-sum games to positive-sum games, setting the stage for society's flourishing as a cooperative venture.

The term 'property rights' is used to refer to a bundle of rights that could include rights to sell, lend, bequeath, and so on. In what follows, I use the phrase to refer primarily to the right of owners to exclude nonowners. Private owners have the right to exclude nonowners, but the right to exclude is a feature of property rights in general rather than the defining feature of private

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ownership in particular.<sup>2</sup> The National Park Service claims a right to exclude. Communes claim a right to exclude nonmembers. This essay does not settle which kind or which mix of public and private property institutions is best. Instead, it asks how we could justify *any* institution that recognizes a right to exclude.

## I. Original Appropriation: The Problem

The right to exclude presents a philosophical problem. Consider how full-blooded rights differ from mere liberties. If I am at liberty to plant a garden, that means my planting a garden is permitted. That leaves open the possibility of you being at liberty to interfere with my gardening as you see fit. Thus, mere liberties are not full-blooded rights. When I stake a claim to a piece of land, though, I claim to be changing other people's liberties—canceling them somehow—so that other people no longer are at liberty to use the land without my permission. To say I have a right to the land is to say I have a right to exclude.

From where could such rights come? There must have been a time when no one had a right to exclude. Everyone had liberties regarding the land, but not rights. (Perhaps this does not seem obvious, but if no one owns the land, no one has a right to exclude. If no one has a right to exclude, everyone has liberties.) How, then, did we get from each person having a liberty to someone having an exclusive right to the land? What justifies original appropriation, that is, staking a claim to previously unowned resources?

To justify a claim to unowned land, people need not make as strong a case as would be needed to justify confiscating land already owned by someone else. Specifically, since there is no prior owner in original appropriation cases, there is no one from whom one can or needs to get consent. What, then, must a person do? Locke's idea was that any residual (perhaps need-based) communal claim to the land could be met if a person could appropriate it without prejudice to

other people, in other words, if a person could leave “enough and as good” for others.<sup>3</sup> This so-called Lockean Proviso can be interpreted in many ways, but an adequate interpretation will note that this is its point: to license claims that can be made without making other people worse off.

We also should consider whether the “others” who are to be left with enough and as good include not just people currently on the scene but latecomers as well, including people not yet born. John Sanders asks, “What possible argument could at the same time require that the present generation have scruples about leaving enough and as good for one another, while shrugging off such concern for future generations?”<sup>4</sup> Most theorists accept the more demanding interpretation. It fits better with Locke’s idea that the preservation of humankind (which includes future generations) is the ultimate criterion by which any use of resources is assessed. Aside from that, we have a more compelling defense of an appropriation (especially in environmental terms) when we can argue that there was enough left over not just for contemporaries but also for generations to come.

Of course, when we justify original appropriation, we do not in the process justify expropriation. Some say institutions that license expropriation make people better off; I think our histories of violent expropriation are ongoing tragedies for us all. Capitalist regimes have tainted histories. Communist regimes have tainted histories. Indigenous peoples have tainted histories. Europeans took land from Algonquin tribes, and before that, Algonquin tribes took the same land from Iroquois tribes. We may regard those expropriations as the history of markets or governments or Christianity or tribalism or simply as the history of the human race. It makes little difference. This essay discusses the history of property institutions, not because their history can justify them, but rather because their history shows how some of them enable people to make themselves and the people around them better off without destroying their environment. Among such institutions are those that license original appropriation (and not expropriation).

## II. Original Appropriation: A Solution

Private property's philosophical critics often have claimed that justifying original appropriation is the key to justifying private property, frequently offering a version of Locke's Proviso as the standard of justification. Part of the Proviso's attraction for such critics was that it seemingly could not be met. Many critics conclude that the Proviso is, at least in the case of land appropriation, logically impossible to satisfy, and thus that (private) property in land cannot possibly be justified along Lockean lines.

The way Judith Thomson puts it, if "the first labor-mixer must literally leave as much and as good for others who come along later, then no one can come to own anything, for there are only finitely many things in the world so that every taking leaves less for others."<sup>5</sup> To say the least, Thomson is not alone:

"We leave enough and as good for others only when what we take is not scarce."<sup>6</sup>

"The Lockean Proviso, in the contemporary world of overpopulation and scarce resources, can almost never be met."<sup>7</sup>

"Every acquisition worsens the lot of others—and worsens their lot in relevant ways."<sup>8</sup>

"The condition that there be enough and as good left for others could not of course be literally satisfied by any system of private property rights."<sup>9</sup>

"If the 'enough and as good' clause were a necessary condition on appropriation, it would follow that, in these circumstances, the only legitimate course for the inhabitants would be death by starvation . . . since *no* appropriation would leave enough and as good in common for others."<sup>10</sup>

And so on. If we take something out of the cookie jar, we *must* be leaving less for others. This appears self-evident. It has to be right.

But it isn't right, for two reasons.

### 1) *Appropriation Is Not a Zero-Sum Game*

First, it is hardly impossible—certainly not logically impossible—for a taking to leave as much for others. We can at least imagine a logically possible world of magic cookie jars in which, every time you take out one cookie, more and better cookies take its place.

Second, the logically possible world I just imagined is the sort of world we actually live in. Philosophers writing about original appropriation tend to speak as if people who arrive first are luckier than those who come later. The truth is, first appropriators begin the process of resource creation; latecomers get most of the benefits. Consider America's first permanent English settlement, the Jamestown colony of 1607. (Or, if you prefer, imagine the lifestyles of people crossing the Bering Strait from Asia twelve thousand years ago.) Was their situation better than ours? How so? They were never caught in rush-hour traffic jams, of course. For that matter, they never worried about being overcharged for car repairs. They never awoke in the middle of the night to the sound of noisy refrigerators, leaky faucets, or even flushing toilets. They never wasted a minute at airports waiting for delayed flights. They never had to change a light bulb. They never agonized over the choice among cellular telephone companies. They never faced the prospect of a dentist's drill; after their teeth fell out, in their thirties, they could subsist for a while on liquids. Life was simple.

Philosophers are taught to say, in effect, that original appropriators got the good stuff for free. We have to pay for ugly leftovers. But in truth, original appropriation benefits latecomers far more than it benefits original appropriators. Original appropriation is a cornucopia of wealth, but mainly for latecomers. The people who got here first literally could not even have imagined what we latecomers take for granted. Our life expectancies exceed theirs by several *decades*.

Original appropriation diminishes the stock of what can be originally appropriated, at least in the case of land, but that is not the same thing as diminishing the stock of what can be

owned.<sup>11</sup> On the contrary, in taking control of resources and thereby removing those particular resources from the stock of goods that can be acquired by original appropriation, people typically generate massive increases in the stock of goods that can be acquired by trade. The lesson is that appropriation typically is not a zero-sum but a positive-sum game. As Locke himself stressed, it creates the possibility of mutual benefit on a massive scale. It creates the possibility of society as a cooperative venture.

The point is not merely that enough is produced in appropriation's aftermath to compensate latecomers who lost out in the race to appropriate. The point is that being an original appropriator is not the prize. The prize is prosperity, and latecomers win big, courtesy of those who arrived first. If anyone had a right to be compensated, it would be the first appropriators.

## *2) The Commons Before Appropriation Is Not Zero-Sum Either*

The next point is that the commons before appropriation is not a zero-sum game either. Typically it is a negative sum game. Let me tell two stories. The first comes from the coral reefs of the Philippine and Tongan Islands.<sup>12</sup> People once fished those reefs with lures and traps, but then began bleach-fishing, which involves dumping bleach into the reefs. Fish cannot breathe sodium hypochlorite. Suffocated, they float to the surface where they are easy to collect.<sup>13</sup>

The problem is, the coral itself is composed of living animals. The coral suffocates along with the fish, and the dead reef is no longer a viable habitat. (Another technique, blast-fishing, involves dynamiting the reefs. The concussion produces an easy harvest of stunned fish and dead coral.) Perhaps your first reaction is to say people ought to be more responsible. They ought to preserve the reefs for their children.

But that would miss the point, which is that individual fishermen lack the option of saving the coral for their children. Individual fishermen obviously have the option of not

destroying it themselves, but what happens if they elect not to destroy it? What they want is for the reef to be left for their children; what is actually happening is that the reef is left for the next blast-fisher down the line. If a fisherman wants to have anything at all to give his children, he must act quickly, destroying the reef and grabbing the fish himself. It does no good to tell fishermen to take responsibility. They are taking responsibility—for their children. Existing institutional arrangements do not empower them to take responsibility in a way that would save the reef.

Under the circumstances, they are at liberty to not destroy the reef themselves, but they are not at liberty to do what is necessary to save the reef for their children. To save the reef for their children, fishermen must have the power to restrict access to the reef. They must claim a right to exclude blast-fishers. Whether they stake that claim as individuals or as a group is secondary, so long as they actually succeed in restricting access. One way or another, they must have, and must effectively exercise, a right to restrict access.

The second story comes from the Cayman Islands.<sup>14</sup> The Atlantic Green Turtle has long been prized as a source of meat and eggs. The turtles were a commonly held resource and were being harvested in an unsustainable way. In 1968, when by some estimates there were as few as three to five thousand left in the wild, a group of entrepreneurs and concerned scientists created Mariculture Ltd. (sold in 1976 and renamed Cayman Turtle Farm) and began raising and selling captive-bred sea turtles. In the wild, as few as one tenth of one percent of wild hatchlings survive to adulthood. Most are seized by predators before they can crawl from nest to sea. Cayman Farm, though, boosted the survival rate of captive-bred animals to fifty percent or more. At the peak of operations, they were rearing over a hundred thousand turtles. They were releasing one percent of their hatchlings into the wild at the age of ten months, an age at which hatchlings have a decent chance of surviving to maturity.

In 1973, commerce in Atlantic Green Turtles was restricted by CITES (the Convention

on International Trade in Endangered Species) and, in the United States, by the Fish and Wildlife Service, the Department of Commerce, and the Department of the Interior. Under the newly created Endangered Species Act, the U.S. classified the Atlantic Green Turtle as an endangered species, but Cayman Farm's business was unaffected, at first, because regulations pertaining to commerce in Atlantic Green Turtles covered only wild turtles, implicitly exempting commerce in captive-bred animals. In 1978, however, the regulations were published in their final form, and although exemptions were granted for trade in captive-bred animals of other species, no exemption was made for turtles. The company could no longer do business in the U.S. Even worse, the company no longer could ship its products through American ports, so it no longer had access via Miami to world markets. The Farm exists today only to serve the population of the Cayman Islands themselves.<sup>15</sup>

What do these stories tell us? The first tells us we do not need to justify failing to preserve the commons in its pristine, original, unappropriated form, because preserving a pristine commons is not an option. Leaving our environment in the commons is not like putting our environment in a time capsule as a legacy for future generations. There are ways to take what we find in the commons and preserve it—to put it in a time capsule—but before we can put something in a time capsule, we have to appropriate it.<sup>16</sup>

### 3) *Justifying the Game*

Note a difference between justifying *institutions* that regulate appropriation and justifying particular *acts* of appropriation. Think of original appropriation as a game and of particular acts of appropriation as moves within the game. Even if the game is justified, a given move within the game may have nothing to recommend it. Indeed, we could say (for argument's sake) that any act of appropriation will seem arbitrary when viewed in isolation, and some will seem



unconscionable. Even so, there can be compelling reasons for an institutional framework to recognize property claims on the basis of moves that would carry no moral weight in an institutional vacuum. Common law implicitly acknowledges morally weighty reasons for not requiring original appropriators to supply morally weighty reasons for their appropriations. Carol Rose argues that a rule of first possession, when the world is notified in an unambiguous way, induces discovery (and future productive activity) and minimizes disputes over discovered objects.<sup>17</sup> Particular acts of appropriation are justified not because they carry moral weight but because they are permitted moves within a game that carries moral weight.

Needless to say, the cornucopia of wealth generated by the appropriation and subsequent mobilization of resources is not an unambiguous benefit. Commerce made possible by original appropriation creates pollution, and other negative externalities as well. Further, there may be people who attach no value to the increases in life expectancy and other benefits that accompany the appropriation of resources for productive use. Some people may prefer a steady-state system that indefinitely supports their lifestyles as hunter-gatherers, untainted by the shoes, tents, fishing rods, and safety matches of Western culture. If original appropriation forces such people to participate in a culture they want no part of, then from their viewpoint, the game does more harm than good.

Here are two things to keep in mind, though. First, as I said, the commons is not a time capsule. It does not preserve the status quo. For all kinds of reasons, quality of life could drop after appropriation. However, pressures that drive waves of people to appropriate are a lot more likely to compromise quality of life when those waves wash over an unregulated commons. In an unregulated commons, those who conserve pay the costs but do not get the benefits of conservation, while overusers get the benefits but do not pay the costs of overuse. An unregulated commons is thus a prescription for overuse, not for conservation.

Second, the option of living the life of a hunter-gatherer has not entirely disappeared. It is

not a comfortable life. It never was. But it remains an option. There are places in northern Canada and elsewhere where people still live that way. As a bonus, those who opt to live as hunter-gatherers retain the option of participating in western culture on a drop-in basis during medical emergencies, to trade for supplies, and so on. Obviously, someone might respond, “Even if the hunter-gatherer life is an option now, that option is disappearing as expanding populations equipped with advancing technologies claim the land for other purposes.” Well, probably so. What does that prove? It proves that, in the world as it is, if hunter-gatherers want their children to have the option of living as hunter-gatherers, then they need to stake a claim to the territory on which they intend to preserve that option. They need to argue that they, as rightful owners, have a right to regulate access to it. If they want a steady-state civilization, they need to be aware that they will not find it in an unregulated commons. They need to exclude oil companies, for example, which would love to treat northern Canada as an unregulated commons.

When someone says appropriation does not leave enough and as good for others, the reply should be “compared to what?” Compared to the commons as it was? As it is? As it will be? Often, in fact, leaving resources *in the commons* does not leave enough and as good for others. The Lockean Proviso, far from forbidding appropriation of resources from the commons, actually requires appropriation under conditions of scarcity.

Removing goods from the commons stimulates increases in the stock of what can be owned and limits losses that occur in tragic commons. Appropriation replaces a negative sum with a positive sum game. Therein lies a justification for social structures enshrining a right to remove resources from the unregulated commons: when resources become scarce, we need to remove them if we want them to be there for our children. Or anyone else’s.

### III. What Kind of Property Institution Is Implied?

I have defended appropriation of, and subsequent regulation of access to, scarce resources as a way of preserving (and creating) resources for the future. When resources are abundant, the Lockean Proviso permits appropriation; when resources are scarce, the Proviso requires appropriation. It is possible to appropriate without prejudice to future generations. Indeed, when the burden of common use begins to exceed a resource's ability to renew itself, leaving the resource in the commons is what would be prejudicial to future generations.

Private property enables people (and gives them an incentive) to take responsibility for conserving scarce resources. It preserves resources under a wide variety of circumstances. It is the preeminent vehicle for turning negative sum commons into positive sum property regimes. However, it is not the only way. Evidently, it is not always the best way, either. Public property is ubiquitous, and it is not only rapacious governments and mad ideologues who create it. It has a history of evolving spontaneously in response to real problems, enabling people to remove a resource from an unregulated commons and collectively take responsibility for its management. The following sections discuss research by Martin Bailey, Harold Demsetz, Robert Ellickson, and Carol Rose, showing how various property institutions help to ensure that enough and as good is left for future generations.

#### 1) *The Unregulated Commons*

An unregulated commons need not be a disaster. An unregulated commons will work well enough so long as the level of use remains within the land's carrying capacity. However, as use nears carrying capacity, there will be pressure to shift to a more exclusive regime. For a real-world example of an unregulated commons evolving into a regime of private parcels as

increasing traffic began to exceed carrying capacity, consider economist Harold Demsetz's classic account of how property institutions evolved among indigenous tribes of the Labrador Peninsula. As Demsetz tells the story, the region's people had, for generations, treated the land as an open-access commons. The human population was small. There was plenty to eat. Thus, the pattern of exploitation was within the land's carrying capacity.<sup>18</sup> The resource maintained itself. In that situation, the Proviso, as interpreted above, was satisfied. Original appropriation would have been permissible, other things equal, but it was not required.

With the advent of the fur trade, though, the scale of hunting and trapping activity increased sharply. The population of game animals began to dwindle. The unregulated commons had worked for a while, but now the tribes were facing a classic "tragedy of the commons."<sup>19</sup> The tragedy of the commons is one version of a more general problem of externalities. In this case, the benefits of exploiting the resource were internalized but the costs were not, and the arrangement was no longer viable. In response, tribal members began to mark out family plots. The game animals in question were small animals like beaver and otter that tend not to migrate from one plot to another. Thus, marking out plots of land effectively privatized small game as well as the land itself. In sum, the tribes converted the commons in nonmigratory fur-bearing game to family parcels when the fur trade began to spur a rising demand that exceeded the land's carrying capacity. When demand began to exceed carrying capacity, that was when the Proviso came not only to permit but to require original appropriation.

One other nuance of the privatization of fur-bearing game: although the fur was privatized, the meat was not. There was still plenty of meat, so tribal law allowed people to hunt for meat on each other's land. Unannounced visitors could kill a beaver and take the meat, but had to leave the pelt, prominently displayed to signal that they had eaten and had respected the owner's right to the pelt. The new customs went to the heart of the matter, privatizing what had to be privatized, leaving intact liberties that people had always enjoyed with respect to other

resources where unrestricted access had not yet become a problem.

## 2) *The Communal Alternative*<sup>20</sup>

We can contrast the unregulated or open-access commons with communes. A commune is a restricted-access commons. In a commune, property is owned by the group rather than by individual members. People as a group claim and exercise a right to exclude. Typically, communes draw a sharp distinction between members and nonmembers, and regulate access accordingly. Public property tends to restrict access by time of day or year. Some activities are permitted; others are prohibited.

Ellickson believes a broad campaign to abolish either private property or public and communal property would be ludicrous. Each kind of property serves social welfare in its own way. Likewise, every ownership regime has its own externality problems. Communal management leads to overconsumption and to shirking on maintenance and improvements, because people receive only a fraction of the value of their labor, and pay only a fraction of the costs of their consumption. To minimize these disincentives, a commune must monitor production and consumption activities.

In practice, communal regimes can lead to indiscriminate dumping of wastes, ranging from piles of unwashed dishes to ecological disasters that threaten whole continents. Privately managed parcels also can lead to indiscriminate dumping of wastes and to various other uses that ignore spillover effects on neighbors. One advantage of private property is that owners can buy each other out and reshuffle their holdings in such a way as to minimize the extent to which their activities bother each other. But it does not always work out so nicely, and the reshuffling itself can be a waste. There are transaction costs. Thus, one plausible social goal would be to have a system that combines private and public property in a way that reduces the sum of transaction

costs and the cost of externalities.

#### IV. Local versus Remote Externalities

Is it generally best to convert an unregulated commons to smaller private parcels or to manage it as a commune with power to exclude nonmembers? It depends on what kind of problem the property regime is supposed to be solving. In particular, not all problems are of equal scale; some are more local than others. As a problem's scale changes, there will be corresponding changes in which responses are feasible and effective. An individual sheep eating grass in the pasture is what Ellickson and Demsetz would call a *small* event, affecting only a small area relative to the prevailing parcel size. If the commons is being ruined by small events, there is an easy solution: cut the land into parcels. We see this solution everywhere. If we can divide the land into parcels of a certain size, such that the cost of grazing an extra sheep is borne entirely by the individual owner who decides whether to graze the extra sheep, then we have internalized externalities and solved the problem. If we divide the pasture into private parcels, then what a particular sheep eats on a particular owner's pasture is no one else's concern. The grass is no longer a common pool.

For better or worse, events come in more than one size. For the sake of example, suppose six parcels are situated over a pool of oil in such a way that, via oil wells, each of the six owners has access to the common pool. The more wells individual owners sink, the more oil they can extract, up to a point. As the number of wellheads goes up, oil pressure per wellhead declines. Not only is the reserve of oil ultimately fixed but the practically extractable reserve eventually begins to decline with the number of wells sunk. Past a point, we no longer have a situation in which what individual owners do on their property is of no concern to other owners.

Instead, the six owners become part of a *medium* event, a kind of problem that

neighbors cannot solve simply by putting up fences. This kind of problem occurs when an event is too large to be contained on a single parcel, or does not have a precise and confined location, or migrates from one location to another. For one reason or another, the event is large enough that its effects spill over onto neighboring parcels.

In an unfenced commons, there is in effect only a single parcel, so the words “small,” “medium” and “large” would refer simply to the radius over which the effects of an event are felt, that is, small, medium or large parts of the whole parcel. In a regime that has been cut into smaller parcels, the more interesting distinction is between a small event that affects a single owner, a medium event that affects immediate neighbors, and a large event that affects remote parts of the community. When land is divided into parcels, whether an event is small, medium, or large will depend on the size of the parcels. Whether a regime succeeds in internalizing externalities will depend on whether it succeeds in carving out parcel sizes big enough to contain those events whose effects it is most crucial to internalize. In effect, if an individual owner’s parcel size could be increased without limit, any event could be made “small.”<sup>21</sup>

Ellickson says private regimes are clearly superior as methods for minimizing the costs of small and medium events. Regarding small events, the first point is that the external effects of small events are by definition vanishingly small. Neighbors do not care when we pick tomatoes on our own land; they do care when we pick tomatoes on their communal plot. In the former case, we are minding our own business; in the latter, we are minding theirs. (In effect, there are no small events on communal land. Everything we do affects our neighbors. Even doing nothing at all affects our neighbors, given that we could instead have been helping to tend the communal gardens.) The second point regarding small events concerns the cost of monitoring. To internalize externalities, whatever the property regime, owners must be able to monitor other would-be users. On a private regime, though, it is only boundary crossings that need monitoring; guard dogs and motion sensors can handle that. By contrast, the monitoring needed within a

communal regime involves evaluating whether workers are just going through the motions, whether they are taking more than their share, and so on. In sum, “detecting the presence of a trespasser is much less demanding than evaluating the conduct of a person who is privileged to be where he is.”<sup>22</sup> Thus, the external cost of small events is lower on private parcels, and monitoring, while still required, is relatively cheap and relatively nonintrusive in a parcelized regime.

The effects of medium events tend to spill over onto one’s neighbors, and thus can be a source of friction. Nevertheless, privatization has the advantage of limiting the number of people having to be consulted about how to deal with the externality, which reduces transaction costs. Instead of consulting the entire community of communal owners, each at liberty with respect to the affected area, one consults a handful of people who own parcels in the immediate area of the medium event. A further virtue of privatization is that disputes arising from medium events tend to be left in the hands of people in the immediate vicinity, who tend to better understand local conditions and thus are in a better position to devise resolutions without harmful unintended consequences. They are in a better position to foresee the costs and benefits of a medium event.<sup>23</sup>

When it comes to large events, though, there is no easy way to say which mix of private and public property is best. Large events involve far-flung externalities among people who do not have face-to-face relationships. The difficulties in detecting such externalities, tracing them to their source, and holding people accountable for them are difficulties for any kind of property regime. It is no easy task to devise institutions that encourage pulp mills to take responsibility for their actions while simultaneously encouraging people downstream to take responsibility for their welfare, and thus to avoid being harmed by large-scale negative externalities. Ellickson says there is no general answer to the question of which regime best deals with them.

Large events will fall into one of two categories. Releasing toxic wastes into the atmosphere, for example, may violate existing legal rights or community norms. Or, such laws or



norms may not yet be in place. Most of the problems arise when existing customs or laws fail to settle who (in effect) has the right of way. That is not a problem with parceling land per se but rather with the fact that key resources like air and waterways remain in a largely unregulated commons.

So, privatization exists in different degrees and takes different forms. Different forms have different incentive properties. Simply parceling out land or sea is not always enough to stabilize possession of resources that make land or sea valuable in the first place. Suppose that fish are known to migrate from one parcel to another. In that case, owners have an incentive to grab as many fish as they can whenever the school passes through their own territory. Thus, simply dividing fishing grounds into parcels may not be enough to put fishermen in a position to avoid collectively exceeding sustainable yields. It depends on the extent to which the sought-after fish migrate from one parcel to another, and on continuously evolving conventions that help neighbors deal with the inadequacy of their fences (or other ways of marking off territory). Clearly, then, not all forms of privatization are equally good at internalizing externalities. Privatization per se is not a panacea, and not all forms of privatization are equal.

There are obvious difficulties with how private property regimes handle large events. The nature and extent of the difficulties depends on details. So, for purposes of comparison, Ellickson looked at how communal regimes handle large events.

## V. Jamestown and Other Communes

The Jamestown Colony is North America's first permanent English settlement. It begins in 1607 as a commune, sponsored by London-based Virginia Company. Land is held and managed collectively. The colony's charter guarantees to each settler an equal share of the collective product regardless of the amount of work personally contributed. Of the original group

of one hundred and four settlers, two thirds die of starvation and disease before their first winter. New shiploads replenish the colony; the winter of 1609 cuts the population from five hundred to sixty. Colonist William Simmons writes, “It were too vile to say (and scarce to be believed) what we endured, but the occasion was only our own for want of providence, industry, and government, and not the barrenness and defect of the country, as is generally supposed.”<sup>24</sup> In 1611, career soldier Thomas Dale (appointed by Governor Thomas Gates to administer martial law) arrives to find living skeletons<sup>25</sup> bowling in the streets, waiting for someone else to plant the crops.<sup>26</sup> Their main food source consists of wild animals such as turtles and raccoons, which settlers hunt and eat by dark of night before neighbors arrive to demand equal shares.<sup>27</sup>

Colonist George Percy writes that bad water accounted for many deaths, but most of the deaths were from “meere famine.”<sup>28</sup> Archeologist Ivor Hume reacts with wonder: “The James Fort colonists’ unwillingness or inability to work toward their own salvation remains one of American history’s great mysteries.”<sup>29</sup> Newly arriving ship’s crew members, fishing the Chesapeake Bay, caught seven-foot sturgeon and oysters the size of dinner plates, and left their fishing gear with the colonists. How could colonists starve under such circumstances? Moreover, “Percy’s recognition that bad water was the cause of many deaths leaves one asking why, then, nothing was done to combat its dangers. That foul water was bad for you had been known for centuries . . .”<sup>30</sup>

In 1614, (by now Governor) Thomas Dale has seen enough. He assigns three-acre plots to individual settlers, which reportedly increases productivity at least seven-fold. (I found no verification of this, but colonist Captain John Smith observes that, “When our people were fed out of the common store, and laboured jointly together, glad was he could slip from his labour, or slumber over his taske he care not how, nay, the most honest among them would hardly take so much true paines in a weeke, as now for themselves they will doe in a day”)<sup>31</sup> The colony converts the rest of its land holdings to private parcels in 1619.<sup>32</sup>

Why go communal in the first place? Are there advantages to communal regimes? One advantage is obvious. Communal regimes can help people spread risks under conditions where risks are substantial and where alternative risk-spreading mechanisms, like insurance, are unavailable. The Company was sending settlers to a frontier where, without help, something as simple as a sprained ankle could be fatal. The only form of insurance available was, in effect, mutual insurance among the settlers, backed up by their ability to work overtime for less fortunate neighbors. But as communities build up capital reserves to the point where they can offer insurance, they tend to privatize, for insurance lets them secure a measure of risk-spreading without having to endure the externalities that tend to afflict communal regimes.

A communal regime might also be an effective response to economies of scale in large public works that are crucial in getting a community started. To build a fort, man its walls, dig wells, and so on, a communal economy is an obvious choice as a way of mobilizing the teams of workers needed to execute these urgent tasks. But again, as these tasks are completed and community welfare increasingly comes to depend on small events, the communal regime gives way to private parcels. At Jamestown, Plymouth, the Amana colonies, and Salt Lake, formerly communal settlers “understandably would switch to private land tenure, the system that most cheaply induces individuals to undertake small and medium events that are socially useful.”<sup>33</sup> (The legend of Salt Lake says the sudden improvement in the fortunes of once-starving Mormons occurred in 1848 when God sent sea gulls to save them from plagues of locusts, at the same time as they coincidentally were switching to private plots. Similarly, the Jamestown tragedy sometimes is attributed to harsh natural conditions, as if those conditions suddenly changed in 1614, multiplying productivity seven-fold while Governor Dale coincidentally was cutting the land into parcels.)

Of course, the tendency toward decentralized and individualized forms of management is only a strong tendency and, in any case, there are tradeoffs. For example, what would be a small

event on a larger parcel becomes a medium event under more crowded conditions. Loud music is an innocuous small event on a ranch but an irritating medium event in an apartment complex. Changes in technology or population density affect the scope or incidence of externalities. The trend, though, is that as people become aware of and concerned about a medium or large event, they seek ways of reducing the extent to which the event's cost is externalized. Social evolution is partly a process of perceiving new externalities and devising institutions to internalize them.

Historically, the benefits of communal management have not been enough to keep communes together indefinitely. Perhaps the most enduring and successful communes in human memory are the agricultural settlements of the Hutterites, dating back to sixteenth century Austria. They migrated to the Dakotas in the 1870s, then to Canada (to avoid compulsory military service during World War I). North American Hutterite communities now contain around forty thousand people (mostly on the Canadian prairies). Hutterites believe in a fairly strict sharing of assets. They forbid radio and television, to give one example of how strictly they control contact with the outside world.

Ellickson says Hutterite communities have three special things going for them: 1. A population cap: when a settlement reaches a population of one hundred and twenty, a portion of the community must leave to start a new community. The cap helps them retain a close-knit society; 2. Communal dining and worship: people congregate several times a day, which facilitates a rapid and intense monitoring of individual behavior and a ready avenue for supplying feedback to those whose behavior deviates from expectations; 3. A ban on birth control: the average woman bears ten children (the highest documented fertility rate of any human population) which more than offsets the trickle of emigration.<sup>34</sup> We might add that Hutterite culture and education leave people ill-prepared to live in anything other than Hutterite society, which accounts for the low emigration rate.

Ellickson discusses other examples of communal property regimes. But the most

pervasive example of communal ownership in America, Ellickson says, is the family household. American suburbia consists of family communes nested within a network of open-access roadways. Family homes tacitly recognize limits to how far we can go in converting common holdings to individual parcels. Consider your living room. You could fully privatize, having one household member own it while others pay user fees. The fees could be used to pay family members or outside help to keep it clean. In some respects, it would be better that way. The average communal living room today, for example, is notably subject to overgrazing and shirking on maintenance. Yet we put up with it. No one charges user fees to household members. Seeing the living room degraded by communal use may be irritating, but it is better than treating it as one person's private domain.

Some institutions succeed while embodying a form of ownership that is essentially collective. History indicates, though, that members of successful communes internalize the rewards that come with that collective responsibility. In particular, they reserve the right to exclude nonmembers. A successful commune does not run itself as an open-access commons.

## VI. Governance By Custom

Many commons (such as our living rooms) are regulated by custom rather than by government, so saying there is a role for common property and saying there is a role for government management of common property are two different things. As Ellickson notes, "Group ownership does not necessarily imply government ownership, of course. The sorry environmental records of federal land agencies and Communist regimes are a sharp reminder that governments are often particularly inept managers of large tracts."<sup>35</sup> Carol Rose tells of how, in the nineteenth century, public property was thought to be owned by society at large. The idea of public property often was taken to imply no particular role for government beyond whatever

enforcement role is implied by private property. Society's right to such property was held to precede and supersede any claim by government. Rose says, "Implicit in these older doctrines is the notion that, even if a property should be open to the public, it does not follow that public rights should necessarily vest in an active governmental manager."<sup>36</sup> Sometimes, rights were held by an "unorganized public" rather than by a "governmentally organized public."<sup>37</sup>

Along the same lines, open-field agricultural practices of medieval times gave peasants exclusive cropping rights to scattered thin strips of arable land in each of the village fields. The strips were private only during the growing season, after which the land reverted to the commons for the duration of the grazing season.<sup>38</sup> Thus, ownership of parcels was usufructuary in the sense that once the harvest was in, ownership reverted to the common herdsmen without negotiation or formal transfer.<sup>39</sup> A farmer had an exclusive claim to the land only so long as he was using it to bring in a harvest. The scattering of strips was a means of diversification, reducing the risk of being ruined by small or medium events: small fires, pest infestations, etc.. The post-harvest commons in grazing land exploited economies of scale in fencing and tending a herd. Scattering the strips also made it harder for a communal herdsman to position livestock exclusively over his own property, thus promoting more equitable distribution of manure (i.e., fertilizer).<sup>40</sup>

According to Martin Bailey, the pattern observed by Rose and Ellickson also was common among aboriginal tribes. That is, tribes that practiced agriculture treated the land as private during the growing season, and often treated it as a commons after the crops were in. Hunter-gatherer societies did not practice agriculture, but they too tended to leave the land in the commons during the summer when game was plentiful. It was during the winter, when food was most scarce, that they privatized. The rule among hunter-gatherers is that where group hunting's advantages are considerable, that factor dominates. But in the winter, small game is relatively more abundant, less migratory, and evenly spread. There was no "feast or famine" pattern of the sort one expects to see with big-game hunting. Rather, families tended to gather enough during

the course of the day to get themselves through the day, day after day, with little to spare.<sup>41</sup>

Even though this pattern corroborates my general thesis, I admit to being surprised. I might have predicted that it would be during the harshest part of the year that families would band together and throw everything into the common pot in order to pull through. Not so. It was when the land was nearest its carrying capacity that they recognized the imperative to privatize.

Customary use of medieval commons was hedged with restrictions limiting depletion of resources. Custom prohibited activities inconsistent with the land's ability to recover.<sup>42</sup> In particular, the custom of "stinting" allowed the villagers to own livestock only in proportion to the relative size of their (growing season) land holdings. Governance by custom enabled people to avoid commons tragedies.<sup>43</sup>

*Custom* is a form of management unlike exclusive ownership by individuals or governments. Custom is a self-managing system for according property rights.<sup>44</sup> For example, custom governs rights-claims you establish by taking a place in line at a supermarket checkout counter. Rose believes common concerns often are best handled by decentralized, piecemeal, self-managing customs that tend to arise as needed at the local level. So, to the previous section's conclusion that a successful commune does not operate as an open-access commons, we can add that a successful commune does not entrust its governance to a distant bureaucracy.

## VII. The Hutterite Secret

I argued that the original appropriation of (and subsequent regulation of access to) scarce resources is justifiable as a mechanism for preserving opportunities for future generations. There are various means of exclusive control, though. Some internalize externalities better than others, and how well they do so depends on the context. There is no single form of exclusive control that uniquely serves this purpose. Which form is best depends on what kind of activities are most

prevalent in a community at any given time. It also depends on the extent to which public ownership implies control by a distant bureaucracy rather than by local custom.

As mentioned earlier, I have heard people say Jamestown failed because it faced harsh natural conditions. But communal (and noncommunal) settlements typically face harsh natural conditions. Jamestown had to deal with summer in Virginia. Hutterites dealt with winter on the Canadian prairie. It is revealing, not misleading, to compare Jamestown to settlements that faced harsher conditions more successfully. It also is fair to compare the two Jamestowns: the one before and the one immediately following Governor Dale's mandated privatization. What distinguished the first Jamestown from the second was not the harshness of the former's natural setting but the thoroughness with which it prevented people from internalizing externalities.

Michael Hechter considers group solidarity to be a function of (a) the extent to which members depend on the group and (b) the extent to which the group can monitor and enforce compliance with expectations that members will contribute to the group rather than free ride upon it.<sup>45</sup> On Hechter's analysis, it is unsurprising that Hutterite communal society has been successful. Members are extremely dependent, for their upbringing leaves them unprepared to live in a non-Hutterite culture. Monitoring is intense. Feedback is immediate. But if that is the Hutterite secret, why did Jamestown fail? They too were extremely dependent on each other. They too had nowhere else to go. Monitoring was equally straightforward. Everyone knew who was planting crops (no one) and who was bowling (everyone). What was the problem?

The problem lay in the guarantee embedded in Jamestown's charter. The charter entitled people to an equal share regardless of personal contribution, which is to say it ensured that individual workers would be maximally alienated from the fruits of their labors—that they would think of their work as disappearing into an open-access commons.

Robert Goodin says, "Working within the constraints set by natural scarcity, the greatest practical obstacle to achieving as much justice as resources permit is, and always has been, the



supposition that each of us should cultivate his own garden.”<sup>46</sup> However, Jamestown’s charter did not suppose each of us should cultivate his own garden. It supposed the opposite. Colonists abided by the charter, and starved. Only a few years later, with a new charter, colonists were tending their own gardens, and thriving.

We should applaud institutions that encourage people to care for each other. But telling people they are required to tend someone else’s garden rather than their own does not encourage people to care for each other. It does the opposite. It encourages spite. The people of Jamestown reached the point where they would rather die, bowling in the street, than tend the gardens of their free-riding neighbors, and die they did.

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<sup>1</sup> A negative externality or external cost is a cost (of a decision or transaction) paid by bystanders who were not consulted and whose interests were not taken into account. A transaction may also, analogously, create positive externalities, that is, have external benefits.

<sup>2</sup> Merrill (1998).

<sup>3</sup> See Locke (1669/1690, Chap. 5). Locke sometimes uses other locutions, such as "as much and as good."

<sup>4</sup> Sanders (1987) 377.

<sup>5</sup> Thomson (1990) 330.

<sup>6</sup> Fried (1995) 230n.

<sup>7</sup> Held (1980) 6.

<sup>8</sup> Bogart (1985) 834.

<sup>9</sup> Sartorius (1984) 210.

<sup>10</sup> Waldron (1976) 325.

<sup>11</sup> Is it fair for latecomers to be excluded from acquiring property by rules allowing original appropriation? Sanders (1987, 385) notes that latecomers "are *not* excluded from acquiring property by these rules. They are, instead, excluded from being the first to own what has not been owned previously. Is *that* unfair?"

<sup>12</sup> Chesher (1985). See also Gomez, Alcala, and San Diego (1981).

<sup>13</sup> Nash (1996) says fishermen currently pump 330,000 pounds of cyanide per year into Philippine reefs.

<sup>14</sup> I thank Peggy Fosdick at the National Aquarium in Baltimore for correspondence and documents. See also Fosdick and Fosdick (1994).

<sup>15</sup> As later sections stress, privatization may be a key to avoiding commons tragedies, but it is not a panacea. In this case, there was concern that the farming of turtles would spur demand, and that rising demand would lead to rising prices, which would mean an increased poaching pressure on wild populations. This is unlikely. As a rule, the prices of scarce wild animals do not rise when people begin bringing to market large quantities of farm-bred alternatives. One real danger, though, is that large-scale farms (salmon farms, cattle farms, etc.) breed disease and put wild as well as domestic populations at risk. As with any other new industry, there are always unanticipated problems and newly emerging externalities that need to be contained. See Davis (2007).

<sup>16</sup> A private non-profit organization, The Nature Conservancy, is pursuing such a strategy. Although not itself an original appropriator, it has acquired over a billion dollars' worth of land in an effort to preserve natural ecosystems. Note that this includes habitat for endangered species that have no market value.

<sup>17</sup> Rose (1985).

<sup>18</sup> This was not true everywhere. I have seen places where tribes hunted bison by stampeding whole herds over the edge of a cliff. (The Blackfoot name for one such place translates as "head-smashed-in buffalo jump.") So I accept Dukeminier and Krier's warning against forming "an unduly romantic image of Native American culture prior to the arrival of 'civilization.'" There is considerable evidence that some American Indian tribes, rather than being natural ecologists who lived in respectful harmony with the land, exploited the environment ruthlessly by overhunting and extensive burning of forests" (1993, 62).

<sup>19</sup> Hardin (1968) 1243. The cases described in the previous sections are examples of the "tragedy of the commons," where unregulated access to a resource results in overuse by a population of users who lack the effective right to exclude other users and thus whose only rational alternative is to jump in and overuse while they can. See also Schmidtz & Willott (2003).

<sup>20</sup> This essay discusses Ellickson's article in some detail. While I take little credit for the ideas in the next few sections, any errors are presumably mine.

<sup>21</sup> I have modified this discussion from that of the original paper, borrowing what first appeared in "Reinventing the Commons." I thank Elizabeth Willott for helpful discussions of the small/medium distinction.

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<sup>22</sup> Ellickson (1993) 1327.

<sup>23</sup> Ellickson (1993) 1331.

<sup>24</sup> Haile (1998) 340.

<sup>25</sup> The word chosen by eyewitness George Percy was “anatomies” (Haile, 1998, 507).

<sup>26</sup> Eyewitness Ralph Hamor refers to Thomas Dale arriving at Jamestown where “the most company were, and their daily and usuall workes, bowling in the streetes.” Dale declared martial law, conscripting these people to repair their buildings, plant corn, etc. (Hume, 1994, 298).

<sup>27</sup> As reported by CNN News, September 13, 1996, on the occasion of the original fort’s excavation.

<sup>28</sup> Hume (1994) 159.

<sup>29</sup> Hume (1994) 160.

<sup>30</sup> Hume (1994) 160. Hume adds, “Although considering the geology of Jamestown Island, it would have been fruitless to try to reach sustained freshwater by digging wells, they were not to know that—but nobody even tried!” (161). Upon visiting the Jamestown excavation in 2007, I saw new diggings indicating that the colonists had indeed tried to dig a well, but Hume’s point still holds. When the well project failed, the colonists seem to have given up. Just as inexplicably, they seem to have torn down sections of the fort to use as firewood, even though eyewitnesses described the edge of the forest as “within a stone’s throw.” Apart from the need for firewood, the forest should have been cut back for the sake of securing the fort’s perimeter.

<sup>31</sup> Quoted by Ellickson (1993) 1337. After visiting Jamestown in 2007, talking to four history buffs who work there, and reading scholarly work published since the first version of this essay (including Haile’s extraordinary collection of eyewitness accounts), I now suspect that several factors exacerbated the communal charter’s corrosive incentive effects. First, the Virginia company intended to make a profit, so eventually skimming the produce of the colony was precisely the point. The colonists resented having been misled about how difficult life would be, and the idea of working harder than required for their own subsistence, largely to profit the lying fat cats who had put them in their plight to begin with, was intolerable. Second, the colonists wanted to go home, and had the idea that they could win a deadly game of Chicken. The idea, as reported by a horrified Thomas Dale, was, “We will weary out the Company at home in sending us provisions, and then, when they grow weary and see that we do not prosper here, they will send for us home. Therefore let us weary them out” (Haile, 1998, 779).

<sup>32</sup> Under the new “Headright” system, settlers are given 50-acre plots, plus an additional 50 acres for each servant in their employ. So, they plant tobacco, harvest a crop, and use the money to return to England to recruit new servant/settlers. The recruiter collects the new settler’s 50-acre grant. The new settler gets transport to Virginia and some portion of the fifty acres in return for working the recruiter’s land for a few seasons while learning the essential skills. Recruiters thus begin to cobble together large plantations, new recruits in turn become recruiters themselves, and Virginia’s tobacco economy begins to gallop.

<sup>33</sup> Ellickson (1993) 1342.

<sup>34</sup> Mydans (1989).

<sup>35</sup> Ellickson (1993) 1335.

<sup>36</sup> Rose (1986) 720.

<sup>37</sup> Rose (1986) 736.

<sup>38</sup> Ellickson (1993) 1390.

<sup>39</sup> For an excellent discussion of the issue of adverse possession, see Rose (1985). A “usufructuary” right is an entitlement that persists only so long as the owner is using an item for its customary purpose. For example, you establish a usufructuary right to a park bench by sitting on it, but you abandon that right when you leave.

<sup>40</sup> Ellickson (1993) 1390.

<sup>41</sup> Bailey (1992).

<sup>42</sup> Rose (1986) 743.

<sup>43</sup> Of course, no one thinks governance by custom automatically solves commons problems. Custom works when local users can restrict outsider access and monitor insider behavior, but those conditions are not always met, and tragedies like those discussed earlier continue to occur.

<sup>44</sup> Rose (1986) 742.

<sup>45</sup> Hechter (1983) 21.

<sup>46</sup> Goodin (1985, 1). Goodin and I debate the issue at length in Schmitz & Goodin (1998).