

THE FUTURE OF OWNERSHIP—AND THE WORLD

Pick any newspaper. We're 100 percent confident there's a major headline today—the day you are reading this chapter—whose meaning snaps into focus if you understand the hidden rules of ownership. We wrote this book so you can have more of these “aha” moments.

How can we be so sure about predicting today's news? Because ownership is the scaffolding that society uses to structure every struggle over the things we all want. That's a lot of things. And where should we look to see the future of ownership? Anywhere people are chasing scarce resources. That's everywhere, really.

As we write this chapter, the biggest headlines that touch on ownership concern threats to the natural world and at the digital frontier. The stories highlight blows to the environment—unchecked climate change, loss of tropical forests, and crashing fisheries. And they describe perils to individual freedom from tech giants and governments online, through data tracking, algorithmic discrimination, and pervasive surveillance. Even though these are challenges at a national and even planetary scale, they are basically the same as fights over Knee Defenders and droneways, parking chairs and line-standers. All are fights over who gets what and why. Only the stakes are higher.

Remember that we are all using the same ownership toolkit. It contains six contested pathways to claiming ownership: *first-in-time*, *possession*, *labor*, *attachment*, *self-ownership*, and *family*. And it contains a small handful of design tools including: *ex post*—

ex ante, *rules–standards*, *exclusion–governance*, *baseline setting*, and *liberal commons*. This same toolkit controls both the trivial and the epic.

Looking to the future, the challenge will be to mix and match this limited number of pathways and tools as we seek to address seemingly unsolvable dilemmas at the ownership frontier. It turns out that paying careful attention to how we make things *mine*—whether greenhouse gases or clickstream data—may be our best chance for saving the planet and preserving our freedom.

The Greatest Water on Earth

New Yorkers are rarely a soft-spoken group, particularly when boasting about their city. *Time Out* magazine lists fifty reasons why New York is the “greatest city in the world”—greatest skyline, greatest theater, and on and on. These brags should come as no surprise. Everyone has heard of the Empire State Building and Times Square. But you may be surprised at what the magazine lists as the number-one reason New York is so great.

Its drinking water.

And you don’t need to take the magazine’s word for it. New York tap water routinely wins blind taste contests against even the priciest bottled water.

While New Yorkers may know their tap water tastes great, few know that it comes from 125 miles northwest of the city; and even fewer know that innovative ownership design lies at the heart of providing over a billion gallons of safe and refreshing water to nine million people every day. But Al Appleton knows.

Appleton is a bear of a man with a quick wit and disarming candor. In 1990 he became commissioner of the New York City Department of Environmental Protection and director of the city’s water and sewer system. He immediately faced a dilemma. Unlike most big American cities, New York did not have treatment plants for its tap water. Showing great foresight in the early 1900s, the city had laid huge pipes from the undeveloped Catskill Mountains, far to the north and west, to bring the region’s pristine water down to giant reservoirs near the city. Apart from mechanical filters at the collecting reservoirs to keep out sticks and leaves, and

chlorination to kill bacteria, the water went almost directly from the mountains to faucets in apartments in Manhattan and homes in the Bronx.

Starting in the 1980s, though, small farms in the Catskills watershed came under economic pressure. They increased fertilizer use and began selling land to residential subdevelopers. As the population grew and land use intensified, the clean water that New York City had taken for granted came under threat. Coupled with a revision to the Safe Drinking Water Act, it looked like New York would need to build a huge treatment plant for Catskills water with a price tag up to \$4 billion, along with \$200 million more annually to operate the plant.

Instead of going ahead with construction, though, Appleton took a step back and looked to the ownership toolkit. Most everyone assumed a new treatment plant was inevitable. But Appleton reframed the problem. The watershed's vegetation and soil had been doing a great job breaking down contaminants, trapping sediments, and filtering toxins. The result was admirably high-quality drinking water. Instead of spending enormous sums to treat water downstream, how about investing instead to restore the upstream landscape? Was it possible to avoid spending money at all on a big plant? As Appleton put it, "A good environment will produce good water."

Thus began an eighteen-month process of more than 150 meetings with local groups in the Catskills, negotiating land-management practices to ensure water quality. One participant described the endless meetings as similar to a "rolling Thanksgiving dinner with relatives you only want to see once a year." The final agreement was signed by sixty towns, ten villages, seven counties, and environmental groups. New York City committed to spending \$1.5 billion to acquire sensitive lands, restore stream corridors, and fund partnerships that would foster water quality and support economic development in the watersheds.

The results have been impressive. Water pollution dramatically declined. New York City payments have proven popular with rural upstate landowners. And the Environmental Protection Agency was persuaded that the watershed initiatives would provide safe

drinking water, so the federal government has repeatedly waived the requirement that New York City build the multibillion-dollar treatment plant. As a result, in purely financial terms, New York came out ahead by investing in natural capital rather than in built capital, investing in green rather than gray infrastructure. The program has paid for itself many times over.

But what does all this have to do with ownership?

We tend not to think about ownership when we are talking about the environment. The benefits we receive from nature—the clean air we breathe, a stable climate, fish schooling in the oceans, scenic vistas across landscapes—seem like they must be goods common to all. That’s a lovely notion, but it’s also a problem.

Common ownership works well when resources are abundant, but it often fails as populations grow and technology changes. When valuable resources are free for the taking, we tend to take too much—the tragedy of the commons discussed in Chapter 4. The result of common ownership is that we’re overfishing the world’s oceans, cutting down tropical forests, and overusing the atmosphere by emitting greenhouse gases at historically high levels, driving climate change. At this rate, the world of our children and grandchildren will be very different from the one we grew up in, and not for the better.

Just as the Catskills watershed provides clean drinking water, nature provides all kinds of critical services that we take for granted. Insects pollinate our crops. Microbes in soils break down waste and create fertile fields for farming. Coastal marshes protect against storm surges and provide habitats for young fish. These are all examples of common resources that benefit everyone and are owned by none. We all enjoy the wild birds and butterflies flying around us. But the landowners who provide the habitat for this wildlife receive no compensation in exchange. If they don’t own the resources and can’t charge for them, then they have little economic reason to protect or invest in them.

Wetlands, for example, may protect towns by slowing floodwaters or filtering drinking water. If landowners convert wetlands into homes or farms, they may benefit financially, but the community is made far worse off by flooding and dirty water.

Because no one owns wetlands' services like flood prevention and water purification, landowners don't take the value of those services into account when deciding how to use their land. If the choice is to earn a living by draining the wetland to grow crops or to earn nothing by preserving it, then the choice is simple. Drain the wetland.

Appleton's great insight was to innovate around the attachment principle we described in Chapter 4. He told Catskills landowners that New York City would deal with them as if they owned the environmental services attached to their land. We don't think twice about paying for potatoes or coal attached to land, so why not pay farmers for improved water quality? Appleton crafted an ownership tool in which wealthier downstate city dwellers would pay poorer upstate farmers to preserve a clean environment. He showed that *as-if attachment* can motivate people, even in the absence of state law giving people ownership over the environmental benefits their lands provide.

This approach of creating what we call *as-if ownership* in nature's bounty has exploded in recent decades. Salzman has been working with governments around the globe for decades to develop payment schemes that compensate landowners for providing natural services. In recent work, he identified more than 550 active programs around the globe with an estimated \$42 billion in annual transactions.

The strategy is being used to try to save the world's rainforests. Tropical forests contain most of the world's species diversity and capture vast amounts of carbon from the atmosphere, playing a critical role in slowing climate change. Deforestation is responsible for up to 20 percent of global warming. As this chapter is written, swaths of the Amazon forests, often called the lungs of the planet, are burning.

The basic problem is that people who live in these forests don't own the environmental services they provide. They can't charge for wildlife habitat or storing carbon. Even though these resources are critical to humanity, we receive them for free. Not surprisingly, owners and squatters in forests focus instead on things they can sell. They burn forests to clear them for grazing, logging, and

agriculture. The challenge is to make trees worth more standing than cut down.

Norway is doing just that, trying to offset some of the climate harm it has caused by extracting North Sea oil. Thanks to its sovereign wealth fund—profits the country accumulated from oil sales—Norway has been able to spend tens of billions of dollars paying people in the Amazon, Indonesia, and Mexico for their efforts to reduce local deforestation rates. If the rate of forest loss slows, more trees are left standing and more carbon is captured from the atmosphere.

China has made an even larger investment. Environmental payments have become a central component of the country's nationwide environmental-protection strategy. China has already paid over \$50 billion to farmers and households to increase forest cover. By planting trees instead of chopping them down, China gets flood protection, wildlife habitat, and water quality—all shared goods that come along with investing in trees.

So can we use ownership design to steer people to conserve nature rather than despoil it? Absolutely. Around the world, new types of ownership to promote environmental services are changing the behavior of farmers and forest dwellers, timber companies and big landowners. They now compete to protect the environment, and they make money in the process.

With a billion-dollar program here, a billion there, ecosystem-services ownership begins to add up. While substantial already, these programs are not yet nearly big enough. The key to addressing some of the world's greatest environmental challenges may be to encourage people to call ever more aspects of nature *mine*.

The Not-So-Deadly Catch

Clambering around high stacks of metal crab traps, the crew of the trawler *Time Bandit* works late into the black night of the Bering Sea, far from the comforts of their home port on the Alaskan coast. They have to focus just to keep their balance on the pitching deck. It's nasty weather, but that's a given for this part of the world. Howling winds throw cold spray over the crew. Without warning,

a thirty-foot rogue wave crashes over the port bow, bursting across the deck. The crew regain their balance, shake off the water, and look around.

Then one starts screaming, “James! James!”

The bow hand, James Tommy, is nowhere to be seen. If he has been swept overboard into the freezing seas, it’s over for him.

On the bridge, Captain Jonathan Hillstrand mutters, “Okay, James...” Barking on the intercom to the deck, he orders, “Body count. Body count.”

The only response is more frantic calls of “James!”

Hillstrand can do nothing but watch from the safety of the bridge, swearing to himself.

Nothing.

Suddenly James appears, swarmed by the hugging crew. Thrown by the wave into the traps, he miraculously emerged unharmed. Dripping wet, he shrugs like it’s no big deal. “A little bit of water. We’re in the ocean. Come on, man.”

As the crew give thumbs-up signs to Hillstrand, the captain is visibly shaken. “Thank you, God....It felt like a train hit us. I mean, we stopped dead. That was the scariest I’ve been in a long time.”

Welcome to *Deadliest Catch*.

The Discovery Channel launched this series in 2005. It became one of the longest-running and most successful reality TV shows. Every year camera crews capture life aboard fishing boats in the Bering Sea during Alaska’s king crab season. There is no shortage of colorful personalities. But the real star is the setting.

There’s a reason they call the show *Deadliest Catch*. Day and night, the ship’s crew have to fill seven-hundred-pound crab pots with bait, swing them into position over the rails, and launch them four hundred feet down, only to do the reverse hours later when the pots are hauled up full (they hope) of crabs that need to be removed and placed in the hold. All this takes place with the boat rolling on heavy seas, often in high winds. Because ice can form on deck, there is an ever-present threat the boat will become top-heavy and roll over.

Crab fishing in Alaska has long been one of the most dangerous jobs in America. From 1989 to 2005, scores of people died in the fishery. Ten boats sank. For years, crab fishing on the Bering Sea was “the deadliest job in the country—more likely to kill you than going on foot patrol in Iraq.”

But it’s not the weather that made crab fishing so dangerous. It’s how the crabs were owned: too many boats chasing too few crabs.

For most of human history, fishing followed the same rule of capture as hunting wild animals (see Chapter 1). First come, first served. If you hauled the fish out of the ocean first, you owned it. This worked fine. With simple fishing practices, the sea’s bounty was effectively limitless. In an ocean of abundance, almost any ownership rule (or no rule at all) worked fine.

Ownership design mattered more as scarcity increased and people started to compete for the same resource. And that’s what happened on the high seas after World War II, with the development of flash freezing and ever-larger fishing vessels. Fish stocks that had seemed boundless began to crash—anchovies off the coast of Peru, cod off New England, king crab off Alaska.

Over the short term, as stocks declined, it made sense for each boat to catch as much of the remaining fish as quickly as possible. If not, other boats would catch those same fish instead. But every boat acting this way led to rapid destruction of fish populations. With physical possession deciding ownership, fisheries became textbook examples of the tragedy of the commons.

In 1980 the Alaska king crab fishery landed 200 million pounds. New boats arrived, eager to make their profits. Just a few years later the catch dropped by 90 percent. With the collapse of the crab population came the collapse of the local economy. As a fishery official observed, crab vessel owners couldn’t make a living: “They just drove a lot of the boats to the dock, dropped the keys at the harbormaster’s office, and took the next plane to Seattle.”

To stop overharvesting and restore the crab fishery, the state of Alaska stepped in and abolished its unlimited rule of capture. Instead, the state set a catch limit. The goal was to fix the total

catch every year at a sustainable level—the maximum harvest that still allowed crabs to reproduce a stable population. The fishery season began on a set date and shut down as soon as the limit was reached. Anyone caught catching crab after that date faced punishment.

Here is how Alaska used the ownership toolkit to conserve scarce crabs. First, in 1976, the state asserted ownership for itself through attachment. The crabs scuttling on the ocean floor were “ours because they are attached to something ours,” in this case, the two-hundred-mile Exclusive Economic Zone that America claims off the Alaska coast (see Chapter 4). Alaska kicked out foreign fishing fleets. Next, Alaska designated the total allowable catch of its crabs—the season closes as soon as the catch limit is reached. Third, it set possession as the basis for ownership of those allowable crabs.

Eventually, this new system helped stabilize crab stocks. But Alaska’s approach was still terrible ownership design. Inadvertently, the state had turbocharged the race to capture, creating the conditions for *Deadliest Catch*.

Because the season ended as soon as the catch limit was reached, boats competed to catch crabs as quickly as they possibly could. The result was a dangerous race, a *Mad Max*–style free-for-all. Trawlers motored out of port the instant the season opened, even in the face of bad weather and dangerous seas. *Especially* in the face of bad weather and dangerous seas. Crews and captains worked beyond the point of exhaustion. No one could play it safe because they risked getting left behind as others caught what could have been their share of the total catch. Before anyone expected, the season would close. Sometimes in just a few days. Even a hint of caution invited commercial catastrophe.

Racing out to sea invited another catastrophe—injuries from heavy equipment on the unsteady decks, crew lost overboard, sunk ships. Versions of this frantic competition governed almost all fisheries in the United States. It became known as derby fishing—not only dangerous but also highly inefficient.

Captains spent more and more money so their boats could catch fish faster than the next vessel. Because every captain did

the same, all the expense gave little advantage. Instead, the whole fleet locked itself into an unwinnable high-seas competition for better technology that drove up everyone's costs of operation, leading to less profit for the fixed number of crabs that could be caught. And to make matters worse, they caught all the crabs within the same short window. So when boats brought their catch to shore, prices were always low because of the temporary market glut from crabs landed by the others.

Catch limits helped sustain crab populations but proved disastrous for the people who caught them.

In response, Alaska tried again. Catching crabs on the Bering Sea will never be like dropping a baited line in your neighborhood pond, but thanks to smart ownership design, it's no longer the deadliest catch, either. This time around, the state looked abroad for a solution that would protect marine resources and, at the same time, make fisheries safer and more profitable. It looked to Iceland.

In the 1970s fishery managers in Iceland started with a crazy idea. They rummaged in the ownership toolkit and put together an entirely new way to claim *mine*, one specifically tailored to fisheries.

The rules of ownership steer people indirectly but effectively. Recall that when America wanted people to settle the West in the late 1800s, it modified possession—settlers became owners, but only after they had engaged in certain types of useful labor. They had to homestead 160 acres and make it productive within five years; divert water and put it to beneficial use; or find and work a mineral claim. Similarly, when Duke wanted rabid grad student fans to fill the stands, it modified first-in-time: students entered a lottery, but only after they had gone through days of Campout. In all these cases, owners realized that preexisting possession and first-in-time rules did not steer people where they wanted them to go. They needed to modify the rules.

Iceland went through the same process, creating ownership rules that would allow fishing captains to spend less money, earn more, and keep crews safer—all while ensuring robust fisheries.

In short, Iceland replaced catch limits with what came to be known as *catch shares*. Under this new system, the focus switched from exclusion to governance (see Chapter 6). The rule of capture stays in place, but you are allowed to catch fish only if you already hold a catch share (also known as an individual fishing quota, or IFQ). A single IFQ gives the holder the right to catch a specific amount of fish, such as one ton of halibut. If the season's total sustainable catch for the halibut fishery is set at one thousand tons, the state issues a thousand IFQs. To claim ownership of one ton of halibut, the vessel owner needs to have at least one IFQ. In simple terms, boats need to own an IFQ before they can fish at all.

Who gets the initial IFQs? That's a challenge. One option is for the state to auction them. But then, local fleets might be outbid by more efficient outsiders. In principle, with higher auction prices, the public reaps much of the economic benefit from fish in its waters and could use some of it to retrain laid-off locals. But in practice, resentful local fishing captains might fight back, engage in pirate halibut fishing, and even attack outsider boats. (Recall the fierce lobster gangs in Chapter 2.) So instead of auctions, Iceland used attachment to distribute IFQs initially. It attached catch shares to each boat in the existing fleet based on that boat's average catch from past seasons.

Was this distribution fair? No, not really. Newcomers and outsiders started with nothing. The state got zero auction revenue from its fisheries. And the most rapacious danger-seeking boat owners from previous years got a windfall. But attachment had a key advantage: the existing fleet accepted the new ownership regime instead of fighting it.

IFQs ended derby fishing. Boat captains owned the entire year's harvest through their IFQs before the season even opened. This meant captains could catch their fish when they wanted. If the weather was bad, the boat could stay in port until skies cleared up. If the market price of fish was low, they could wait until it went up. There was no reason to race because the total catch had already been divvied up from day one.

IFQs had another, subtler effect: it gave boat owners a reason to care about the health of the fishery as a whole. Healthier fish stocks meant more IFQs for every owner. And they mobilized the

entire fleet in a common effort to guard against other pirate fishing boats taking halibut—each IFQ holder could say, rightly, *Some of those fish are mine.*

Soon enough, many boat owners realized it could be more profitable to stay in port and lease or sell their IFQs to another boat. Fewer boats were needed to catch the full share because each boat could fish for a longer time. In turn, this lowered costs in fuel, equipment, and labor. Because the boats could wait for better weather, fewer crews were put in danger. And with the catch spread out over a longer season, prices were steadier. Crews also had time to separate out female crabs, undersize crabs, and other bycatch and safely return it to the ocean. Under the catch share system, fish populations rebounded, fishing became safer, and the fleet's profits went up. It was win-win-win.

Innovative ownership worked.

Other nations took note. New Zealand and Australia adopted catch share programs after Iceland pioneered them. They caught on more slowly in the United States. The first trial in Alaska began in 1995 in the halibut fishery. Derby fishing had gotten so bad that there were only three twenty-four-hour windows of halibut fishing allowed per year. It wasn't much better for Alaskan king crabs, but crab boat owners resisted ownership innovation. Grudgingly, after waves of bankruptcies and deaths, the fleet accepted the catch share strategy in 2005, just six months after *Deadliest Catch* went on the air.

The results have been remarkable.

No more frantic free-for-all on the Bering Sea. The crab season lengthened from three days in 2004 to three months in 2006. Erik Olson, a banker who makes loans to crab vessels, described the dramatic shift: under catch shares, "You know that a fisherman is going to be allocated X percent of the crab. You can translate that into dollars, and you can get a pretty good idea of what their revenue will be. That is a huge change. It's the difference between, 'Grab a case of Red Bull, pray for good weather, and buckle up,' and, 'Now we have a business plan.'" Profits increased fourfold per vessel. And in the 2014–15 season, no one died in the entire

Alaska commercial fishery, including the salmon, halibut, and other fisheries that had adopted catch shares.

But as with every ownership choice, catch shares impose trade-offs. More efficient newcomers had to buy their way in by paying off “armchair fishermen,” those who got the initial IFQ windfall, then simply sold or leased them out and stayed home collecting royalties. This was inevitable because there were far too many boats, but shrinkage in the fleet was painful for many communities. It’s estimated that half the total crew lost their jobs. And wages went down for those who remained, in part because new owners had to pay armchair fishermen for IFQ leases. Instead of owning a share of the derby catch, many crew became employees paid hourly wages. The *Deadliest Catch* series has continued, but the number of active boats fell by two-thirds, and the show now edits out the boring, lower-paid routines on bigger, safer boats.

Note that both catch limits and catch shares ensure that the crab fishery survives. If your overriding goals are job protection, free entry for newcomers, and adrenaline-packed television, then stick with derby fishing. But if you value crew safety and economically sustainable fleets, then catch shares are the way to go.

Today well over half of the world’s fisheries are overfished, threatening the major protein source and livelihood for large parts of the global population. Catch shares create the possibility for environmentally sustainable ownership far beyond crabbing in the Bering Sea. But they work only where states can enforce ownership. On the high seas, there are treaties for a few species, like whales and tuna, and some regional fishing agreements, but for the most part, once fleets cross out of a country’s Exclusive Economic Zone, derby fishing is back on. Maybe catch shares can reach there, too, someday.

To date, catch shares have been adopted in forty countries and already account for about one-fifth of the global catch. It’s no surprise the strategy has been called “the greatest unknown policy success of our time.”

Cap-and-Trade for Better and Worse

This approach of reengineering ownership, used to protect fisheries through catch shares, has also proven effective in battling pollution from leaded gasoline, smog, and acid rain. The acid rain story shows how it works.

In the 1970s and '80s, coal-fired power plants in the Midwest and Southeast spewed out large amounts of sulfur-rich pollution. The jet stream carried these pollutants to the coast, falling as acid rain in New England and Canada. Lakes, forests, and streams in Maine and Vermont, nowhere near any human activity, suffered fish kills and stunted trees. The name for this problem in Germany was *Waldsterben*—"forest death," a stark but accurate description. In 1990 the U.S. Congress transformed the ownership of pollution to address the problem.

We have seen that catch shares create new ways to own fish. The government gives away—or sometimes auctions—IFQs for that year's catch. Congress adapted the same approach to create ownership rights in pollution. It sounds counterintuitive, even perverse, but the results have been dramatic.

The EPA announces how much total pollution will be allowed each year, such as one million tons of sulfur dioxide. It then creates one million pollution allowances, each allowing emission of one ton. Just as fishing boats must have an IFQ for every ton of fish they take out of the ocean, polluters must have an allowance for every ton of sulfur dioxide their smokestacks put into the air. If a power plant doesn't have allowances, it cannot pollute.

For fish, the limit on total catch is set to ensure sustainable fisheries; for pollution, the goal is to reduce acid rain over time. Initially, to ensure industry support, allowances were given out to each power plant to allow it to continue emitting its then-existing level of pollution. After that, though, the total cap was lowered every year; fewer allowances were issued.

This ownership form became known as *cap-and-trade*, and here is where it gets interesting. Previously, power plants were like every other regulated polluter: they needed to come into compliance with whatever public health and environmental standards the regulator set. If their emissions limit was one

thousand tons per year, they made sure not to emit over that amount—but there was no benefit to emitting even one ton less.

Cap-and-trade upended that thinking: it provided polluters a novel business opportunity.

Imagine a big power plant that has a legal limit to pollute one thousand tons. It starts with one thousand allowances, so it's business as usual for that facility. The plant managers, however, realize that they can cheaply switch to low-sulfur coal. If they do so, the plant emits only seven hundred tons. Now they are holding three hundred extra allowances they don't need. Under cap-and-trade, this newly clean plant can sell its excess allowances to polluting plants that can't cheaply switch to cleaner fuels or technology.

The genius of this approach is that pollution ownership creates a business case for reducing emissions. Reducing pollution becomes a profit center. The power plant now sells both electricity *and* sulfur dioxide allowances, which leads it to find even more ways to reduce its emissions so it can sell even more allowances.

And all this happens without the EPA having to pick winners or losers among power plants or technologies. It just estimates the overall pollution trajectory needed to reduce acid rain over time. The agency doesn't mandate what fuels to use; doesn't back one technology or another; doesn't order any particular plant to shut down. All of the conservation happens via trades in a robust market, so the most innovative power plants profit by getting cleaner and the worst plants pay for the privilege to keep polluting. We get pollution reduction for the least cost.

As with catch shares, the results have been impressive. Sulfur dioxide emissions dropped far faster than expected as power plants raced to free up allowances by adopting less-polluting fuels and better scrubber technology. Acid rain in the Northeast is now history.

On its face, cap-and-trade seems perfectly suited for battling not just acid rain but climate change more generally. Since the industrial revolution in the 1800s, we have increasingly relied on fossil fuels such as coal, gas, and oil for energy, leading to a rapid buildup of gases such as carbon dioxide in the atmosphere. These

greenhouse gases are warming the Earth and changing its climate, driving more intense and frequent storms, raising sea levels. The most direct way to combat climate change is to reduce emissions of these gases. Since they all mix in the atmosphere, it doesn't matter where the reductions come from. From the standpoint of global climate change, reducing carbon dioxide emissions in Africa has the same benefit as reducing them in America.

Just as with acid rain, countries or states can set caps for total greenhouse gas emissions, issue allowances for the emissions, and then let companies trade the allowances to pollute. The European Union launched a program based on this principle in 2005 that now covers more than eleven thousand factories and power stations in thirty-one countries. California's trading program seeks to reduce greenhouse gas emissions by 80 percent below 1990 levels by 2050. China is in the midst of launching the largest greenhouse-gas-trading program in the world. Smart ownership design might yet save the planet.

Or it might not. With fisheries and acid rain, new ownership forms shifted behavior for the better. But there's always a risk of unintended consequences: because factories and power plants freely trade sulfur dioxide allowances, we end up with a patchwork of clean and dirty plants. But the pattern is not random. As it has turned out, the remaining dirty plants are often clustered in pollution hot spots, mostly in poorer communities of color.

And cap-and-trade can go wrong in other disastrous ways. One early cap-and-trade program for greenhouse gases resulted in what environmental groups have called "the biggest environmental scandal in history."

The negotiators of the 1997 U.N. international treaty to battle climate change, the Kyoto Protocol, adapted the approach used for fish and acid rain, but on a global scale. Designed by some of the world's leading economists, the Kyoto Protocol's program created another new type of ownership—certified emissions reductions (CERs). Just as fishing boats need IFQs to fish and power plants need allowances to emit sulfur dioxide, governments and companies need to own CERs to offset their own greenhouse gas emissions.

Projects around the world could earn CERs based on how much greenhouse gas they removed from the atmosphere. The projects could then sell these CERs to countries or companies. Growing trees capture carbon dioxide, so a forestry project in the tropics could earn CERs. It could then sell these to a refinery or cement plant in another country that needed to offset its emissions. Many economists and environmentalists thought this a terrific development. It would create a huge new market to save rainforests.

At least that was the plan.

Initially, CERs did spur some forest projects in the tropics. But they also increased activity in an unexpected quarter. A small number of companies in China and India produced a chemical used in refrigerators. Their manufacturing process created a by-product called HFC-23. This chemical has an unusual property: it is a super greenhouse gas. Just one HFC-23 molecule causes as much global warming as 11,700 molecules of carbon dioxide.

The manufacturers spotted an opportunity with CERs. Five years into the trading program, it emerged that these companies had doubled their output and had earned roughly half the world's total CERs. The market for refrigerants had not grown, though, so why had they ramped up production?

These companies had changed their business model. Their profit no longer came from producing and selling refrigerant. What they now cared about was producing and destroying the HFC-23 by-product. They duly incinerated every pound of HFC-23 they created. And for every pound of super greenhouse gas they destroyed, the companies were awarded CERs—which they then sold to polluting countries and companies in Europe and Japan. As Gerben-Jan Gerbrandy, a Dutch member of the European Parliament, explained, “It’s perverse. You have companies which make a lot of money by making more of this gas, and then getting paid to destroy it.”

Creating and then destroying HFC-23 generated a lot of profit—but it provided zero environmental benefit. Even worse, it was cheaper for companies to buy credits from HFC-23 destroyers than from forest builders. So very little money flowed to

rainforests. By the time this scam was recognized and stopped, Chinese and Indian HFC-23 makers had earned a fortune. Billions of dollars had been wasted; the world's climate got nothing in return.

The Kyoto Protocol's trading program was designed by some very smart economists. They had intended to drive greenhouse-gas-reduction projects around the world and save forests. But a handful of Chinese and Indian refrigerant entrepreneurs proved even smarter. Ownership rules, and the profits they can generate, powerfully concentrate the mind, for good and for ill.

No doubt, CERs, IFQs, and allowances have had occasional failures—as have other novel, acronym-rich variants on environmental-resource ownership. Humility is warranted. But overall the programs have been a success. We have learned that it is possible to design ownership to motivate Catskills farmers, Bering Sea crabbers, midwestern coal plant operators, and others around the globe to protect our environment and atmosphere.

Protecting the natural world falls primarily to governments. Sometimes they get novel ownership forms wrong, but they can succeed when given the chance to experiment and try again. The ownership toolkit offers paths to avoiding species extinction, conserving forests, and keeping the air and water healthy. Humanity's best hope for survival may be to make more environmental resources—even pollution—*mine*.

Bricks and Sticks

The digital world and the natural world share a core feature. Both start from the no-ownership baseline that characterizes all new and emerging resources. As soon as the race to own the resource begins, competing stories emerge. *I'm first*, like in the fox case in Chapter 1; *I possess it*, like the parking chairs in Chapter 2; *I labored*, Disney's claim in Chapter 3. Which ownership rule seems most efficient? Fairest? Most conducive to enhancing our freedom and sustaining our joint projects?

We are now asking the same questions online. But there's an important difference between natural and virtual resources. So far governments have not been driving ownership online. Maybe they

should, but they haven't. Online, it's the business community that has pushed the frontiers of ownership, relying on tools like strategic ambiguity, capturing the baseline, and opt-in versus opt-out. Companies aren't waiting for laws to be written, and they don't ask for permission. And when they tweak ownership, it's to maximize their own profit, not to serve public goals.

That's not all bad. Internet-driven innovation has been the productive engine of the modern economy for over a generation. But this dynamism comes with costs.

Anders G. da Silva experienced this trade-off in a stark way. Like millions of consumers, da Silva buys movies through his Apple iTunes account. To his surprise one day, he found that three movies he'd bought had disappeared from his account. He contacted Apple, looking for an explanation. He didn't like the customer service agent's answer, so he tweeted a dramatized version of his unsatisfying exchange—which promptly went viral. As he wrote:

Me: Hey Apple, three movies I bought disappeared from my iTunes library.

Apple: Oh yes, those are not available anymore. Thank you for buying them. Here are two movie rentals on us!

Me: Wait...WHAT?? @tim_cook when did this become acceptable?...

Apple: You see, we are just a store front.

Me: Store front?

Apple: Yeah, we take your money, but we are not responsible for what is sold. And, we certainly do NOT guarantee you get to keep anything you buy in our store front. We only guarantee that we get to keep your money.

Me: I see....So that "Buy" button is meaningless? It should maybe be called: "Feelin Lucky"?

Apple: I see you are unhappy. Have two more rentals on us.

Linn Nygaard felt the same frustration, but with Amazon instead of Apple. An information technology consultant based in

Oslo, Nygaard is often on the road. In England on a trip, she got a Kindle. It worked great. Over time she bought forty books. Lots to read on a conveniently compact screen. One morning, though, she found her account blocked. Even worse, her books had vanished from her Kindle. Concerned, she e-mailed for help and was told Amazon and its affiliates “reserve the right to refuse service, terminate accounts, remove or edit content, or cancel orders at their sole discretion.”

To drive the point home, Amazon added, “Please know that any attempt to open a new account will meet with the same action.” Taken aback, Nygaard replied that she was a longtime Amazon customer in good standing. Amazon’s final reply, though, was even starker: “We wish you luck in locating a retailer better able to meet your needs and will not be able to offer any additional insight or action on these matters.”

A friend of Nygaard blogged about her saga, and like da Silva’s tweets, it quickly went viral. A few days later her account and books were restored with no explanation. Amazon presumably decided to quiet the public relations debacle. It had faced a similar uproar a few years earlier after deleting readers’ purchased copies of George Orwell’s dystopian novel *1984*, following a copyright dispute. Ironically, erasing *1984* was just the kind of thing the novel’s Big Brother would do.

These stories go beyond digital movies and books. They now reach even into physical objects—when they’re powered by online software. Arlo Gilbert owned a Revolv device, a box that controlled his home’s doors, alarms, and lights. One morning he woke up and the device was dead, not just dead but “bricked.” And not just Gilbert’s machine. All Revolvs in the world were bricked that day.

Turns out, Google had remotely activated a kill switch on everyone’s device. Why? Google had bought Revolv in 2014, when it was expanding into the “Internet of Things” market. It later decided to invest instead in a different home automation product line called Nest. What better way to boost sales of Nest than to terminate the software that powered Revolv? Deep in the terms of service for Revolv, Google had retained the right to shut it all down.

In a blog post, Gilbert asked, “Which hardware will Google choose to intentionally brick next?...Is your Nexus device safe? What about your Nest fire/smoke alarm? What about your Dropcam? What about your Chromecast device?” Gilbert was out of luck. He still owns the hardware, but it works only as a doorstop.

Now imagine if Amazon were a local bookstore in the same dispute with Nygaard. Surely the bookstore’s employees couldn’t open the door to Nygaard’s home, walk into her study, and remove all the books she had bought from them. The same is true for Apple taking back movies from da Silva, or Google bricking Gilbert. Yet that’s effectively what these online giants did—and had designed their ownership rights to do. The self-created power to “terminate accounts, remove or edit content” at their sole discretion is unequivocally spelled out in online contracts that no one ever reads.

Amazon, Apple, and Google are profiting from a transformation in the meaning of ownership for digital content. For most of history, we lived in a world dominated by farms, horses, hammers, and bread. In that world, ownership mostly referred to tangible, physical things: we could stand on our land and hold on to our stuff. If you owned something, then for the most part you could exclude everyone else; you controlled the object and got to direct its fate. This exclusion intuition is how most of us thought of ownership, and how we still think of it today—what we’ve been calling the on-off-switch image of ownership: *It’s mine. Hands off.*

Online companies know this. They count on that on-off response as they evoke our visceral and indeed instinctual feelings about ownership. But it is a bait-and-switch.

Website marketplaces show us the little shopping cart icon, so we will assume it’s just like the one at the supermarket. We “put things” in the cart, and we head to “checkout.” The online world is carefully designed to mimic the world of physical possession and to activate those impulses. Don’t be fooled.

A recent survey found that 83 percent of respondents believe they own digital content just as they own a physical good—and are

free to do with it what they want. They're free to loan it to friends, use it again and again, sell it, donate it, or even cut it up to make something new like a mash-up song or a collage. As a co-author of the survey explained, "There's a lot of meaning built into the phrase 'buy now.' It's not saying 'rent now.' It's not saying 'gain conditional access.' It says 'buy,' and that means something very specific to most consumers—something that, in the case of digital content, isn't true."

In most cases, your ability to reuse, sell, donate, or modify a digital product is severely limited. The on-off switch does not easily translate to the digital world. The familiar symbols of everyday possession are not meaningful online—they're vestiges of a fading system. But we are still coming to grips with this new reality. It's not just own versus rent—our old familiar choices. Instead, online, ownership feels strange and in between, more like a dimmer than a switch.

The Internet economy is routinely described with innovative superlatives—it's "unprecedented" and "unparalleled." It's easy to imagine the virtual economy as something radically new in human history. In some ways, perhaps it is. But it's not new in terms of ownership.

Lawyers sometimes describe ownership as a *bundle of sticks*. This metaphor was introduced about a century ago, and it has radically transformed the teaching and practice of law. The metaphor is useful because it helps us see ownership as a grouping of interpersonal rights that can be separated and put back together. When you say *It's mine* in reference to a resource, often that means you own a lot of the sticks that make up the full bundle: the sell stick, the rent stick, the right to mortgage, license, give away, even destroy the thing. Often, though, we split the sticks up, as for a piece of land: there may be a landowner, a bank with a mortgage, a tenant with a lease, a neighbor with a right-of-way easement, a plumber with a license to enter the land, an oil company with mineral rights. Each of these parties owns a stick in the bundle. And even the fullest ownership bundle is limited: you don't have sticks that allow you to make a nuisance of yourself, use the property to commit a crime, or discriminate in certain ways.

As da Silva, Nygaard, and Gilbert learned the hard way, when we buy online, we don't buy the full bundle, just a couple of sticks. The sellers have figured out how to hold on to the rest. When you click "buy now" on an Amazon movie, what you get is: "a non-exclusive, non-transferable, non-sublicensable, limited license,... for personal, non-commercial, private use."

What does that mean? Not much, after you cut through all the legalese. You definitely don't get the right to "transfer, copy, or display," except as Amazon permits; nor any right to "sell, rent, lease, distribute, or broadcast" your purchase. Amazon holds on to most of the bundle. Clicking "buy now" really gives you just a few sticks.

iTunes, Kindle, and Revolv licenses all work more or less the same way, with similar gobbledygook. The limits of your ownership are described in excruciating legal detail on a website no one ever reads and few could understand (including us, your authors).

Yet everyone clicks the "buy now" button. People want to complete their purchases and get on with their lives. Even if you did read the terms, they are complex, not open to negotiation, and ever-changing. Companies generally keep the right to amend terms whenever they want without telling you. When you click to buy, often you also agree to accept without notice future changes in the scope of your ownership.

In short, today, you buy just a limited-use stick. Apple, Amazon, and Google hold the rest of the bundle. And they even keep a string attached to the stick you bought, so they can take it back if it suits their purposes. Amazon is upfront about this, if you read deeply enough into its online license agreement. When you click "buy," it agrees only that your online content will "generally continue to be available to you." Amazon makes no guarantee. Just the opposite. According to the agreement, the content "may become unavailable due to potential content provider licensing restrictions or for other reasons." What other reasons? Amazon doesn't say.

As a kicker, if Amazon shuts down Nygaard's Kindle or takes back your download of *1984*, the company "will not be liable to

you”—that is, it won’t owe Nygaard or you a penny. That’s what it means to own an Amazon book online. And it’s why Google could flip the kill switch on Gilbert’s Revolv, and Apple could remove movies from da Silva’s iTunes account. Don’t think this is limited just to Amazon, Google, and Apple. The switch from bundle to stick is nearly universal in online ownership.

As Internet speeds increase and cloud storage becomes cheaper, we will stream more and more goods and services throughout our lives. Opaque licenses will govern not only the songs we listen to and the books we buy. They will span the entire Internet of Things, from coffee makers and thermostats to security and sound systems. Perhaps it’s not so worrying if Oral-B bricks your wireless toothbrush (yes, it exists). But surprises in the ownership structure of diabetes monitors, pacemakers, and home alarms could be deadly.

Our intuitions still tell us that possessing the hardware is what matters. That’s been mostly true throughout human history. But more and more, it’s the software embedded in physical products that matters. In the digital economy, we hold ephemeral licenses to streams of 1s and 0s—the ghost in the machine.

Think Different(ly)

The bundle-of-sticks idea is a powerful piece of ownership design technology. The “buy now” button is just one visible example of the commercial benefits that flow from radically redesigning the bundle. The companies we interact with online are masters of ownership engineering. They profit from it. Governments let them. Perhaps, as consumers, we need to adapt Apple’s old slogan, “Think different.”

For starters, we need to recognize that the gap between what we feel we own and what we actually own is ever widening. And it is no accident. This is the sleight-of-hand of digital ownership: we are encouraged to think we own more than we do, the bundle rather than just a stick. When we buy online, the primitive instinctive power and scope of *mine* just don’t follow.

What gets lost in this new world? One cost arises through the increasing concentration of online ownership. In olden days,

physical ownership was dispersed. With books, people owned tangible copies. And multiplicity meant that memory could be preserved and diffused. Nowadays, books and movies can simply disappear. Just a few companies can own all the bundles; everyone else holds just a stick. With a press of a button somewhere in the cloud, every copy can disappear. As one commentator writes, “In the grimmest version of that narrative, we’re headed toward a sort of techno-feudalism, where we all end up as serfs of these onetime Silicon Valley upstarts. In this sense, we’re not looking at the end of ownership per se so much as the end of individual ownership.”

A second cost can be to our freedom. Ordinary ownership of physical things automatically gives wide scope for individual choice. When you own a paperback book, you can reread it, give it away, lend it to friends, use it as a doorstop, cut it up and paste it into a scrapbook. You don’t have to ask anyone’s permission. If you want, you can shred your book in protest—and neither the bookseller nor the publisher can stop you. We lose much of that freedom when we click “buy now” online. Sellers can just delete your stick and brick your device if they don’t like how you are behaving. Ray Bradbury anticipated exactly this dystopian world in his 1953 novel *Fahrenheit 451*—books were banned and “firemen” raced to burn the last few physical copies, leaving only the official televised version.

Techno-feudalism and lost freedom are not easy problems to solve. Sure, we could ban Amazon from using “buy now” buttons for online content and instead require a less deceptive button like “click for super-limited license.” We could make online sellers notify you in all-caps text, THIS MOVIE IS NOT REALLY YOURS. NO LENDING ALLOWED. Maybe this would help. It’s worth a try. But many studies have shown the limited effect of forcing information on people. We quickly learn to tune out unpleasant ownership details—in part because the digital economy brings so much immediate gratification.

There’s a reason streaming services are replacing home bookshelves. While some may be nostalgic for their wall of treasured CDs, many prefer the vast library and song-recommendation engine available with a click on Spotify—both

old favorites and new discoveries. We also benefit as consumers because licensing the stick can be cheaper than owning the bundle. Companies can maximize revenue by offering us just what we want right that minute. We may feel we own more, but we really don't.

Life à la Carte

There is one last stop on this frontier tour of ownership: the *sharing economy*. In a sense, the sharing economy is the flip side of digital ownership. Instead of wrongly believing we own more than we really do, in the sharing economy we intentionally want to own less. Forget the bundle of ownership. Just give us temporary use of someone else's good or service. We seek micro-ownership in exchange for micropayments. This is the world of twigs, not sticks.

“How many of you own a power drill?”

In a broad Australian accent, Rachel Botsman poses this simple question to the packed audience at a TEDx talk in Sydney.

Most of the audience's hands go up, but no one knows where this is going. Botsman makes her living thinking big thoughts and spotting emerging trends, especially on how we consume things. *Time* described her 2010 book *What's Mine Is Yours* as one of the “ten ideas that will change the world.” So this simple question is clearly leading somewhere big.

“And how long will that drill be used in its lifetime?”

This question's not so easy to answer. Turns out, it's twelve to thirteen minutes.

“It's kind of ridiculous, right? Because what you need is the hole, not the drill.” And given that, she asks, “Why don't you rent the drill? Or even better, rent out your own drill to other people and make some money from it?”

When you put it that way, the sharing economy seems obvious. Why didn't we think of it before?

Botsman's insight about the benefits of sharing a power drill has been true for as long as there have been power drills, so why did *Time* magazine think it was such a new, big idea that would

change the world? There has been a big change, but not in the way most people think.

What's changed is not power drills. Nor is the idea of renting goods and services anything new. The big change is that smartphones and the Internet have unlocked new possibilities for micro-ownership. As a tech journalist explained, "The iPhone helped put the Internet and GPS in people's pockets. The Great Recession helped make them desperate and broke. These two developments dovetailed to sow the seeds of the sharing economy: consumers were looking for new ways to save, workers were looking for new ways to earn, and smartphones gave them both new ways to transact."

Twenty years ago renting out your power drill, spare bedroom, or car was too expensive and complicated to be practical. There was no low-cost way to communicate with potential buyers, negotiate price and terms, and collect payment. You had all kinds of assets lying around your house and parked in your driveway with value for others' use, but there was no simple way to make a deal. The Internet slashed all these costs. As one scholar put it, now we can get "slices" of things that once came only in "lumps." Suddenly new markets can arise.

The average American car is in use only 4 percent of the day. It's now possible to ask whether value can be created the other 96 percent of the time, when the car is idle. Is there a business opportunity here? Turo, Getaround, Maven, and other start-ups sure hope so—they want renters to bypass Hertz and Avis and instead take your private car out of the driveway. It's Zipcar, but for every car. As one tech reporter fantasized, "In a world where property is networked and programmable, and ultra-fast micro-payments can happen automatically, and software records and enforces who owns what, the pool of possible transactions is potentially infinite."

Getting married and don't want to own a pricey wedding dress? Log on to RentTheRunway—it has hundreds for you to choose from. Most people wear their special-occasion dresses fewer than seven times—and wedding dresses, we hope, just once. RentTheRunway tries for thirty "turns" for its dresses. Some are worn 150 times. Spending a weekend in a new city? Find a place to

stay through VRBO or Airbnb. It can be cheaper than a hotel and put you in a more fun neighborhood. Not using your apartment's parking space next week? A commuter can pay for it through JustPark.

Anyone who follows business or technology news, even casually, knows this list of start-ups goes on and on—for clothes, bikes, odd jobs, groceries, electricity outlets, and more. Internet platforms are creating markets for goods and services that we owned but could not trade.

Not every idea works, of course. To return to Botsman's example about the drill hole, it turns out many do-it-yourselfers still want the power drill—as evidenced by a string of failed hole providers, including NeighborGoods, Ecomodo, Crowd Rent, Share Some Sugar, Thingloop, OhSoWe, and SnapGoods. People actually don't want to spend money, time, and hassle for a one-day rental when they can pick up a thirty-dollar drill at the local hardware store or get same-day delivery from Amazon. And more often than not, people don't want either the drill or the hole. They want the curtains hung and the IKEA dresser assembled. TaskRabbit figured out it could provide that useful combination, sending you both the drill and the person who would finish the project.

There's no shortage of names for these new markets—"collaborative consumption," the "gig economy," the "peer economy." There has been no end of breathless predictions for where it will lead: "A startling number of young people, it turns out, have begun to question one of the central tenets of American culture: ownership." And at least in theory, it's a promising development. We don't need full ownership to satisfy our wants and needs. As a *New York Times* writer notes, "Nowadays we don't really buy things. We just subscribe to online services. And how can we resist?" After all, it's the service that matters, not the thing.

The optimistic version of the sharing economy is that consumers will acquire just the amount of services they need. Nothing—no thing—is wasted.

Indeed, it may be true we are too attached to material things—as the Buddhists among us might caution. As a society, we generate and own too much stuff. Many people feel burdened by their things. How many of us have attics, basements, or even rented storage lockers full of stuff we never see? If we stop owning things that we don't use much, we won't just worry less, we will free our spirits and spark joy (per Marie Kondo). Purchasing use-on-demand may also promote a more environmentally sustainable lifestyle. “Many of us are starting to rethink what it means to own something,” one commentator notes. “In turn, that's giving rise to a new social and commercial landscape in this country, and even a new way of life.” To consume at our accustomed level, we can use fewer resources—say, by ridding ourselves of cars that sit idle in garages and clutter parking spaces in crowded cities.

There is something appealing to this idyllic vision, but it also misses a larger point.

The sharing economy isn't really about sharing; nor is it about the end of ownership. It's about advances in ownership technology that transform who we are as citizens and consumers—just like catch shares and FastPass+, oil unitization and dynasty trusts have changed the landscape of ownership. Going forward, the intersection of micro-ownership and smartphones may upend life as thoroughly as ownership attachment and barbed wire remodeled the Great Plains.

There will be surprising costs in the shift from owning things to streaming life. For starters, the sharing economy may turn out to encourage not Zen simplicity but even more conspicuous consumption. Think about it: you rarely see people at a big buffet with half-empty plates. Plates are piled high. As each good or service becomes cheaper, people consume greater variety—less perhaps of each thing but more overall. All that streaming of high-end dresses and handbags may be training people to value luxury over sufficiency, never quite satisfied with what they have, always ready to jump to the next, even more expensive, tier of service.

And the sharing economy does not build wealth; for most of us, it consumes wealth. People lose the discipline of saving up for big purchases, taking out loans or mortgages, paying them off, and owning equity—in their jewelry, cars, and, most of all, homes.

Historically, homeownership was America's greatest source of wealth-building, for those able to buy homes (it's the largest driver of racial wealth differences). After mortgages were paid off, homes gave retired people a secure place to live or provided cash if they downsized. By contrast, renters pay month to month, and streamers day to day, accumulating nothing.

Communities also suffer if everyone streams accommodations rather than makes long-term commitments. Who organizes the Fourth of July block party if its residents are just Airbnb'ers pulling wheeled suitcases from place to place? Neighbors don't go next door to get a cup of sugar from strangers or congratulate them on their child's birthday. Popular tourist destinations have seen entire neighborhoods unravel as longtime residents are replaced by investors who buy apartments with the sole purpose of short-term turnover. This transition can also drive up the price of housing, making it more difficult for people who grew up in an area to stay. Community solidarity is intangible, hard to measure, but its loss is a real cost nonetheless. In this tragedy of the commons, individual homeowners rationally choose to profit by listing on Airbnb, but collectively we all lose connection to our sense of place, to what makes us feel truly at home.

In response, some communities—like Santa Monica, California—are starting to prohibit short-term rentals, effectively banning Airbnb. By restricting willing sellers and buyers, the city is trying to prevent already high house prices from escalating further and to keep community spirit intact. But that choice also helps Santa Monica remain wealthy and white, excluding those who are neither but want a brief sojourn by the beach. And it imposes substantial costs on local homeowners who are house rich and otherwise broke.

One way to make sense of the Airbnb ban is to see it as pushing the dimmer of ownership a little down—away from markets, toward nonmonetary values. Santa Monica is addressing the loss of neighborhood solidarity, but at a cost (for us, on balance, too high a cost) to individual autonomy and racial equality. All ownership rules involve trade-offs.

So who decides how much of our lives we will live à la carte? The answer, as always, depends on whose hand rests on the

remote control of ownership. Should this be a choice for individual owners, condo boards, neighborhoods, cities, or states? There is nothing neutral about who decides—each choice transforms the meaning of *mine*.

Looking into the crystal ball, we can envision a world, perhaps not too far in the future, where the full bundle of ownership is concentrated in relatively few corporate hands and everyone else licenses twigs of access. What would it mean to live in such a world, where each individual's connection to goods and services is so ephemeral?

The risk is not just that we lose touch with our neighbors and communities. We may also lose aspects of our personhood, a connection with the sacred that many people experience through old-fashioned ownership. We could be giving up—inadvertently, and through a thousand clicks—the creativity, self-expression, and self-knowledge that come from owning, personalizing, and connecting with our most intimate objects. We move away from cherishing, say, our parents' underlined novels and cookbooks with notes in the margins and spills on the pages—evidence of what they thought and cared about. Instead, we type ingredients into recipe search engines or absentmindedly order dinner from GrubHub. And rather than learning how to change the oil in our convertible Mustang or VW Bug, twentieth-century automotive symbols of freedom, we Uber, consuming a rather less exalted stream of car services.

This shift matters because we exist not only as consumers. Much of our identity is bound up with the things we own. We get attached to our homes and cars, our books and clothes. As one journalist poignantly asks, “Who remembers the sound of unwrapping a new record album, the smell of a new car or the thrill of opening the front door to a newly purchased home? At different points in my life, each one stood for the joy of possession, and the sense of having really arrived.”

In this grand shift from owning something—some thing—to holding just a twig in someone else's bundle, we risk losing the profound value that comes from our intimate connections to simple material possessions. Our things—like our bodies—define and constitute who we are, not just as individuals but as part of

meaningful communities. In this new world, we may never cook a meal to bring to a sick neighbor, plant a garden with a friend, join together to clean up an abandoned lot, or share tools and skills to build a community playground.

In the sharing economy, we may be clicking our way to lives where physical possession really does drop below one-tenth of the law—*I'm holding it, yet it's barely mine at all*. Ownership floats free from the things we fleetingly possess. Life à la carte might be super-convenient, but do you really want to license your engagement ring and lease your dog? And how do you buy a gift for someone who can stream anything and owns nothing?