I. What Is the Meaning of Property?

A naïve definition of property would say that property consists of things. This couch is property, this land is property, etc. But there's much more to it than that. Just like the word scarcity does not merely refer to the fact that the quantity of something is limited, but to the relationship between the quantity of a thing and the demands people make on it, property is not merely the existence of things, but a relationship between people and things.

Broadly speaking, property refers to control over the use of things. And there are as many types of property right as there are types of control over things. For instance, we can talk about:

• Rights of usufruct. These are rights to use or enjoy something. I have usufruct rights over my clothes, my rented apartment, other things in my apartment complex (such as the spa, swimming pool, and exercise room), etc. Note that it's possible for me to have usufruct rights in things that I don't own in the broader sense of the term. I don't own the pool at my apartment complex, but I can use it.

• Rights of exclusion. These are rights to prevent others from using something. When we say you have a right to prevent trespassers and to evict unwanted guests, there are rights of exclusion. Note that it's possible to have a right to exclude with a right of usufruct. For instance, neighbors might have a right to prevent each other from dumping garbage on each other's lawns, and yet not have the right to dump garbage on their own lawns (because of, say, a zoning regulation).

• Rights of alienation. These are rights to sell or give away other rights. I have a right to sell my clothes -- and by sell my clothes, what I mean is to sell the right to use those clothes. When you can sell or give away a right, it is called alienable. Note that it is possible to have other rights without the ability to alienate them. For instance, you own your own body, but you cannot (in our legal system) sell yourself into slavery. (You can, however, alienate a portion of your labor.)

Once we think about these types of control separately, it becomes apparent that what we usually think of as "property" is actually a bundle of rights that can, in principle, be unbundled. The simplest and easiest to understand variety of property is private property of the sort that lawyers call "fee simple ownership." If I own a piece of land, I can do whatever I want with the land, I can prevent others from using the land, and I can alienate the land if I wish, we say I own the land in fee simple. This is actually a relatively rare thing in the modern age, however.

Once we think about property in this way, it's apparent that we cannot imagine a world without property. People do have rights (legal or de facto) to control the use of things in various ways, although the distribution and arrangement of those rights differs from society to society. The question is not whether there should be property, but what kind of property regime we should have. Another way of asking this question: What is the
appropriate distribution and arrangement of property rights? Which property rights should be bundled together, and which should be owned separately? Which property rights should be alienable and which should not?

The economic approach says decisions like these should be made on grounds of economic efficiency. That is, we want property rights to end up in the hands of the people who value them most (in dollar terms). Some rights are more valuable when bundled together; other rights are more valuable when separate. We will consider questions like these in greater detail later. But first, we need to answer the big question: what kind of property regime should we have?

II. The Case for Private Property

Private property is a condition in which a single person or entity has two kinds of rights in an asset: usufruct (they can use the asset as they place) and exclusion (they can prevent others from using it). Usually, private property also includes rights of alienation, but they are not crucial to the definition.

There are various alternatives to private property, but the usual alternative is known as commons property. Commons property is a condition in which many people have usufruct rights, but no one has exclusion rights (at least, not against other people with usufruct rights). Private property regimes have usually emerged out of commons property regimes, and the question is why? From an economic perspective, the answer is that private property provides incentives for efficient behavior that are not provided by commons property. Though the reasons are all related, I'll try to address them separately.

A. Resolution of Conflict

For most resources, there are many possible uses. A piece of land could be used for timber, or it could be cleared and used for agriculture, or it could be used as the site for a factory or residence. Some people will favor some uses, others people will prefer other uses. Which use should prevail? Should people just fight it out?

The obvious answer, from an economic perspective, is that it should be used in the most valuable use. But quite aside from that question, it's even more important that it be used at all. Fighting over the use of an asset can waste a great deal of time, effort, and other resources. Trying to do multiple projects on the same piece of land can ruin all the projects; better that just one gets done. Private property resolves this problem by putting the choice in the hands of a single decision-maker, the owner. He can make the decision, and he doesn't have to fight anyone else to do it.

(What would happen if we required him to get consent from everyone else in the community before he could commit to any use of the land? There would very likely be a hold-out problem, of the sort we've discussed earlier. That would not, however, be a commons property situation -- it would be a third kind of regime, involving joint ownership with universal rights of exclusion.)
Once the land is the private property of one person, there is also an additional benefit that can be garnered if alienation is allowed. If anyone has an idea for a more valuable use of the land than what the current owner has in mind, they can make a mutually beneficial transaction that transfers the land to a new owner. This assures that the land will not just be used, but used in its most valuable use.

**B. Incentives to Be Productive**

Imagine if you could plant crops on a piece of commonly owned property, and you didn't have to worry about fighting others to make sure nobody mowed down your crops and built a house instead. But anyone who wanted to could come by and take some of your crops. They could pick your apples, pull up your turnips, take whatever they wanted. How long do you think you'd continue to grow crops on that land?

Maybe you'd still grow some crops, because you have to live. But would you put as much effort into growing crops as you otherwise would? No, because others’ taking of what you've produced is a lot like a tax. You'll only put in additional effort to the extent that the marginal benefit (to you) is greater than the marginal cost (to you). From an efficiency perspective, it makes sense for you to put in more effort as long as the marginal benefit (in terms of the dollar value of food produced) exceeds the marginal cost of your effort. But if other people take some of your product, then the marginal benefit to you is smaller than the marginal benefit in total. [Draw diagram with constant marginal cost of effort and diminishing marginal benefit; show how predations of others reduce the marginal benefit, thus reducing your effort level.]

Private property internalizes the benefits of productive effort, thereby giving you the incentive you need to expend the efficient amount of effort. And this argument doesn't just apply to effort expended for the production of goods; it applies more generally to any activity that improves the value of the land, such as constructing buildings or draining swamps. To the extent that the benefits of such activities are dispersed, individuals will lack the incentive to make efficient improvements.

**C. Incentives to Conserve**

The last argument was about internalizing the benefits of activity on the land. Now we consider the flipside: internalizing the costs of activity on the land. When land is owned in common, people have an incentive to keep on using the land as long as the marginal (private) benefit is greater than the marginal (private) cost. But under a commons property regime, there may be costs felt by others, so that the marginal social cost is greater than the marginal private cost. As a result, people may overuse the land, leading to its degradation. This is known as the tragedy of the commons.

The tragedy of the commons actually has the structure of a prisoners' dilemma. Say there is an oyster bed owned in common by two families. When too many oysters are harvested, there aren't enough oysters left to breed, so next year's oyster catch is reduced.
Each family has to decide whether to catch more oysters after the traditional end of the oyster catching season. Right now, there are $200 worth of oysters in the bed. For every $100 worth of oysters left this season, there will be $150 worth next season in present value terms. Each family must decide whether or not to take $100 more oysters now. Next year, whatever oysters are in the bed will be split between the two families. The payoffs might look like so:

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It should be clear that \{Catch More, Catch More\} is the equilibrium outcome of this situation, even though everyone would have been better off if everyone had waited. A potential solution is to divide the oyster bed in half and give each family private property in their half. Now, each family's choice is between $100 now and $150 later; they don't get any of the benefit of the other family having chosen to wait.

With a little thought, it becomes clear that incentives to conserve and incentives to improve are really just two versions of the same issue. The choice not to use property now when waiting would be better is really just another kind of improvement choice.

D. Local Knowledge

This is a reason that DDF does not talk about, but it is important. We've been acting like people are pretty much identical, so it really doesn't matter who makes choices about the use of an asset. But that's not necessarily so. Someone who lives on a particular piece of land is more likely to possess specialized knowledge about how to use it. Similarly, someone who works in a particular factory is more likely to understand the capabilities and limitations of that factory. This is known as local knowledge. The use of local knowledge is a crucial component of economic efficiency, because it ensures that assets are used in the most productive manner possible. But for local knowledge to be employed, someone has to have an incentive to use it; they have to be able to reap the benefits of exercising their superior knowledge.

When assets are owned in common, so that anyone may reap the benefits of the activities of others, the incentive to employ local knowledge is reduced. This is really just another example of how common property can reduce the incentive to make land improvements, but it's more abstract. With a simple land improvement, it would be possible for everyone to know about the potential for improvement but for no one to do it. The local knowledge takes the argument a step further, by pointing out that not everyone will even be aware of the possibility.

III. The Case Against Private Property

DDF points out that, for the reasons above, the question to an economist is not, "Why do we have private property?" but "Why do we ever not have private property?"
The answer, in a nutshell, is that sometimes it's too expensive. Property rights are not self-enforcing. It takes time, effort, and resources to enforce boundaries and punish offenders. If we are to justify private property, the efficiency benefits must exceed the costs of enforcement; if they don't, then private property really isn't efficient after all.

Let's look at the oyster bed example. The total benefit of moving from commons to private property is $100 ($50 for each family). But what if it costs $110 dollars to enforce the new property rules? Then in that case, it would not make sense to privatize the oyster bed.

This is not just a legal issue; it's also an issue that is faced on a regular basis by private business people. When you go to a restaurant, you generally have to pay for the food and drinks you want to consume. The owner is choosing to exercise his rights of exclusion in those commodities. But you don't have to pay for the salt on the table. You can eat as much salt as you want. The same goes for ketchup, sugar, and various other items. To use economist Yoram Barzel's phrase, the proprietor has placed these things "in the public domain." Why?

Clearly, there is an efficiency problem of sorts with any item in the public domain. When you don't have to pay for salt, you consume salt as long as the marginal benefit is greater than zero (the marginal cost to you). But the marginal cost of producing salt is not zero, so we expect that you'll consume too much salt. This creates a loss of wealth. Suppose that you consume two teaspoons more salt than is justified, and the cost per teaspoon of salt is 1/10 of a cent. Then there's a waste of around 2/10 of a cent (actually a bit less, because you do get some benefit from those two teaspoons of salt). So, should the owner start charging you for salt? Probably not. The cost of monitoring salt use and charging by the shake is almost certainly greater than 2/10 of a cent per customer.

This argumentation implies that whether an asset should be privatized or left to the commons (or in the public domain) is dependent on both (a) the technology of enforcement, and (b) the efficiency gains from privatization. We should expect that privatization will take place when, other things equal, the technology of enforcement gets cheaper or the gains from privatization increase. Let's consider an example of each:

- Beaver lodges and the Montagne Indians of Quebec. For many years, beaver hunting rights were owned in common by the Montagne Indians. Anyone could hunt beaver from any lodge. This presumably created a tragedy of the commons, but not necessarily a bad one. But eventually, the Montagne Indians privatized beaver lodges. A family or clan that found a beaver lodge would mark it as theirs, and they would police the area periodically to be sure no one else hunted there. Why? As Harold Demsetz noted, during the same period the value of beaver pelts rose dramatically because of European demand. As a result, the efficiency gain from privatization rose as well. (Imagine doubling or tripling all the numbers in the oyster bed example.)
Barbed wire and the American West. For many years, cattle grazing land was effectively owned in common. Property rights in cattle were enforced by groups of cowboys out on the range. Incentives for animal husbandry were low, because no one knew which adult cows gave birth to which calves (which were called "mavericks" and distributed on the basis of the percent of cows owned by each ranch). Why didn't they privatize? Because wood was scarce, making fencing too expensive. But then Samuel Glidden invented barbed wire, a very cheap method of fencing. After the invention of barbed wire, the ranges of the American West were quickly privatized.

So when will property not be privatized? When the costs of policing it are too great relative to the benefits of doing so. There are many examples of this. One obvious example is commodities like air and (sometimes) water, which are difficult if not impossible in some cases to divide up into discrete units like land parcels.

IV. Which Rights Belong Together?

When we speak of property in the abstract, it's easy to think of pieces of property as simple, discrete entities with well-defined boundaries. But looking at property in the real world reveals an array of complexities. Property actually consists of a bundle of rights that may be unbundled, as we noted earlier, and this raises the question of which rights should be bundled together and which shouldn't.

Consider a parcel of land. There are many things that could be done with this land: it could be mined, tilled, used for a housing development, etc. These are all distinct uses of the land, and they can in principle be separated from each other. One person can own the mining rights, another the tilling rights, another the developing rights, etc. But would it make sense to separate these rights?

Usually, no. Recall that one of the functions served by private property was to resolve conflict among competing uses. But if tilling rights and developing rights are owned separately, we can run into exactly the same kind of problem: you till the land one day, a developer plows your crops under to prepare for construction the next, etc. So the tilling rights and development rights have greater value when bundled together than when held separately. When held separately, the rights are nearly useless; but when held together, the owner can put the land to whichever use is more valuable. For that reason, we expect these rights usually to be bundled together.

But sometimes different use-rights are held separately; mining rights are a good example. It is often the case that mineral rights are held separately from the other rights appertaining to a parcel of land. As DDF discusses, it's common in Pennsylvania (and elsewhere) for one person to have a right to mine underneath a parcel of land -- so long as he doesn't interfere with the "support estate" owned by someone else. That is, he can mine so long as his mining doesn't cause the land above to collapse. Does it make sense for mining rights to be held separately from other rights? Quite possibly. It's entirely possible to mine land without interfering substantially with other uses of the land. In this case, the rights are more valuable owned separately than together. (They could be owned
by a single person, and they may start that way. But a residential homeowner is not necessarily an expert in the minerals and mining business. So the mining rights are probably more valuable to someone in that business than they are to the homeowner, thus giving him an incentive to sell them.)

You can see the economic efficiency rule taking shape here: Rights should be bundled together when they are more valuable when held together than when held separately. They should be unbundled when they are more valuable held separately than held together.

Another example: How far above the surface of the earth does one's property in a piece of land extend? The answer under the old common law was "ad coelum," or to the heavens. The idea was that you owned a column of air extending infinitely upward (and perhaps downward to a point in the center of the earth as well). But this doctrine was put to the test by the advent of airplanes. If the ad coelum doctrine were taken seriously, an airline would have to obtain permission from the owners of all land it intended to send flights over -- or, if the courts used a liability rule instead of a property rule to enforce the land owners' entitlement, pay all the owners damages every time a flight went over. Clearly this would be problematic. The property rule would create a severe holdout problem, and the liability rule would create large logistical and litigation costs. Clearly, the air rights 1000 feet over a parcel of land are more valuable held separately (by all those who would fly over) than bundled together with the rest of the rights associated with land. A similar argument applies to the transmission of radio waves over land.

V. Establishing Initial Property Rights

The earlier discussion of the benefits of private property makes it clear that, at least for many resources, private ownership is economically beneficial. But it does not establish to whom such private property rights should belong.

In some sense, the economic answer to that question is, "It doesn't matter." Ultimately, we want the property rights to end up where they are most valuable. But they don't necessarily have to start there. As long as alienation rights are secure, private property can be moved relatively easily from one owner to another through private transactions. Of course, the initial distribution is important from a wealth distribution standpoint, since those who start off owning more (or the most valuable) property are likely to end up with a larger share of the wealth created. But that's a matter of transfers, which are strictly speaking irrelevant to wealth maximization.

But we also know that, while the transfers themselves are unimportant, people can waste a great deal of resources on trying to get their hands on a transfer (or defending themselves from such a transfer). This is called rent seeking. It stands to reason that, if the initial distribution of property rights is in question, people are likely to engage in rent-seeking behavior to acquire those initial rights. For that reason, the means chosen to distribute initial property rights is relevant to efficiency.
Many authors have championed homesteading as a good way to distribute initial property rights. John Locke said that property is removed from the commons and into private hands by the "mixing of one's labor with the land." By working a parcel of land for some period of time, you acquire a private property right in that land. The U.S. government adopted a homesteading principle for the distribution of land acquired through the Louisiana Purchase, Mexican Cession, etc. If a settler farmed a parcel of land for fixed number of years (and developed it in certain other specified ways), he acquired ownership.

The problem with homesteading is that it can create a rent-seeking problem. Say there is a parcel of land that is not yet economically viable, because it's too far from civilization. It won't be economically viable for another 20 years, but at that time it will start to generate profits. Obviously, many people would like to acquire this land, but they have to beat others to it, and they have to use the land in some way to acquire ownership via homesteading. So they will cultivate the land for a few years where it's not profitable to do so, in order to get a claim on the profits to be made later. How much loss would someone be willing to incur to acquire the land? Just slightly less than the profit they stand to make once the land becomes profitable -- and competition with other potential settlers will drive them to do just that. As a result, the land gets settled and used inefficiently early.

Rent-seeking is the downside of homesteading. But it does have arguments in its favor. First, there are ways that rent-seeking can be limited in a homesteading regime. For instance, land can be opened for homesteading only a little at a time, which is exactly what the U.S. government did in the 19th century.

Second, it's unclear what the alternative is. One option is to have the government auction off the land. This only makes sense, of course, when the land is assumed to be initially owned by the government (as was the case with the Louisiana Purchase, etc.). But even when that's the case, there's an additional problem: it's hard to enforce the results of an auction. Whether or not homesteading is an officially recognized practice, there will be squatters who attempt de facto homesteading anyway. As DDF notes, those who purchased land at government auctions often found their supposedly "empty" land already occupied by less-than-friendly settlers. According to the argument, the rent-seeking associated with homesteading is unavoidable, so it's better just to recognize it and handle it officially.

A related matter is the question of what rights are actually acquired when one obtains initial property rights in a piece of land. Suppose a factory sets up in the middle of nowhere and begins to spew smoke and soot on the surrounding land -- where there is nobody to be disturbed by it. Later, new residents show up and settle in the surrounding land, and they dislike the pollution. They sue the factory to cease its polluting activity. Should the court side with the factory or the residents?

This is a classic instance of "coming to the nuisance." Under the old common law, the "coming to the nuisance" doctrine said that if someone voluntarily settled in the vicinity
of a nuisance, they would not be able to collect damages or demand abatement. (The related "nuisance coming to the plaintiff" doctrine said that if the nuisance arrived later, the plaintiff should win.) In short, the courts used a "first come, first served" rule.

From an efficiency standpoint, what can be said about the coming to the nuisance rule? This is an exceedingly complex issue, because many of the concepts we've discussed are relevant.

- First, it might seem that the Coase Theorem applies here. Any initial rights allocation should be fine, since the residents and the factory can negotiate to an efficient outcome.
- Second, however, transaction costs may be substantial. If there are many residents, for example, there could be a public good problem. Furthermore, there may be some negotiations that should take place before the factory settles in the first place -- but obviously, the cost of negotiating with non-existent or unknown people is incredibly high! We have to think about the efficient sequence of events. If it's efficient for the factory to settle elsewhere in anticipation of future residents arriving here, then who can negotiate on behalf of the future residents? One possibility is that land speculators might perform this function, which could partially allay the problem.
- Third, the externality can be avoided by having the residents locate elsewhere. It seems likely, then, that the residents are the least-cost avoider at the time of their arrival. But before we make that judgment, we have to consider that the factory was the least-cost avoider at an earlier point in time. So we have to think about the efficient sequence of events, once again.
- Fourth, this is really a form of homesteading, and as we discovered earlier, homesteading can lead to rent-seeking. Some parties may deliberately create excessive nuisances purely to either (a) guarantee their future ability to expand operations, or (b) demand payments from future residents.
- Fifth, there is an informational problem facing the courts. If the courts are asked to make decisions based on unseen (and subjective) costs and benefits, their choices may be incorrect and (worse yet) unpredictable.