

REINVENTING THE COMMONS
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It is a great honor to follow Douglass North in offering the closing remarks for this fifth meeting of the IASCP. We are indebted to institutional economic historians in general and Douglass North in particular for pointing out the impact of institutional structures on economic growth, and especially for making us appreciate the importance of clear specification of property rights in economic growth and in efficient use of resources. When this idea is combined with the crude (but apparently true) historical simplification that many societies used to have common property institutions and that individual private property has in many instances displaced common property, one might carelessly conclude that individual property is the more efficient form, requiring that we dismantle common property. This conclusion is, of course, at the heart of the campaign to privatize resource use around the world, and I believe that it represents a grotesque misunderstanding of North's insights.

Instead, I believe one can use North's arguments to diagnose the strengths and weaknesses of common property as well as of individual property, and to itemize circumstances in which REINVENTING the commons might be efficiency-enhancing. In my comments, I will try to lay out an argument for why it might actually be reasonable for societies to undertake three efficiency-enhancing transitions: the creation of common-property in a pre-industrial setting, the move toward individual property (and often to systems that combine common and individual property on different resources), and back again to common property for some resources. Following North's treatment of agricultural and industrial revolutions, I will take each of these transitions in turn:

TRANSITION I: CREATION OF COMMON PROPERTY RIGHTS

The first transition, the creation of property rights, occurs in order to enforce conservative or sustainable resource use when substitutes for those resources are not readily available. When there is little trade between regions and transport costs are high, people cannot buy someone else's grain, or charcoal, or wool when they have made a mess of their own resources. My own guess is that people will not bother to develop property rights institutions, private or common, unless they have at least a minor brush with disaster to prove to them that their resources are finite and they really are capable of exhausting them. But once people know that their choices are limited to sustainable resource management, migration, or death, they are likely to experiment a bit with property rights. And we get the first transition, the invention of property rights. These are often shared, or common rights, in order to economize on enforcement costs, although there may be additional reasons to opt for common rather than individual property

regimes. I will itemize these additional reasons for choosing common property as I explain the next transition, to replace some commons with parcelled property. Where the conditions that make common property management efficient turn upside down, parcelled property becomes the more efficient choice.

TRANSITION II: PARCELLIZATION OF COMMON PROPERTY INTO INDIVIDUAL PROPERTY

The rise of markets and a money economy can stimulate the emergence of individual property and enclosure of some commons for a complex array of reasons.

(1) People may have chosen to use common property management as a way to hold enforcement costs down. The need to keep enforcement costs low can diminish if the emergence of markets and trade increases the value of the products of the commons and thus justifies an increase in spending on enforcement. Parcelization may then become worthwhile.

(2) Trade, the emergence of specialization and alternative employment, and economic differentiation within the user community can increase the cost of negotiating compromises in joint management. Users who begin to feel that they have options other than managing the commons in traditional ways may not cause trouble if they leave town, but there can be big trouble if they stay behind and begin to argue for a transformation on the commons -- or simply begin cheating. Now the transactions costs of negotiating management decisions can skyrocket. Decision-making by majority rule can produce dissension and open defection from the rules. And attempting to honor unanimity decision-rules can prove mind-boggling. In Japanese communities that require unanimous decisions, the costs of talking late into the night to persuade holdouts to agree or of tracing heirs of some rights-holders to the ends of the earth for a crucial signature prove ridiculously high. Unanimity rules change to majority decision rules, majority decision rules produce unaccommodated dissenters, large commons with many owners are divided into smaller commons with fewer co-owners, and eventually parcelization into individually-held units with higher enforcement costs begins to look better than collective management with astronomical negotiations costs.

(3) There are also cases where the rise of trade and markets leads to conditions that damage commons, inviting their parcelization as a policy to rescue them. One such situation begins when the rising value of the products of the commons (fuelwood, timber, cockatoos) strengthens the wish of some users to begin selling the products of the commons to a new wider market -- one whose demand is greater than the commons can sustainably supply. This increases the temptation payoff in the prisoner's dilemma matrix and also creates the possibility that some commons users will decide to cheat early, accumulate the rising payoffs to cheaters while other community members are still cooperating (like suckers), and then skip town. They have no intention of sticking around for an indefinite number of iterations. They leave a degraded commons behind for others

to fix. If the community has been seriously fractured by this experience with rampant cheating, then the social basis for continued collective management is gone, and parcellization may look like the only sensible option left.

(4) The rise of trade and markets can also produce the exact opposite stimulus -- not greater demand for the traditional products of the commons, but **less**. A reduced demand for products of the commons can also be associated with a reduction in concern for conservative (prudent) behavior on the commons. That is, new technologies and, more importantly, long-distance trade make substitutes available for the products of the commons. There is then less need for conservative management of local resources. People may begin to use their commons carelessly (intentionally mining the resource with a plan to switch to readily available substitutes whenever necessary), or to convert the commons into completely different uses.

The new uses of the converted or parcelled commons may produce fewer environmental services, but the environmental costs of the change may take a long time to accumulate and attract notice. Examples of the resource substitutions that can make the commons less valuable than before range from environmentally sustainable ones to globally damaging ones.

People may improve their ability to catch or buy fish to supplement the local diet, so they become less dependent on food products from their commons. Or they become able to use fertilizer derived from fish-meal (or petroleum!) on their arable land, so they become less dependent on green manure gathered from the common meadow. Or they become able to buy wood (or propane!) from far away to supplement or even replace wood supplied by local forests. People may begin using more machinery in agriculture (especially of the subsidized variety) and have less need of livestock as work animals. Now a commons that was needed for fertilizer or hay or fuelwood or grazing can be converted to other uses. In flat areas (where one need not worry as much about "downhill" effects) this can happen quickly. The commons might be parcelled and the forests cut down for arable fields or urban expansion (bowling alleys, shopping malls). Coastal fisheries might be displaced by higher value-added activities like industrial harbors and petrochemical complexes (remember again that negative externalities aren't noticed at first).

In hilly areas we see a slower transition in ownership and land uses. These lands are more marginal, less attractive to potential parcel-owners as their personal acquisitions, and also more likely to be appreciated by their users for environmental benefits. But we might see a conversion from fuelwood coppice to apple orchard. We might see an enclosure of grazing land that can support cultivation with the addition of synthetic fertilizers from far away, especially if they are heavily subsidized. The intensification of agriculture that occurs at this point usually means an expansion of cultivation, but there was also Scotland, where the clan chiefs who retained residual ownership of the highland commons decided that sheep were more valuable than people, terminated collective uses by humans, and installed large herds of sheep on their vast private estates, forcing

their displaced crofters to emigrate to the new world in the process. (The survival of clan loyalties up into the present among the descendants of these refugees mystifies me.)

Apart from the emergence of markets and trade, there are some other conditions for using common property that, if reversed, become reasons for choosing parcelled property instead.

(5) Indivisible resources cannot be parcelled so have to be managed in common. One might think that physical indivisibility of a resource is an unchangeable given, but actually this is not so. Sometimes a technological innovation can make an indivisible resource divisible, and as long as the value of the harvested resource is great enough to cover the cost of employing the technological change (or as long as the new technology is cheap), parcelling can become possible where it wasn't before. Examples would include scramblers to make TV signals excludable, passwords and entry codes and credit card numbers to make internet access or pay-TV billable (Compuserve!), cheap barbed wire to make pastures fencible, or cheap techniques for sinking individual water wells.

(6) People also find it rational to choose common property management in settings where the location of the resource system's productive patches is highly variable and unpredictable over space or time. Again, one might think that this is climatologically fixed (arid lands stay arid), but sometimes a technological change can improve predictability so that management in smaller parcels is acceptable. This MAY involve an environmental transfer -- resource inputs brought in from other regions -- and such transfers MAY turn out much later to have undesirable or unjust effects.

An example might be agricultural production in the American southwest. Without the technology to move water around, the central valley of California could never have become a center for intensive agriculture. It is fundamentally a desert, and left to its own devices Southern California should have become a region of nomads grazing their donkeys where we now have Tinseltown. Logically, the Los Angeles area would have been managed as commons, and it would never have become a center of orange groves, suburbs, automobiles, or Disneyland. And the natural flow of the Owens and Colorado rivers would have improved agricultural productivity elsewhere (Mexico). Perhaps moving this water, or some of it, to the valleys of California was wise (not in Mexico's perspective of course) because the soil there turns out to be incredibly fertile when damp. However, the fact that the water was moved via tremendous subsidies and the recipients did not pay the full cost of moving the water causes tremendous waste to this day. We all know that it would have been better to move only the amount of water that recipients would have been willing to pay the full cost for, and indeed water-conserving agricultural methods might have permitted tremendous improvements in agricultural productivity over an even larger area, including northern Mexico perhaps. The point is that sometimes technological change can increase predictability in a large resource system and thus make parcellization efficiency-enhancing. On the other hand, if the technological change is subsidized to absurd levels over a very long time, it might even, once the full environmental bill is taken into account, be efficiency-reducing over the long term. Thus

the technology of deep boreholes in Africa, also built with huge subsidies, exacerbated overgrazing and overuse of resources rather than alleviating these problems.

(7) A final reason for choosing common property over parcelled property is to internalize negative externalities between parcels. Where a resource system is more productive in large pieces than in small ones, common property is a vehicle for coordination. This is why we so often see common property arrangements maintained for some resources right alongside parcelled individual property -- as Robert Netting has so ably pointed out and as Bonnie McCay reminded us just the other day. The common resources that are most likely to survive as commons even when parcellization of other resources is all the rage is the common property that is designed to internalize externalities. As long as those potential externalities are significant and noticeable to a single generation (or perhaps two or three) there should be tremendous resistance to parcellization. This may be why we have had the longest survival of commons in arid lands and mountaineous areas. In some of these cases, the externalities that result from parcellization and uncoordinated management are visible within a few decades and promote a reversal of policy, as we are beginning to see in many countries today -- especially India and Nepal.

But sometimes changes can arise that either compensate for externalities or make them seem to disappear for a very long time, so that owners begin to feel that these externalities can be safely ignored. Environmental transfers can actually convert local environmental externalities into long-distance ones. There are also many more noxious environmental tranfers. Rich folks high on the food chain can pay for a huge propotion of the world's fertilizer supply to permit the extreme intensification of agriculture to produce broccoli for themselves and corn for their cattle, vastly increasing the rate of global land-clearing and deforestation. Rich folks in big houses who work in offices that go through football fields full of paper can deforest all over the world -- and might then encourage replanting with eucalyptus trees so they can do it again, leaving the toxic soils and diminished water supplies behind after the eucalyptus have done their local damage. Environmental transfers of this kind -- in which nations not only trade in materials but trade in environmental burdens -- are socially inefficient subsidies -- just like price subsidies -- that cause overuse of the thing that is subsidized. Appropriate property rights institutions that internalize externalities are a barrier to efficiency-reducing transfers.

TRANSITION III: A RETURN TO COMMON PROPERTY AS CURE FOR EMERGING EXTERNALITIES

But the transfer of environmental burdens goes only so far. People (especially the rich ones) have figured out how to shrink tropical forests, extinguish species, and devour the ocean's fish. But we haven't figured out how to move our global warming problem to Venus or send our hazardous wastes to Mars or import cheap goodies from the asteroid belt. It's all coming back in our face. Just as pre-industrial people needed to manage commons well to avoid migration or death, we do too. Actually, though we have fewer alternatives than they did: migration to frontier lands and the New World was easier for

pre-industrial peoples than migration to outer space is for us. (There are people who advocate spending research dollars on space colonies rather than on environmental management down here on the surface. I know someone who worked for NASA on agricultural planning for space colonies, and he decided to promote the potato as the ideal all-purpose nutritious food source. I suppose I should have told him about monoculture and the Irish potato famine.) Global environmental shrinkage means that we must be concerned about global efficiency and therefore about even our long-distance externalities. These newly created externalities that we must finally become concerned about mean that coordinated management among multiple resource users is once again necessary for reasons of efficiency. Herein lies the reason to reinvent the commons.

We have intensified the use of our private parcels to the point where activity on one parcel is constantly imposing costs on other parcels. Moreover, we are not just doing this in (a) natural resource production systems that might have been held in common in the past (those that give us wood, bamboo, fish, meat). We are also encountering these externalities in (b) natural resource production systems that we have almost always held in parcelled form (those that give us grapes, asparagus, chickens, cotton, corn) and in (c) industrial production systems (those that give us steel, cement, electricity, semiconductors and pollution). Thus industrial economies find that they must create common property in environmental sinks (air, water, and soil) in order to maintain environmental services from those sinks. When societies decide that they must limit the deposition of pollution into these sinks they are closing access, setting quotas on use, and declaring that citizens residing within those sinks own those sinks. Similarly, when municipalities and counties devise zoning and coordinated land use regulation in order to preserve diminishing public amenities, they are actually creating property rights in the landscape and in decisions about land use. And natural resource systems yielding products for which no cheap substitutes are any longer available must once again be jointly managed in order to coordinate uses for optimal sustainable yield. Societies have held resources in common in the past for many reasons beyond a concern for environmental externalities. Many of those reasons have been reversed and commons have been replaced with individual parcelled property in situations where that transition probably remains appropriate. But where new externalities among parcelled uses have emerged, a new transition is needed. Even if we were today to reinvent the commons only in those circumstances where we need coordination and cooperation in the management of environmental externalities, we would be vastly increasing the number of common property regimes on this earth.

North's insight is to demonstrate that clear, specific, and exclusive property rights encourage investment, technological innovation, and thus economic growth. It is a tragic misapplication of this principle to think that all resource systems must be sliced up into individual portions. Common-pool resources don't slice well; and the more intensively we use resources that we thought we could slice up, the more we discover negative externalities among competing uses. In such situations, we obtain higher long-term productivity from such resource systems by coordinating our uses, through joint management. That is, by having groups of individuals share clear, specific, and exclusive

property rights. Sadly, we have reached the point on this planet where resource use is often too intense to tolerate these externalities. Fortunately, we have an institutional record and a storehouse of surviving indigenous knowledge to comb to stimulate our imaginations, to help us reinvent the commons.

Reinventing the commons has been the theme of this conference, which I must now draw to a close with words of thanks. For Erling Berge, Audun Sandberg, Anne Utvaer, their colleagues on the program committee and local arrangements committee, the supporters they have had from students and their universities, and the hotel staff who have worked so hard to make all this possible. This has been a wonderful meeting with exciting sessions and many new participants as well as old regulars. We are all very grateful for being able to enjoy the magnificent setting that Bodoë and Nordland have provided, and to learn about the common property issues relevant to the Arctic. The field trips were fantastic glimpses into resource and property rights problems of this region. And I don't think we have ever been so well cared for or so well fed. Bodoë will be a tough act to follow, but I urge you all to begin planning your contributions for Berkeley in 1996, where we hope to hear many voices from the commons.