

## TOWARD A THEORY OF PROPERTY RIGHTS

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When a transaction is concluded in the marketplace, two bundles of property rights are exchanged. A bundle of rights often attaches to a physical commodity or service, but it is the value of the rights that determines the value of what is exchanged. Questions addressed to the emergence and mix of the components of the bundle of rights are prior to those commonly asked by economists. Economists usually take the bundle of property rights as a datum and ask for an explanation of the forces determining the price and the number of units of a good to which these rights attach.

In this paper, I seek to fashion some of the elements of an economic theory of property rights. The paper is organized into three parts. The first part discusses briefly the concept and role of property rights in social systems. The second part offers some guidance for investigating the emergence of property rights. The third part sets forth some principles relevant to the coalescing of property rights into particular bundles and to the determination of the ownership structure that will be associated with these bundles.

### *The Concept and Role of Property Rights*

In the world of Robinson Crusoe property rights play no role. Property rights are an instrument of society and derive their significance from the fact that they help a man form those expectations which he can reasonably hold in his dealings with others. These expectations find expression in the laws, customs, and mores of a society. An owner of property rights possesses the consent of fellowmen to allow him to act in particular ways. An owner expects the community to prevent others from interfering with his actions, provided that these actions are not prohibited in the specifications of his rights.

It is important to note that property rights convey the right to benefit or harm oneself or others. Harming a competitor by producing superior products may be permitted, while shooting him may not. A man may be permitted to benefit himself by shooting an intruder but be prohibited from selling below a price floor. It is clear, then, that property rights specify how persons may be benefited and harmed, and, therefore, who must pay whom to modify the actions taken by persons. The recognition of this leads easily to the close relationship between property rights and externalities.

Externality is an ambiguous concept. For the purposes of this paper, the concept includes external costs, external benefits, and pecuniary as well as nonpecuniary externalities. No harmful or beneficial effect is external to the world. Some person or persons always suffer or enjoy these effects. What converts a harmful or beneficial effect into an externality is that the cost of bringing the effect to bear on the decisions of one or more of the interacting persons is too high to make it worthwhile, and this is what the term shall mean here. "Internalizing" such effects refers to a process, usually a change in property rights, that enables these effects to bear (in greater degree) on all interacting persons.

A primary function of property rights is that of guiding incentives to achieve a greater internalization of externalities. Every cost and benefit associated with social interdependencies is a potential externality. One condition is necessary to make costs and benefits externalities. The cost of a transaction in the rights between the parties (internalization) must exceed the gains from internalization. In general, transacting cost can be large relative to gains because of "natural" difficulties in trading or they can be large because of legal reasons. In a lawful society the prohibition of voluntary negotiations makes the cost of transacting infinite. Some costs and benefits are not taken into account by users of resources whenever externalities exist, but allowing transactions increases the degree to which internalization takes place. For example, it might be thought that a firm which uses slave labor will not recognize all the costs of its activities, since it can have its slave labor by paying subsistence wages only. This will not be true if negotiations are permitted, for the slaves can offer to the firm a payment for their freedom based on the expected return to them of being free men. The cost of slavery can thus be internalized in the calculations of the firm. The transition from serf to free man in feudal Europe is an example of this process.

Perhaps one of the most significant cases of externalities is the extensive use of the military draft. The taxpayer benefits by not paying the full cost of staffing the armed services. The costs which he escapes are the additional sums that would be needed to acquire men voluntarily for the services or those sums that would be offered as payment by draftees to taxpayers in order to be exempted. With either voluntary recruitment, the "buy-him-in" system, or with a "let-him-buy-his-way-out" system, the full cost of recruitment would be brought to bear on taxpayers. It has always seemed incredible to me that so many economists can recognize an externality when they see smoke but not when they see the draft. The familiar smoke example is one in which negotiation costs may be too high (because of the large number of interact-

ing parties) to make it worthwhile to internalize all the effects of smoke. The draft is an externality caused by forbidding negotiation.

The role of property rights in the internalization of externalities can be made clear within the context of the above examples. A law which establishes the right of a person to his freedom would necessitate a payment on the part of a firm or of the taxpayer sufficient to cover the cost of using that person's labor if his services are to be obtained. The costs of labor thus become internalized in the firm's or taxpayer's decisions. Alternatively, a law which gives the firm or the taxpayer clear title to slave labor would necessitate that the slaveowners take into account the sums that slaves are willing to pay for their freedom. These costs thus become internalized in decisions although wealth is distributed differently in the two cases. All that is needed for internalization in either case is ownership which includes the right of sale. It is the prohibition of a property right adjustment, the prohibition of the establishment of an ownership title that can thenceforth be exchanged, that precludes the internalization of external costs and benefits.

There are two striking implications of this process that are true in a world of zero transaction costs. The output mix that results when the exchange of property rights is allowed is efficient and the mix is independent of who is assigned ownership (except that different wealth distributions may result in different demands).<sup>1</sup> For example, the efficient mix of civilians and military will result from transferable ownership no matter whether taxpayers must hire military volunteers or whether draftees must pay taxpayers to be excused from service. For taxpayers will hire only those military (under the "buy-him-in" property right system) who would not pay to be exempted (under the "let-him-buy-his-way-out" system). The highest bidder under the "let-him-buy-his-way-out" property right system would be precisely the last to volunteer under a "buy-him-in" system.<sup>2</sup>

We will refer back to some of these points later. But for now,

<sup>1</sup> These implications are derived by R. H. Coase, "The Problem of Social Cost," *J. of Law and Econ.*, Oct., 1960, pp. 1-44.

<sup>2</sup> If the demand for civilian life is unaffected by wealth redistribution, the assertion made is correct as it stands. However, when a change is made from a "buy-him-in" system to a "let-him-buy-his-way-out" system, the resulting redistribution of wealth away from draftees may significantly affect their demand for civilian life; the validity of the assertion then requires a compensating wealth change. A compensating wealth change will not be required in the ordinary case of profit maximizing firms. Consider the farmer-rancher example mentioned by Coase. Society may give the farmer the right to grow corn unmolested by cattle or it may give the rancher the right to allow his cattle to stray. Contrary to the Coase example, let us suppose that if the farmer is given the right, he just breaks even; i.e., with the right to be compensated for corn damage, the farmer's land is marginal. If the right is transferred to the rancher, the farmer, not enjoying any economic rent, will not have the wherewithal to pay the rancher to reduce the number of head of cattle raised. In this case, however, it will be profitable for the rancher to buy the farm, thus merging cattle raising with farming. His self-interest will then lead him to take account of the effect of cattle on corn.

enough groundwork has been laid to facilitate the discussion of the next two parts of this paper.

### *The Emergence of Property Rights*

If the main allocative function of property rights is the internalization of beneficial and harmful effects, then the emergence of property rights can be understood best by their association with the emergence of new or different beneficial and harmful effects.

Changes in knowledge result in changes in production functions, market values, and aspirations. New techniques, new ways of doing the same things, and doing new things—all invoke harmful and beneficial effects to which society has not been accustomed. It is my thesis in this part of the paper that the emergence of new property rights takes place in response to the desires of the interacting persons for adjustment to new benefit-cost possibilities.

The thesis can be restated in a slightly different fashion: property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization. Increased internalization, in the main, results from changes in economic values, changes which stem from the development of new technology and the opening of new markets, changes to which old property rights are poorly attuned. A proper interpretation of this assertion requires that account be taken of a community's preferences for private ownership. Some communities will have less well-developed private ownership systems and more highly developed state ownership systems. But, given a community's tastes in this regard, the emergence of new private or state-owned property rights will be in response to changes in technology and relative prices.

I do not mean to assert or to deny that the adjustments in property rights which take place need be the result of a conscious endeavor to cope with new externality problems. These adjustments have arisen in Western societies largely as a result of gradual changes in social mores and in common law precedents. At each step of this adjustment process, it is unlikely that externalities per se were consciously related to the issue being resolved. These legal and moral experiments may be hit-and-miss procedures to some extent but in a society that weights the achievement of efficiency heavily, their viability in the long run will depend on how well they modify behavior to accommodate to the externalities associated with important changes in technology or market values.

A rigorous test of this assertion will require extensive and detailed empirical work. A broad range of examples can be cited that are consistent with it: the development of air rights, renters' rights, rules for

liability in automobile accidents, etc. In this part of the discussion, I shall present one group of such examples in some detail. They deal with the development of private property rights in land among American Indians. These examples are broad ranging and come fairly close to what can be called convincing evidence in the field of anthropology.

The question of private ownership of land among aboriginals has held a fascination for anthropologists. It has been one of the intellectual battlegrounds in the attempt to assess the "true nature" of man unconstrained by the "artificialities" of civilization. In the process of carrying on this debate, information has been uncovered that bears directly on the thesis with which we are now concerned. What appears to be accepted as a classic treatment and a high point of this debate is Eleanor Leacock's memoir on *The Montagnes "Hunting Territory" and the Fur Trade*.<sup>3</sup> Leacock's research followed that of Frank G. Speck<sup>4</sup> who had discovered that the Indians of the Labrador Peninsula had a long-established tradition of property in land. This finding was at odds with what was known about the Indians of the American Southwest and it prompted Leacock's study of the Montagnes who inhabited large regions around Quebec.

Leacock clearly established the fact that a close relationship existed, both historically and geographically, between the development of private rights in land and the development of the commercial fur trade. The factual basis of this correlation has gone unchallenged. However, to my knowledge, no theory relating privacy of land to the fur trade has yet been articulated. The factual material uncovered by Speck and Leacock fits the thesis of this paper well, and in doing so, it reveals clearly the role played by property right adjustments in taking account of what economists have often cited as an example of an externality—the overhunting of game.

Because of the lack of control over hunting by others, it is in no person's interest to invest in increasing or maintaining the stock of game. Overly intensive hunting takes place. Thus a successful hunt is viewed as imposing external costs on subsequent hunters—costs that are not taken into account fully in the determination of the extent of hunting and of animal husbandry.

Before the fur trade became established, hunting was carried on primarily for purposes of food and the relatively few furs that were required for the hunter's family. The externality was clearly present. Hunting could be practiced freely and was carried on without assessing its impact on other hunters. But these external effects were of such

<sup>3</sup> Eleanor Leacock, *American Anthropologist* (American Anthropological Assn.), Vol. 56, No. 5, Part 2, Memoir No. 78.

<sup>4</sup> Cf., Frank G. Speck, "The Basis of American Indian Ownership of Land," *Old Penn Weekly Rev.* (Univ. of Pennsylvania), Jan. 16, 1915, pp. 491-95.

small significance that it did not pay for anyone to take them into account. There did not exist anything resembling private ownership in land. And in the *Jesuit Relations*, particularly Le Jeune's record of the winter he spent with the Montagnes in 1633-34 and in the brief account given by Father Druilletes in 1647-48, Leacock finds no evidence of private land holdings. Both accounts indicate a socioeconomic organization in which private rights to land are not well developed.

We may safely surmise that the advent of the fur trade had two immediate consequences. First, the value of furs to the Indians was increased considerably. Second, and as a result, the scale of hunting activity rose sharply. Both consequences must have increased considerably the importance of the externalities associated with free hunting. The property right system began to change, and it changed specifically in the direction required to take account of the economic effects made important by the fur trade. The geographical or distributional evidence collected by Leacock indicates an unmistakable correlation between early centers of fur trade and the oldest and most complete development of the private hunting territory.

By the beginning of the eighteenth century, we begin to have clear evidence that territorial hunting and trapping arrangements by individual families were developing in the area around Quebec. . . . The earliest references to such arrangements in this region indicate a purely temporary allotment of hunting territories. They [Algonkians and Iroquois] divide themselves into several bands in order to hunt more efficiently. It was their custom . . . to appropriate pieces of land about two leagues square for each group to hunt exclusively. Ownership of beaver houses, however, had already become established, and when discovered, they were marked. A starving Indian could kill and eat another's beaver if he left the fur and the tail.<sup>5</sup>

The next step toward the hunting territory was probably a seasonal allotment system. An anonymous account written in 1723 states that the "principle of the Indians is to mark off the hunting ground selected by them by blazing the trees with their crests so that they may never encroach on each other. . . . By the middle of the century these allotted territories were relatively stabilized."<sup>6</sup>

The principle that associates property right changes with the emergence of new and reevaluation of old harmful and beneficial effects suggests in this instance that the fur trade made it economic to encourage the husbanding of fur-bearing animals. Husbanding requires the ability to prevent poaching and this, in turn, suggests that socioeconomic changes in property in hunting land will take place. The chain of reasoning is consistent with the evidence cited above. Is it inconsistent with the absence of similar rights in property among the southwestern Indians?

Two factors suggest that the thesis is consistent with the absence of

<sup>5</sup> Eleanor Leacock, *op. cit.*, p. 15.

<sup>6</sup> Eleanor Leacock, *op. cit.*, p. 15.

similar rights among the Indians of the southwestern plains. The first of these is that there were no plains animals of commercial importance comparable to the fur-bearing animals of the forest, at least not until cattle arrived with Europeans. The second factor is that animals of the plains are primarily grazing species whose habit is to wander over wide tracts of land. The value of establishing boundaries to private hunting territories is thus reduced by the relatively high cost of preventing the animals from moving to adjacent parcels. Hence both the value and cost of establishing private hunting lands in the Southwest are such that we would expect little development along these lines. The externality was just not worth taking into account.

The lands of the Labrador Peninsula shelter forest animals whose habits are considerably different from those of the plains. Forest animals confine their territories to relatively small areas, so that the cost of internalizing the effects of husbanding these animals is considerably reduced. This reduced cost, together with the higher commercial value of fur-bearing forest animals, made it productive to establish private hunting lands. Frank G. Speck finds that family proprietorship among the Indians of the Peninsula included retaliation against trespass. Animal resources were husbanded. Sometimes conservation practices were carried on extensively. Family hunting territories were divided into quarters. Each year the family hunted in a different quarter in rotation, leaving a tract in the center as a sort of bank, not to be hunted over unless forced to do so by a shortage in the regular tract.

To conclude our excursion into the phenomenon of private rights in land among the American Indians, we note one further piece of corroborating evidence. Among the Indians of the Northwest, highly developed private family rights to hunting lands had also emerged—rights which went so far as to include inheritance. Here again we find that forest animals predominate and that the West Coast was frequently visited by sailing schooners whose primary purpose was trading in furs.<sup>7</sup>

<sup>7</sup> The thesis is consistent with the development of other types of private rights. Among wandering primitive peoples the cost of policing property is relatively low for highly portable objects. The owning family can protect such objects while carrying on its daily activities. If these objects are also very useful, property rights should appear frequently, so as to internalize the benefits and costs of their use. It is generally true among most primitive communities that weapons and household utensils, such as pottery, are regarded as private property. Both types of articles are portable and both require an investment of time to produce. Among agriculturally-oriented peoples, because of the relative fixity of their location, portability has a smaller role to play in the determination of property. The distinction is most clearly seen by comparing property in land among the most primitive of these societies, where crop rotation and simple fertilization techniques are unknown, or where land fertility is extremely poor, with property in land among primitive peoples who are more knowledgeable in these matters or who possess very superior land. Once a crop is grown by the more primitive agricultural societies, it is necessary for them to abandon the land for several years to restore productivity. Property rights in land among such people would require policing cost for several years during which no sizable output is obtained. Since to provide for