RESOLVING LAND USE CONFLICTS

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I would like to relate to you some recent innovations in the theory of entitlements, expand on the framework in which they were developed, and apply these ideas to the problem of land use conflicts.

You might expect a welfare economist to say, "Find the efficient solution and then implement it in such a way that everyone is better off." But that is not a satisfactory approach to land use conflicts. It ignores the possible ambiguity of the original situation and the frequent unmeasurability of significant costs and benefits related to land uses.

This ambiguity is illustrated by the conflicts surrounding pesticides. If farmers expect to use DDT because that is the most effective pest killer, while bird fanciers expect that people will not be allowed to act in a way that endangers the survival of birds, then someone is going to be disappointed. Once we discover the connection between bird deaths and DDT, we cannot escape the choice, implicitly or explicitly, between letting birds die or lowering agricultural productivity. The actors involved, bird fanciers and farmers, may have been unaware of any conflict between their expectations, but now that the conflict is known, someone must inevitably be disappointed. We need a theory of how to avoid disappointing people, and how to decide whom to disappoint when we cannot or do not avoid it.

The problem of unmeasurable benefits also applies to DDT. How can we discover the value of the survival of a species of birds? There is no market in which a person can buy species survival. What possible practical meaning could there be, then, in a statement that the survival of woodlarks is worth X dollars? We need a theory of appropriate social behavior that does not depend on the concept of measurable value.

The framework that I shall apply to these problems of land use conflicts has developed from the analysis of Professor Guido Calabresi of Yale Law School in his book, *The Costs of Accidents*. Calabresi divides costs into three categories: primary costs, the loss of life and property in accidents, plus the expenses of avoiding accidents; secondary costs, the losses we feel when costs are borne by persons whom we feel should not have to bear them,

either because they are poor or because we regard them as blameless; and tertiary costs, the costs of administering a system of allocating the costs of accidents.

Methods of dealing with accident costs are analyzed by Calabresi in terms of their impacts on other costs and on the allocation of costs to different persons. He divides rules that might be used to limit accident costs into "specific deterrents" and "general deterrents." A specific deterrent is a prohibition against a particular activity, such as speeding or running red lights. A general deterrent is a rule that a person who engages in a particular activity must pay the resulting costs. It might seem that general deterrents would always be more efficient, since they permit people to value individually the benefits of engaging in activities that may result in accidents. But our inability to price all the consequences of accidents and our unwillingness to make others subject to accidents just because one person is willing to risk the consequences lead us to favor specific deterrents in some circumstances.

Even if we have settled on the type of deterrent to be used, a very difficult question that remains is to whom it is to apply. When an accident occurs, typically a number of persons might have prevented it. In the case of an accident between a car and a pedestrian, there are the auto manufacturers, the highway designers, the traffic policemen, the driver, and the pedestrian, to name just a few. In some situations we might want to add the driver's boss or mother-in-law. If we single out one group, such as drivers, to hold responsible, then all other groups lose the incentive to avoid accidents that comes from being held accountable. Such groups may still have some incentive to avoid accidents though, either because, like pedestrians, they may be subject to costs that are not fully compensated, or, like auto manufacturers, they may have an economic relationship with the group held accountable, in which relationship accident-avoiding behavior may be rewarded. It is also possible that the group held accountable (drivers) will pass the costs on to some other group (insurance companies), in which case the economic incentives to avoid accidents, if any, are those which insurance companies place upon drivers.

You might think the solution would be to decide the fault of each accident separately, but that encounters two difficulties. The first is the high tertiary (administrative) costs of case-by-case decisions. The second is the unpredictability of the outcome. A person who had to decide how much accident-avoiding behavior was worthwhile would want to consider both the likely accident

costs and the probability of being tagged with those costs. Incentives are diluted in a similar fashion when we spread the costs of an accident among several parties. And if we were to charge the full cost of an accident to each of the parties that might have avoided it, we would generate an inefficient multiple discouragement of the activities that might be charged with accidents. The best we can do in these complex circumstances is to make an informed guess concerning who is the best cost avoider, or, failing that, who is best able to identify the best cost avoider and pass the cost on to that party.

A longer summary and critique of Calabresi's framework can be found in Frank Michelman's review in the February 1971 *Yale Law Journal*, in which he transfers a variety of Calabresi's concepts to the problem of pollution. For example, he suggests that general deterrence, applied to pollution, would be a rule that a polluter must pay the costs caused by his pollution, while specific deterrence would be represented by decisions that in some cases pollution may not continue without compensation, while in other cases pollution must cease.

An article by Calabresi and A. Douglas Melamed in the April 1972 *Harvard Law Review* includes a discussion of pollution in a different vocabulary. What Michelman described as specific deterrence is described by Calabresi and Melamed as "entitlements protected by property rules," while "general deterrence" has become "entitlements protected by liability rules." Thus if a polluter may be stopped by an injunction sought by a pollutee, the pollutee has an entitlement to be free of pollution, protected by a property rule. Pollution may occur only if the pollutee is compensated to his satisfaction. If the polluter may pollute unless the pollutee gives him acceptable compensation not to, then the polluter has an entitlement protected by a property rule. If a polluter may be sued for damages but not enjoined, then the pollutee has an entitlement protected by a liability rule. Calabresi and Melamed mention a fourth possibility, which Michelman overlooked. If pollution may be enjoined through action by a pollutee, but the polluter must be compensated, then the polluter has an entitlement to pollute, protected by a liability rule.

Calabresi and Melamed also discuss "inalienable entitlements," such as the right not to be a slave. Such entitlements add a new dimension to the set of possibilities they discuss. The fundamental dichotomy here is between entitlements that require specific majority approval in some form for transaction and those that do not.

As Calabresi and Melamed have said, entitlements require enforcement directed by some collective decision. With some entitlements this enforcement can be redirected by contract (following property rules) or by courts (following liability rules) without further collective decisions. An entitlement is "inalienable" if a new collective decision is required to redirect the enforcement. I have an alienable entitlement to live in my house because the police can be redirected from keeping others out of my house to keeping me out, by the process of sale. But I have an inalienable entitlement not to have marijuana in my cigarettes, because no matter what I do to avoid this entitlement, the police will still try to keep the marijuana out. My entitlement can be alienated only by a process that includes a new collective decision. So rather than call the entitlement "inalienable," we might more accurately call it an entitlement that is protected by a requirement of collective assent, or, to be brief, a "collective entitlement."

Once the idea of new collective decisions is introduced, different varieties of collective entitlements can be identified. Returning to the pollution example, a collective entitlement protected by a property rule could be illustrated by a situation in which a polluter could not pollute unless he paid a fee acceptable to those involved in the collective decisions. The crucial difference between this case and an individual entitlement protected by a property rule is that with the collective entitlement some individuals may be required to accept compensation which they personally feel is inadequate. A collective entitlement protected by a liability rule would involve a court determining the appropriate fee for polluting. In this case the collectivity has no role in the decision.

Polluter entitlement protected by a property rule would allow a polluter to pollute unless the collectivity decided to order compensation that was acceptable to him. Here individuals could be coerced to participate in compensation which they personally felt was excessive. Polluter entitlement protected by a liability rule would mean that if the collectivity offered to a polluter compensation considered adequate by a court, the polluter would be required to accept it and desist. Here again individuals could be coerced to participate in what they felt was excessive compensation.

Entitlements that are protected by liability rules are subject to coercive transfer. When we compensate an accident victim or a person whose property is taken by eminent domain for a public project, we do not insist that the person whose entitlement is taken be satisfied. We say that these entitlements are protected by liability rules, permit courts to determine compensation coercively, and risk disappointment of the holders of entitlements.

Transfers of collective entitlements involve a different type of coercion than liability rules, in that the compensation must satisfy a criterion of collective rather than judicial acceptability. The holders of the entitlement that is transferred participate through the collective decision process, which can reasonably be regarded as imposing less coercion than liability rules, unless the collective decision process is totally unresponsive to individual value. By accepting the coercive transfer of collective entitlements, a society gains a potential for transactions in entitlements which would be almost impossible if unanimous consent (property rules—the absence of coercion) were required. To illustrate the potential and some of the problems of collective entitlements, I will elaborate a proposal for applying them to land use conflicts.

Before making the proposal, I should say a few words about the judgments involved in deciding to have rules about entitlements. In the area of land use there seems to be considerable uncertainty about entitlements, in other words, uncertainty about how the courts and the executive branches of government will direct the police to behave. By establishing rules for entitlements, we can eliminate some future disappointments and some inefficiency that arises from uncertainty. But the establishment of rules generates secondary costs. If we do not establish rules, conflicts will still be resolved as they arise, one by one. And the judges and juries who would resolve these conflicts would be able to make each decision according to what they felt was fair, unhampered by the need to be consistent with established rules that may not have adequately anticipated the peculiarities of individual cases. If we decide to have rules, we are deciding that such secondary costs are less significant than the savings in primary and tertiary costs that come from being able to predict the outcome of the judicial process.

So assuming that we want to have some rules, what should the rules be? Permit me to ignore the problem of injustice in the transition to the rules and concentrate on the operation of the rules after they have been initiated.

I propose to require a plan for the use of each site. Each owner would have a property entitlement to carry out the activities described in his plan as long as the consequences of his activities were only those which had been foreseen (more on foreseeability later). There would be a collective property entitlement to be free of undesired activities not specified in a person's plan. There would have to be rules about changes that could be made without permission, such as planting different flowers in one's garden, and prob-

ably changing the color of the paint on one's house. But to add a room might require permission, as it now does in places that require building permits. The trade-off here is between primary and tertiary costs. In deciding what changes require permission we must balance the costs of filing for changes against the losses from allowing changes without permission.

A person who wished to make a change in his land use plan that was not automatically permitted would be required to state the negative consequences that could be expected from the change. When negative consequences that had not been predicted occurred (when there was a "land use accident"), the person whose action generated the negative consequences would be held liable for damages. This rule reflects a judgment that persons who want to make changes are better able to foresee the consequences than anyone else. By announcing the consequences proponents of changes could guarantee that their entitlements would not be affected by those consequences. Assigning liability to the proponents of change also reflects a judgment that to the extent that consequences of change are speculative, the proponents are more likely to be able to make good speculations than anyone else.

Making the remedy liability for damages rather than the retraction of permission would mean that a person who misjudged the consequences of his changes would not face the threat of having to ransom his whole investment back from a disgruntled collectivity. This would also mean that collectivities would have to insure themselves on the difference between property rights and liability rights. This would make them more reluctant to approve changes, but proponents of changes might reduce that reluctance by offering convincing evidence that unforeseen consequences were unlikely.

Except for accidental consequences, entitlements in land use would be protected by property rules. Transactions in entitlements would require mutual consent of an owner and a collectivity. For the collective decisions that must be made I propose special voting rules related to the estimated distribution of the impacts of changes.

Changes in land use have spatial and nonspatial effects. An example of nonspatial effects is the opposition to the trans-Alaska pipeline by persons who will never see it, or opposition to DDT by persons concerned with the survival of birds they will never see or hear. Nonspatial effects related to shared values would produce little or no controversy. Nonspatial effects related to minority values pose very difficult problems that will not be discussed in this paper.

With respect to spatial effects, which I suspect are the dominant external effects of changes in land use, I will rely on a presumption that tastes are reasonably similar. Persons with unusual tastes will suffer at the hands of the majority, but the protection of all unusual tastes would require the cessation of change. If we wish to permit some changes in land use, we must decide that persons who have tastes in land use that are not protected by majority action are the best cost avoiders with respect to injuries to their interests.

A transaction in land use entitlements would occur upon approval of the person whose land use plan was to change, and an appropriate weighted majority of the surrounding residents and property owners, with compensation possible in either direction. Votes and compensation payments would be weighted by estimated effects.

I cannot say exactly how weights should be chosen, but I can describe how the weighting could be improved over time, as experience with the system was gained. Voters could be sorted by any characteristic that was thought to be related to the intensity of effects of land use changes (age, years of residence, distance from the site where use was to change), and the voting pattern examined for systematic differences in the probability of approval with respect to that characteristic. When it could be established that some group was less likely to approve than average, their weight would be increased in future votes. The size of the area over which votes would be held would be adjusted over time by the rule that the size was large enough when the probability of approval among voters just inside the district was average, even though the compensation involved was "small." I believe that for many controversial changes in land use the area of impact is very small.

The number of votes required for approval could be half, two-thirds, or any other proportion. The higher the required majority, the more likely it will be that basically desirable changes will be thwarted for lack of the needed majority. The lower the required majority, the more likely it will be that minorities with unusual tastes would suffer from majority domination. (In contemplating the fate of persons who must accept changes they voted against, we should bear in mind that a "no" vote could be a strategic hold-out for more compensation. A person might be worse off with the change only in the sense that his expectation of gain was not fulfilled.)

A transaction would typically begin with an offer from a land-

owner to pay specific compensation for permission to change his land use plan, or an offer to change his plan in a way he believes would be of value to others, in return for compensation. Whoever proposed the transaction would have to pay at least part of the voting cost, and the landowner would have to agree in advance to be bound to the transaction if it should be collectively approved. The voting authorities would allocate the potential compensation (positive or negative) among voters, and a vote would then be taken, perhaps by mail. If the necessary majority approved, the transaction would be final unless overturned by the same process. Compensation would be paid or received by all voters, irrespective of how they voted.

Precautions against the buying of votes would have to be taken since if a bare majority approved because of the side payments they received, the dissatisfied minority would be subject to losses not offset by other gains.

At the beginning of this paper I said I would depart from traditional welfare economics in which money is the standard by which costs and benefits are combined. And now I have suggested that land use entitlements be traded for money. Have I reneged on my bargain? I believe not. Whenever enough people (as determined by the voting rules) felt that costs could not be monetized, transactions would not occur. And I do not claim that the proposed system is efficient. I suggest only that in a difficult class of problems in which we cannot measure the values of individuals in money and must inevitably disappoint some persons, the proposal offers a hope of giving what would be regarded as decent consideration to the values of all affected persons.

PART V

Policy Education