

## PUBLIC CHOICE, PROPERTY RIGHTS, AND ENVIRONMENTAL QUALITY\*

DR. FRANK G. MÜLLER

*Associate Professor of Economics  
Concordia University*

### ABSTRACT

The property rights approach to political economy is an attempt to integrate institutional economics into the marginalist methodology of neoclassical microeconomics. Since environmental quality and common property resources are applications of political economy, the property rights approach provides some new insights for the management of common property resources. Where values of competing uses of common property resources must be weighted, problems arise. Contrary to the Coasian Theorem, its value will depend on the assignment of property rights. However, where environmental objectives conflict with other economic objectives, such as full employment, property rights are no safeguard against environmental degradation, since majority rule can change existing rights at the cost of environmental quality.

### Introduction

In recent years two different partly overlapping bodies of literature have been developed which focus on the relevance of the institutional framework with regard to the allocation of resources, namely the property rights and the public choice approach. Both property rights and public choice, after all, influence the incentives and constraints on all parties involved in economic decision-making. Property rights and collective decision-making rules are often regarded as a purely legal matter to the extent that they are

\* This is a revised version of a paper which was presented at the conference of the Public Choice Society, European Section, September 22-24, 1976.

designed to conform with prevailing laws. But the resulting institutional changes are the concern of all scientists interested in economic and social affairs. Social scientists, and particularly economists, are increasingly searching for solutions to pressing problems that arise from existing property rights and governmental systems. However, in coping with reality, it seems appropriate that the institutional factors such as property rights and public decision rules should be divested of as many constraints as possible and be treated as variables in economic analyses.

Property rights and decision-making rules may appropriately be considered as institutions, in the sense of representing generally accepted rules of social interaction. In the case of environmental goods and services, for example, the institutions of property rights and public choice explain how the property of environmental goods and services is established, as well as determine the amount of their use and allocation in various competing employments.

When an institution shows signs of malfunctioning, it is clear that institutional changes are required. A well-documented example of such an institutional failure is the mounting social and environmental cost of producing and consuming activities which economists dismiss in almost a Freudian slip as "externalities." This term refers to the inability of the market mechanism to achieve economic efficiency. But one must realize, that markets and their failures are only a subset of the existing overall property rights structure. Furthermore, the markets can only be regarded as a surrogate for the sociological and political demands of the public and may indeed be a reflection of the prevailing, but inappropriate, institutions. Consequently, an appropriate examination of the perceived case of market failure such as the deterioration of environmental quality calls for an analysis of existing institutions which affect the use of environmental goods and services.

In this paper the importance and implications of property rights and public choice will be examined with respect to protection of environmental quality.

### The Property Rights Approach

The Property rights approach to political economy can be regarded as an attempt to link the two already established schools of economic thought, namely the neoclassical microeconomics and institutional economics. Briefly, neoclassical microeconomics can be defined as an optimizing framework which enables the prediction of demand and supply constellations, assuming that the economic

agents' behavior can be described adequately by profit or utility maximization. Institutional considerations do not enter into the neoclassical microeconomic analysis, i.e., the economic activities take place within a given institutional framework. On the other hand, institutional economics has always stressed the view that economic processes are part of the overall social system and, therefore, should be a subject of legitimate analysis.<sup>1</sup>

The integration in the property rights approach of these two schools of thought appears to be rather tenuous since only one institutional factor, namely property rights, is being considered.<sup>2</sup> Furthermore, the methodological individualism which characterizes neoclassical microeconomics is maintained. Basically, the property rights approach can be regarded as an application of neoclassical microeconomic methodology to institutional problems, or as Furubotn and Pejovich see it: ". . . microeconomic theory properly developed is the property rights approach." [3, p. 1157] In other words, the property rights approach explains how individuals who are seeking to maximize their utility react to changes in the property rights structure [4].

### **Property Rights, Resource Allocation and Environmental Quality**

The inefficiency problems related to externalities, including environmental pollution, have been recognized and examined by economists for several decades [5]. Also the problem of public goods and common property resources is known for quite a while [6]. The development of the property right approach has provided some interesting results for the solution of these problems. If a non-attenuated structure of property rights, including some additional assumptions for competitive equilibrium, is sufficient for achieving a Pareto-optimal allocation of resources, then the reasoning of the property rights school is valid to the extent that it regards the problems of externality, common property resources, and public goods as a failure of the existing property rights structure. Consequently, Cheung suggested the replacement of these terms by a more general expression "inefficiency." [7, p. 13] The proponents of the property rights approach argue that the solution of these

<sup>1</sup> An interesting analysis of institutional economics and its contribution to mainstream economies is provided by Kapp [1].

<sup>2</sup> Randall would prefer to describe the approach to institutional economics as "the incentive structure approach" rather than "property rights approach." [2].

problems may require the establishment a non-attenuated structure of property rights in all resources. Through a process of voluntary exchange of property right titles, which will continue until all potential gains from trade are exhausted, the problems of public goods and common property resources will be eliminated. The outcome of this market process is regarded as an efficient allocation of resources by definition [4, pp. 354-356, 7].

The interrelationship between efficiency, the structure of property rights, and the distribution of income and wealth has to be comprehended fully in order to understand the significance of Pareto-optimality. In facing the choice between alternative exclusive uses of a common property resource, e.g., a wild and scenic river for industrial versus recreational use the income-distributional effects enter directly into the assessment of opportunity costs. What is the decision rule? According to the Pareto criterion, a project is efficient, and therefore probably regarded as desirable, if the expected benefits exceed the expected costs, such that the beneficiaries could compensate the losers and still improve their position. However, the measurement of these benefits and costs is quite controversial matter particularly when the property rights of the resources at issue are ambiguously defined. Since property right either constrain the field of feasible outcome or determine the Pareto domain, a change in the property rights structure would cause a change in the optimal allocation of resources. This conclusion, however, is contrary to the famous Coase Theorem, which states explicitly that the resource allocation, and implicitly the resource valuation, are independent of the assignment of property rights [8].<sup>3</sup> Several years later Calabresi restated this theorem: "The same allocation of resources will come about regardless of which of two joint cost users is initially charged with the cost, in other words, regardless of liability rules." [10, p. 67] In the example presented above, if this particular river is valued more by the "rich" environmentalist, represented for example by the Sierra Club, than to the industrialist who is holding user-rights of this river, the environmentalist simply buys out the industrialist, and the river remains in its scenic state. If not, the industrialist will reject the offer and will go ahead with his project. According to Coase this analysis is symmetric. If the rights of this river belong originally to the environmentalist, then the role of the bidder is only reversed. In each case, the resource is employed in its most efficient use regardless of who pays off whom. This is true

<sup>3</sup> A demolishing critique of the Coase Theorem is provided by Samuels [9].

for the explicit part of the theorem. Implicitly Coase assumed that the evaluation of the alternative uses of this resource is not affected by the initial distribution of property rights. While some economists were attracted by the Coasian market solution to internalize externalities, the practitioners remained skeptical of this approach, because its application to situations characterized by environmental externality revealed several flaws.

Returning to our former example of "rich" environmentalist versus industrialist, it is now assumed that a large number of individual consumers will be negatively affected by the project of the industrialist who holds the property rights. In this situation the transaction costs of organizing negotiations with the industrialist may be excessively high, even though the collective value of the scenic river to all consumers is larger than the value of the industrialist. Consequently, the river will be used for industrial purposes.<sup>4</sup>

An additional problem with the application of the Coase theorem arises from the fact that this theorem ignores not only the driving forces of income and wealth distribution upon the dynamic structure of property rights, but also the importance of unequal initial income and wealth positions. However, the existing income distribution and the property rights, which influence it at least partly, determine the resource allocation and specify an individual's ability and willingness to pay or to receive compensation in transactions for internalizing externalities. Obviously, the conclusion is that the valuation process of a common property resource is not unambiguous.

The effect of different assignments of property rights on the valuation of resources are demonstrated in Figure 1 [13, p. 31]. On the vertical axis is measured the production of manufactured good C, while E on the horizontal axis represents the amount of environmental quality. Let us assume that the industrialist initially possesses the property rights for the use of certain environmental resources. The consumer faced with the budget line  $C_0E_0$  would be willing to pay an amount equal  $C_0 - C_1$  to the industrialist for not deteriorating the environmental quality. This payment would leave the consumer on the same indifference curve  $I_0$  as before the transaction took place. In any case the consumer's willingness to pay could not exceed his total income, namely  $OC_0$ .

If the property rights now belong to the consumer, then his

<sup>4</sup> For a detailed discussion of the importance and implication of the transaction costs for the resource allocation see Randall and Crocker [11, pp. 43-46, 12].

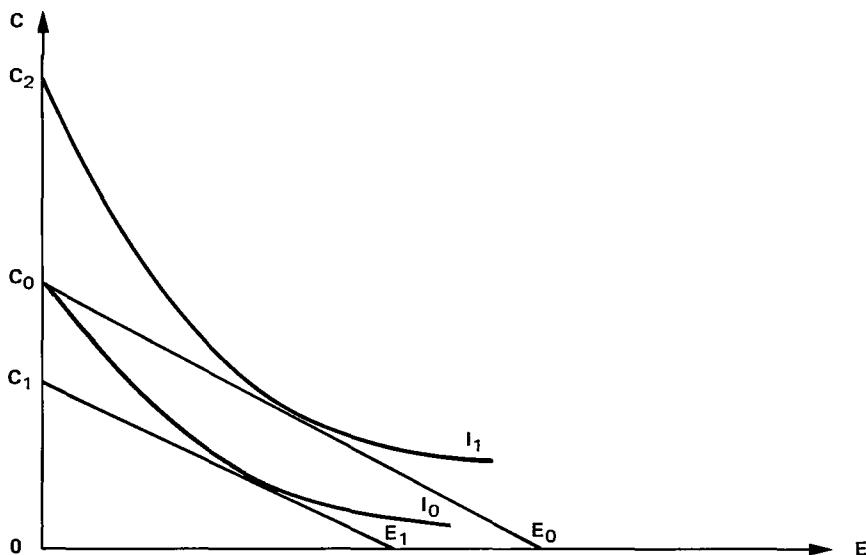


Figure 1. Compensation measures under different assignments of property rights.

relevant indifference curve is  $I_1$ . The amount he would accept for giving up his right to consume environmental quality  $E$  is determined by the intersection of  $I_1$  with the vertical axis at  $C_2$ . Since he remains on the same indifference curve he is just as well off as before the transaction. This example demonstrates that the amount an individual would be willing to pay (here  $C_0 C_1$ ) for enjoying environmental quality will probably be substantially less than the amount he is willing to receive for giving up his rights (here  $C_2 - C_0$ ).

The net benefits from competing uses of resources—manufactured goods versus environmental quality—are determined by the summation of the individual consumer's surplus over all consumers demanding environmental quality minus the expected revenues of the industrialist. However, since the environmental quality services are competing with the resource use of a profit-maximizing firm, which presumably has access to the capital market, it is more than likely that the expected revenues of the firm will exceed the benefits from environmental quality. Consequently, manufactured goods will be provided instead of environmental quality.

This example illustrates the implications of the use of efficiency as a criterion in economic analysis of the structure of property

rights. There is no unique efficiency solution; instead for any given structure of property rights there is a different Pareto optimum. Or, as Samuels states it: "Rights specify efficiency, efficiency does not specify rights." [9, p. 9] Furthermore, the efficiency analysis of alternative structures of property rights suffers from inherent empirical problems. Any comparison of different sets of non-attenuated rights will most likely be conducted with the prices of the existing property rights structure. This procedure will introduce a bias into the efficiency analysis which will favor the prevailing rights structure [2, p. 739].

In the above example there are at least two measures of the value of environmental quality-services versus the expected revenues of the industrialist-depending on the assignment of property rights. The problem is how these two different measures can be reconciled. Obviously, the property rights approach favors the market solution to this problem. Suppose now that two profit-maximizing industrialists—one of them possessing the user rights—with equal access to financial markets are competing for two different industrial uses of this river. In this situation we are again in the Coasian reality, where two parties negotiate for a given resource based on unique valuations of its alternative uses. However, in the case where common property resources provide several competing services the market solution proposed by the property rights approach appears to be inadequate. Unfortunately, the property rights economists have failed to develop other criteria for welfare improvement and accept Pareto-optimality and Pareto-safety as the benchmark for institutional changes. Efficiency as the overall criterion can only very reluctantly be accepted, because

- a. efficiency offers no unique solution, depending as it does on the assignment of property rights; and
- b. efficiency is not the only relevant criterion, and should not exclude equity and environmental quality as relevant dimensions.

Kapp stressed this last point in particular denying, "that . . . price . . . are capable of registering the extra-market physical flows which disrupt our environment and affect our health, our lives and our material assets in a negative way, . . . they (the prices) are misleading . . ." and continues ". . . efficiency and optimality of the sub-system will not give rise to any social efficiency and optimum of the macro-system." [14, pp. 99-100] Since the market solution propagated by the property rights approach is neither intellectually satisfactory, nor politically acceptable, then the

problem arises as to what is an adequate measure. For example, the industrial use of the river by a firm would certainly cause a deterioration of its environmental quality for recreation-seeking individuals, and consequently, would curb their rights to enjoy the scenic natural environment. But, a refusal of the industrial use would also represent a restriction of the firm's right. Therefore, the question has to be answered: who possesses the initial property rights, or, who should buy out whom?

The issue of compensation for institutional changes, in particular property rights changes, has important implications for decision-making for environmental protection. Coase and other proponents of the property rights approach have advanced a position of "ethical neutrality," which required that those whose rights are restricted by somebody else are entitled only to a compensation [3, p. 1142, 8, 15]. The acceptance of the Pareto-optimum and Pareto-safety criteria for changes in the property rights structure implies that an institutional change can occur only after the losers have received compensation. However, the rule that compensation should be paid does not tell whether compensation should be paid in a particular case. It is a fact of life that governments intervene in the economy, and specifically in the market for common property resources and environmental quality, through a variety of means, such as taxation, subsidies, regulations and police power for public health etc. It is very unlikely that all these government interventions are "Pareto-safe"; instead there are cases where firms' potential earnings are curtailed by governmental regulations, but compensation is not paid. In other situations, private property is preempted for a public purpose and appropriate compensation is paid as determined by a due process. The police power of the government is the functional equivalent of the "reclaim clause" of a private contract. Therefore, whether somebody is entitled to receive compensation depends upon whether a "taking" of property rights took place or whether the expropriation was actually a legitimate execution of the police power clause.<sup>5</sup> Unfortunately, the boundaries between legitimate exercise of police power and unreasonable takings are not well defined [17]. But this is a very important issue for the management of environmental quality and common property resources. The use of police power is clearly reasonable and legitimate where health and life are threatened by environmental pollution. The laws regulating emission of dangerous

<sup>5</sup> For a detailed discussion of the compensation problem see Goldberg [16, pp. 561-567].

substances (e.g., radioactive waste) into the environment are an example where the assignment of initial property rights and the willingness to pay are considered as absolutely irrelevant in existing antipollution legislature. But where the infringement of property rights provided by common property rights provided by common property resources affects for example only consideration of aesthetics, the courts have not yet come up with definitive decisions.

Since the property rights proponents do not provide a clear answer to these questions, the society must therefore determine on its own ethical and moral standards which infringements of property rights are compensable and which are not. The property rights approach does not succeed in establishing appropriate criteria for welfare improvement. Its compensation principle is incomplete and requires value judgements.

### **Public Choice and Environmental Quality**

The property rights approach has not developed a coherent theory of the state, but rather follows the libertarian tradition which glorifies the market. The property rights approach proposes a strongly individualistic ethic and its constitutional choice seems to favor processes of voluntary exchange for the solution of socio-economic problems. Furubotn and Pejovich, who sympathize with the property rights approach, restate this position: "Strong concern is shown for the individualist basis of choice; the preferences or values of an individual are assumed to be revealed only through his market or political behavior. Social welfare functions are, therefore either ignored or ruled out." [3, p. 1157]

A characteristic feature of the property rights approach is the extension of the notion of self-interest and utility maximization beyond the narrow boundaries of neoclassical economics. Politicians, legislators and bureaucrats are seeking to maximize their own utility. Individuals are not only pursuing their own self-interest within the existing constitutional structures, but they also will invest resources to achieve institutional changes [18].<sup>6</sup> While Tullock explained the existence of vote-trading and logrolling by applying the principles of utility maximization, Buchanan demonstrated that bribery of politicians and bureaucrats, as a

<sup>6</sup> The notion that institutional changes should be sold to the highest bidder, means that political power as a reflection of income and wealth distribution should determine how society's laws change. Such absurd conclusions would be consistent with the property rights approach [16, p. 561].

means of "voluntary exchange," may lead to optimal political decisions [19, 20].

In this section the functioning of property rights solution, namely the market solution, and collective decision-making with respect to environmental quality will be analyzed. The concept of transactions costs, which is important for the application and solutions of the property rights approach, is also crucial for the process of collective decision-making. The varying amounts of transactions costs which are a function of alternative institutional arrangements, influence the outcomes of alternative institutional structures. For instance, they explain, partly at least, the creation of optimal voting procedures and the spectrum of mechanisms for facilitating collective choice (Markets, administrative processes etc.). However, a discussion of all these various aspects is not intended in this paper; instead we restrict our analysis to the market solution and collective decision-making and its consequences for environmental quality.<sup>7</sup> When the antipollution laws are lenient and/or not enforced then the industrial polluters are not liable for the damages inflicted on others, i.e., they possess *de facto* property rights for the use of the common property resource. In this case a market solution seems unlikely to work because high transactions costs prevent the establishment of an effective organization of the pollutees. The obvious result is low environmental quality.

It was demonstrated in the preceding chapter that different assignments of property rights will substantially influence the allocation and the use of a common property resources. Now we consider a market solution where the polluters are fully liable, i.e., the pollutees possess *de facto* property rights for the use of the common property resources. Several assumptions are necessary to make a market solution operational. Firstly, if firms intend to discharge waste into the environment they must obtain permission to do so. Secondly, the polluters accordingly have an economic incentive to negotiate with the potential pollutees to accept a certain deterioration of environmental quality. Thirdly, the negotiated agreements must be honored and enforced. There are alternative institutional arrangements available which facilitate market exchange. However, they may differ with respect to the amounts of transactions costs generated. Consequently, under some institutional arrangements changes of the existing status appear unlikely, while under different arrangements voluntary market

<sup>7</sup> A survey of the recent development in the area of public choice is provided by Mueller [21].

exchange will take place. The negotiations of voluntary exchange between the polluters and pollutees can be arranged basically through three different institutional organizations, namely, individual negotiations, collective negotiations, and negotiations carried out by a public agency [11, pp. 47-52]. Since the industrial polluters have a stake in pursuing their economic activities, their participation in the process of negotiation with the pollutees is guaranteed. Furthermore, the transactions costs of organizing industrial polluters, if required for collective negotiations, are not substantial, since industrial pollution in a given geographical area is generated by a relatively small number of firms.<sup>8</sup> Therefore, our attention will focus on the pollutees and their institutional problems.

### INDIVIDUAL NEGOTIATION BY THE POLLUTEES

If all members of the community affected by pollution reached unanimity about all aspects of the voluntary exchange of property rights for more income, then the market solution would work. In this case the transactions costs would be low and an agreement would be reached without complications. However, this situation appears rather unlikely, because individuals differ with respect to their preferences, income and wealth. Since environmental quality is a public good which all members of the community share equally, they have to agree on a unique amount of pollution discharged into the environment at any particular time and location. Consequently, the individual negotiations would result in numerous agreements specifying different amounts of permissible emissions. Prolonged negotiations and contracting are necessary to achieve unanimous agreement.

The closing of settlements may be further complicated by the strategic behavior of some individuals. One or several members of the community may reject any settlement, because by doing so they hope that they may receive a huge payment for the sale of their property rights. Under unanimity rule it is rather unlikely to achieve an agreement, since extremely high transactions costs may prevent any agreement and consequently, the *status quo* is maintained, i.e., the firms cannot begin with the production process.

These different outcomes can be demonstrated with the aid of diagrams. In Figure 2, C on the vertical axes and E on the horizontal

<sup>8</sup> This argument would require a modification if the polluters are large in numbers, e.g., automobile drivers.

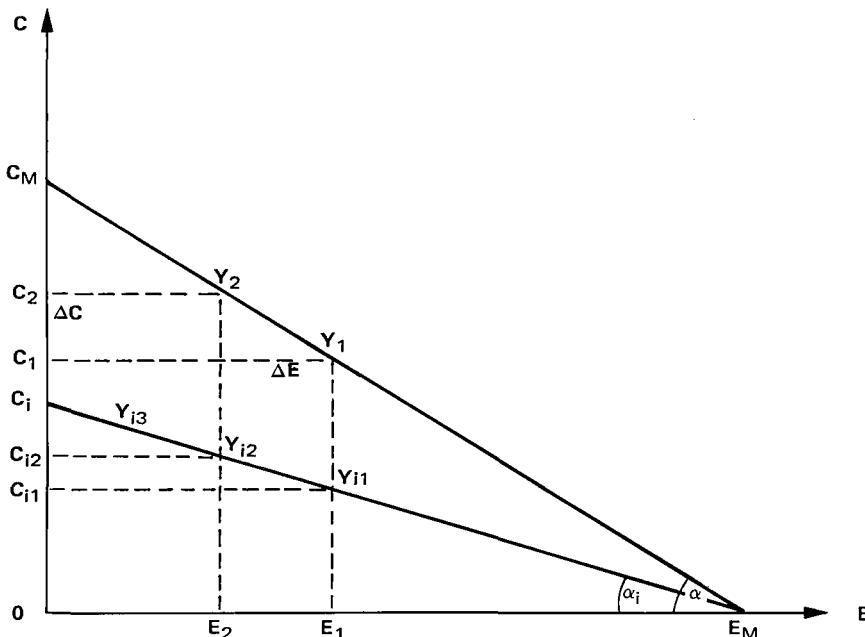


Figure 2. Community transformation curve between income and environmental quality.

axis denote indexes of the goods (community income) and the community's environmental quality. The connecting line  $C_M$  and  $E_M$  represents the alternative combinations of  $C$  and  $E$  available to the community at the present level of technology. The slope of the transformation line, represents essentially the price for the deterioration of environmental quality. A move from  $Y_1$  to  $Y_2$  indicates a deterioration in the level of environmental quality from  $E_1$  to  $E_2$ , but the community's income rises from  $C_1$  to  $C_2$ , i.e., the community would accept as a compensation the amount  $\Delta C$  for a lower level of environmental quality  $\Delta E$ . An approval of the new economic activity at  $Y_2$  would mean a reduction in, e.g., air quality, but this activity would increase the community income.

However, the community makes its final choice ( $Y_1$  or  $Y_2$ ) on the basis of number of votes in favor of  $Y_2$  or  $Y_1$ , and each of the votes will depend on the individual members' preferences. What an individual member can purchase in the market depends on his ability to pay which is a function of his income, including his expected compensation for selling his property rights of environmental quality. A method for defining a member's ability to pay

relative to others in the community is to determine his share of income. If the level of community income is  $\bar{Y}$  and  $Y_i$  is the level of income of the  $i$ th member, then the ratio defines his share of the community income. Consequently, the lower

$$a_i = \frac{Y_i}{\bar{Y}}$$

his individual share is the lower is his budget line, e.g.,  $C_i E_M$  in Figure 2 [22, pp. 257-263]. According to his preference structure the individual prefers some combinations of  $C_i$  and  $E$  to others, e.g.,  $Y_{i3}$  is preferred to  $Y_{i2}$  and  $Y_{i1}$ . Now we are in a position to return to the market solution of property rights. If all members who will be affected by the pollution agreed unanimously about the exchange of property rights and their individual compensation claims do not exceed  $\Delta C$ , then a move from  $Y_1$  to  $Y_2$  is possible. However, it is more likely, that unanimous agreement will not be reached because the sum of individual claims may exceed  $\Delta C$ . Therefore the new economic activity will not take place and the community remains at the *status quo*,  $Y_1$ . Complete elimination of pollution would require extremely high abatement costs which will eventually lead to economic disruptions, accompanied by high unemployment and inflation, e.g., at  $E_M$ .

### COLLECTIVE NEGOTIATIONS BY THE POLLUTEES

Since the transactions costs in achieving unanimity are high and increase rapidly as the number of individuals involved in the agreement grows, a decision rule which requires less than complete unanimity seems to be more appropriate. In dealing with potential pollution of a common property resource, decision-making through majority voting appears to be an acceptable approach.

In general, different individuals have different preferred combinations on their consumption possibilities schedules, because of different individual preferences and income shares. Therefore, a collective compromise must be made since the public choice via majority rule will determine a single level of environmental quality. Several studies have provided some evidence that a high level of environmental quality is mainly a concern for higher income groups, since they have already reached a sufficient level of consumption of private goods [23, 24].<sup>9</sup> Lower-income groups rank environmental quality low on their list of priorities, while employment

<sup>9</sup> The alleged greater emphasis of the rich on the improvement of environmental quality may simply be the result of a positive income effect.

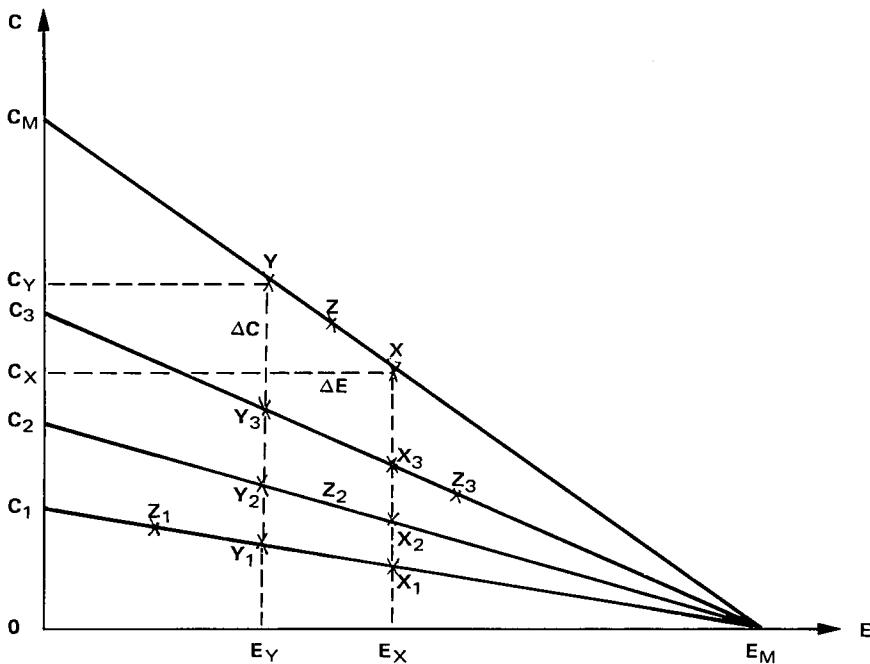


Figure 3. Voting model in a hypothetical community of three.

and inflation are on top of their list. Figure 3 depicts the consumption possibilities schedules of a community of three members, faced with the issue of changing the community's output mix, i.e., a move from X to Y. Under the existing property rights structure, X represents the community's combination of income and environmental quality. The industrialists who are willing to increase the community income by  $\Delta C$  have to compensate the pollutees for the resulting reduction in environmental quality,  $\Delta E$ . How each person reacts to this potential income gain, depends on his or her individual preferred position. Member one would benefit from lowering environmental standards because he would move from  $X_1$  to  $Y_1$ , i.e., closer to his preferred position  $Z_1$ . The reverse is true for member three, i.e., he is moving away from his preferred position  $Z_3$ . Two's preferred position is between the two alternatives. Without any specific information on the comparison of  $Y_2$  and  $X_2$ , it is uncertain how he will decide. But if  $Z_1$  and  $Z_3$  are symmetrically distributed around  $Z_2$ , then the majority rule delegates the choice of the community income to the person whose preferences are median for the community, i.e.,  $Z_2$ . However, in

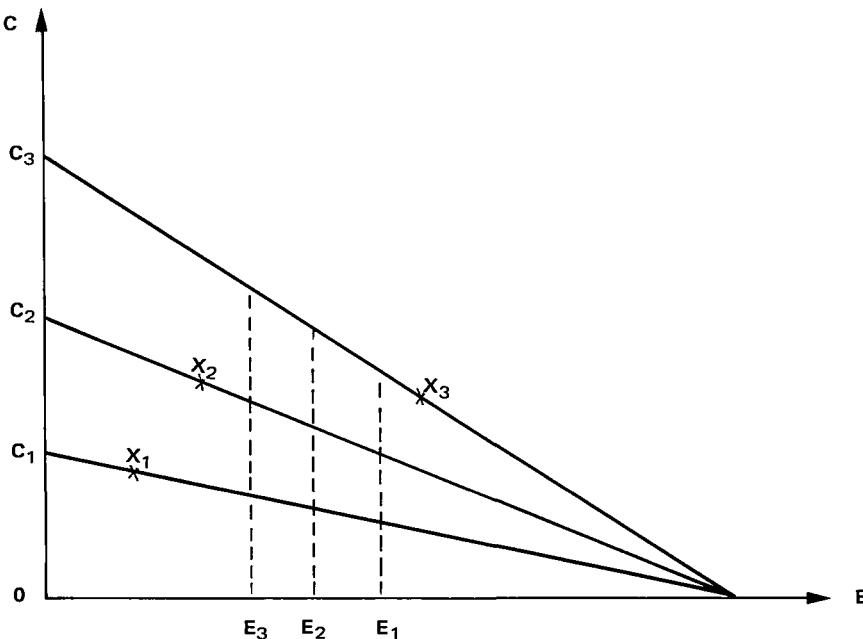


Figure 4. Voting model in a community of three.

reality a nonsymmetrical distribution of preferences is more likely.<sup>10</sup> Furthermore, the incomes are very unevenly distributed so that the majority of the members of a community belong to the lower-income brackets. Based on these assumptions, the theory would predict that the lower the income the greater the tendency to favor a motion which will increase the individual's income at the cost of reducing the level of environmental quality.

In Figure 4,  $X_1$ ,  $X_2$ ,  $X_3$  represent the preferred positions of three individuals. Individuals one and two prefer  $E_2$  to  $E_1$  and  $E_2$  to  $E_3$ . In a democratic process the votes in favor of greater economic activity represent in the above example a two-third majority, and, therefore, environmental quality is allowed to deteriorate. The majority can change the property rights structure at the cost of the minority. Since the poor are in the majority in the community, they may force even the rich to accept  $E_3$ , which would represent a substantial welfare loss for the rich. In summary, wherever environmental aims are in conflict with aims to improve

<sup>10</sup> For a detailed discussion of public choice with majority rule see Buchanan, Tullock, Wagner [18, 25].

the economic welfare of the majority, the majority is in a position to change the property rights at the cost of environmental quality.

### NEGOTIATIONS BY THE POLLUTEES VIA A PUBLIC AGENCY

A public agency could be created to represent the interests of the pollutees. If the agency is authorized to make binding settlements on behalf of the pollutees, the resulting transactions costs would probably be relatively low. The appropriate design and organization of such an agency would depend upon the environmental problem at issue, e.g., an airshed or a watershed. The compensation received for selling the property rights would be distributed among the pollutees. However, the transfer of authority for collective action to a representative means that his own version of what is in the interest of the public will enter into the process of negotiation. It is unrealistic to assume that the representative knows exactly the preferences of the pollutees; instead he may include the costs and benefits that he may incur or receive from negotiation into the settlement with the polluters.<sup>11</sup> The delegation of decision-making power to the representative changes the existing structure of property rights, because, even before any administrative decision is made, he holds potentially-valued claims that were nonevident before the agency was founded. Therefore, by following his own self-interest, the representative may fail to maximize the value of property rights that have been assigned to him by the community [20, pp. 587-591]. However, despite the problem of strategic behavior of representatives, such an agency can be regarded as a possible variant of the proposed market solution by the property rights proponents.

In summary, the market solution of the property rights school may solve some of the prevailing environmental problems if the property rights of environmental resources are assigned to the pollutees. However, where environmental objectives conflict with objectives of economic welfare, property rights are no safeguard against environmental destruction, since through majority rule property rights can be changed at the cost of environmental quality.

<sup>11</sup> Buchanan suggests that optimal decision may be obtained by maximizing side payments of representatives [20, pp. 587-591]. However, his conclusion may be doubtful, because the existence of side payments under majority rule could easily degenerate into a form of collective blackmail.

## Summary and Conclusions

The property rights approach to political economy is an attempt to integrate institutional economics into the marginalist methodology of neoclassical microeconomics. Since environmental quality and common property resources are applications of political economy, the property rights approach provided some new insights for the management of common property resources. In particular, it focuses attention on the importance of transactions costs and their implications for the efficiency of institutional alternatives.

Where values of competing uses of common property resources must be weighted as in a benefit-cost analysis, problems arise. The value of the resources for non-profit-oriented production, for example environmental quality, is not uniquely determined. Contrary to the Coasian Theorem, its value will depend on the assignment of property rights. Where a producer possesses the initial property rights for a competing use of a common property resource (e.g., industrial use), its value to the environmentalist is determined by his income-constrained maximum willingness to pay to purchase the property rights from the industrialist. But if the environmentalist possesses the initial property rights, then its value is determined by the unconstrained minimum amount which he is willing to accept for selling his property rights. These two valuations are in general different; therefore the assignment of the property rights is crucial for the allocation of resources.

Since the property rights approach did not succeed in its search for new welfare criteria, society must therefore determine on its own ethical standards which infringements of property rights are compensable and which are not.

The property rights approach has not yet developed an adequate theory of the state, but rather follow the libertarian tradition. Its constitutional choice seems to favor processes of voluntary exchange for the solution of socio-economic problems. The suggested market solution of the property rights school may solve some prevailing environmental problems, if the property rights of environmental resources are assigned to the pollutees. However, where environmental objectives conflict with other economic objectives, such as full employment, property rights are no safeguard against pollution, since majority rule can change existing rights at the cost of environmental quality.

## REFERENCES

1. K. W. Kapp, The Nature and Significance of Institutional Economics, *Kyklos*, 29, pp. 209-232, 1976.

2. A. Randall, Property Rights and Social Microeconomics, *Natural Resources Journal*, 15, pp. 729-744, 1975.
3. E. Furubotn and S. Pejovich, Property Rights and Economic Theory: A Survey of Recent Literature, *Journal of Economic Literature*, 10, pp. 1137-1162, 1972.
4. H. Demsetz, Toward a Theory of Property Rights, *American Economic Review*, Papers and Proceedings, 57, pp. 347-359, 1967.
5. A. Pigou, *The Economics of Welfare*, 4th Edition, Macmillan, London, 1932.
6. S. Gordon, The Economic Theory of a Common-Property Resource: The Fishery, *Journal of Political Economy*, 62, pp. 555-579, 1954.
7. S. Cheung, The Structure of a Contract and the Theory of a Non-Exclusive Resource, *Journal of Law and Economics*, 13, pp. 49-70, 1970.
8. R. Coase, The Problem of Social Cost, *Journal of Law and Economics*, 3, pp. 1-44, 1960.
9. W. J. Samuels, The Coase Theorem and the Study of Law and Economics, *Natural Resources Journal*, 14, pp. 1-33, 1974.
10. Calabresi, Transactions Cost, Resource Allocation, and Liability Rules—A Comment, *Journal of Law and Economics*, 11, pp. 67-73, 1968.
11. A. Randall, Coasian Externality Theory in a Policy Context, *Journal of Natural Resources*, 14, pp. 35-54, 1974.
12. T. Crocker, Externalities, Property Rights and Transactions Costs: An Empirical Study, *Journal of Law and Economics*, 14, pp. 451-464, 1971.
13. J. Krutilla and A. Fisher, *The Economics of Natural Environments*, Johns Hopkins University Press, Baltimore, 1975.
14. K. W. Kapp, Environmental Disruption and Social Costs: A Challenge to Economics, *Political Economy of Environment Problems of Method*, Mouton and Co., Paris, pp. 91-101, 1972.
15. H. Demsetz, The Exchange and Enforcement of Property Rights, *Journal of Law and Economics*, 7, pp. 11-26, 1964.
16. V. Goldberg, Public Choice—Property Rights, *Journal of Economic Issues*, 8, pp. 555-579, 1974.
17. J. Sax, Takings, Private Property and Public Rights, *Yale Law Journal*, 81, pp. 149-186, 1971.
18. J. Buchanan and G. Tullock, *The Calculus of Consent*, University of Michigan Press, Ann Arbor, 1962.
19. G. Tullock, Problems of Majority Voting, *Journal of Political Economy*, 67, pp. 571-579, 1959.
20. J. Buchanan, The Coase Theorem and the Theory of the State, *Natural Resources Journal*, 13, pp. 579-594, 1973.
21. D. Mueller, Public Choice: A Survey, *Journal of Economic Literature*, 14, pp. 395-433, 1976.
22. P. Shapiro and A. Barkume, Political Choice and Environmental Quality, *Economic Analysis of Pressing Social Problems*, L. Phillips and H. Votey, (eds.), Rand McNally, Chicago, pp. 251-275, 1974.

23. J. Harry, R. Gale and J. Hendee, Conservation: And Upper Class Social Movement, *Journal of Leisure Research*, 1, pp. 246-254, 1969.
24. W. Baumol, Environmental Protection and Income Distribution, *Redistribution Through Public Choice*, H. Hochman and G. Peterson, (eds.), Columbia University Press, New York, pp. 93-114, 1974.
25. R. Wagner, *The Public Economy*, Markham Publishing Company, Chicago, 1973.

#### **ACKNOWLEDGEMENT**

I wish to thank Professor Jaleel Ahmad for his comments on this paper.

Direct reprint requests to:

Dr. Frank G. Müller  
1455 de Maisonneuve Blvd., W.  
Montreal, P.Q., Canada  
H3G 1M8