

The Role of Self-Interest in International Environmental Law

World public order of the environment: Towards an international ecological law and organization. By Jan Schneider. Toronto, London, and Buffalo: University of Toronto Press, 1979. Pp. vii, 319. \$20.00*

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Environmentalism ultimately demands a global perspective. The concepts of finitude and interdependence, absolutely fundamental to environmental analysis, are confirmed in the recognition of the global environment as an essentially closed system.¹ Any less encompassing analytic framework undermines, to some extent, the central proposition that all levels of the natural system are fundamentally intertwined. Admittedly overused, the image of "Spaceship Earth" nonetheless powerfully illustrates both that the planet is a discrete, and hence finite, entity and that its occupants cannot escape the consequences of their activity.

Concluding that the entire globe is an ultimately appropriate analytic framework does not, however, simplify current environmental issues or decisions. Their scientific irrelevance notwithstanding, national boundaries and the other political facts, including the power and wealth of individual nation-states, cannot be ignored. It is as presumptuous and counterproductive for environmental scientists to deny the power and importance of human political associations as for politicians to ignore fundamental physical laws. The

* Earlier drafts of parts of this book have appeared at 2 Yale Stud. World Pub. Ord. 32 (1975) and 82 Yale L.J. 1659 (1973).

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1. The system is not entirely closed, however. It critically depends on the input of solar radiation, especially in the forms of light and heat.

goals of environmental decisionmaking are inherently political. Thus even from a global perspective, environmental decisions must inevitably take political relationships into consideration.

At any level of political organization, environmental policymakers confront formidable problems. Even in situations in which authority relationships are stable and clearly defined, environmental policy decisions involve the integration of information from several disciplines. Few decisionmakers are familiar with the concepts and analytical assumptions of such diverse fields as biology, economics, epidemiology, politics, statistics, chemistry, and law. Yet it is clear that competence in these and other disciplines is essential to ensure the quality of environmental decisions.² At the international level, these complexities are compounded by the lack of a central political authority with effective coercive power. The international environmental policymaker's tasks are even more difficult than those of his national counterpart.

In this context, *World public order of the environment*³ is a welcome addition to the literature on environmental law and politics, for it begins to integrate the multitude of analytic methods and information sources necessary in order more rationally to "take account of the ecological dimension to [international] political choices."⁴ The book is a solid and valuable initial step toward the development of a system "to protect the human environment in the calculable future[.]"⁵

Throughout her book, Dr. Schneider demonstrates familiarity with the principal sources in this new and largely unorganized intellectual field. Her general theory of international environmental organization is developed with specific reference to several of the most pressing global environmental issues. Woven through the broader discussion are treatments of the Law of the Sea

2. See B. Ackerman, S. Rose-Ackerman, J. Sawyer & D. Henderson, *The Uncertain Search for Environmental Quality* (1974).

3. J. Schneider, *World public order of the environment: Towards an international ecological law and organization* (1979) [hereinafter cited by page number only].

4. P. 6.

5. *Id.*

Conference and the Intergovernmental Maritime Consultative Organization (IMCO) agreements on oil pollution that, in themselves, represent useful syntheses of substantial and diverse bodies of information. Though organized around the concepts of inclusive and exclusive claims to resources,⁶ Chapter 3, "Concepts of international and environmental law," includes concise summaries of activity in several of the substantively important areas of environmental law: air pollution, anadromous fish species, uses of outer space, Antarctica, international rivers, exclusive economic zones, and private remedies for transfrontier pollution. By integrating this empirical material into her argument for the proffered analytic framework, Dr. Schneider makes her book more accessible and, ultimately, more informative than if it had remained entirely theoretical.

I. The Theory of Delegation

As has been suggested, the decentralization of effective power within the international system compounds the complexity of environmental decisionmaking. Dr. Schneider confronts the absence of central coercive institutions and nonetheless contends "that this international system can, without centralized coercion, be rendered more ecologically responsive in the future."⁷ In place of coercion by the central community,⁸ she

6. Pp. 22, 30-31. Inclusive resources are defined to be those over which the world community justifiably asserts jurisdiction because the primary impacts of activities involving those resources will be international. Inclusive resources, best exemplified by the world's oceans, are considered to be 'the common heritage of mankind,' p. 29, and, consequently, to require consultation of the world community in establishing their proper use. Exclusive resources are those over which individual nation-states or private parties may exercise unique ("exclusive") jurisdiction because they will capture both the costs and benefits of exercising that control. For the traditional formulations of the concepts of inclusive and exclusive interests, see p. 10.

7. P. 6.

8. In this review, the term "central community," borrowed from Dr. Schneider, will be used to include authoritative representatives of the world community, particularly the U.N., its branches and organizations and other widely recognized authoritative bodies carrying out legislative, executive, or judicial functions.

suggests "that the authority to coerce be delegated to states whose self-interests are compatible with common environmental interests. The public good--environmental protection and preservation--may thus be achieved as a result or by-product of activities undertaken by states in their own national interest."⁹ As an illustration of this point, the author notes that international marine pollution agreements have recently tended toward authorizing coastal states--the frequent victims of "vessel-source" pollution--to enforce standards and take jurisdiction over damages actions.¹⁰ She argues that "[t]he creation of [these] new alternative enforcement jurisdictions is intended ... to see that those states which have particular or exclusive incentives compatible with more inclusive common international interests have the means to pursue them and consequently benefit humanity as a whole."¹¹

The idea of delegating authority is certainly attractive. It seems partially to solve the free rider problem associated with the production of public goods. In an unregulated system, actors who might well benefit from producing a public good may nonetheless refrain from doing so. Their decision will be influenced by the possibility of some other actor bearing the cost of production and allowing the first party to enjoy the public good at no cost whatsoever.¹² There are two situations in which the free rider tendency can be overcome and some measure of public goods produced by self-interested actors. The first is a situation in which one actor¹³ can ascertain that no other actor

9. P. 14.

10. Pp. 92-96.

11. P. 95.

12. Thus, for example, the potential members of a labor union can all agree that it would benefit each of them to organize. Yet despite recognizing the desirability of that goal, none will have an incentive to incur the costs in time, money, and effort of actually undertaking to organize the others. In the environmental context, a coastal state might conceivably capture enough of the benefits of enforcing ocean dumping standards to merit incurring the costs of doing so, but it could even better further its interests if some other nation would enforce the standards and provide the same benefit which, by definition, would be available to all.

13. It should be evident that the "small group exception" does not require that only one member of the affected group supply the good. Coalitions of two or more "costbearers" could apportion costs and available benefits among themselves in such a way as to

will provide the good. Actors who have no opportunity to be free riders may decide that they "would be better off if the collective good were provided, even if they had to pay the entire costs of providing it themselves, than they would be if it were not provided."¹⁴ This situation is most likely to occur in small groups with members of unequal power. Such groups will tend to minimize information and organization costs and to maximize the chance that the preeminent members will be able to appropriate to themselves a sufficient, albeit incomplete, fraction of the benefits associated with the collective good to merit their incurring the entire cost of producing it.¹⁵

The second situation in which private costbearers may be induced to provide public goods is where "side payments" are made to overcome an actor's reluctance to incur costs. A party may be induced to become the cost-bearer by being granted benefits over and above the share of the public good he will be able to capture for himself.¹⁶ Side payments do not necessarily compensate for the cost of providing the good; they simply overcome a potential beneficiary's inclination to refrain from producing on the chance of becoming a free rider.

Dr. Schneider suggests that international environ-

13. (Continued)

fall within the exception. Obviously, however, as the number of members of the coalition increases, the transactions costs of finding one another and of ascertaining that none can reasonably expect to be a free rider will also increase steeply.

The term "costbearers" will be used to describe self-interested actors who, for whatever reason, incur the costs of producing a collective good the benefit of which they cannot effectively deny to their counterparts--"free riders" or "non-costbearers."

14. M. Olson, *The Logic of Collective Action* 34 (2d ed. 1971).

15. *Id.* at 27-29, 33-35. See p. 12 for Dr. Schneider's summary of this point.

16. To continue with the traditional example of the labor union, the individual incurring the expense of actually organizing others would not only participate in the collective good of higher wages, but would also receive the "side payment" of being made a union officer. Officership would distinguish this individual and give him more money, better work conditions, or, perhaps, simply more prestige. In the environmental case, the coastal state would not only benefit from reduced ocean pollution, but might be permitted to collect certain fines from violators of the international dumping standards.

mental public goods can often be produced¹⁷ by self-interested nation-states and proposes that, where self-interested activity *does* produce a public benefit, the central community should authorize such activity.¹⁸ Delegating coercive authority represents a side payment to the costbearing nation-state. Schneider's theory, however, acknowledges that, despite authorization, the level of environmental protection provided by a nation-state will be dictated by the goals, costs, and benefits of that nation-state. From the point of view of the central community, self-interested nation-states will produce suboptimal quantities of public goods.¹⁹ Moreover, self-interested nation-states will be indifferent to the distribution of the public good. The interests of free riders will have no bearing on costbearers' decisions as to levels of environmental protection or preservation. From the perspective of the costbearer, this is wholly legitimate; free riders bear no costs, do not contribute to the production of the public good, and so have no right to participate in production decisions. From the perspective of the central community, however, there are no members of the benefited community who are not also costbearers. That is precisely the consequence of the global perspective. Whereas the costbearer regards the portion of the public benefit that it cannot capture to be an externality,²⁰ within the global system, there are no externalities,

17. The word "production" tends to connote active synthetic effort on the part of the producer. It should be noted in passing that, particularly in the field of environmental protection, maintaining a certain condition or refraining from development may equally redound to the general welfare. All these possibilities are contemplated in the use of the verb "to produce."

18. P. 14.

19. P. 16. Dr. Schneider acknowledges that public goods will be produced at suboptimal levels. She accepts the "second best" nature of her proposed solution. Such second best solutions may, however, represent substantial improvements over the current global situation and may be the best achievable solutions in the context of decentralized global power. While second best solutions should not be rejected out of hand, it will be suggested in this review that the costs and causes of this suboptimal public goods production should be more carefully explored before wholeheartedly adopting Dr. Schneider's approach.

20. Briefly, a positive externality is an "action taken by an economic unit [which] results in uncompensated benefits to others." E. Mansfield, *Microeconomics* 450-51 (2d ed. 1975). A negative externality would be a similar action which resulted in uncompensated costs rather than benefits.

either positive or negative. Dr. Schneider contemplates environmental public goods produced by self-interested costbearers. But their activity is directed at *inclusive* resources.²¹ Each nation-state member of the world community has, by definition, a legitimate interest in the disposition of the resources being exploited or preserved and in the benefits of that exploitation or preservation. The costs of production may not be shared equally, but each nation-state has a proprietary interest in the inclusive resources being exploited or protected; none is a free rider.²²

Before it delegates coercive authority to individual nation-states with interests divergent from its own, the central community should be convinced of the value, from its perspective, of the benefits provided. Evaluating the act of authorization solely according to the total level of environmental benefits produced ignores important aspects of the function and value of the act itself. Authorization by the central community, particularly in the context of jurisdiction over inclusive resources, has normative consequences that should be seriously considered before recommending a theory of delegation. Dr. Schneider, it should be noted, is not wholly unaware of these factors,²³ but she underemphasizes their importance in deciding to which occasions and factual situations her theory is most appropriately applied. Careful analysis should allow one to decide with more precision which classes of environmental problems are amenable to delegation of authoritative control to a particular nation-state and what the costs to the world community of such a delegation are likely to be.

Authorization by the central community may not in any way enhance the power of an individual nation-state to provide environmental goods or protect environmental values, but it will *legitimate* the exercise of that power. Given that purely self-interested nation-states will produce suboptimal amounts of public goods and will consider only their own goals in determining the level of a good that will be produced,²⁴ it is problematic,

21. See note 6 *supra*.

22. Thus, it should be noted from this point, that the terms "costbearer" and "non-costbearer" are only relative. For the sake of consistency, they will continue to be used, but "costbearer" should be read as "principal costbearer."

23. See, e.g., p. 108.

24. See note 19 *supra*.

at the least, for the central community to authorize such purely self-interested activity.

The legitimacy of the central community rests in large measure on its representativeness of the world community, the formally equal members of which are nation-states. Much of its authority resides in the consensus or at least majority will of those members. Though it is undisputed that the world system is characterized by inequalities of effective power, it is equally clear that it is founded on a normative principle of fundamental political equality. That norm requires that the central community concern itself not only with producing the greatest total benefit, but also with the way in which that benefit is produced and distributed. Decisionmakers of the central community should balance all three factors before delegating coercive authority to a particular nation-state. Dr. Schneider implicitly recognizes the broad responsibility of central community decisionmakers,²⁵ but she stops short of stating how that responsibility should affect the use of her theory. Having struck upon a mechanism capable of increasing the levels of environmental protection within the constraints of the existing separation of global authority and effective power, she fails to evaluate in detail its possible operation. Her analysis underplays the duty of the central community to advance norms of equality and distribution and so underestimates the potential costs of authorizing self-interested costbearers to enforce environmental standards. A narrow emphasis on the level of benefits may lead to authorization in cases where the value of those benefits is outweighed by the costs to other central community values or where virtually the same level of benefit could be obtained by the central community without any authorization at all. In other words, if authorization is looked on as a "side payment" that costs the central community something to make, it should only be paid when necessary. If the environmental public good would be produced regardless of authorization, the central community can withhold its side payment and, in essence, become a free rider. Similarly, if the side payment costs more than the central community is willing to pay for the benefits that will be produced, it should decline to authorize. A systematic examination of possible relationships between the central community and prospective costbearers

25. P. 108.

should demonstrate instances in which values and factors not sufficiently developed in Dr. Schneider's analysis would dictate that authorization be withheld.

With regard to the private production of any particular public environmental benefit, there are three possible relationships between authorization by the central community and the actual behavior of a cost-bearing nation-state: First, the nation-state can act solely according to its self-interest regardless of the authorization or approval of the central community; in other words, the action of the central community will have virtually no effect on the level of the public good produced. Second, the nation-state can, in return for the legitimating authorization of the central community, accept certain conditions relating to the quantity and distribution of the public good produced. Third, the approval or authorization of the central community can be felt to be capacitating; that is, the state will not, without such authorization, be *able* to provide enough of the public good to merit incurring the cost.²⁶

The first relationship, nation-state action independent of central community approval or disapproval, most closely resembles the model of public goods production envisaged by the "small group" exception to the logic of collective action.²⁷ Possession of the public good is a sufficient condition for its production. The nation-state proposing to produce an environmental public good has the power, within the zone of activity, to do so. It values the production of the good highly enough to incur the costs of production, convinced, for whatever reason, that if it does not do

26. The third relationship falls outside of Dr. Schneider's model to the extent that the authorization is substantially more than a side payment to overcome an individual nation-state's inclination to weigh heavily its chances of becoming a free rider. If authorization is somehow *capacitating*, then the central community has effective control and, hence, substantial bargaining power. Moreover, because the costs of delivering the public good will, in this instance more than the other two, fall heavily on the central community, there is a stronger basis for expecting direct intervention or regulation to be as economical as authorization.

27. See note 13 *supra* and accompanying text.

it, the good will not be produced.²⁸ The state will produce a suboptimal amount of the good and fail to consider the claims of other states in deciding when the costs of producing the good exceed the benefits. Moreover, the quantity of the public good produced will be only negligibly, if at all, affected by the approval, disapproval or acquiescence of the central community. There is no need for a side payment because the cost-bearer has forgone the opportunity to be a free rider.

Where this relationship holds, the central community should not authorize the exercise of jurisdiction by a costbearing nation-state. Authorization risks the legitimacy of the central community organization in the eyes of non-costbearers.²⁹ Declining to authorize sacrifices very little, if any, of the benefit that would otherwise have been achievable and yet reinforces the community's legitimate commitment to equality and distributive justice. It is precisely where this exception to the collective action model most narrowly predicts the interaction that central community decision-makers responsible for advancing normative principles should decline to authorize. Though the central community may decline to authorize a certain activity, it

28. This is not a wholly unlikely scenario in the context of unilateral efforts at environmental protection. A nation-state may so intensely desire to protect some resource over which it has sovereignty that it may, in so doing, protect resources over which it claims neither sovereignty nor even special privilege. While the community of nations is not particularly small, the inequalities of power and asymmetries of interest among its members are such that information on likely alternative costbearers is frequently unambiguous. Consider, for example, the Canadian Arctic Waters Pollution Prevention Act of 1970, Can. Rev. Stat. (1st Supp.) c. 2 §§ 1-28 at 3-25. Canada probably had little expectation that any other nation would unilaterally protect the arctic waters along Canada's northern border.

29. Though it should be acknowledged that the legitimacy of an authoritative organization may be threatened by its continued or egregious impotence in the face of activity of which it does not approve, here the greater danger seems to be approving the production and distribution of a good derived from an inclusive resource solely according to the interests of a self-interested nation-state. This seems particularly true when, as discussed *infra*, the world community has the option of *acquiescing* in an exercise of national self-interest without formally disapproving or condemning it.

need not decline to benefit from it.³⁰ The central community, representing its constituent non-costbearing members, may become a "free rider." The choice remains, however, between acquiescing in and actively disapproving the individual nation-state's action.

The decision to acquiesce or disapprove, under the conditions of this first relationship, is meaningful only insofar as it signals the world community's balancing of the factors of total benefit, equality and distribution. By hypothesis, neither acquiescence nor disapproval will significantly affect the level of the good produced. The difference between the two is in the degree of legitimacy withheld. The central community should acquiesce in cases in which, albeit by ultimately unacceptable means, the private action does significantly contribute to the total public welfare. The choice between acquiescence and disapproval should be based on the amount of the public good that is made available to non-costbearers, how much of an improvement over complete non-production the situation represents, the identity of the non-costbearing beneficiaries, and how close to an optimal level of the good is being produced. It is conceivable that a nation-state might, without agreeing to the conditions attendant upon authorization, produce and distribute a public good in a way that would in fact fulfill those conditions.³¹ The objective fact of meeting or approaching a Pareto-optimal pattern of public good production should not, however, necessarily result in authorization. It may be most advantageous to the world community merely to acquiesce in the nation-state's unilateral action. Acquiescence may not efficiently enable the community to continue to capture the benefit and not risk the consequences of either coerced approval or impotent disapproval.³² If nation-state control over an inclusive resource egregiously underproduces or maldistributes the public good, the central

30. In some cases the world community cannot *choose* not to benefit--the health effects of cleaner air cannot be declined. In most cases, since it is a common or inclusive resource at stake, it would be foolhardy to decline to benefit since one is already incurring the cost. Accepting the benefit is merely capturing a fraction of the benefit in which each nation has a legitimate interest.

31. It seems unlikely that any nation-state would produce at this level and not agree to conditions it was already meeting. However, such a situation might arise where the nation-state placed a very high value on its freedom unilaterally to change the levels of the good produced or the pattern of the distribution of benefits.

32. See note 29 *supra*.

community should disapprove the exercise of jurisdiction.

It is only in the second possible relationship between central community authorization and the behavior of the self-interested nation-state that authorization may be appropriate. Authorization should be limited to situations in which it can be effectively and explicitly exchanged for concessions as to the production and distribution of the environmental public good. The authorizing central community and the costbearing nation-state must agree to the scheme of public goods production. Before making its "side payment" of authorization, the central community should satisfy itself that the level of benefits, the means of their production, and their ultimate distribution approach the optimum that can be expected in the particular situation. To remain within the model of self-interested action, concessions will necessarily be constrained by the costbearer's analysis of the amount of benefit it must capture to continue producing the public good. The costbearer can be burdened only to the point at which its cost/benefit ratio, including the benefits associated with the central community's side payment, is just sufficient to keep it producing the good.³³ The only reason to make any distributive concessions at all would be the costbearer's placing a value on authorization over and above the value necessary to abandon its option to free ride. Within the constraints of the self-interest model, it seems likely that only in certain situations will the value attached to authorization exceed

33. The range of bargaining within the self-interest model will depend on a certain inelasticity in the costbearer's demand for a particular level of the public good. This is not, however, a difficult condition to imagine. The value of environmental public goods--*e.g.*, cleaner air or water--frequently demonstrates a non-linear relationship to costs. If air pollution levels became high enough to have uniformly acute, population-wide health effects, the demand for reducing pollution below whatever threshold produces those effects would be relatively insensitive to variations in the marginal costs of any range of the necessary reduction. Similarly, if one sought to repopulate acidic lakes with fish species that require a pH above 6.5 to survive, increasing the pH (reducing the acidity) from 5.0 to 6.0 would be of no value. Regardless of whether a substantially greater price were attached to the increase from 6.0 to 6.5 than to that from 5.0 to 6.0, the demand would be the same (assuming that the only benefit associated with the change in pH were the creation of a fish habitat).

the extra cost associated with the central community's demand for distributional considerations. The most likely situation, given the value of central community authorization implicit in the global distribution of effective power, would seem to be one in which the cost-bearer would, but for the fact that the good is a "public" or "collective" one and cannot, therefore, be captured and sold to non-costbearers, continue to produce the good beyond the point at which its own demand was satisfied.³⁴ In that situation, the side payment of authorization is relatively more likely to induce cost-bearers to incur the costs of additional production, or of effecting distributional goals. In essence, in such a situation, the extra quantity of benefits produced or distributed is "sold" to the central community in exchange for authorization, a value no individual non-costbearer could deliver.

Although the level of benefits provided and their distribution will be suboptimal relative to that which might be produced by a central community with coercive power, the exchange of authorization for affirmative production or distributional duties is substantially preferable to the unilateral production of an equivalent level of public benefits. Only where exchanged for an agreement to certain duties should coercive authority be delegated to a self-interested nation-state. Whereas wholly unilateral action can, for the purposes of this discussion, be considered devoid of normative content, an agreement between the central community and the cost-bearing state acknowledges the authority of the central community as well as the power of the costbearer. Production of the public good becomes a conscious pursuit of a more broadly defined self-interest. It recognizes that consumers of the public good are not free riders, that they are entitled to participate in the benefits associated with the particular inclusive resource over which the costbearer³⁵ has been granted jurisdiction.

34. This situation would be graphically illustrated by a costbearer whose demand is satisfied at an output quantity that occurs at a point at which the costbearer's marginal cost curve continues to decline. In other words, an additional unit of the good would be less costly to produce than the last. There is no incentive to continue producing a "public" good beyond this point, however, because it cannot be sold. Despite declining marginal costs, marginal returns would be zero.

35. The costbearer should be recognized to be the *principal* but not the *sole* costbearer. See note 22 *supra*.

Only by insisting on agreements with these effects does the central community exchange its valuable authorization for benefits of equal value.

While Dr. Schneider's analysis and the allied Canadian concepts of "custodianship" and "delegation of powers"³⁶ acknowledge in a general way that authorization by the central community entails responsibility on the part of the costbearer, they do not sufficiently account for the outlines of that responsibility or the factors that must be balanced in evaluating its fulfillment. Because she focuses on levels of environmental benefits and too completely analogizes international environmental problems to economic externalities in market systems,³⁷ thereby underestimating the normative component of the global community's perspective, Dr. Schneider's analysis would recommend delegation of authority in situations in which the benefits of doing so are limited relative to the costs. Except in cases where the self-interested nation-state acknowledges the inclusive nature of the resource being exploited and, hence, the limitations on its right to control the resource or the destination of the benefits flowing from that resource, the world community has no reason to delegate authoritative jurisdiction. Given the asymmetry of effective power in the world system, the situations in which authorization can be exchanged for meaningfully redistributive actions by self-interested states are apt to be more limited than Dr. Schneider's analysis suggests. Except where the establishment of a pattern or practice of unilateral action risks developing a norm in favor of that pattern, the world community can probably gain as much benefit from acquiescence as from authorization. Where benefits can be gained without authorization and the self-interested nation-state declines to recognize limits on its rights--situations which as an empirical matter may be rather frequent among powerful nations³⁸--

36. Pp. 108-25.

37. *See, e.g.*, pp. 12-13.

38. *See* Nuclear Tests Cases (Australia v. France) [1974] I.C.J. 253 and (New Zealand v. France) [1974] I.C.J. 457. These cases fall short of declaring an international norm against atmospheric testing at least in part because the United States and the Soviet Union declined to support such a norm despite being signatories to the Partial Test Ban Treaty, Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, August 5, 1963, 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43. Their refusal was at least partly linked to their desire to retain the right,

the central community should not authorize or legitimate unilateral enforcement.

II. Trends in International Environmental Law

In the course of developing its principal theoretical framework, *World public order of the environment* identifies two important themes in international environmental decisionmaking: the tension between developed and developing countries and the emergence of "functional" or "zonal" criteria in defining and allocating inclusive resources. The first is more important to the field. Indeed, environmental protection can be viewed simply as a component of the larger problem of divergence between the interests of developed and developing nations. Nonetheless, the area of international environmental policy represents an especially clear illustration of an important aspect of the conflict: Developed nations seek to preserve remaining environmental amenities and conserve resources threatened by their historic and current rapaciousness. They pursue environmental quality through the application of sophisticated and frequently expensive technology. Developing countries perceive environmental problems but frequently, and often justifiably, subordinate their concern about such problems to issues of economic development and the basic material welfare of their populations.

Without pretending to resolve it, Dr. Schneider captures the tension between developed and developing worlds in a way that demonstrates understanding of both positions. Starting from a premise that "[t]he fundamental goal ... is fairness or social justice of some sort,"³⁹ she nonetheless acknowledges that "the concept of fairness or justice is itself a mixed goal,"⁴⁰ which "although largely indefinable by any empirical methods ...

38. (Continued)

written into the treaty, to escape its jurisdiction under certain specified conditions. Declaration of an international norm would provide no such "escape hatch." If this attitude toward limitations on national autonomy persists, individual nation-states capable of producing public goods out of self-interest will be reluctant, at least for the foreseeable future, to accept meaningful limitations on their autonomy by formally acknowledging that the public goods being produced are justly under the jurisdiction of the world community.

39. P. 66.

40. P. 67.

is recognizable at least in its absence,"⁴¹ Because instances of such injustice are so frequent, the world community cannot ignore them and must concentrate on the "objective goals of reducing the costs of resource use by the global community."⁴²

While this "objective" formulation may reasonably operationalize aspirations in both the developed and developing spheres, it does not begin to allocate the costs of implementation. The tension between those nations which suffer principally from the "pollution of poverty"⁴³ and those which are now paying the price for having "fouled their own nests" is largely over who will bear the costs of solving those problems. If, as has been tacitly acknowledged,⁴⁴ the costs of both environmental cleanup and integrating environmental protection measures into development planning are to be borne by the developed countries,⁴⁵ there will have to be some incentive to do so. It is in recognition of the need to act that Dr. Schneider develops her theory of environmental protection by delegating authority to self-interested nations and observes the evolution of "functional" and "zonal" criteria for defining and allocating resources.

Dr. Schneider identifies a trend away from unilateral assertions of control over entire geographic areas or resources. Such "resource-specific" claims are being replaced by claims based on "consequence-specific"⁴⁶ criteria.

41. P. 66.

42. *Id.*

43. P. 70.

44. In its Declaration on the Human Environment, The Stockholm Conference stated:

In the developing countries most of the environmental problems are caused by underdevelopment... Therefore, the developing countries must direct their efforts to develop, bearing in mind their priorities and the need to safeguard and improve the environment. For the same purpose, the industrialized countries should make efforts to reduce the gap between themselves and the developing countries.

Declaration of the United Nations Conference on the Human Environment [hereinafter cited as The Stockholm Declaration], in *Report of the United Nations Conference on the Human Environment*, U.N. Doc. A/Conf. 48/14 at 2 (1972).

45. P. 70 *citing* Principle 12 of The Stockholm Declaration, *supra* note 44, at 5.

46. P. 24.

Instead of dealing with the oceans and other resources *en bloc* or as total physical media to be carved up geographically, ... the trend is increasingly toward treating these resources as bundles of multiple potential uses, some of which are separable for decisionmaking purposes. The real function of the zonal concept, therefore, can be seen as serving as a safety valve from the rigidities of line-drawing by boundaries of territorial 'sovereignty'...: it permits the satisfaction of particular reasonable demands through exercise of limited authority and control which does not endanger the whole gamut of inclusive community interests.⁴⁷

The division of inclusive resources into reasonably discrete functional segments may provide the central community with greater leverage over individual nation-states. Where the resource is widely acknowledged to be inclusive and, hence, legitimately controlled by the central community, division into separate components will give the central community more flexibility in the side payments it can make or withhold. Authorization of specific functions would free the central community from the choice between granting exclusive jurisdiction over an entire geographic area or not authorizing at all. Instead, it could authorize the costbearer to exercise exclusive or disproportionately advantageous jurisdiction over one component of a resource and, in turn, require the costbearer to develop or protect remaining aspects or functional components of the inclusive resource to the advantage of the entire world community. For instance, rather than permitting coastal states to assume complete jurisdiction over the adjoining ocean in order that they be able to enforce oil pollution standards, the central community might grant jurisdiction over dumping and spills by surface shipping within a certain zone and might even license the costbearing state to specify certain design features of vessels traversing the zone.⁴⁸ Thus, the world community could authorize the coastal state to promulgate and enforce standards to protect its own shoreline that would admittedly infringe

47. *Id.*

48. See p. 112. Dr. Schneider, however, states that design specification is currently seen as an excessive interference with traditional values of the freedom of navigation.

the traditional scope of freedom of navigation but would also protect the biological integrity of the ocean zone by preventing dumping or spilling. The inclusive resource, the ocean beyond the coastal state's territorial waters, would be protected from biological degradation without sacrificing the entire range of freedoms of navigation.

As intriguing and, indeed, useful as these suggestions may be, the concept of functional division of resources does not fully solve the problems, discussed above,⁴⁹ implicit in producing public goods through self-interested action. First, the central community must be recognized to have original jurisdiction over the resource in question for it effectively to make trade-offs between different functions and to delegate competencies over them. Since the central community has no monopoly over information or the ability to conceptualize a resource in terms of its functionally severable characteristics, there seems little reason, in the absence of general recognition that each aspect of the resource is inclusive, for the self-interested state not to identify the particular function in which its private interest lies and limit its activities to that function. Before side payments can be made in terms of functional jurisdiction, the central community must have recognized and *effective* jurisdiction over the resources in question.

The zonal or functional concept may, however, be useful where different functional aspects of a resource are differentially acknowledged to be legitimately within the jurisdiction of the central community. In such cases, the recognized international jurisdiction over one component may provide the central community with bargaining power vis-à-vis the self-interested state and may suffice to elicit acceptable terms for authorization. Enforcing marine pollution standards by authorizing coastal states to exercise some degree of jurisdiction over the widely acknowledged right of free navigation may well exemplify just such a trade-off. Central community jurisdiction over the freedom of navigation is more strongly established than its claimed jurisdiction over marine pollution. Both values represent components of a broader inclusive resource: the oceans. A side payment to costbearing coastal states allowing them, in the course of enforcing marine pollution stan-

49. See Part I, *supra*.

dards, to infringe limited aspects of the freedom of navigation could have tremendous cost-saving implications. The "side payment" would represent a substantive contribution to the cost of enforcing the pollution standards. A side payment limited to authorizing the coastal state to enforce pollution standards might well produce a lower level of benefits, because the individual nation-state would face a higher cost schedule.

As the example suggests, the use of functional and zonal criteria in instances where the central community can bring its effective jurisdiction to bear may increase both the scope and flexibility of its bargaining power. These observations do not, however, vitiate the point that unilateral enforcement action should not be authorized unless in exchange for real concessions from the self-interested nation-state.

Conclusion

World public order of the environment offers valuable first steps toward collecting, organizing, and analyzing the mass of information that constitutes the basis for international environmental standards and expectations. The book acknowledges from the outset that its purpose is to suggest how better to protect and enhance environmental values within the constraints of the current global situation. The value of Dr. Schneider's suggestions is only marginally diminished by their failure to provide complete solutions. More complete resolution of international environmental problems may require nation-states to recognize that increasing interdependence necessarily affects the definition of sovereignty. While the present global system offers no imminent prospect of significant change in the patterns of sovereign power, the environmental consequences of unilateral calculations of welfare maximization continue to accumulate. Used cautiously, Dr. Schneider's attempt to enlist self-interested sovereigns into the service of global welfare goals is, in the absence of a central authority with effective power, a most promising approach to environmental policy.

