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Alternative Regimes for Future Mineral Resource Development in Antarctica *

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ABSTRACT

The operation of the Antarctic Treaty is subject to review beginning in 1991. It has functioned as a model of international cooperation for 22 years but stresses on the Treaty system are increasing. In particular, interest is growing concerning the mineral resource potential of Antarctica, but the Antarctic Treaty does not address resource allocation issues. Efforts are currently underway to devise a minerals regime for Antarctica, but negotiations could take several years. If negotiations do not produce a new regime by the review date, some countries may decide to withdraw from the Treaty, signaling the end of the cooperative era in Antarctica. This paper reviews and evaluates some of the major options for a minerals regime. It is suggested that the most likely alternatives for Treaty states are those joint jurisdiction options which sidestep the contentious issue of sovereignty. External accommodation with the international community will remain a difficult problem. While the joint jurisdiction options contain several provisions for sharing with outsiders, there is room for improvement.

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INTRODUCTION

Interest in the exploitation of the mineral resources of Antarctica is increasing. Discussion of these resources dominated the Eleventh Antarctic Treaty Consultative Meeting in Buenos Aires in June, 1981. The Antarctic Treaty is the cornerstone of the present regime, but it does not address exploitation issues. At the meeting representatives agreed to conclude a regime for Antarctic mineral resources without delay. Negotiations began with a meeting in Wellington, New Zealand in June, 1982, but several years may elapse before an acceptable regime is drafted. If a satisfactory solution to resource allocation problems is not found, some states may decide to withdraw their support from the Treaty. This could well signal the end of the cooperative era in Antarctic affairs.

To date, no exploitation of the mineral resources of Antarctica has taken place. In part this is because lack of geophysical and geological data, technological problems, environmental hazards, and remoteness from civilization combine to make the commercial exploitation of the mineral resources of Antarctica economically unattractive at present. [1] A U.S. government report, tabled at the 1976 Paris Special Preparatory Meeting, concluded that "the combination of water depth, ice conditions, severe weather, transportation costs, and short annual working time imply production costs of such magnitude that other areas will be more attractive to industrial exploitation for some time, given current assumptions on the economics of hydrocarbon development." [2]

A second set of constraints is political in nature. Of central importance is the problem of the ownership of Antarctica, and, hence, of its resources. The unsettled territorial status of this vast continent and its adjacent waters continues to be an unresolved issue. All resource allocation issues are complicated in one way or another, by the fact that no one owns clear title to Antarctica and thus to its living and non-living resources. Seven Antarctic Treaty states have made territorial claims to portions of Antarctica. The six other Treaty states with consultative status, including the U.S. and U.S.S.R., neither accept the claims of others nor make any claims of their own. Those states which have not acceded to the Antarctic Treaty (generally those countries not involved in Antarctic research, the majority of whom are developing countries) neither recognize claimant states' claims nor the special status of the states belonging to the exclusive Antarctic club.

The high degree of cooperation among Antarctic Treaty states that has thus far been attained has in large part been made possible by a provision in

[1] Notes on p. 229

the Antarctic Treaty (Article IV) which has allowed states to skirt the issue of territorial sovereignty. Article IV states that while the Antarctic Treaty is in effect, territorial claims will be held in abeyance ("nothing contained in the present Treaty shall be interpreted as... a renunciation by any Contracting Party of previously asserted rights or of claims to territorial sovereignty in Antarctica" [3]). This provision allowed states with contrasting views and interests to come together in an era when the resource potential of Antarctica was only dimly recognized. Creative diplomacy has thus far allowed states to continue to skirt the sovereignty issue.

While no oil has yet been discovered in Antarctica, there is indirect evidence that it may exist in potentially large amounts. Ninety-eigth percent of the surface of Antarctica is covered by iee, but there is no reason to assume that the continent is peculiar with respect to its geological history, [4] and, consequently, no reason to rule out the presence of hydrocarbons. Mitchell and Tinker cite the findings of the U.S. research vessels *Eltanin* and *Glomar Challenger* which indicate that thick layers of unmetamorphosed Tertiary sediments have been found in the Bellingshausen, Weddell, and Ross Seas. Oil is frequently associated with such sediments. [5] Moreover, methane, ethane, and ethylene have been found in holes drilled by the *Glomar Challenger*. Ethylene, in particular, is often an indication of the presence of oil.

It will be difficult to avoid explicit discussion of sovereignty issues when dealing with non-living resources. With the exception of icebergs, non-living resources are fixed in place and, therefore, can be made subject to national control. The technical constraints to the exploitation of hydrocarbons—the most likely non-living resources to be developed—have been declining in recent years. Experience gained in the Arctic could prove invaluable in Antarctica. Oil prices are falling at present, but the long-term trend is for significant price increases.

The Antarctic Treaty is the cornerstone of the present regime in Antarctica, but is does not provide for the commercial exploitation of resources. A new regime will be needed. A number of alternative regimes are discussed in this paper in which the management of mineral resources might take place. These regimes have been selected for review from a spectrum which ranges from very restrictive to very open. From the outset, it is recognized that several of the alternatives discussed are very unlikely compromise regimes. However, it is undesirable to eliminate less likely alternatives—such as the territorial or the open use options—from consideration without a close examination. Regimes based on these models are the norm rather than the exception for governing or managing land and ocean space—and air outer-space as well.

The minerals regime which is eventually selected will undoubtedly *not* be among those evaluated here. There are too many possibilities for compro-

mise that cannot be considered. However, the future regime should *resemble* one of the regimes introduced in this study. This essay represents an attempt to identify and comment upon the major contending alternatives. Systematic analysis—a necessary next step—might predict which of these alternatives will be the most likely model for a future, more comprehensive regime for Antarctica.

THE STATUS QUO

The existing regime in Antarctica—the status quo—has been described in great detail by numerous authors. It will be discussed only briefly here. The status quo regime includes the Antarctic Treaty and all the conventions, recommendations, and agreements originating from consultative state meetings or otherwise applicable to Antarctica. The status quo regime is a restricted common property regime. Most importantly, none of the claimant states agree that the present common property nature of the regime shoud be the ultimate form of political organization. In essence they have agreed to hold their claims to private property rights in abeyance in the interests of scientific cooperation and demilitarization. All parties to the Antarctic Treaty have agreed that no such activities undertaken while the Treaty is in force will constitute a basis by which to make new claims. Concomitantly, prior claims will not be diminished while the Treaty is in effect, nor will those who do not recognize these claims diminish their juridical positions during the life of the Treaty.

The status quo is now coming under pressure as the outlook for mineral resource development improves. An interim measure to which Treaty states have agreed is voluntary restraint in taking unilateral action to develop mineral resources. Voluntary restraint is a type of informal moratorium. The cost of such restraint is still quite low because significant economically exploitable resources have not yet been discovered.

There are several reasons for considering this regime in a comparative study of alternative future regimes for Antarctica. For one, it really does not fare badly with the other regimes being considered. Even if significant exploitable resources are discovered in Antarctica, states might collectively conclude that political and environmental interests do not warrant radical change of the status quo. They might in fact conclude that the policy of voluntary restraint should continue. Short of declaring Antarctica a world preserve—which would require a change in the juridical positions of claimant states—the Treaty states might agree that for the foreseeable future the non-living resources of Antarctica ought to be held in reserve for future generations and the present Treaty system maintained intact. This is, in

effect, an incremental approach to change.

Other regimes are being considered because there is a perceived need to have in place a regime capable of coping with resource development problems before such problems arise (if they ever do). Many changes have occurred under the present regime—the regime does not inhibit change. Hence, the philosophy of those who advocate maintenance of the present regime is that an incremental, go slow approach may well be preferable to creating a full-blown, entirely new regime for resource development. Looked at in this light, the status quo provides the structural framework within which change by stages may occur. Developing rules and regulations for commercial exploration activities might be the first stage in designing a mature resource exploitation regime, for instance.

THE TERRITORIAL REGIME

In a territorial regime for Antarctica claimant states would have absolute control over their territory, unless specifically limited by agreement. The sovereign territories of Antarctica would be eligible for both a territorial sea and an exclusive economic zone. Within their territories claimants would be able to allocate resources as they see fit.

The territorial regime is presumably viewed favorably only by the claimant states. However, a regime based on the exclusivity inherent in a territorial regime has important advantages over other types of regimes that should not be overlooked. It is far from clear that claimant states strongly favor this solution or that non-claimant uniformly oppose it. Since exclusive ownership to only a sector of Antarctica carries responsibilities as well as rights and means that claimants would not be equally eligible to share in the wealth of other potentially rich sectors of Antarctica, claimants may derive more utility by pursuing means to maintain a functioning Antarctic Treaty System than by pressing for widespread recognition of their claims. Similarly, while a territorial regime would presumably be unacceptable to non-claimant countries, there are elements of such a regime which nationals of non-claimant states might find desirable. In particular, the business community would feel more secure investing in areas in which property rights are undisputed than in areas in which territorial status remains inchoate.

The territorial regime stands in marked contrast to the common property regime. A version of a common property regime—the open use regime—will be discussed in the next section, but the following paragraphs will introduce some problems often associated with classical common property regimes. The territorial regime is one in which these problems may be avoided or more easily managed, but it is not the only regime—and, in fact, may not

always be the best alternative—for resolving common property problems.

One such problem is the free rider problem. Free riders are those who take advantage of the efforts of others, while incurring little expense to themselves. A free rider might, for instance, closely monitor the exploration and research efforts of companies involved in the search for offshore hydrocarbons. The exploration company, in an effort to protect itself, would have to take costly countermeasures. Once a discovery had been made, the free rider could, in an unrestricted common property regime, move in and begin exploitation activities, saving himself a significant amount of exploration expenses. Free riders are an obvious disincentive to companies desirous of sound and profitable investments. A company that knew it would not be able to take full advantage of its discoveries would be hesitant about making a major investment. This may be particularly true in Antarctic hydrocarbon development where only large finds may ever be profitable. In a territorial regime the free rider problem could be eliminated. In this case the sovereign would have the power to allocate tracts on land or on the continental shelf for exclusive exploration or exploitation purposes.

A related issue, also problematic in common property regimes, is the common pool problem. Common pools result when access to a resource cannot be restricted. Exploitation then takes place in an inefficient manner. This is because each of the exploiters of a common resource attempts to maximize his individual return. Without restrictions, if as much of the resource as possible is not captured as quickly as possible, the other common pool exploiters will take it. There is no incentive to practice restraint by husbanding scarce resources. This can have devastating effects on both renewable and nonrenewable resources. In a common fishery, for instance, unrestricted fishing could easily result in overexploitation. Numerous instances of overexploitation could be cited. [7] In Antarctica the fur seal population was decimated in the 1820's, [8] and is only now beginning to recover. Without protection, renewable resources could decline to below the stable recruitment level. Nonrenewable resources, once depleted, are gone for good.

If a free rider (or legitimate competitor) decided to sink an oil well into the same hydrocarbon deposit as a rival, a common pool problem would result. In this case each exploiter would attempt to capture the resource before the other could get to it. Capital would needlessly be duplicated, and the pressure in the pool would decrease more rapidly, requiring increased pumping efforts and decreasing the amount of oil ultimately recoverable. [9] Such a situation is both economically inefficient and wasteful. Oil deposits which straddle boundary lines pose a related problem, normally solved by adjacent states developing the deposit jointly. Theoretically, boundary lines could be redrawn so that the deposit lies entirely within the boundary of one

or the other state. [10] Either solution would be superior in terms of economic efficiency to unrestrained exploitation by both parties. Common pool problems could continue to exist even in territorial regimes. This is one reason why the Antarctic Treaty countries negotiated a separate Convention for the Conservation of Antarctic Marine Living Resources as fish, of course, freely move from one zone to the next. A separate management regime, based on the principle of restricted common property, is a large improvement over a territorial regime in this case.

Maintenance of environmental quality could be problematic in an Antarctica divided into sovereign zones. One might argue that environmental quality could more easily be maintained because property rights give each sovereign a vested interest in keeping its own territory unpolluted. However, many pollution problems are transnational in nature. Spilled oil does not recognize national boundaries when drifting at sea. Bilateral or multilateral cooperation could reduce these types of problems. Given the importance which most countries accord to maintaining environmental quality in Antarctica, such cooperative agreements would stand a good chance of being implemented.

Managing pollution problems is likely to be more costly as the number of managers increases and consequent duplication of effort occurs. An alternative to unilateral management of the environment, which sovereign states might consider, is the creation of a functional environmental protection authority for the entire continent. The effectiveness of such an authority would depend upon the amount of independent decision-making power the states were willing to forgo and upon acceptance of the regime by outsiders. Nevertheless, this may prove to be an acceptable way to reduce the increased costs associated with this type of common problem.

Both claimant and non-claimant states have expressed an interest in maintaining the Antarctic Treaty System so long as their respective juridical positions can simultaneously be maintained. In a territorial regime, the Antarctic Treaty System itself would cease to exist, but elements of the Treaty System could survive. States might continue, for instance, to see it in their common interest to maintain the demilitarized status of Antarctica.

While claimant states may continue to find value in maintaining some elements of the present regime, as fully sovereign states they would not be required to do so. One could not take for granted that access to the Antarctic Treaty area for scientific purposes would continue to be unhindered. Access to scientific information and continued prohibition of nuclear waste disposal would similarly be subject to approval by the relevant territorial authority. Most importantly, from the point of view of those non-claimant states who hope to benefit from exploitation of the resources of Antarctica, claimant states could expropriate for themselves all of the resources within their

territories and deny or restrict access by others.

If territorial sovereignty is to be seriously considered as a regime for Antarctica, many problems will be encountered that must be settled before the regime can become effective. The most important of these problems is who, if anyone, has established sufficient rights in Antarctic to gain title? Moreover, how will the decision be made? Which legal principles or precedents are applicable in order to establish a legitimate claim? Law journals contain many studies by authors who have grappled with this problem. [11] If discovery alone can be used as the basis for a claim, several states that have not yet made claims (the United States and the Soviet Union) could make a good case for themselves. The combination of discovery and effective occupation has historically been a much stronger principle on which to base territorial claims. But can anyone claim effective occupation in the hostile environment of Antarctica? States closest to Antarctica have invoked the sector principle, which is often discussed in relation to jurisdiction in the Arctic. Two problems arise in the attempt to use this as a legal principle: first, distances between adjacent land masses are much greater in the Southern Hemisphere than in the Northern; second, the sector principle has never been used to assert sovereignty over large land or water areas. The Russians and Canadians have laid claims to offshore islands within Arctic "sectors" but have not officially invoked the sector principle in doing so. [12] In other words, the sector principle is not a tenable precedent despite the fact that claims in Antarctica do resemble pie-shaped sectors converging at the South Pole.

The former colonies of Spain and Portugal (Chile, Argentina, and Brazil) base their claims (or, in the case of Brazil, could base its claim) in part on the 1494 Treaty of Tordesillas which divided the new world between the current ruling powers and included all lands discovered or to be discovered. [13] Doubtless, these countries would not wish to rely solely on this treaty as it has no legal standing whatever as far as anyone else is concerned. In sum, the legal basis for claims is quite shaky. To further complicate the issue, the claims of three countries, Chile, Argentina, and the United Kingdom overlap. How overlapping claims might be sorted out, based as they are one such tenuous legal principles, is difficult to imagine. Moreover, most countries feel that Antarctica is not subject to national appropriation. There will be opposition, both by non-claimant consultative states and by non-Treaty states, to any regime which restricts access to the present claimants. How such a regime might evolve is difficult to foresee, and this accounts for the feeling of many authors [14] that a territorial regime is not feasible. Claimant states might attempt to assert sovereignty by unilaterally commencing exploitation and enforcement activities. Such actions would require abrogation of the Antarctic Treaty and would probably need to be backed by force.

Even the staunchest claimants are not yet willing to suffer the negative consequences their unilateral action would bring, particularly since the exploitability and value of non-living resources has not yet been demonstrated.

THE OPEN USE REGIME

Under an open use regime, Antarctica would be treated as a part of the world owned by no one (res nullius). The open use regime is almost the mirror image of the territorial regime. Whereas the territorial regime is the most exclusive type of regime, the open use regime would, in theory at least, be the least restrictive regime. Property rights are unambiguously assigned to states with sovereign powers in the territorial regime while in an open use regime there are no vested property rights. Open access is the cornerstone of this type of regime. When resources are plentiful and exploiters have roughly equal capabilities, open access poses no particular problems. However, when resources are scarce, the classic problems associated with common areas may arise. And when exploiters do not have roughly similar capacities to exploit, charges of inequity may be lodged by those less capable.

Historically, an open use regime has existed for the oceans of the world beyond the narrow band of water under the jurisdiction of adjacent coastal states. This worked well so long as there was no pressure on the resources or uses of the ocean, and so long as little thought was given to resources fixed in place—such as seabed minerals. The oceans were considered so vast that the riches they held were thought to be virtually inexhaustible. Eventually, however, increased usage of important resources such as fish began to result in long-term decline of stocks. Increased effort was required to obtain the same amount of the resource. Inevitably, conflicts arose concerning rights to resources in certain areas. Finally, increasing pressure on resources once thought to be inexhaustible gave rise to the still continuing movement to expand jurisdiction over ocean space. In advocating expanded jurisdiction states seek to appropriate nationally what formerly were resources held in common.

States are well aware of the potentially disastrous consequences of the free-for-all that could occur in an open use regime. Given this knowledge some limitations on the activities of states would seem appropriate in an otherwise open use regime. The consultative states have successfully negotiated the Convention on the Conservation of Antarctica Marine Living Resources, a convention in which specific catch quotas have not been set but one in which an ecosystem management approach has been utilized. This mechanism for limiting exploitation is far from perfect, and it is likely to

evolve over time as data on the interactions among species in the ecosystem become more numerous. However, the agreement is an attempt to place limitations on exploitation in an effort to husband renewable resources. Nonrenewable resources present a more complex problem by their very nature. With major restrictions on resource exploitation a regime would hardly deserve the name "open use". Nevertheless, in an open use regime states might be willing to agree upon some simple limitations on exploration or exploitation activity. At the very least a reciprocal agreement concerning the rights of discovery could be worked out among interested parties in an otherwise open access regime. The firm (or state corporation) discovering the deposit would automatically have the first opportunity to develop it. If not developed within a specific time, the deposit might revert to *res nullius* status. This suggestion is similar to the law of capture for fish. In the absence of any rules, the potential for conflict would be great as nationals from different states competed over sites, and military intervention could easily occur.

In the open use regime states would have access to the entire continent and continental shelf. The present Antarctic Treaty allows free access for most uses of the continent but does not refer to exploitation activities, about which three views have emerged. The first is that "it would not be possible to begin commercial mineral exploration in the Antarctic without amendment of the Treaty, as serious problems would arise." [15] Supporters of the second view (among them the U.S., at least officially) hold that the "Treaty does not prohibit exploration and exploitation of mineral resources. Any nation party to the Treaty could now engage in such activity without violating the Treaty, provided the activity was consistent with relevant provisions of the Treaty." [16] The third view "suggests that since the Antarctic Treaty does not directly prohibit and at the same time does not permit commercial exploration and exploitation of mineral resources, it does not directly govern this matter. However, any such action (unilateral, bilateral, or multilateral) by contracting parties will be contrary to the purposes of the Treaty if the action were undertaken before the consent of all consultative parties has been given." [17] This third view has gained support recently as consultative states have pursued a policy of "voluntary restraint" in the hope that a concensus will emerge about what course of action to take. An open use regime could evolve from any of these views.

Some limitations of the open use regime have been mentioned in the discussion of territorial regimes. In an open use regime with increasing utilization of resources, free rider and common pool problems could become significant. The open use regime works best when there is more than enough for everyone. Increasing utilization brings increasing pressure to assign property rights. Freedom of access sounds good in principle. In practice

resource exploitation requires hugh inputs of capital and sophisticated technology. These constraints and the particularly rigorous operating conditions in Antarctica severely limit the number of states able to benefit from resource exploitation in Antarctica. For this reason, unless developing countries benefited from some sharing principle in an open use regime, they would not find this regime much to their advantage. Claimant states, however, might want to give careful consideration to the relative advantage of having non-exclusive access to the entire continent in an open use regime (or any other regime which included this characteristic) as opposed to owning an exclusive slice of a smaller portion of the continent.

Many examples of increasing environmental degradation with greater pressure on the fixed areas of common spaces could be cited. [18] An open use regime which had few (or no) provisions for environmental protection could be disastrous for the fragile ecosystem of Antartica. One of the greatest problems of common spaces is that pursuit of individual self interest often leads to common disaster. This has been demonstrated from the Sahel in Africa [19] to the fisheries off the coast of Peru. Oil producers in Antarctica would have no strong incentive to clean up after an oil spill or to take adequate safequards to prevent a spill. In an open access regime they need only be concerned about their own interests. However, such a spill would have adverse effects upon living resources, the non-living environment, and the value of Antarctica for scientific baseline studies. Presumably Antarctic Treaty states would want to avoid these potentially grave consequences. In an open use regime, therefore, they might be willing to consider some restrictions designed to protect the environment. Nevertheless, since access to resources is the cornerstone of this regime, the contest between resource development and environmental protection will probably tilt in favor of the developers at the expense of the environment.

The positive virtues of the open use regime are basically the same as those that are now enjoyed under the present Antarctic Treaty System. Scientists would continue to enjoy the freedom to conduct research anywhere in Antarctica (but the activities of resource developers would decrease the value of Antarctica as a scientific laboratory). Furthermore, in an open use regime administrative and enforcement mechanisms could be kept to a minimum as they are under the present system. An open use regime would perhaps reflect the preference of states not to have to deal with potentially difficult problems until it becomes necessary to do so. If pressure to develop the resources does not develop—and there is a possibility that it will not for many years—an open use regime might work. This "sleeping dog approach" would not be viable forever but might at least be seen as an interim regime useful until such time as it becomes necessary to consider other options. More attractive options can be found between the extremes of territorial and open use regimes.

THE SVALBARD REGIME AND TEMPERED SOVEREIGNTY [20]

Svalbard is a group of islands in the Arctic Ocean north of and belonging to Norway. Until the discovery of coal at the end of the 19th century little interest was expressed in the archipelago. Norway, in particular, considered that sovereign jurisdiction over the islands was more trouble than the benefits of sovereignty were worth. Consequently, until 1920 the islands remained *res nullius*. However, after 1900 increased economic activity (principally coal mining) on the islands by nationals from various countries led to numerous disputes. Chaotic conditions made it apparent that some sort of administrative jurisdiction was necessary. Accordingly, sovereignty was awarded to neutral Norway at the Versailles Peace Conference at the end of World War I. The Svalbard Treaty was signed by most major powers on February 9, 1920, and had the assent of both Germany and Russia, both of whom had a long history of involvement in Svalbard but were debarred from the Peace Conference. Norway formally accepted Svalbard on August 14, 1925.

The provisions of the Svalbard Treaty are a unique solution to an unusual international problem. The six major principles of the Treaty comprise a basic model which could be used to settle problems arising from the exploitation of mineral resources in Antarctica. First, as the simplest way to bring order to an area in which many had some interest but in which no one claimed jurisdiction, sovereignty was assigned to one country—Norway. Norwegian sovereignty became absolute, with the exception of the specific limitations stated in the Treaty, some of which are stringent. The second principle declares that all signatories of the Treaty are entitled to freedom of access to all resources within the Treaty area. Signatories therefore have the right to fish, hunt, mine, and carry on other commercial activities on an equal footing with Norway, subject only to a common set of regulations. In the Mining Code which accompanies the Treaty, the standard of "first finder" is the underlying allocative principle. The third basic principle is the principle of equal treatment of the subjects of all contracting parties. The equal treatment principle is defined explicitly in the various articles of the Treaty and in the Mining Code. This principle applies to staking mining claims, taxation, and worker protection. The fourth principle states that the taxes, dues, and duties collected in Svalbard are to be used only in Svalbard and that such taxes will be only as high as necessary to cover the costs of administering the islands. Tax rates thus remain comparatively low, a fact which could make future investment in offshore oil production particularly attractive. Fifth is the recognition of previously established rights. Valid claims staked before the enactment of the treaty were recognized, or, in the case of overlapping claims, were settled in accordance with the principle of

equal treatment. Finally, the sixth principle establishes the demilitarized status of Svalbard. This is a particularly important aspect of the Treaty for the Russians, who are apprehensive about potential use of the archipelago to block naval traffic to or from major bases in the Kola Peninsula. [21]

In practice the Treaty has worked reasonably well, though it must be noted that for the greater part of its life only Norway and Russia have shown any interest in the islands. Norway's stated "Nordpolitikk" for Svalbard is to secure a responsible exploitation of resources while preserving the present state of low tension. [22] Several problem areas exist, however, which do or could cause tension. For one, the Treaty is ambiguous about the ownership of resources on Svalbard's continental shelf. This is, of course, also an ambiguity in the Antarctic Treaty. Norway maintains that the Svalbard Treaty applies only to the islands and territorial waters of the archipelago. The continental shelf concept had not been developed when the Treaty was signed, and Norway claims, therefore, that under the Treaty, Svalbard does not have a continental shelf of its own. Instead, the continental shelf outside the territorial waters of Svalbard is held to fall solely under the jurisdiction of Norway, since contemporay international legal standards (as codified in the 1958 Geneva Convention of the Continental Shelf) allow a state to exercise jurisdiction over resources adjacent to its coast to a shelf depth of 200 m or, beyond that, to the limits of exploitability. Other states do not agree with this interpretation. If Svalbard's shelf is its own, it is open to exploitation to all the 1920 signatories. [23] Consequently, other Treaty signatories argue that Svalbard does indeed possess its own continental shelf, and that they are entitled to access to it. The difference of opinion is problematic since there is increasing interest in the production of offshore hydrocarbons in the Svalbard area.

A second problem concerns Norwegian relations with Russia. While all signatories theoretically enjoy equal treatment, the Soviet Union has in fact been the only country which has shown much interest in Svalbard. Over the years they have become accustomed to conducting their activities according to their own custom and often without regard to Norwegian law. They have quietly pursued a policy of "needle pricks" toward Norway in order to achieve de facto what cannot be achieved de jure—a Norwegian-Soviet condominium over Svalbard. [24] Norway has chosen, for the most part, not to assert its authority. However, Norway is aware that if other countries become interested in resource exploitation or other Treaty-sanctioned activities, it will be essential to treat everyone in like manner in order to maintain administrative control. Thus, some special privileges the Russians now enjoy would have to be curtailed. The Russians recognize that Norway's tight administrative control is consistent with their interests, but they would still resist any changes in policy.

The tempered sovereignty of the Svalbard Treaty gives Norway obligations as well as rights. Could such a model work for the more complex situation of Antarctica? What is significant about the Svalbard model is that one state has partial sovereignty while others have specific rights. It is extremely unlikely that consultative states could agree to assign sovereignty to one country in Antarctica. In addition to probably insurmountable political problems, Antarctica is about the size of the United States and Mexico combined; whereas Svalbard is a small archipelago. Control by one country over such vast reaches would be difficult, particularly in the absence of the cooperation of all parties. Therefore, it is unrealistic to expect that, as resource activities increase, one state will effectively be able to maintain control throughout the continent. Nevertheless, it is well worth contemplating application of the Svalbard model to all the present claimed areas of Antarctica. In this case each claimant state would enjoy tempered sovereignty within its claim, and each signatory of a new treaty to be negotiated could have open access to all areas for the purpose of resource exploitation and scientific research (subject only to fulfillment of the regulations set forth in the treaty).

In considering this alternative several problems immediately arise. First, how will conflicts be resolved in the area of overlapping claims? Chile, Argentina, and the United Kingdom may wish to consider forming a condominium in the contested Antarctic Peninsula. Second, what is to be done in the unclaimed sector? A number of alternatives exist for this region. It might be assigned to a new claimant, such as the United States, who could convincingly establish the supremacy of its claim. It might be attached to an adjacent claim—either that of New Zealand or Chile. Or, it might be handed over to the United Nations as a gesture of good will and to secure the cooperation of outsiders in the new regime. Third, why should sovereignty necessarily be assigned to the present claimants? What is to prevent states (such as the United States or the Soviet Union) from making claims of their own in areas already claimed by others, especially if they are able to present strong cases for their claims? Would either the U.S. or U.S.S.R. seriously consider this? It is difficult to say, but if the Svalbard model were enacted, it is unlikely either country would find it necessary to obtain sovereignty to achieve all important ends.

One of the major advantages of a Svalbard-like regime for Antarctica is that, if the aforementioned problems could be resolved, it would settle questions relating to sovereignty. Claimants would find this type regime appealing because it recognizes their juridical positions. Non-claimants would enjoy many privileges without incurring significant obligations. The stable regime provided by unambiguous jurisdiction would encourage the secure investment climate which commercial entities require for major development projects in Antarctica.

Potential disadvantages of such a regime relate mostly to the fragmentation of authority. Environmental regulations would be promulgated separately by each state. There would be no guarantee that regulations would be consistent or that standards would be high enough (or low enough) to please everyone. Moreover, all administrative and enforcement functions would be under the control of each state. Standards for these functions could vary in each sector. A major reservation of the developing world might be that legal access to resources is not a particularly relevant right for those who cannot take advantage of it. Their enthusiasm would be greater if some sort of automatic distributive function were included in the regime.

The differences of opinion that have arisen regarding the offshore boundaries of Svalbard would not arise, since no state is close enough to be able to contest jurisdiction. Water and continental shelf areas not included in the Antarctic regime would be considered part of the high seas regime. The present Antarctic Treaty states would thus prefer that offshore areas to be included in the regime be as extensive as possible while developing countries would surely prefer that offshore areas be included in the high seas regime (the seabed of which would be under the jurisdiction of the proposed International Seabed Authority).

Norway has experienced problems administering Svalbard, primarily because the cooperation of the Russians has been less than ideal. The Russians, for their part, regard foreign control of Svalbard as a potential threat to their security. Fortunately, since the strategic importance of Antarctica is not high, similar tensions are not as likely to occur. The asymmetric nature of the relative power of the two countries active in Svalbard has led to problems. To avoid similar problems in Antarctica, cooperation of the Treaty signatories and equal treatment of signatories by each sovereign will be important.

CONDOMINIUM SOLUTIONS

A condominium is a territory under the joint sovereignty of two or more states. Several authors have noted the potential for a condominium for Antarctica. Writing in 1959, the year the Antarctic Treaty was negotiated, Jessup and Taubenfeld surveyed past attempts at governing by joint sovereignty. Their brief survey concluded that in practice condominium arrangements have not proved very successful. [25] Moreover, "it is a safe generalization," they say, "that a condominium has never been utilized because it was considered to be desirable per se, but rather *faute de mieux* because the states involved were unable to settle a disagreement in any more definitive way." [26] The most encouraging examples of working condominia

have been in cases which are similar to the situation in Antarctica. For those cases in which the technical arrangements of the regime rather than control over populations has been important, condominium solutions have succeeded. Prior to World War II, Britain and the United States established joint control over Canton and Enderbury Islands in the southwest Pacific Ocean. The ownership of these uninhabited islands had been disputed for many years, but both countries decided to overlook the sovereignty question so a practical solution to the utilization of the islands as an air link could be forged. This case is similar to the Antarctic case in so far that there is no indigenous population in either case. However, there are some important differences. The islands are small in comparison to Antarctica; no resource development of importance is ever likely to take place on the islands; and, significantly, no prior claims had ever been made to Canton and Enderbury Islands. Rose suggests that jurisdiction over people working in Antarctica could be left, as it is in the present treaty, to the governments of the different nationals involved. [27] Where indigenous populations have been present joint control has rarely, if ever, been successful. The New Hebrides condominium between Great Britain and France, for instance, was a dismal failure. The arrangements provided for this regime included three separate administrations (French, British, and Condominium), three tax regimes, two sets of laws, two currencies, and entirely separate school systems. The rivalry that the condominium settlement was supposed to prevent was perpetuated. [28]

At least one author, Auburn, has suggested that a *de facto* condominium already exists in Antarctica. [29] The United States and New Zealand cooperate in the New Zealand claimed sector known as the Ross Dependency. Auburn points out that the basis for the New Zealand claim is very shaky and that while the claim was made in 1923, until 1955 the dependency was virtually an American colony. The Antarctic cooperation between the United States and New Zealand is governed by a "status of forces" type agreement by which New Zealand grants use of its air and sea ports (in Christchurch) and exemptions from duties and taxation in return for logistic support in Antarctica. Without this support, New Zealand's activities could probably not continue. [30] Auburn implies [31] that the *de facto* condominium could (and ought to be) changed into a legal joint claim and that Article IV of the Antarctic Treaty does not appear to prevent two contracting parties from asserting a joint claim in this case.

Attention has been given to the condominium solution for Antarctica because some tangible benefits would accrue to all Antarctic Treaty states participating in this regime. Both Rose and Alexander discuss these advantages. [32] Like a solution based on the Svalbard model, a condominium solution would settle, once and for all, questions relating to sovereignty. Claimants and non-claimants would pool their rights and interests. The

claimant states would agree to give up their special claims to sectors of Antarctica in exchange for rights to be shared equally among the claimants and non-claimants alike. Jurisdiction would be exercised by a single joint authority. Moreover, a condominium in Antarctica would qualify (most legal scholars believe) as a coastal state and would benefit from rights to the continental shelf given to states under the terms of the 1982 Convention on the Law of the Sea. This scheme is not likely to earn favor among any developing countries or other non-Treaty states.

A second major advantage of a condominium solution would be the formation of a stable regime which could provide the legal order necessary for commercial exploitation. As part of this legal order, an administrative body would regulate commercial activities. It would be empowered to review development plans, ensure conformity with environmental regulations, issue licences, collect fees, and enforce rules. The uncertainty that investors would face in an open use regime could be virtually eliminated. Only one authority, not many as in a territorial regime, would have to be considered. Rules could be uniform and applied evenly and equitably over the entire continent. Some mechanism for allocating licenses for exploitation would probably be important since smaller, less technologically advanced states would not wish to give up their exclusive claims just so larger countries like the U.S. could gain all the benefits. Alternatively, states might wish to consider sharing technology. By providing a secure legal order Treaty states would be less inclined to act independently to the detriment of the Antarctic Treaty system. The condominium solution, by presenting a united front of Treaty states, would also discourage non-Treaty states from taking unapproved action in Antarctica.

Issues relating to the legitimacy of an Antarctic condominium are a shortcoming of this type of solution. For those not involved in the regime, a condominium would be no more legitimate than the present individual sector claims. Increasingly the legitimacy of an elite club—in whatever form—to make decisions has been called into question. Thus, the implementation of a condominium regime would be difficult. Who would participate in the condominium? Surely all present consultative states would, but to what degree would states who have acceded to the Antarctic Treaty participate? Would new states be allowed to accede and, if so, under what circumstances? The present claimant states would, *ipso facto*, have to renounce their exclusive claims. This could cause domestic political problems in some cases. Furthermore, acquisition of sovereignty over uninhabited lands is still a matter of legal debate.

Rose believes that the threat of outside intervention and the desire for orderly control of commercial exploration and exploitation among the consultative states could be sufficient motivation to induce both claimants

and non-claimants to accept a joint solution [33]. Still, to reach an agreement, substantial modification of the present Treaty system would be required. Article XII of the Antarctic Treaty provides a method by which to do this. Alternatively, an agreement reached under the provisions of Article IX of the Treaty, which directs Treaty representatives to recommend "measures in furtherance of the principles and objectives of the Treaty," [34] might be made.

Several different arrangements can be envisioned for an Antarctic condominium. A *de facto* declaration of joint sovereignty by the consultative states without any provisions for the rights of others could succeed given the amount of power concentrated within this group, but such a declaration would inevitably have adverse impacts upon foreign relations with non-Treaty countries. This could be true even if Antarctica per se were not a particularly important issue for most of the non-Treaty countries. Another approach would be one which both symbolically and substantively recognized the rights of others. An idea for this approach is suggested by the terms of the 1920 Svalbard Treaty. While Antarctica would be jointly owned by the Consultative States, a provision of the condominium could enable others equal access to resources, subject to their adherence to the other provisions.

JOINT JURISDICTION WITHOUT SOVEREIGNTY

A number of important alternatives for a new regime for Antarctica which would include provisions for mineral resource development fall under the heading of joint jurisdiction. These are in many ways similar to condominium solutions. One of the chief differences is that the present juridical positions of both claimants and non-claimants would be unaffected — Article IV of the Antarctic Treaty would remain in force. Nevertheless, the working arrangements of joint jurisdiction and condominium regimes could be quite similar. The choice hinges more on domestic and international politics and legal precedent than on substantive differences. These are important considerations.

Alexander has suggested that the Antarctic Treaty consultative states create a Joint Antarctic Resource Jurisdiction (JARJ). It is the best developed of the joint jurisdiction options, and will therefore be discussed in more detail.

JOINT ANTARCTIC RESOURCE JURISDICTION

Alexander believes a *sui generis* approach is necessary in order to resolve problems associated with the exploitation of the non-living resources of

Antarctica. His approach is an attempt to overcome what he believes are the insurmountable problems of international, joint sovereignty, and territorial regimes. The basic tenet of this, as well as of other joint jurisdiction regimes, is that states would jointly undertake to regulate and manage resource development in Antarctica while otherwise leaving questions of sovereignty aside.

This alternative would allow joint and exclusive jurisdiction by the consultative states over the non-living resources of Antarctica and its continental shelf. Note that any solution which does not include all interested parties will have to grapple with the problem of delimiting boundaries between what is included in the regime and what is not included. The JARJ would not jeopardize the positions of Treaty states regarding sovereignty since joint jurisdiction over resources could be discussed without raising this delicate issue. The Antarctic Treaty and related conventions would remain intact. Other elements include [35]: (1) declaration of a five-year moratorium on development to study the environmental impact of resource activities (perhaps a better arrangement would be to allow limited exploration and development in the initial years of the regime in order to generate the data necessary with which to make a thorough analysis); (2) division of shelf areas designated as suitable for commercial activities into concession blocks; (3) bidding by interested states in the world community for the right to explore concession blocks; (4) equal division of revenues generated from the bidding process among consultative states; (5) taxing of revenues derived from the exploitation of oil (and/or other) resources according to rates established by the world petroleum marked; and (6) distribution of revenues generated through exploitation taxes to consultative states and to a new United Nations Trust Fund created to aid underdeveloped states.

Alexander's JARJ has something for everyone, but not everyone is satisfied with the provisions. Pinto, in a rebuttal, [36] suggests that it would not win the favor of non-Treaty states. He believes an inclusive international solution is the preferable one because with a JARJ or any similar solution, consultative states would have the dominant role. Moreover, resource distribution would be determined by consultative states, which Third World leaders would not find very satisfying. Alexander suggests that non-JARJ states would be satisfied with the revenue-sharing provisions, with the opportunity to accede to the Treaty and qualify for consultative status, with the continued demilitarized status of Antarctica, and with the likelihood that a Law of the Sea Treaty could give the International Sea-Bed Authority jurisdiction over all high seas areas within the Antarctic Treaty area except those covered by the JARJ regime. Nevertheless, these benefits for non-consultative states do not really give them much more than they already have. Moreover, all but the wealthiest states would be at a competitive disadvantage when bidding

for the rights to explore concession blocks unless some attempt were made to distribute concession block rights. The tax on exploitation has to be set low enough to allow exploitation to remain profitable. Otherwise it would not make economic sense to exploit resources. Unfortunately, the production costs in Antarctica will be extremely high without taxes. While a tax provision is desirable, it is, therefore, problematic. Taxes, set low enough to maintain incentives for exploitation, would not result in much gain for developing countries, particularly if divided among consultative states and underdeveloped states as Alexander suggests. The Trust Fund would be more important, then, as a symbolic gesture, than as any major attempt to redistribute the wealth of the world.

From the perspective of the consultative states a major advantage of the JARJ is that the Antarctic Treaty would remain operative; therefore, juridical positions could be maintained. Alexander suggests several possible advantages for the claimant states. Like some other options that have been considered, the claimants would forfeit exclusive rights to the resources in areas they claim but would gain access for exploitation purposes to resources in all of Antarctica. This may be an advantage, but it is not unambiguously so. Claimants would have to consider carefully costs and benefits and their competitive position vis-à-vis others interested in resource exploitation. Presumably, it would be less painful for France, for instance, to agree to give up its claim of exclusive access to the mineral resources in "its" sector than it would be for Australia, given the large difference in the size of the claims. Other differences among countries would include the varying resource potential of sectors of Antarctica and uneven technical capabilities.

Secondly, since the basis for claims is quite weak and since they are not widely recognized, mutual recognition of joint jurisdiction over resources would lend more credibility to the regime and would tend to strengthen resistance to intervention by non-JARJ states. The combined power of the consultative states represents formidable aggregate strength.

A Joint Antarctica Resource Jurisdiction would allow joint control over such things as conservation and environmental protection, whereas unilateral control would entail duplication of resources and other inefficiencies. Under the JARJ, Treaty rights pertaining to voting on new members and Treaty modifications would continue to apply. Moreover, while the overlapping claim problem does not disappear as Alexander suggests, it certainly recedes in importance. Finally, the JARJ could be negotiated without requiring the claimants publicly to disavow their non-resource sovereignty claims. It would be impossible to avoid doing this for international or open use regimes. This advantage could be particularly important for those countries which need to satisfy domestic constituencies that they are not selling out rights to Antarctica. Non-claimant Treaty states would share many of these

advantages. Of major importance to them is that under the JARJ they would have non-discriminatory access to all of Antarctica.

CONSORTIUM

A second type of joint jurisdiction regime is the consortium. In the general sense of the word a consortium is any association, partnership, or union. A consortium composed of Antarctic Treaty consultative states would be similar to the JARJ in that these states would exercise joint and exclusive control over resources and would be able to maintain their juridical positions as codified in the Antarctic Treaty, but it would be substantially different from the JARJ because consultative states would jointly develop the resources of Antarctica.

An early suggestion for a consortium regime was made by Jessup and Taubenfeld [37]. They suggested creation of a company for the exploitation of the minerals of Antarctica. This company would issue stock on "the basis of the extent of the exploration and development of the continent or parts of it, perhaps weighted by the period of time over which such activities have been carried on." [38] In practice the relative allotments of stock to members would be very difficult upon which to agree. It would have to be done in a way that would not bias juridical positions. Initially, consultative members might decide to issue equal amounts of stock to consultative states, but this idea might be resisted by the claimant states which feel their interests are superior and deserve special recognition. The leverage of the less powerful or less interested consultative states would also be increased by this plan. Shares of stock could be brought, sold, or kept. Over time, the distribution of stock could be expected to represent the relative interests of states in exploiting the resource potential of Antarctica.

Jessup and Taubenfeld suggest that the capital "be contributed proportionately by the shareholders, who would have a vote on the control board and a share in the profits corresponding to their stock holding." [39] At a later date provisions could be made for participation by other states. Perhaps new issues of stock could be offered to non-consortium members once the resource potential of Antarctica becomes better known. Development of a major discovery would require huge inputs of capital, and a direct appeal to non-consortium members to share both in the costs and in the profits of resource exploitation would have obvious benefits for both groups.

A consortium arrangement such as this would offer nothing to non-members. To obtain benefits from resource exploitation, a non-member would have to contribute financially to the consortium. It remains to be seen, of course, but a consultative state's interest in this type of regime might not be

strongly correlated with its position regarding the validity of claims. Small states on either side of the sovereignty issue might have much to gain by collaborating. The more powerful and technically advanced states could assure themselves of a secure source of supply, particularly if they controlled much of the stock.

Joint development of resources implies sharing of technical expertise. However, the most technically advanced countries might have serious reservations about sharing their technology with others. If the United States, for instance, felt that one of the major interests of the U.S.S.R. in a consortium would be to acquire knowledge of technology to which it would otherwise not have ready access, this would cause grave concern. Richardson of the U.S. State Department suggests that one way around this shortcoming would be to assign different exploitation functions to different countries. [40]

Environmental protection, of necessity, would be jointly controlled. Arrangements could be similar to those in a condominium or other joint jurisdiction regime. The decision for the consortium to develop a particular site should be made with due regard to the sensitivity of the area. For the consortium to work effectively decisions regarding both development and environmental protection would have to be made strictly on a scientific basis and not along political lines. While voting rights would not necessarily be apportioned by stock ownership, decisions should be made by majority vote and not by unanimous vote.

THE NEW ZEALAND PROPOSAL

In 1976, New Zealand suggested that a regulatory committee be created to oversee the exploration and exploitation of resources. [41] Like both JARJ and consortium ideas, decision-making authority would rest with the consultative states. Also, the Antarctic Treaty system would be maintained and states would not be required to change their juridical positions on the sovereignty question. The regulatory committee, composed of representatives from at least the original twelve signatories, would designate specially protected areas in which no development could occur. In the remaining non-prohibited areas development would be allowed under certain circumstances. Each proposal would be evaluated by the regulatory committee, and the environmental impact of the proposed development would be assessed. Approval for development projects would depend on a unanimous vote. In order to forestall a possible veto, a developer could try to reach an informal understanding with the claimant state in whose territory development is proposed. [42] In other words a fee could be paid to states not to veto. This idea does not formally recognize the special interests of the claimants since

non-claimants would have the same veto power. However, non-claimants might resist the proposal to give veto power to any one state since it could drastically limit their access to resources, an interest of major importance. The fact that a single state could veto a proposed project would probably make the investment climate of this regime somewhat less secure than it would be in the JARJ alternative.

Claimant states might find this proposal particularly to their liking since veto power gives *de facto* if not *de jure* special status to them. Non-claimants, particularly those with the requisite technology or the ability to develop it, benefit even though access is not guaranteed. Access to unrestricted areas would, in essence, be dependent on the ability of a claimant state and a state wishing to exploit resources in its claimed area to come to an informal bilateral understanding.

The proposal is more symbolic then substantive in what it offers outsiders and may have difficulty getting widespread external support. Representatives of other states and international organizations "may be invited" to attend meetings as observers. It does not appear that there are any restrictions on non-consultative states submitting development proposals. Yet this would be particularly difficult for states which have neither the resources nor the experience in Antarctica required, and it is likely that members of the regulatory committee would prefer that "insiders" develop the resources of Antarctica. Nevertheless, the proposal recommends that the interests of the international community be taken into account.

Resource-sharing provisions among consultative states are not discussed in the proposal, but a pre-established tax on revenues generated from exploitation would be a useful improvement. Such a tax could be used to maintain the administrative and evaluative functions of the regulatory committee.

The New Zealand proposal has many similarities with the 1912 Svalbard protocol negotiated by Sweden, Norway, and Russia. This proposal was never applied due to the outbreak of World War I and subsequent changes. Jessup and Taubenfeld describe this regime as a multiple condominium with many internationalized features. It would not have been a true condominium because the members did not plan to declare sovereignty but instead considered the territory *res nullius*. Nevertheless, the three states sought to control activities in the archipelago. The regime was designed to meet the need for "(1) obviating the disadvantages arising from the lack of any legal order [in Svalbard]; (2) the protection of the exploitation of natural resources; (3) the preservation of the status of *terra nullius*; and (4) the recognition, due to their share in the discovery, their territorial proximity, their investments or their scientific explorations, of the special concern of Russia, Sweden, and Norway in the legal organization of Svalbard." [43] Any state could have

acceded to the agreement but ultimate control was to be vested in the three states comprising the international commission. Decisions made by the commission had to be unanimous, and the three states sought to govern in the interests of the international community. The counterpart of the international commission of the Svalbard protocol is the regulatory committee of the New Zealand proposal. The major difference in the plans is that national claims had never been made in Svalbard, and the interested countries, therefore, sought to maintain Svalbard's *res nullius* status, a status which would be entirely unacceptable to the Antarctic claimants.

ZONAL MANAGERS

This joint jurisdiction option, discussed by Charney,[44] differs significantly from the first two but is similar to the New Zealand proposal. Its provisions, like those of the New Zealand proposal, tilt somewhat more toward the interests of the present claimant states. Zonal managers would be designated by a committee similar to the regulatory committee of the New Zealand proposal. The boundaries of each zone could correspond to the boundaries of the present claimed territories, and the managers of each zone could be the present claimants. Zonal managers could interpret their special status as deriving from their claims, while others could interpret this status as deriving from convenience. An element of ambiguity would be built in. This provision is likely to be very attractive to the claimants. The question of the assignment of zonal managers to the unclaimed area (Marie Byrd Land) and to the area in which claims overlap is problematic. Within each zone, managers would have some discretionary authority. Regulations for the regime would still be determined jointly by a regulatory commission or JARJ-like authority. However, since zonal managers would be granted some independent authority in each zone, this alternative might be made more palatable to the non-claimants if rule-making within the regulatory commission were accomplished by majority rather than unanimous vote. A tax on profits from resource exploitation, similar to the tax of the "New Zealand" option, could be distributed partially to the regulatory committee and partially to the zonal managers for "administration expenses." The other elements of this option do not differ significantly from the present regime.

The Zonal Manager alternative in the form described here (or in modified form) is representative of the type of solution that would appeal to the consultative states. In many successful international negotiations there is an element of intentional ambiguity. Burton mentions the case of the 1975 Agreement Concerning Shrimp between Brazil and the United States.[45] Both states were able to agree "with particularity on the manner in which

they would exercise their claimed rights and fulfill their duties without prejudicing their underlying legal positions." Furthermore, the agreement was "capable in every respect of two plausible interpretations—one consistent with the position of Brazil and the other with the position of the United States." A more relevant example of dual interpretation is to be found in the recently negotiated Convention on the Conservation of Antarctic Marine Living Resources. In this convention the consultative states employed a "bifocal approach". The contested issue concerned coastal state rights. Non-claimant states do not recognize the onshore claims of claimants. Since the existence of territorial seas and exclusive economic zones (EEZs) is dependent upon sovereignty, *ipso facto*, the non-claimant states do not recognize claimant states' jurisdiction over offshore areas either. On the other hand, if the claimants do not make offshore claims, they could jeopardize their juridical positions. There are several sub-antarctic islands whose sovereignty no one contests within the area of applicability of the Convention. Thus, the nonclaimants can interpret the convention language concerning coastal states rights as referring only to these sub-antarctic islands while claimants can interpret the same language as referring to their land-based claims. The convention is intentionally ambiguous in this sense. In a loosely analogous way, the zonal manager option embodies this same ambiguity. Approaches such as the one above merit greater attention in devising an effective agreement.

INTERNATIONAL SOLUTIONS

An international regime for Antarctica would bring the entire international community into the Antarctic decision-making process. International cooperation on such a scale is by no means unique; however, despite the existence of international organizations like the United Nations, the fundamental unit of the modern world system is still the nation-state. Cooperation among nation-states on matters affecting vital economic and security interests is far more difficult to achieve than cooperation on issues for which there is clearly a common goal. The reality of scarcity (or at least of the perception) drives competition among nation-states. Regardless of the means by which the present distribution of wealth and power evolved, the fact is that inequality exists among states. [46] Hence, there has been a call by the still developing countries of the World for a New International Economic Order (NIEO), an order in which resources and capabilities would be distributed more equitably. Antarctica has been characterized as an arena wherein many of the key political issues of our time will be debated. [47] Developing countries see in this continent an opportunity to apply the argument that

certain global (and extraterrestrial) areas are forever beyond the jurisdiction of any single state or group of states. The argument, advanced eloquently by Arvid Pardo in the context of the seabed, [48] is that these areas should be part of the Common Heritage of Mankind and that profits derived from such areas should be utilized equally by all states. In contrast, those countries which are consultative signatories of the Antarctic Treaty maintain either that the continent *is* subject to claims of national sovereignty or that it is open to anyone (subject only to their ability to operate in the harsh surroundings). Since most developing countries lack the means by which to benefit from open access, neither condition offers much for the aspirations of the developing world.

The developed world is not totally oblivious to the needs and aspirations of developing countries. Both humanitarian impulses and self interest motivate richer states to share with others. Self-interest would suggest that in the long run industrial countries have more to gain by recognition of at least some of the demands for a NIEO than by stubborn resistance to all change. Herein lies whatever potential there is for a fully international regime for Antarctica. In terms of combined power, the Antarctic Treaty consultative states could easily preempt Antarctica and its resources solely for their own use—but there would be a price to pay. Acting in unison, the developing world is capable of mobilizing considerable power. Furthermore, developing countries are demonstrating an increased ability to utilize tactics first developed in industrial countries for obtaining their ends.

Generally, the perception or reality of scarcity will have much to do with the shape of a minerals regime for Antarctica. If, for instance, alternate secure sources of supply of fuel and other mineral resources become widely abundant, pressure to develop (at great cost) whatever resources may exist in Antarctica will decrease. This would tend to improve the chances for negotiation of a regime acceptable to the international community. Such a regime might lack significant tangible benefits but could still be of enormous symbolic value to developing countries. Antarctica is unlike other international common spaces like the seabed beyond the limits of national jurisdiction in that most of the continent has been claimed. For some of the claimants the symbolic value of a recognized claim is comparable. Thus, even if strategic and economic interests are not threatened, the symbolic nature of the claims may complicate negotiation of an international solution.

Many members of the international community, then, would like to include Antarctica among those areas designated as the common heritage of mankind. The list of such areas is disputed, but the sea and seabed beyond the limits of national jurisdiction and outer space—and in particular the moon—are frequently included in this category. Other lists include, in addition to these, the electromagnetic spectrum, the atmosphere of the earth,

the existing climate and weather conditions, and the existence of each and every species. [49] The difficulty arises in translating this vague and general concept into a program of action. Indeed, even the meaning of the phrase has been disputed. Discussion of its meaning was a central issue in U.S. Congressional hearings on whether to sign and ratify the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (commonly known as the Moon Treaty [50]). For the developing world the notion of the redistribution of wealth is implicit in the concept and, in fact, the International Sea-Bed Authority was created in order that all countries might share in the wealth of the seabed. The developing world believes that the meaning of the common heritage principle as it pertains to the sea bed includes the concept of equitable sharing of common wealth. There is far less agreement among advanced countries that the phrase necessarily includes this concept when applied in other common or potentially common areas. With respect to outer space, for instance, the official U.S. view is that while outer space may be the common heritage of mankind, it is not the common property of mankind. Likewise, in Antarctica there is a tendency to equate the common heritage principle with the evolving principle of the freedom of the seas: open and unrestricted access for all (but access constrained in practice by one's technological sophistication).

The two indispensible elements required by those members of the international community who are not Antarctic Treaty signatories to realize the concept of the common heritage of mankind in Antarctica are participation in decision-making and a share of the wealth created from resource exploitation. Some observers, like Pinto, believe that the movement toward a NIEO is inevitable and that an international regime for Antarctica would speed this process along. [51] Pinto and others of a similar mind see Antarctica as an area for a worldwide cooperative effort in which everyone (not just a small group of, for the most part, powerful nations) participate in the management of the continent. Many non-treaty countries were former colonies. They view the 19th century principle that states could acquire property by occupation as outmoded and as a vestige of colonialism [52] (of course, in the case of Antarctica, "effective" occupation has not been possible in the usual sense, but that has not stopped some countries from making claims). The Treaty states realize that unless they make it clear to the developing world that their actions in Antarctica are for the protection and development of the continent for the benefit of all mankind, they will be perceived by many as imperialists. The Treaty states have declared their intention to act with the interests of others in mind, but such rhetoric has thus far had more symbolic than tangible value.

An international regime for Antarctica could have several advantages. The sovereignty dispute would become a non-issue since Antarctica would be-

come an international commons (albeit a restricted commons). All states would have an opportunity to share in decision-making, and all states would have a stake in the future of Antarctica. Acceptance by all would produce a more secure regime, since universal participation would mean all states would adhere to a single set of legal obligations. Challenges to the authority of the regime by outsiders would not be a problem (unless, of course, one or more powerful countries were not regime participants). In other regimes that have been discussed, the delimitation of the boundary between what is and what is not included in the regime is problematic. If an international regime for Antarctica and its continental shelf is established, it will either border or be included in the regime of the deep sea bed beyond the limits of national jurisdiction. The existence of adjacent international regimes would tend to minimize potential disputes over boundaries.

Nevertheless, an international solution for Antarctica is not at present popular with Antarctic Treaty consultative states. For these states, whether claimants or non-claimants, the disadvantages would appear to outweigh the advantages. Any international regime would dilute their power and privilege. If the wealth of Antarctica is to be shared with the entire international community, the share of that wealth that accrues to consultative states would be reduced. If the profits from resource exploitation are heavily taxed in order to redistribute a portion of the benefits to those who have not risked their capital, the incentive to invest will be low or non-existent, and little wealth is likely to be generated. Moreover, claimants would be required to give up their claims, a change they are not willing to make. The prospect of international management in Antarctica offers claimants (in particular) much lesss—both substantively and symbolically—than they would receive if they could appropriate for themselves all (or most) of the wealth derived from their claims. Even if claimants and non-claimants participate together in a joint sovereignty or joint jurisdiction regime, claimants will still derive more benefits from these arrangements than they would from an international regime. Non-claimants, likewise, would sacrifice substantive benefits by participating in an international regime.

While many of the elements of the present Antarctic Treaty System might be retained, the Treaty itself would be superseded by an entirely new document. The Treaty System as an institution capable of cooperative problem solving would be replaced by a regime that could become unwieldy. Since the participants in the regime would be more numerous, the differences among members would be greater, so that there would be a tendency for least common denominator type solutions. The Law of the Sea (LOS) Treaty for example, is not especially protective of the marine environment. For the most part flag state jurisdiction prevails. There is little reason to believe that the participation of the international community in Antarctica

would result in measures which would protect the environment any better than LOS measures protect the oceans. However, an international regime does not automatically preclude strong environmental measures.

The Law of the Sea Treaty—and particularly the provisions for an International Sea-Bed Authority (ISA)—deserves special attention in consideration of an international regime for Antarctica. All countries involved in the international Law of the Sea negotiations were aware that their efforts could set a precedent for the manner in which problems are resolved in other common spaces. The developing world welcomes this prospect, but Antarctic Treaty states do not now view Antarctica as an area subject to negotiation and compromise in a large multilateral forum. Ocean space within the Antarctic Treaty area has been excluded from the Law of the Sea discussions because negotiators realized that inclusion of this area in the LOS regime against the wishes of powerful Treaty States would have complicated an already complex multilateral bargaining process. Furthermore, Antarctica has not until recently commanded much attention among the members of the international community. Most coastal states are more interested, first, in areas adjacent to their own coasts and, second, in areas beyond jurisdictional limits which have never been claimed. Nevertheless, an international regime for Antarctica along the lines of the International Sea-Bed Authority is conceivable. Moreover, one way to achieve such a regime would be to extend the jurisdiction of the ISA to include the Antarctic Treaty area.

The 1970 U.N. Declaration of Principles Governing the Sea Bed and the Ocean Floor beyond the Limits of National Jurisdiction [53] laid the foundation for negotiation of a comprehensive regime. The declaration proposed that an "international regime applying to the area and its resources and including appropriate international machinery" be established. It also stated that the regime should "provide for the orderly and safe development and rational management of the area and its resources, and for expanding opportunities in the use thereof, and ensure the equitable sharing by states in the benefits derived therefrom, taking into particular consideration the interests and needs of developing countries." [54] The International Sea-Bed Authority is the product of the LOS negotiations that have taken place subsequent to the 1970 declaration. [55]

The International Sea-Bed Authority has an elaborate set of provisions. The provisions generally have been designed to distribute power and benefits as widely as possible and still provide incentive for private capital investment. With so many different interests involved, this has been an extraordinarily difficult task—one that may ultimately fail. "Even the most ideological members of the Group of 77 (the U.N.'s Third World Caucus)", says Richardson, "have been brought to recognize that sea bed mining will never occur unless and until private capital can be induced to invest in it." [56] The

prospect is similar in Antarctica; so in setting up the structure for an international regime, it is important not to lose sight of the fact that not only must the regime appear equitable in principle, it must be capable of working, if anyone—particularly developing countries—expects to receive any tangible benefits.

An international regime for Antarctica could have provisions similar to those of the International Sea-Bed Authority. There could be a supreme body, the Assembly, in which all states would be members. General policy would be established here with each state having one vote. The Assembly would consider and assess regulations, recommendations, and budget proposals submitted to it by a similar 36-member Council. In the model ISA regime the objective is balanced representation on the Council. [57] Balanced representation would be a consideration as well in a separate regime for Antarctica, but all consultative states would have to be on the Council. The Council would establish specific policies, supervise and coordinate implementation of the provisions for the deep-seabed, and approve work plans. Activities by the Enterprise, the operating arm of the Authority and private developers would be allowed. This is the parallel system concept. Private companies would be required to prospect two potential sites and offer the Enterprise its choice of the two. The remaining site could then be exploited by the private company. [58] Funds would be derived from two sources: (1) initially by the contributions of parties to the new treaty assessed in accordance with the scale used for the regular U.N. budget and (2) by the income of the authority with respect to activities undertaken in the area (private companies would pay license fees, annual fees prior to production, and, after production begins, charges or a share of profits). The Enterprise's profits would also go to the Authority to be used for the benefit of all. The 36-member Council would have primary responsibility to develop and promulgate environmental regulations, to resolve disputes, and to promote scientific research.

The LOS Treaty includes production limitations on seabed minerals which are designed to protect developing countries whose major source of income is derived from production of the same minerals on land. Production might be limited in a similar way in Antarctica—but such limitations would probably make any investments unprofitable. The LOS Treaty also includes provisions for transfer of technology developed by private companies to both the Enterprise and to developing countries. This provision has been controversial and would be just as controversial when applied to Antarctica (particularly with respect to the transfer of offshore drilling technologies).

An international solution modeled on the International Sea-Bed Authority would significantly downgrade the status of consultative states. A regime based on the U.N. Trusteeship system could allow consultative states to

retain more authority. A U.N. administered trusteeship "is perfectly possible under article 81 of the [U.N.] charter even though the whole trusteeship system envisaged previous colonial territories and was aimed particularly at helping people gain their independence." [59]

Originally eleven trusteeship agreements were signed. All but the Trust Territory of the Pacific Islands have now gained their independence. Under the U.N. Trusteeship System the Trusteeship Council was the principal organ of the U.N. responsible for the supervision of trust territories. The Council consisted of member states administering trust territories, permanent members of the Security Council who do not administer trust territories, and enough other non-administering countries elected by the General Assembly for three-year terms to ensure that the membership is equally divided between administering and non-administering members. [60] In Antarctica administrative powers could be delegated to the fourteen consultative states as a group. If this were the case, fourteen other U.N. members (including China) would be appointed to the Trusteeship Council. The Council would determine the terms under which Antarctica would be administered. Each member would have one vote, and decisions would be reached by majority vote. The trustees—the consultative states—could be charged with granting licenses for exploration and exploitation of resources to all interested parties. Lease scale proceeds and royalties from exploitation could be used for the administration of the regime and for the benefit of mankind as a whole. A share of these proceeds could be reserved for the benefit of the consultative states (as a management fee, perhaps). Other responsibilities of the trustees would include maintaining peace, protecting the environment, and promoting scientific research. The regime might function much like a joint jurisdiction regime, with resource development provisions similar to those in the proposed Joint Antarctic Resource Jurisdiction. However, oversight responsibilities would effectively be transferred to the U.N. The Trusteeship Council would periodically review the activities of the trustees, based on reports submitted to the Council by them. [61]

Jessup and Taubenfeld were the first to suggest applying the U.N. Trusteeship System to Antarctica. Several writers have revived the idea. Barnes, suggests that if "other nations outside the Antarctic club do not accept the Treaty parties' attempts to control decision-making regarding resources, if the parties do not want to risk [adverse consequences], trusteeship would appear to be a logical legal and equitable solution that would satisfy the complaints of the larger world community while at the same time leaving a large degree of effective management of the area to the Antarctic Treaty parties." [62] Similarly, Pinto, has suggested what amounts to a trusteeship solution. He proposes that the matter be brought before the United Nations. A declaration similar to Article IV of the Antarctic Treaty could be

made which would state that any actions taken would not affect claims of sovereignty with respect to part or parts of the area. A committee consisting of all Antarctic Treaty parties and fifteen other states selected on the basis of the geographical distribution would be constituted to make recommendations. Pinto suggests that the approach may prove appealing to claimants since there would be no attempt to resolve the disputed sovereignty of Antarctica. Thus, no faction could claim the area as a common heritage, and therefore ideological confrontation would be avoided. Pinto concludes his discussion with an exhortation which both those hoping for and those resisting international solutions ought to bear in mind: "Indeed, in the life of the community, as in the life of the individual, there are times when certain events compel consideration of change, of adaptation and development. Such an evolutionary challenge faces us here, and it is important how states respond." [63] It is by no means clear how states will respond, but the future for an international solution, whether modeled on the Law of the Sea Convention or the defunct U.N. Trusteeship System, does not look bright.

CONCLUSION

The present Antarctic Treaty System was never designed to be a comprehensive regime but rather one which enabled an accomodation of juridical differences so unhindered scientific research could continue. In the absence of increased pressure to consider exploitation of non-living resources, the status quo would not require changing. The present regime has been successful but, in part, this is because its aims have been limited.

Not all of the alternatives which have been evaluated in this assay are strong candidates to replace the present regime. The territorial and open use regimes are very unlikely options. They have been presented primarily to illustrate the problems associated with resource allocation in Antarctica. All but two of the options considered—a regime based on the Law of the Sea Convention and one based on the U.N. Trusteeship System—focus on accommodations within the group of consultative states. Neither of the options which focus on external accommodation with the international community have much chance of success, given the present distribution of wealth and power. However, a regime based on the U.N. Trusteeship System deserves a second look by consultative states—it provides significant advantages over other international options.

The Svalbard and Condominium alternatives are somewhat more probable candidates, if only because the number of participants in the regime would be restricted. However, both options require a fundamental restructuring of the Antarctic Treaty System. This would be difficult to accomplish,

and it does not appear necessary to resolve territorial claims in order to create an effective minerals regime.

The most likely alternatives for a minerals regime are the Joint Antarctic Resource Jurisdiction, the Consortium, the New Zealand, and the Zonal Manager options. These all provide for maintenance of the basic Antarctic Treaty System framework. A creative combination of the major elements of these regimes would be a very strong option. A best solution will create a series of tradeoffs so that all participants will have an interest in seeing the system work as intended. External accommodation with the international community will remain a difficult problem. Naturally, consultative states would like to find ways to accommodate outsiders without relinquishing their control. The joint jurisdiction regimes contain several provisions for doing this, but there is room for improvement.

NOTES

1 James H. Zumberge, "Mineral Resources and Geopolitics in Antarctica." American Scientist, Vol. 67, January–February 1979, p. 68.
2 John A. Dugger, "Exploiting Antarctic mineral resources—Technology, economics, and the environment." University of Miami Law Review, Vol. 33, No. 2, Dec. 1978, p. 319.
3 The Antarctic Treaty. 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71.
4 B. Mitchell and Jon Tinker, Antarctica and Its Resources. Earthscan Press, London, Jan. 1980, pp. 68–69.
5 James H. Zumberge, op. cit., p. 71.
6 For a discussion of the free rider problem as it relates to Antarctica see Steven J. Burton. "New stresses on the Antarctic Treaty: Toward international legal institutions governing Antarctic Resources." Virginia Law Review, 65, April 1979, p. 454.
7 See, for instance, R. Bruce Rettig and Jay J.C. Ginter (eds.), Limited Entry As a Fishery Management Tool. Proceedings of a National Conference to Consider Limited Entry as a Tool in Fishery Management. (Seattle and London: University of Washington Press, 1978), passim.
8 Barbara Mitchell and Jon Tinker, Antarctica and Its Resources. Earthscan Press, London, 1980, p. 52.
9 Ross D. Eckert, The Enclosure of Ocean Resources: Economics and the Law of the Sea. The Hoover Press, Stanford, Calif. 1979, p. 99.
10 Ibid., p. 102.
11 See, for instance, S.J. Burton, "New stresses," and Richard B. Bilder, "The present legal and political situation in Antarctica." In: The New Nationalism and the Use of Common Spaces: Issues in Marine Pollution and the Exploitation of Antarctica, ed. Jonathan I. Charney. Allenheld-Osmum, New Jersey, 1982.
12 This point was made by Donat Pharand at a workshop concerning Arctic Ocean Issues for the 1980's. Mackinac Island, Michigan, May 1981.
13 Oscar Pinochet de la Barra. Chilean Sovereignty in Antarctica. (Andres Bello Academy of Diplomatic Studies, Chile: Ministry of Foreign Affairs, October, 1954, p. 9.
14 See S.J. Burton, "New stresses," 465–466. He concludes there that "neither the principle of territorial sovereignty nor that of open use is an appropriate conceptual foundation for

developing effective Antarctic resource law." See also Frank C. Alexander, Jr., "A recommended approach to the Antarctic resource problem," University of Miami Law Review, 33, December 1978, and M.J. Peterson, "Antarctica: The last great land rush on Earth," International Organization, 34 (Summer 1980).

15 United States House of Representatives, "Polar Energy Resources Potential". Committee Print. Report Prepared for the Subcommittee on Energy Research, Development and Demonstration and the Subcommittee on Energy Research, Development and Demonstration (Fossil Fuels) of the Committe on Science and Technology. 94th Congress, 2nd Session, September 1976. p.22.

16 Ibid., p. 23.

17 Ibid., p. 23.

18 See particularly Garrett Hardin and John Badin, Managing the Commons. W.H. Freeman and Co., San Francisco, 1977, passim.

19 Ibid., pp. 116–122.

20 The phrase "tempered sovereignty" is Barbara Mitchell's. In an as yet unpublished study Mitchell has examined the Svalbard Treaty and proposed a regime in many ways similar to the one outlined here.

21 These principles are described and amplified in Willy Ostreng's "Politics in High Latitudes: the Svalbard Archipelago" (translated by R.I. Christophereson). McGill-Queen's University Press, Montreal, 1978, p. 14.

22 Falk Bomsdorf, "Norway's nordpolitikk and the Soviet Union" Aussenpolitik, 30, 1979, pp. 258–273.

23 Elizabeth Pond, "Svalbard: Arctic outpost at strategic crossroads." Christian Science Monitor, 9 September 1980, p. 13.

24 Bomsdorf, "Svalbard," p. 265.

25 Phillip C. Jessup, and Howard J. Taubenfeld, "Controls for Outer Space and the Antarctic Analogy." Columbia University Press, New York, 1959), p. 11.

26 Ibid., p. 12.

27 Julia Rose, "Antarctic Condominium." p. 26.

28 Ibid., p. 26.

29 See F.M. Auburn, "The Ross Dependency—An undeclared condominium." Auckland University Law Review, 1, October 1970.

30 Ibid., p. 105.

31 F.M. Auburn, "A sometime world of men: Legal rights in the Ross Dependency." American Journal of International Law, 65, July 1971, pp. 578–582.

32 See Rose, "Antarctic Condominium," and Alexander, "A recommended approach to the Antarctic resource problem." University of Miami Law Review, December 1978, pp. 371–423.

33 Rose, "Antarctic Condominium." p. 27.

34 Antarctic Treaty. Article IX, 12 U.S.T. 794, T.I.A.S. No. 4780, 420 U.N.T.S. 71.

35 Alexander, "A recommended approach," pp. 417–423.

36 M.C.W. Pinto, "The International Community and Antarctica." University of Miami Law Review, 33, December 1978, pp. 475–487.

37 Jessup and Taubenfeld, "Controls for Outer Space." p. 188.

38 Ibid., p. 101.

39 Ibid., 101.

40 Interview with Joe Richardon, Department of State, December 1981. For instance, the Russians might supply icebreakers while the Americans could do the drilling.

41 Barbara Mitchell, "Resources in Antarctica: Potential for Conflict." Marine Policy, April 1977, p. 97, footnote 25.

42 Ibid., p. 101.
43 Jessup and Taubenfeld, Controls for Outer Space. p. 36.
44 Jonathan I. Charney, "Future strategies for an Antartic mineral resource regime—Can the environment be protected?" In: The New Nationalism and the Use of Common Spaces: Issues of Marine Pollution and the Exploitation of Antarctica. ed. Jonathan I. Charney. New Jersey, Allenheld, Osmun publishers, 1982.
45 Burton, "New stresses."
46 On world systems theory see, for instance, the International Studies Quarterly 25 (March 1981). This special issue highlights world system debates.
47 Jon Tinker, "Antarctica: Towards a new internationalism." New Scientist, 13 September 1979, p. 801.
48 See Arvid Pardo's 1967 speech: "Statement of Ambassador Arvid Pardo, Representative of Malta in Committee I, on the question of the reservation exclusively for the peaceful purposes of the seabed and the ocean floor, November 1, 1967." U.N. General Assembly Documents: Provisional A/C.1/PV1515 and provisional A/C.1/PV.1516. Nov. 1, 1967, English; provisional verbatim records of 1515th and 1516th meetings.
49 Lance Antrim and Christopher W. Herrick, "Issues of technology transfer on the Law of the Sea." Office of Ocean, Resource and Scientific Policy Coordination; U.S. Department of Commerce, April, 1980, pp. 51 and 54.
50 United States Senate. Hearings before the Subcommittee on Science, Technology, and Space of the Committee on Commerce, Science, and Transportation. 96th Congress, Second Session on "Agreement Governing the Activities of States on the Moon and Other Celestial Bodies" (the Moon Treaty). July 29 and 30, 1980. Serial No. 96-115. Washington, D.C., U.S. Government Printing Office, 1980, p. 106 and passim.
51 Pinto, "The International Community." p. 485.
52 Peterson, "The last great land rush." p. 398.
53 United Nations General Assembly Resolution 2749 (XXV), December 17, 1970. Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction. From S. Houston Lay, Robin Churchill and Myron Nordquist (eds.), New Directions in the Law of the Sea, Documents. Vol. 11, Oceana Publications, 1973, p.740.
54 Ibid., p. 740.
55 The Third U.N. Conference on the Law of the Sea concluded deliberations April 30, 1982. The U.S. chose not to sign the Treaty in Jamaica in December, 1982, citing reservations about the provisions of Part XI pertaining to sea-bed mining and the operation of the International Sea-Bed Authority.
56 United Nations Association of the United States of America. "A Seven Year Effort Hangs in the Balance." An educational supplement to "The Interdependent." The U.S. and the Law of the Sea. A Review of the Issues, 1981, p. 1.
57 See article 161: a–e. Four states will be selected on the basis of the amount of consumption (including at least one socialist state); another four states from the largest investors in sea-bed mining (including a socialist state); another four from major exporters of similar minerals as those derived from the area, including at least two developing countries whose economies depend on these exports; six developing states representing categories such as large populations, geographically disadvantaged, etc.; and eighteen states picked to ensure a fair geographical distribution.
58 United Nations Convention on the Law of the Sea. A/CONF.62/122/ October 7, 1982. See Annex III, Article 8: Reservation of areas.
59 Jessup and Taubenfeld, "Controls for Outer Space." p. 180.

60 United Nations. "Everyman's United Nations: A Complete Handbook of the Activities and Evolution of the United Nations During Its First Twenty Years, 1945-1965." 8th edition. United Nations, New York, 1968, p. 20.

61 In the trusteeship system as it previously existed, the Trusteeship Council then submitted its report to the General Assembly.

62 James N. Barnes. "The Emerging Antarctic Living Resources Convention." In: Proceedings of the 73rd Annual Meeting. Washington, D.C., American Society of International Law, April 26–28, 1979. Barnes expresses the belief that Consultative Parties do not have the right to exploit Antarctic minerals merely for their own benefit. For a discussion of some of the advantages of a U.N. Trusteeship for Antarctica see pp. 288–291.

63 Pinto, "The International Community." pp. 485–486.