Finally, our preoccupation with environmental impacts as such—oil spills, endangered species, acid precipitation, among many others—has distracted us from the heart and source of the problem. Unless and until we confront the matter of overpopulation of the earth by humankind—the so-called Lemming syndrome—we are only nibbling at the edges of our environmental predicament. All our efforts directed at conservation, improved efficiency, designation of preserves, and the like, are marginal, though, in the interim, necessary. The demands being made on natural resources will be ever-increasing. Most environmentalists mention "population pressures" at the outset of their statements, in a list of problems, but no environmental organization has thus far made it a, if not the, principal target of concern. The enormity and complexity of the problem, as well as its several sensitivities, place the topic clearly outside the scope of this panel. Nonetheless, efforts to restrain or preclude the development of resources, including in the polar regions, without major population controls will ultimately prove futile, in my judgment.

Remarks by Christopher C. Joyner*

My remarks this morning have three aims. First, I want to touch on certain political and legal implications arising from the adoption of the Wellington Convention. Second, I would like to point out some lingering questions about the regime's operation, its purposes, and its portents for Antarctica's environmental situation. The recent impalement of the Exxon Valdez on the rocks offshore Alaska, spilling 10 million gallons of crude oil into Prince William Sound, tragically illustrates the magnitude of ecocatastrophe in frigid waters. That a similar incident might happen in the Antarctic is no longer in doubt, even in the absence of mineral development activities. One only needs to recall that in January 1989, the Argentine transport vessel, Bahia Paraiso, ran aground near Palmer Station, leaking more than 250,000 gallons of oil along Antarctica's coast, threatening the local ecosystem. The environmental impact of a minerals regime must, therefore, remain a serious and real concern. Finally, I would like to offer a few brief conclusions about the implications that the regime presents for the international community.

First, some general observations about this mineral resource regime. Regarding its area of application, the CRAMRA covers the continent of Antarctica and all Antarctic islands, including all ice shelves, south of 60 degrees South Latitude, as well as the seabed and subsoil of adjacent offshore areas. The minerals agreement specifically excludes from its jurisdiction mineral resource activities beyond the "geographic extent" of Antarctica's continental shelf, as defined in international law by article 76 of the 1982 U.N. Convention on the Law of the Sea. This ambit of jurisdiction was purposefully set in order to preclude CRAMRA's regulatory reach from impinging upon mining activities that might be conducted by the International Seabed Authority provided for in the 1982 Law of the Sea Convention.

A second point concerns the negotiations leading up to the minerals agreement. The minerals negotiations process took place over 6 years, in 12 sessions. Negotiations began in January 1982 in the forum of the Fourth Special Consultative Meeting in Wellington, New Zealand, and concluded in Wellington with the successful promulgation of the Convention in June 1988. These negotiations required the Antarctic Treaty consultative parties (ATCPs) to reconcile several centrifugal tensions amongst themselves, claimants and nonclaimant states, developed and developing countries, and Western and Eastern bloc governments. The negotiations were characterized by

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carefully crafted tradeoffs, hard bargaining, and political compromise, a process effectively and capably promoted by its chairman, Ambassador Christopher C. Beeby, in order to arrive at a consensus agreement. The process, moreover, aimed at securing a package deal. The complexity of these negotiations is easily realized in the intricacy of the composition of, and qualified voting arrangements for decisions made by, the regulatory committee in article 32 of the CRAMRA.

Completion of the Antarctic Minerals Convention further demonstrates that the ATCPs are capable of successfully negotiating consensus on protracted regional issues, issues that are complicated by overlapping legal, political, economic, and environmental considerations and conflicting national interest priorities.

Also interesting in the Wellington Convention is that for the first time in Antarctic law and politics, reference is made to international terrorism. In article 8(4), liability of an operator may be excused in certain circumstances, including a natural disaster of an exceptional character, “an armed conflict,” or “an act of terrorism directed against the activities of an Operator, against which no reasonable precautionary measures could have been effective.” Coming in the wake of the International Maritime Organization’s promulgation in March 1988 of a Convention for the Suppression of Unlawful acts Against the Safety of Maritime Navigation and an attendant protocol against threats to fixed drilling platforms on the continental shelf, concern that terrorist activities might reach into the Antarctic has been elevated from fictional musing to being considered a serious possibility.

The minerals agreement does many things, as the preceding panelists have noted. It creates new institutions, sets new standards, and establishes new responsibilities for the ATCPs to follow should mineral activities go forward in the Antarctic. It is a preclusive agreement, not a reactive one. It is also important to be mindful of certain things that the Antarctic Minerals Convention does not do. For one, CRAMRA does not resolve the claims conundrum on the continent, either in terms of the lawfulness of title or the legal status of overlapping sectors. The claims remain frozen under article IV of the Antarctic Treaty, which in essence is repeated in article 9 of the Wellington Convention. Even so, the seven claimant states are given a certain special status by virtue of their claims in the voting qualifications set out for the regulatory committees in article 32. That claimant states enjoy such special voting consideration because they have claims to the continent—claims that are not recognized by any member of the international community except themselves—should not be lost in appraising the legal significance of this treaty.

Second, the minerals treaty fails to temper international criticism over inclusion of the white minority regime of South Africa as a member of the consultative party group. The Government of South Africa remains an ATCP, and will enjoy automatic rights to participate as a principal decisionmaker in the minerals regime.

Third, the Wellington Convention does not specify where profits, or revenues derived from mineral activities in Antarctica, will go. Nor does it explain how derived revenues can be disposed of such that they do not prejudice, in the words of the preamble to the Antarctic Treaty, “the interest of all mankind,” but yet are able to contribute to ensuring that “Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord.”

Fourth, the Minerals Convention cannot guarantee that the Antarctic environment will remain in pristine condition should mining operations go forward on and around the continent. True, environmental principles and safeguards are plainly written into the Convention, but at present they are only words on paper; their efficacy remains to be tested as policy in practice. In any case, some environmental degradation is bound
to occur if mineral resource activities proceed, though what those impacts might be cannot as yet be estimated.

Finally, the Minerals Convention intentionally omits ice as a mineral resource under its aegis. The Convention will regulate the exploration and development of hard minerals and fuels—namely, petroleum, natural gas, and coal formations. Regulations for harvesting ice resources, as well as the legal status of ice, remain to be addressed by the ATCPs at a later time.

Certain fundamental questions remain, foremost of which is how the regime will operate in practice. Closely akin to this is how blithely the governments of claimant states will react to permitting mining activities by other national sponsors within their sector claims, particularly since they will not explicitly share in revenues derived from mining operations in their "territories." Relatedly, problems associated with sovereignty are bound to persist. While perhaps somewhat depreciated, sovereignty certainly has not been dissipated in the new minerals regime. During the negotiations, sovereignty considerations remained notably salient, a fact clearly indicated by the prominence of the claimants and the special role negotiated for them in qualified voting majorities in the regulatory committees. Sovereignty considerations remain salient today, evidenced in the current debate in Australia over whether that government should even become a party to the CRAMRA.

It should not be overlooked that the new minerals regime may present difficulties for promoting international scientific cooperation in Antarctica. Increased emphasis by ATCPs on resource issues, plainly evidenced by the adoption of the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and the Minerals Convention, may detract from international scientific cooperation by encouraging applied research for national programs. One can easily imagine this to be the case for geological or geodesic research, where scientific activities might be labeled "prospecting," thus preserving the confidentiality of commercial valuable data. Non-publication of scientific data is already a problem, as evident by some states withholding mandated CCAMLR reports of fish catches in the Southern Ocean and by certain governments being reluctant to supply information regarding drilling activities in the Ross Sea.

Turning to the environmentalist perspective, the fundamental question underpinning the CRAMRA comes down to this: when mineral activities occur in Antarctica, how should they proceed? That is, implicit in the creation of this regime stands the assumption that mining may one day go forward, and a regime needs to be in place for that eventuality. For environmentalists, the critical question does not turn on how, but on whether there should be any mineral activities at all on, in, or around the continent. Seen from another vantage point, might the mere availability of a regulatory regime become a self-fulfilling prophecy? By having a regime in place, will corporate interests become encouraged to promote mining ventures, given the legal and political stability that a multilaterally agreed upon resource regime will afford? Answers to these queries are only speculations until the regime is tested in practice. Nevertheless, both positive and negative aspects of the minerals agreement may be mentioned in regard to its provisions on the Antarctic environment.

There is no question that the CRAMRA contains several specific provisions seriously designed to preserve, protect, and conserve the Antarctic environment. Indeed, proponents of the Convention contend that it is not intended to encourage mineral resource development in the region. That appears to be the case de jure, though the upshot de facto may prove to be different. It is also fair to say that the environmental standards and safeguards contained in the Antarctic Minerals Convention may well be
the strongest, most far-reaching ever negotiated for an international commons regime. This is not the equivalent of saying, however, that these provisions are capable of guaranteeing the prevention of environmental degradation, or ensuring that incidents of regional pollution will not occur.

In appraising the CRAMRA's environmental implications, one must be mindful that impetus for greater environmental concern and caution came from several sources. Among these were the southern states closest to Antarctica: Argentina, Chile, Australia, and New Zealand. These states remain concerned about pollution threats to their regional environments and associated ecosystems. The scientific community was also genuinely concerned about preserving the Antarctic environment. Scientists generally are not eager to have their pristine laboratory transformed into open pit mining operations, nor to have opportunities for research constrained or delayed because of mineral development activities. Most vehement in promoting wilderness values were international environment groups, led by Greenpeace and the Antarctic and Southern Ocean Coalition. These organizations lobbied long and hard during the minerals negotiations to persuade national delegates that Antarctica should be left as a world park. Failing that, and given that a minerals regime was becoming inevitable, they then pressed for the strongest possible standards and environmentally sensitive provisions to protect Antarctica's flora and fauna, and natural habitat from the certain environmental degradation that would result from mining operations. Much to these groups' credit, throughout the course of the negotiations, environmental standards were clarified, strengthened, and integrated into the regime's infrastructure, though less so than what they had aspired to.

Also noteworthy for promoting international environmental concern for Antarctica were the annual debates over Antarctica in the U.N. General Assembly. Admittedly, these discussions often assumed more the form of political rhetoric than legal reason. Even so, that they took place highlighted the concern over Antarctica and the disposition of its resource wealth. In so doing, environmental preservation became salient in the debate. Finally, inclusion of meaningful environmental provisions into the Wellington Convention was greatly facilitated by the absence of commercial mineral and energy interests vigorously lobbying for greater, more open access to Antarctic minerals. The uncertainty of Antarctica's economic potential, coupled with harsh climatic conditions, logistical difficulties, and ample land-based mineral supplies elsewhere, combined to make Antarctica a less-than-attractive opportunity for commercial mining interests. Consequently, mining companies were not nearly as prominent or persuasive during the Antarctic minerals negotiations as they had been in opposing the deep seabed mining regime during the law of the sea negotiations in the 1970s.

The Antarctic Minerals Convention does take a strong position on protecting the environment from damage caused by mineral activities. Article 4 sets forth principles for judging the acceptability of minerals activities, albeit in a general way that may be subject to future interpretation. Decisions taken are to be based on "sufficient information." That is, before proceeding with mineral development, sufficient information must be available for decisionmakers to ascertain whether unacceptable damage might occur to the environment.

Article 4(2), requires that environmental impact statements be made to ascertain what effects certain exploration and development decisions might produce for Antarctica's air and water quality, as well as for changes in the region's atmospheric, terrestrial, or marine environments. These assessments are also intended to determine whether mineral activities might constitute "further jeopardy to endangered species in
the region," or result in degradation or "substantial risk" to areas of special historical, biological, scientific, and wilderness significance.

Article 4(3), directs that possible "significant adverse impacts" on global climate and weather patterns must be considered in the calculus. Further stipulations are provided to ensure that findings and technology are available to assure safe operations and compliance with environmental protection standards.

Provisions in article 8 contribute to strengthening the environmental regulations in the regime. These provisions would make an operator strictly liable for damage to the Antarctic environment and associated ecosystems caused by its mineral activities. The operator would be liable to pay for damage if restoration is not satisfactory, and the operator would be liable for the cleanup costs incurred by another agent.

Article 12 provides for the inspection of mineral resource activities. Such inspections may be performed at all "stations, installations, and equipment relating to Antarctic mineral resource activities in the area in which these activities are regulated by this Convention, as well as ships and aircrafts supporting such activities at points of discharging or embarking cargoes or personnel" (article 12 (1)). These inspections, including aerial inspections, may be conducted by observers appointed by any member of the commission, as well as by observers designated by the commission, or regulatory committees. Presumably, violations of environmental standards would be reported back to the commission and the relevant regulatory committee.

Although the CRAMRA mandates serious attention to environmental considerations before decisions on mining activities are discharged, certain criticisms made by environmental groups should be noted.

First, the conservation lobby has voiced sharp concern over the lack of specificity and definition for subjective terms used in environmentally related provisions in the Convention. For example, what are the nonnegligible impacts used to define "damage" in article 1(15)? What standards constitute "significant damage" or "substantial risk" in article 4(1)? By what scientific measures can these be accurately set and determined? How much information is "adequate" or "sufficient" for gauging environmental impacts? The Convention does not answer these queries.

Second, conservation groups question whether enough accurate information about the Antarctic environment will be available to both the commission and regulatory committees for them to make informed, balanced decisions on mineral resource activities. Conservation organizations also contend that insufficient opportunities exist for outside, more impartial nongovernmental observers to contribute to the environmental assessment process. This situation, they argue, exacerbates the accountability problem between the regime and the general public, and also may lead to decisionmakers being shortchanged of relevant information about the environment which might be helpful in their deliberations.

Third, conservation groups are quick to criticize the weak role of the Scientific, Technical and Environmental Advisory Committee in the decisionmaking process. The Advisory Committee is without binding power. Hence, there is concern that decisions might be taken by the commission or by regulatory committees irrespective, or in spite of, its recommendations.

Along these same lines, environmental groups assert that the review functions of the commission over the regulatory committees are weak and wanting. The commission lacks the authority to overrule a regulatory committee decision, thus creating a situation where accountability is lacking between a critical decisionmaking body, the regulatory committee, and the principal political body in the regime, the commission. Environmentalists contend that a thorough review of standards, regulations, and ac-
tivities must take place, both periodically and in response to new information as it becomes available to the regime. Most important, there must exist genuine opportunity to modify rules and tighten limitations on activities if local environmental conditions warrant.

Finally, conservationists and environmentalists voice concern about the liability provisions in the Convention. They assert that even stricter liability and full responsibility for all damage done to the environment must be placed on the operator conducting activities in the area. In this way, those at fault would be made fully responsible for environmental restoration, a costly scenario that should act as a greater deterrent to environmental abuse, and presumably would furnish stronger incentives for operators to exercise caution and prudence in conducting mineral resource activities.

With respect to international implications, much has been made about the aspiration to make Antarctica part of the common heritage of mankind. As pronounced by some Third World spokesmen during the U.N. General Assembly debates, Antarctica's resources should be put under a universal regime and developed as a part of the new international economic order principally to benefit less developed countries. It is important to realize that the legitimacy of the common heritage of mankind approach is based on normative, philosophical theory. It is also important to realize that this common heritage regime is an exploitation regime, one committed to developing Antarctic resources. The implications of this arrangement appear unsettling, to say the least. While perhaps noble in its purpose, common heritage applied to Antarctica could be environmentally deleterious.

In contrast, the ATCPs predicate their claim of collective jurisdiction in Antarctic affairs on positive international law, namely, the Antarctic Treaty System, resultant state practice, and the customary law that has grown up around them over the past three decades. Thus, the Antarctic Treaty System supplies a convenient and efficient forum in which to deal with mineral activities. Thirty years of cooperative participation in a regional administrative regime has produced the requisite functional infrastructure, working relationships among delegations, and a valuable body of knowledge implicit in such a regime. Nothing improves competence more than experience. Given the high level of cooperation sustained over such a prolonged period, this experience may aptly be construed to be state practice as well.

Adoption of CRAMRA certainly highlights the ATCPs' ability to legislate and regulate Antarctic affairs through their own means, in spite of international pressure in the U.N. General Assembly opposing their position. In sum, adoption of the Antarctic Minerals Convention, despite its problems and deficiencies, anchors the Antarctic Treaty System even more firmly as a fixed reality in international affairs. No less important is that the creation of legal order governing Antarctic mineral resources in the foreseeable future hinged on the continued vitality of the Antarctic Treaty System.

At the end of the day, however, the success of the mineral regime in my mind comes down to three acid tests. First, how well can it perform the function of preventing Antarctica from becoming "the scene or object of international discord"? Second, in what way and for whose benefit will revenues accrued from Antarctic mineral resource activities be disposed? And, third, if ever activated, how well will this new minerals regime operate to preserve and protect the Antarctic environment? We thus come full circle to confronting the inevitable question of whether we would be better off with the new mineral regime, or without it. The verdict is still out on that one. In any case, appreciating the Antarctic Treaty regime's laudable accomplishments in the
past, but given the stark economic, geostrategic, and political challenges that await the international community in the future, it will be instructive to keep a watchful eye on how the new Antarctic minerals agreement evolves in its course towards entry into force. That would seem especially prudent since this regime might one day regulate the conduct of mineral activities occurring in over one-tenth of the earth’s surface.

DISCUSSION

BERNARD OXMAN:* I would like to congratulate Ambassador Beeby and Mr. Scully on their success in an extremely difficult undertaking. Everyone (myself included) seems concerned, and somewhat dissatisfied with the Minerals Convention, perhaps an inevitable reaction to a finely balanced set of compromises. I recognize Mr. Scully’s difficult situation in negotiating for the United States and having to reconcile conflicting interests and voluble constituencies.

The liability regime in the Minerals Convention is rather elaborate. One of the difficulties in a civil liability regime is determining general liability in environmental cases. My questions to Ambassador Beeby are, how can one determine and assess damages for general environmental degradation in situations where no specific costs can be determined above cleanup costs and where no private property has been damaged? Who is the plaintiff in such a situation? Could a state make a general environmental degradation claim if it is a claimant state in that area?

Ambassador BEEBY: If a situation arises prior to the Protocol, the commission envisaged by the Convention shall be the plaintiff in national courts. After the Protocol comes into force, the Protocol itself will answer the problem.

JONATHAN CHARNEY:** If the present economic value of the minerals in Antarctica is zero and the prospect of development very small, why did we need to negotiate a minerals convention? Is the Convention designed to protect the Antarctic regime from external and internal pressures? Is it because sustained economic development would not permit Antarctica's environment to remain protected? Is the Antarctic environment protected by this Convention to achieve political objectives since only noneconomic exploitation is likely? In the case of future developments, is the Convention open-textured enough to handle them?

Professor JOYNER: The value of minerals in Antarctica is not zero, but unknown. There may be a difference in perception only in commercial minds who do not want to make the investment which may be uneconomic.

My answer to your second question is in the affirmative. The Malaysia factor was a catalyst and so was the Third World's conception of Antarctica as a resource source. In the early 1970s, U.S. mining interests had made inquiries about prospecting. Thus, there existed the awareness of the need to prevent ice grabs. The system is evolutionary in structure and will make amendments and reflect the needs of changing circumstances.

Mr. SCULLY: The value of mineral resources in Antarctica is zero. When the resource issues emerged, living resources were given priority over mineral resources. Therefore, some kind of arrangement was necessary. In the seventies, perceptions of scarcity encouraged the possibility of resource activities in Antarctica; so did the formative problems of OPEC. There was a conscious view that living resources needed attention which produced the CCAMLR and Minerals Convention. On the relationship between the environment and the economic aspects of the activities, the

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