

UNITED NATIONS AND THE DEEP OCEAN: FROM DATA TO NORMS

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INTRODUCTION

Marine affairs, as a set of active relationships between man and the sea, are today a rapidly expanding universe. Already a major concern of policy-makers in many states, marine affairs display a characteristic of all public issues in a state of flux: the man of action is pulling ahead of the man of thought—often in the same person—and the question of how well we know what we are doing is harder and harder to ignore. This question is particularly critical in international marine affairs. The international system is far behind the national ones in its lack of effective mechanisms for regulating scientific and technological change and bringing social sciences to bear on the policy and law making processes.

Two types of activity make up the primary international response to the implications of scientific and technological change pervading marine affairs. One is a visible and vigorous flow of moves: states, organizations and individuals are drafting many blueprints for new institutions and rules to govern the uses of the world ocean. The blueprints come in many shades between national egoism and global messianism, and in time-projections ranging from the immediate to a distant future. All these, when thrown into the melting pot of multilateral negotiations of the 1972 Stockholm Conference and the 1973 Geneva Conference, are expected to yield at least some residual consensus on an international policy for regulating man's use of the oceans.

The second type of response to the technological challenge and its implications consists of attempts to assess whether international institutions as we now know them can effectively cope with the demands and opportunities opening up in marine affairs. This is primarily an evaluative, largely academic quest: what courses of actions are open to the international community, so goes the question, if it is to manage its own propensity to increasingly use and abuse the marine environment?

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This process of assessment, scholarly and deliberate, is much less energetic than the blueprinting rush of the social engineers, and remains rather removed from the mainstream of decision making. International negotiations are either here or imminent. Only the effort to assess and understand what it is we are attempting to do, and what we are actually capable of doing, is asthmatic. In a very real sense, the international community acts faster than it thinks. Perhaps, it cannot do otherwise.

This gap results partly from the diverse roles which are played by men competent to diagnose the problems and potential of international policy-making in areas of scientific and technological change. Basic research, policy-oriented inquiries, and the formulations of preferred policies represent a set of roles social scientists play. In fields such as marine or environmental affairs, the brain-drain into the last category—prestigious, exciting and even lucrative—is quite noticeable, especially in the United States. Yet this may be but a symptom of a more fundamental factor at work. The main reason why social and political action often runs ahead of social and political assessment is probably buried deep in human nature and in the nature of contemporary society. In any case, the policy-making process cannot be halted to await new doses of wisdom. The only alternatives are to lament the state of affairs or, while lamenting it, to increase and improve the flow of social science insights into the policy-making endeavors.

The pages below offer an analytical survey of the initial phase of the seabed issue as it unfolded in the United Nations in the late 1960's. The study has a limited goal, to identify some of the elements which characterized that phase and to assess their role and impact. The scientific and technological factor pervades most areas of oceanic policy-making and, therefore, serves as a particular focus of this study. The possibility exists that some of the scientific and technological factors influencing the formulation of an international seabed policy represent a more widespread and growing challenge to the contemporary law-making mechanisms in other fields as well. While this possibility of useful analogies is noted, they are not critically examined.

THE CHANGING ARENA OF OCEAN POLICY

Escalation is a dominant feature of the process through which states seek to change the rules of the ocean. The international community set out to formulate principles and norms for governing the uses of the deep ocean floor; now it finds itself about ready to scrutinize the entire law of the sea through a global conference. But the 1973 Law of the Sea

Conference, if indeed it should take place, will be an affair very different from its 1958 Geneva version. Many factors influencing the process through which the international community formulated the rules of conduct in the marine environment have changed significantly. There are now many nations with well-developed interests in ocean uses. Many new ocean uses have been recognized and many technologies have been developed to utilize the hydrosphere more effectively. In 1958 the political interest in the formulation and reformulation of legal rules stopped at the continental shelf's outer edge; now it engulfs the entire ocean floor. These quantitative differences between the fifties and the seventies are massive and their impact on the law-making process is going to be profound. However, there are also qualitative differences in the contemporary setting of oceanic politics. Although many of these differences are quite visible, they are not easily accounted for and fitted into a meaningful pattern.

Some of the qualitative differences are likely to make the 1958 Geneva law-making experience inadequate as a lesson for 1973. One may well begin with a somewhat general impression: the politics of oceanic law-making is much more intense in the seventies than it was in the fifties. Perhaps this simply reflects the fact that to many people the ocean of the seventies seems richer and more important than that of the fifties. Alternatively, the world of the seventies, less immediately concerned with global issues of war and peace, has more energy to spend on the race for food, minerals and other values of the sea.

However, the step-up in the political intensity of the law-making process may have still other and deeper roots. Among them is a broad lesson learned since the fifties by many smaller states, reflecting their progressing adaptation to the contemporary conditions of international relations. The lesson is this: that in issues such as those presented in oceanic policy-making—jurisdictional limits, fishing rights, or research restrictions—the great powers may be effectively defied, because the sanctions they can apply to enforce compliance are limited and diminishing. A related reason for the quickening of the political pulse of oceanic law-making may be the fuller realization by many countries that those in international councils who show no interest and say nothing get nothing. Even if they are uninvolved and more or less uninterested in marine affairs today, many countries feel that they should nevertheless negotiate for the sake of their potential future interests, or to seek the satisfactions of other needs, unrelated to the sea.

Still another element of change in ocean policy-making is the greater diversity of international as well as subnational participants seeking to sway the ocean policy in the direction of their particular interests.

Among the active international participants with varying measures of direct influence on the ocean policy-making process are various non-governmental and semi-governmental organizations, scientific and other, as well as intergovernmental agencies often with well-developed interests and policies of their own. Simultaneously, the expanding range of actual or potential ocean uses makes national policy-making more complex. New interests are articulated and seek to be served; even smaller and less developed states for whom the ocean used to represent but one particular value, mostly fish, now find it necessary to weigh and range their marine priorities for today, tomorrow, and the future. The result is often an increased difficulty and procrastination in the shaping of a national ocean policy and, consequently, a greater instability of positions already taken by a country in international negotiations. This need not be altogether bad; a measure of flexibility in a national policy stand is potentially an asset. However, instability and flexibility are two different things; where flexibility energizes negotiation, uncertainty stifles it. But whatever its effect, the qualitative change since 1958, resulting from the proliferation of interacting interests, is again very real.

A closer view of many of the new elements emerging on the law-making horizon of the seventies comes through an analysis of the policy-making overture acted out in the second half of the last decade in the United Nations.

THE SEABED IN THE GENERAL ASSEMBLY: THE 1966-69 OVERTURE

In the United Nations the year 1969 was a threshold year in the development of an international policy for the deep ocean floor. The seabed policy-making in 1969 shows a sharp discontinuity from the previous three years and opens up a new phase of the policy-making process. This discontinuity and the main factors contributing to it become quite clear as one reviews the changing spectrum of policy issues expressed in the General Assembly resolutions and surveys the shifting configuration of political interests around these issues. The changing content and the fate of the various seabed resolutions acted on by the General Assembly, abbreviated into a table, illustrate a dynamic political process.

U.N. GENERAL ASSEMBLY SEABED RESOLUTIONS 1966-70

<i>Date</i>	<i>Resolution</i>	<i>Vote</i>
1966 2172 (XXI)	Secretary-General to undertake comprehensive survey of marine science and technology	100-0-11
1967 2340 (XXII)	Ad Hoc Seabed Committee created	unanimous
1968 2467 (XXIII)	A Seabed Committee continued and enlarged	111-0-7
	B Study dangers of pollution	unanimous
	C Study feasibility of international control	85-9-25
	D Encourage scientific research and data dissemination	unanimous
1969 2574 (XXIV)	A Communicate with all states to ascertain desirability of law-of-the-sea conference	65-12-30
	B Prepare draft declaration of principles governing uses of seabed	109-0-1
	C Continue study of types of international control	100-0-11
	D Moratorium: freeze exploitation and claims	62-28-26
1970 2749 (XXV)	Declaration of principles	108-0-14
2750 (XXV)	A Study economic impact of seabed exploitation	104-0-16
	B Study problems of access by landlocked countries to seabed	111-0-11
	C Call and prepare 1973 comprehensive law-of-the-sea conference	108-7-6

1966—The Issue Emerges

In 1966 the seabed problem was not yet a major policy item on the General Assembly agenda. However, this was a crucial year. In 1966 the stage was set for a rapid politicization of the deep ocean floor issue. It opened a new phase rather than a mere continuation and development of ideas on the internationalization of the seabed which had been advanced

before and during the 1958 Geneva Conference on the Law of the Sea.¹ In the fifties, the ideas about internationalizing the deep ocean floor were primarily legalistic notions put forward in the context and as a by-product of a reformulation of the law of the sea. In 1966, the seabed issue entered the political arena in the context of the development program. Requests that the Secretary-General prepare studies dealing with the marine resources beyond the continental shelf were, in fact, an outgrowth of the Secretary-General's proposal for a five-year survey program on the development of non-agricultural natural resources.² This proposal itself was motivated by "the sense of frustration and even disappointment that had been evident in the General Assembly and in the Economic and Social Council when they had come to weigh up achievements and failures of the United Nations Development Decade."³

In 1966 two draft resolutions were submitted, one in the Economic and Social Council,⁴ another somewhat later in the General Assembly.⁵

1. The establishment of an international board for the protection of the resources of the sea was proposed in the United Nations International Law Commission by Jean Spiropoulos as early as 1951. 1 U.N. YRBK OF THE INT'L LAW COMM'N 304, (1951). In 1955 Georges Scelle suggested that an international administrative authority be created within the United Nations framework and empowered to control the uses of the resources of the bed and subsoil of the high seas. 1 U.N. YRBK OF THE INT'L LAW COMM'N 10 (1955). During the 1958 Geneva Conference of the Law of the Sea the Federal Republic of Germany proposed the establishment of international control over the entire ocean floor; the proposal found some support in the policies of Japan and Monaco. U.N. Conference on the Law of the Sea, 6 *Official Records* 7-8, 14, 18, 125-126. U.N. Doc. A/CONF. 13/42. See also, Z. SLOUKA, *INTERNATIONAL CUSTOM AND THE CONTINENTAL SHELF: A STUDY IN THE DYNAMICS OF CUSTOMARY RULES OF INTERNATIONAL LAW* 37-38 (1968); and U.N. Secretariat, *Legal Aspects of the Question of the Reservation Exclusively for Peaceful Purposes of the Sea-Bed and the Ocean Floor . . .*, a study prepared for the *Ad Hoc* Committee to Study the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National Jurisdiction, 2nd session, U.N. Doc. A/AC. 135/19/Add. 2 at 13-17 (June 25, 1968).

2. The Secretary-General's proposal was submitted in a biennial review of the work of the United Nations in the field of non-agricultural resources (U.N. Doc. E/4132). The proposal was meant to be "a major and practical contribution in this field to the second half of the United Nations Development Decade" (U.N. Doc. A/6460).

3. As described by Mr. De Seynes, U.N. Under Secretary for Economic and Social Affairs during the 1408th meeting of ECOSOC, 40th session.

4. The draft resolution (U.N. Doc. E/AC. 6/L. 330) was sponsored jointly by Ecuador, Pakistan, and the United States, and was adopted by ECOSOC without change as ECOSOC Res. 1112 (XL) (March 7, 1966).

5. The General Assembly text, later to become G.A. Res. 2172 (XXI) (December 6, 1966), asked the Secretary-General ". . . to undertake, in addition to the survey requested by the Economic and Social Council, a comprehensive survey of activities in marine science and technology, including that relating to mineral resources development . . ." and, for that purpose, to set up "a small group of experts to be selected, as far as possible, from the specialized agencies and intergovernmental organizations . . ."

The debate on the General Assembly draft resolution was extensive and abrasive enough to reflect some of the main lines of an emerging policy conflict. The basic issues were whether new studies on the marine resources beyond the continental shelf should be requested through the Secretary-General and whether the international community should rely on bodies such as the Intergovernmental Oceanographic Commission to supply the necessary information. The request that the Secretary-General create his own expert council for the study was a particular target of criticism.

The debate was not inspired solely by budgetary concerns of the intervening delegations. Political interests came through quite visibly. For example, the United States delegation defended the draft throughout the debate in the Second Committee. In this action, however, the United States spokesmen seem to have followed their own preferences for an internationally oriented course with a marked degree of initiative and independence from the Department of State.⁶ In time, evidence may become available to form a judgment whether, in fact, this was a case in which diplomats, enjoying considerable freedom of decision-making in a policy area of relatively low priority, actually made political steps of far-reaching consequences. In any case, the United States' diplomacy itself pushed the seabed issue into new political visibility and thereby catalyzed interests which eventually carried it onto the floor of the General Assembly.

The Soviet Union exerted considerable energy to get the issue away from the politically volatile atmosphere of the General Assembly by redelegateing it into the Intergovernmental Oceanographic Commission (hereinafter the IOC).⁷ While the Soviet delegate argued that unnecessary duplication should be avoided, it was Sir Edward Warner, speaking for the United Kingdom, who spelled out the real apprehension, namely, that "... a vast new and continuing activity in the United Nations might be opened up without adequate consideration

6. At this moment this can only be inferred from various signs. The strongest is the obvious discomfort shown by the U.S. policy makers, and the policy disarray, when the sea-bed issue was brought before the First Committee of the General Assembly and the move set in motion the congressional mechanism and the higher levels in the Department of State. But some reading of the internal policy-making strain can be also obtained from the fact that the marine affairs studies requested of the Secretary-General had to be supported by substantial funds obtained through non-official U.S. sources. For a statement by U.S. representative, Mr. Roosevelt, regarding the substantial contributions made by U.S. non-official organizations, see General Assembly, 21st Session, *Official Records*, Second Committee, 1062nd meeting (8 November 1966), par. 5. Mr. De Seynes, U.N. Under Secretary for Economic and Social Affairs, stated that thanks for obtaining such contributions were due to "trade union leader Walter Reuther." *Id.* 1063rd meeting, par. 52.

7. *Id.* 1062nd and 1063rd meetings.

of the financial and *other* implications. . . ."⁸ In retrospect it is, of course, quite striking to note that during the same debate and only a few months before Malta proposed the seabed item for the General Assembly agenda, Ambassador Pardo argued against the United States proposal which would involve the Secretary-General and the General Assembly in the seabed issue. A survey of the state of knowledge of the resources of the sea, he cautioned, may be too costly in relation to the benefits it could bring.⁹

1967—*The Mobilization of Interest*

The adoption of the resolutions requesting new studies of the resources of the deep ocean floor and the whole political process surrounding the resolutions were important ingredients in what became a rapid mobilization of interests in an issue which until then, at least from the perspective of the General Assembly, was politically so marginal as to be almost non-existent. In view of the initial Maltese policy in 1966 with its tendency to see the problem of the deep ocean floor as primarily a scientific concern best left to IOC, Ambassador Pardo's submission in 1967 of the new item for the agenda of the General Assembly was itself an effect of the mobilization rather than its beginning. Its novelty was primarily in its political thrust and in the forcefulness and imagination with which the issue was laid out.¹⁰ This was a classical example of a small country presenting a big issue effectively in order to achieve prominence, influence and other values.¹¹

8. *Id.* 1063rd meeting, par. 2 (emphasis added).

9. *Id.* 1062nd meeting, par. 33.

10. The Maltese submission of the item came in the form of a *note verbale* of August 18, 1967 requesting the Secretary-General to have the issue of the deep ocean floor included as a supplementary item in the agenda of the 22nd session of the General Assembly. In the *note verbale* the issue was outlined but briefly. The full and formal presentation lasting several hours was made on November 1, 1967 on the floor of the First Committee, complete with scientific and technical data so selected and arranged as to create an image of oceanic wealth within the reach of the international community. For the text of the *note verbale*, see General Assembly, 22nd Session, *Official Records* (Annexes: Agenda Item 92), U.N. Doc. A/6695 (1967). For Arvid Pardo's presentation, see U.N. Doc. A/C. 1/P/V. 1515 and 1516 (November 1, 1967), or HOUSE COMM., ON FOREIGN AFFAIRS, INTERIM REPORT ON THE UNITED NATIONS AND THE DEEP OCEAN RESOURCES, H.R. Rep. No. 999, 90th Cong., 1st Sess. 267-286 (1967). For a fuller analysis of the Maltese presentation, see Z. SLOUKA, SCIENTIFIC KNOWLEDGE AND INTERNATIONAL POLICY: THE CASE OF THE SEABED (forthcoming).

11. The question of the relative freedom representatives of small countries enjoy in the United Nations is of more than little interest. The contrast between the complex national restraints on major policy initiatives by representatives of countries such as the United States or the Soviet Union and the elbow room allowed to diplomats such as Ambassador Pardo, is considerable. In an informative newspaper profile of Arvid Pardo, Kathleen Teltch of *The New York Times* notes the agility with which the Maltese Ambassador

In 1967, the seabed issue escalated in the sense that it moved from relative obscurity in the Economic and Financial (Second) Committee into the more influential Political (First) Committee.¹² However, the crucial point of international policy remained essentially unchanged. The core question still was whether or not the issue of allocating rights to the resources of the deep ocean floor was ripe and should have been before the General Assembly at all.

In retrospect, the question really no longer existed. The Soviet Union futilely adopted a policy consistent with its 1966 stand when it asked that the whole matter be postponed for a few years while scientists looked more systematically into the properties of the deep ocean floor.¹³ The United States became much more cautious and restrained; the effort of its spokesmen to play the issue down was very obvious.¹⁴ The

searched for new subjects and then initiated and prosecuted new policies in the General Assembly; after the sea-bed he followed with a less spectacular success with international controls over radiological weapons and then with military implications of laser technology. Ambassador Pardo was quoted in the article: "We operate independently. We do not ask other countries to join Malta in sponsoring our proposals. We want them judged on merit. We base our proposals on study, on reading, on learning." N.Y. Times, Dec. 10, 1969, at 5.

12. When the original Maltese *note verbale* was submitted in August 1967 (*supra* note 10) the possibility was real that the agenda item would be allocated to the Legal (Sixth) Committee and that it might then find its way into the International Law Commission. This possibility arose primarily because the original title of the item described its subject as "Declaration and treaty . . ." and therefore the formulation of rules and the drafting of legal documents seemed indicated. However, after some informal consultations among various governments, Malta agreed to erase the terms "Declaration and treaty . . ." and have them replaced by "Examination of the question . . ." The change and the resulting allocation of the item to the Political Committee were approved simultaneously by the General Assembly on October 6, 1967. Report of the First Committee, U.N. Doc. A/6964 (December 12, 1967), in General Assembly, *Official Records*, 22nd Session (Annexes: Item 92). Cheever infers from the United Nations debates that a great majority of governments did not want the item in the Legal Committee and in the International Law Commission because they were not ready to commit themselves to a new treaty regime, and because they considered the sea-bed issue to be an economic and political matter of fundamental national interest. See Daniel S. Cheever's comment in panel discussion focused on national attitudes toward international organizations for the sea, in *THE LAW OF THE SEA: INTERNATIONAL RULES AND ORGANIZATION FOR THE SEA* 398 (L. Alexander ed. 1969) (Proceedings of the 3rd Annual Conference of the Law of the Sea Institute, June 1968).

13. *E.g.*, see statement by Mr. Mendelovich in the Political Committee, U.N. Doc. A/C. 1/PV. 1525 at 8-21 (November 10, 1967). The Soviet Union saw the establishment of a special committee and the formulation of basic principles as risky undertakings, labelled the question as "premature" and warned against "over-hasty action."

14. The United States statements took on a considerable and elaborate cloak of ambiguity. There were freely used phrases such as those describing the deep ocean floor as "the legacy of all human beings" to be used "for the benefit of mankind" in such a way as to keep it open to "all States, without discrimination" and without "unfair

British, on the other hand, now accepted the inevitable and were quite ready to go along with the policy debate as long as it was low-keyed and inconclusive.¹⁵ The policies of the three major powers were certainly far from identical in 1967. However, a convergence process clearly started, and the policy distances originally separating most of the larger powers were visibly shortened. The majority of the countries of the industrial North would have probably deferred the seabed issue if it were politically feasible to do so.¹⁶ But there was no going back. The *Ad Hoc* Seabed Committee was established by a unanimous vote of the General Assembly¹⁷ as an inevitable step toward a further political escalation of the problem.

1968—*The Stage Is Set*

By the time the *Ad Hoc* Seabed Committee started its work in 1968, the policy concerns shifted considerably in the direction of international action. The pitch of the debates may have been a little below its 1967 level primarily because the main battle had already been fought. What had been keenly argued and contested in 1966-67, now was entirely out of the way; the seabed issue as a political problem was fully in the lap of the world organization. The major powers of the advanced world yielded some ground to the mounting pressures from smaller and developing states. When the question arose as to the *Ad Hoc* Committee's mandate for the future, no opposition was voiced against its continuation. Consequently, the *Ad Hoc* qualification was removed and membership was increased from thirty-five to forty-two.¹⁸

The policy conflict now revolved about the question of how the United Nations should proceed. Many advanced countries, the major powers among them, were quite content to let the seabed debate linger on in a very low key. The developing countries favored the institution-building. Thirty-nine of them¹⁹ sponsored a draft resolution requesting the

competition"; however, the controlling policy was much better represented by the emphasis laid on the need to move ahead with "all deliberate speed" and on "progressive development of general standards and principles." See especially statements by Messrs. Goldberg, Abel and Popper in the following documents: U.N. Doc. A/C. 1/PV. 1524 at 18 (November 8, 1967); U.N. Doc. A/C. 1 1530 at 18 (November 16, 1967); U.N. Doc. A/C. 1/PV 1542 at 18-22 (December 7, 1967); U.N. A/AC.135/SR.3 at 13 (March 20, 1968).

15. The British consistently advocated "a slow and careful approach" without committing themselves to any definite position. *E.g.*, see British statements as recorded in U.N. Doc. A/C. 1/PV. 1524 at 8-16 (November 8, 1967), U.N. Doc. A/C. 1/PV. 1542 at 16-17 (December 7, 1967).

16. Full analysis of this trend is in SLOUKA, *supra* note 10, chapter 2.

17. G.A. Res. 2340 (XXII), 22 U.N. GAOR Supp. 16 at 14-15, U.N. Doc. A/6716 (1967).

18. G.A. Res. 2467 C (XXIII), 23 U.N. GAOR Supp. 18 at 16, U.N. Doc. A/7218 (1968).

19. The sponsors were African, Asian and Latin American countries, with Yugoslavia joining them later as the only European country. For the full list of sponsors see U.N. Doc. A/7477 at 6 (December 20, 1968).

Secretary-General to study "the question of establishing in due time appropriate international machinery for the promotion of the exploration and exploitation of the resources" of the deep ocean floor while "taking into consideration the interest and needs of the developing countries. . . ." ²⁰ The draft resolution encountered serious difficulties in the Political Committee. There were seventy-seven affirmative votes, nine against, and eighteen abstentions.²¹ The General Assembly did not change this voting pattern.²² For the first time in the seabed policy-making process, the United States did not vote affirmatively for a resolution and instead led, with a few other developed countries, the block of abstentions. Also making history were the negative votes, all of them coming from the Soviet Union and its allies. The stage was set for 1969.

1969—The Year of Action

In 1969, the main policy concern focused on normative action, on the actual formulation of controlling principles and law-making mechanisms. The hot issue of 1968 cooled down perceptibly. A draft resolution requesting the Secretary-General to "prepare a further study on various types of international machinery . . . having jurisdiction over the peaceful uses of the sea-bed and the ocean floor . . .", a request which had caused a rift in 1968, now went through smoothly with a 100-0-9 division of the vote.²³ The pressing demands that the international community move toward the articulation and acceptance of norms effectively and immediately regulating state conduct were embodied in two draft resolutions. One requested the Secretary-General "to ascertain the views of Member States on the desirability of convening at an early date a conference on the law of the sea . . ." ²⁴ The split of the General Assembly vote on this text was rather wide: 65-12-30. Although no roll call was taken, the general lines of the polarization which

20. The text of the resolution can also be found in 8 INT'L LEGAL MATERIALS 204-215, (1969).

21. For a full survey of the formulation and voting on this and the other three sea-bed resolutions of 1968 see U.N. Doc. A/7477 (December 20, 1968). The bloc of 77 nations voting in favor of the draft resolution on the feasibility of international control machinery for the deep ocean floor consisted of developing countries joined by Denmark, Finland, Greece, Iceland, Japan, Netherlands, Norway, Spain and Sweden.

22. See Table, *supra* p. 65.

23. G.A. Res. 2574 C(XXIV), 24 U.N. GAOR Supp. 30 at 11, U.N. Doc. A/7630 (1969). There was no roll-call, but the 11 abstentions included those who in 1969 cast negative votes on the same proposal, while the 1968 abstentions changed into affirmative votes. The text of this and all other 1969 General Assembly sea-bed resolutions are reprinted together with the voting records, in 9 INT'L LEGAL MATERIALS, 419-423 (1970).

24. G.A. Res. 2574 A (XXIV), 24 U.N. GAOR Supp. 30 at 10, U.N. Doc. A/7630 (1969).

emerged in 1968 were again quite visible. This polarization emerged in full light during the climax of the 1969 policy-making process when a draft resolution was presented demanding that until an international regime of the deep ocean floor were established, all exploitation of such areas should be halted and no claims to any part of the deep ocean floor or its resources were to be recognized.²⁵ The recorded vote of sixty-two in favor, twenty-eight against and twenty-eight abstaining, with eight absentees, was almost a classic split. The bloc of sixty-two read like a roster of the less developed and non-aligned countries of Africa, Asia, Latin America, and Finland, Sweden and Yugoslavia. The twenty-eight against represented the developed North, including the United States and the Soviet Union with their respective allies and South Africa. Only Ghana and Malta disturbed the homogeneity of this group. The abstaining bloc and the absentees reflected various special interests or, perhaps, disinterest.²⁶ The resolution, of course, had little chance to have any effect on the actual exploitation of deep ocean floor resources. Little such exploitation was then, and is now, really taking place anywhere. Besides, with the boundaries between seabed areas under national jurisdiction and the deep ocean floor undefined, the resolution, instead of inducing the developed countries to move more willingly and swiftly toward some international regime embodying the principle of sharing the ocean floor riches with others, could just as well have prodded them to claim progressively larger segments of the ocean floor as falling under their own coastal jurisdiction.

That an important phase of the seabed policy-making process culminated in 1969 was quite apparent in 1970. The high 1969 policy polarization along the North-South axis was followed by the splintering of each of the two blocs into smaller mixed segments. Again four major seabed draft resolutions were before the General Assembly, but there was little real fighting over them.²⁷ Only one of the resolutions calling for a comprehensive law of the sea conference to be convened in 1973 or later drew seven rather routinely negative votes from Eastern Europe and six assorted abstentions.²⁸

25. G.A. Res. 2574 D (XXIV), 24 U.N. GAOR Supp. 30 at 11, U.N. Doc. A/7630 (1969).

26. This group was a real mix. It included Cuba, Rumania, Israel, United Arab Republic, Indonesia and Libya, among others. Possibly many of these countries abstained because of some concern about the existing or planned oil and gas exploitation off their coasts.

27. G.A. Res. 2749 (XXV) was a declaration of principles whose substance included much that would have been rejected as preposterous only two years earlier. Now it went 100-0-14. G.A. Res. 2750 A (XXV) and 2750 B (XXV) calling for economic and political studies of some aspects of the sea-bed problem passed by 104-0-16 and 111-0-11 respectively. All 1970 General Assembly sea-bed resolutions are reprinted in 10 INT'L LEGAL MATERIALS 220-30 (1971).

28. G.A. Res. 2750 C (XXV), 25 U.N. GAOR Supp. 28 at 25, U.N. Doc. A/8028 (1970). The vote was recorded.

The relative quiet after the 1969 storm was not a sign of an expanding consensus. It simply signalled that the seabed issue was thoroughly politicized, the lines of contention were drawn, and with the subtleties afforded by the United Nations diplomatic game largely exhausted, the policy-making process started to shift into channels beyond the world organization. But what factors made the seabed issue go through its initial phase in the United Nations the way it did? Was there anything beyond the usual push and pull of diverse national interests that may have given the policy-making process the acceleration and scope it achieved between 1966 and 1970?

DATA, EXPERTISE, AND INTERNATIONAL OCEAN POLICY

All political issues before the General Assembly fall within the broader context of East-West rivalries, North-South tensions, or the various subsets of regional strife of the Middle East, Indo-Pakistan or Sino-Soviet variety. These confrontations and relationships often determine the size and intensity of a policy consensus on an international issue more profoundly than the content of the issue itself would suggest.

Many policy questions laid before the United Nations also have another, very different dimension: they are open to various, essentially non-political pressures. One particularly rich and general source of such influences is the considerable scientific and technological component penetrating so many concerns of modern society. This study concentrates on the impact of science and technology on the seabed policy-making in the United Nations not only because this component has been so very conspicuous in ocean affairs, but also because it may possibly have a more general significance for other international law-making efforts. One point to keep in mind is that the scientific and technological component of international policy-making, however penetrating, is only one of the major influences on the international behavior of states. After assessing its impact, it would be imperative, for the sake of greater balance, to identify and evaluate the particular thrust of other elements, a task beyond the scope of this paper.

The basic hypotheses to be explored are rather simple. The evolution of the United Nations seabed policy-making process suggests that the scientific and technological component had some effects on the mobilization of interests in the seabed issue (the type of active participants in the political interplay), on the scope of the policy problem in terms of other ocean-related questions included in or appended to the seabed issue, and on the limits of time within which the seabed issue could and should be settled. These three major effects, partly overlapping and each with a number of subtleties and ramifications, are now to be examined.

Technical Information: A Radix of Ocean Politics

Marine science and technology, as a set of data and capabilities, had a profound effect on the mobilization of political interests in the United Nations. At first it provided the Trojan horse in which the seabed issue invaded the world organization as a political rather than a technical problem. It then alerted and energized into action governments to whom the seabed had been an entity even more remote and politically inert than the moon and outer space. It also provided new opportunity for political influence to those who have ordinarily had little such opportunity. Scientists, engineers, various functional organizations and interest groups, and administrators not ordinarily involved in scientific and technological affairs found a new access route to policy-making.

The brief survey of the events of 1966²⁹ already indicated how requests for scientific and technical reports on the resources of the deep ocean floor and other related issues served as powerful catalysts of the international policy-making process and carried the signals from the Economic and Social Council and from the Economic and Financial Committee of the General Assembly into its Political Committee. The use in 1966 of technical information to mobilize political participation contrasted sharply with 1958.

The proposals made in the fifties for an internationalization of the deep ocean floor³⁰ had two common denominators. Not only were they formulated in primarily legal terms, but their proponents completely failed to show any political and economic potential through such scientific and technical data and economic projections as were then available. They stirred little interest. Consequently, the issue was undersold and lost.

Yet all the technical information employed so effectively in the sixties had been available in the fifties as well. The reports requested in 1966 of the Secretary-General³¹ and the data Ambassador Pardo carefully plucked in 1967 from the available knowledge about the properties of the seabed and the related technologies to fire the imagination of policy-makers³² contained nothing new. The presence throughout the three

29. See pp. 65-68.

30. See p. 66 and especially note 1.

31. The reports, referred to at p. 66, were eventually issued as U.N. Secretary-General, *Resources of the Sea* [(Part I: Mineral Resources of the Sea Beyond the Continental Shelf), U.N. Doc. E/4449/Add. 1 (February 19, 1968)]; (Part II: Food Resources of the Sea Beyond the Continental Shelf Excluding Fish, U.N. Doc. E/4449/Add. 2 (February 7, 1968)); and U.N. Secretary-General, *Marine Science and Technology: Survey and Proposals*, U.N. Doc. E/4487 (April 24, 1968).

32. Ambassador Pardo quoted miscellaneous data illustrating the urgency of the seabed issue and the imminence of the exploitation of sea-bed resources by those technically capable to do so; among his sources were *The New York Times*, *Komsomolskaya Pravda*, *Oil and Gas Journal*, and *Forbes*. But his main source was a volume by an

major ocean areas of metal-rich manganese nodules lying freely and in huge quantities on the deep ocean floor was known since the voyage of the Challenger in 1872-76.³³ The technological accessibility and the economic potential of that latent resource have occupied considerable attention since the end of World War II.³⁴

This does not mean that in the sixties the scientific and technical information was the only effective factor in the mobilization of political interests. There was, at the same time, a confluence of various interacting conditions which helped escalate the seabed issue into a major policy problem. Among the elements which set the stage was an increasing frustration of the developing countries over their prospects of rapid growth, the decreased tensions of the East-West conflict and the relative unwillingness and inability of the superpowers to resist effectively the smaller states' policies which did not involve the vital interests of the superpowers. However, the projection of technical data was clearly the direct stimulus of political interaction just as the demands for scientific and technical reports served as the instrument to get the issue into the United Nations. The Secretariat itself moved energetically to intensify the awareness of governments and other organizations in the potential of the seabed issue. The Secretary-General, empowered by the General Assembly to prepare a special survey of marine science and technology with the help of an ad hoc group of experts, created a prestigious council. Originally envisaged as consisting of no more than eight men,³⁵ the group of experts eventually had thirty-two participants and six observers. The size of the group, the

American oceanographer and mining engineer, J. MERO, *THE MINERAL RESOURCES OF THE SEA* (1965). From this Ambassador Pardo freely used data showing the range and quantities of valuable sea-bed resources: aluminum enough for 20,000 years at the 1960 world rate of consumption, manganese for 400,000 years, zirconium for 100,000 years, copper for 6,000 years, nickel for 150,000 years, cobalt for 200,000 years, molybdenum for 30,000 years, and all this in the Pacific Ocean alone. For references to the text of the Pardo address, see note 11 *supra*.

33. The expedition's official report on deep sea deposits was published only in 1891 as a part of a 50-volume collection. Murray & Renard, *Report on Deep Sea Deposits*, 5 REPORT ON THE SCIENTIFIC RESULTS OF THE VOYAGE OF H.M.S. CHALLENGER (C. Wyville Thomson ed. 1891).

34. A reference list of some 190 published items in Mero, *supra* note 32, at 296-304 indicates the proliferation in the 1940's and 1950's of scientific and technical reports on deep ocean floor deposits and on their exploitability.

35. G.A. Res. 2172 (XXI), par. 4, called for a small group of experts to be selected especially from the specialized agencies and inter-governmental organizations. The Secretary-General suggested the actual size of the group in par. 4 of a note on the financial implications of the proposal to set up the group. See U.N. Doc. A/C.5/1085 (November 15, 1966) in U.N. General Assembly, 21st Sess., *Official Records*, Annexes, Item 94.

scientific prominence of many of its members, and the number of organizations represented³⁶ were elements likely to mobilize considerable interest in the international scientific community as well as in the national systems. Those scientists who were aware of the political issues acted as advisors and as consultants.

The second step in the process of mobilizing political interests by the employment of the scientific and technological component grew out of the first. Supported by his group of experts, the Secretary-General sent all the member states a *note verbale* and a questionnaire³⁷ requesting data describing each nation's activities in marine science and technology and the views of each government regarding its need for international activities in marine science and technology. The impact of this type of inquiry as an interest-mobilizing device is obvious; the responding governments³⁸ had to survey their potential, interest and policy in marine science and technology and to reassess their goals.

All this preceded the submission of the Maltese proposal and, very possibly, also stimulated the policy of Malta itself more rapidly than the Secretariat had anticipated. In any case, by the summer and autumn of 1967 the ground work was done and Ambassador Pardo's well-prepared presentation only served to intensify and broaden the spectrum of aroused interests while, at the same time, shifting the issue more into the public domain and thereby multiplying the pressures on the formation of national policies.

The mobilizing efforts, significantly aided by the availability and manipulation of technical data and by the need for technical information, resulted in an expanded and diversified field of participants in the policy-making process. The effects were very obvious on the governmental level. During the initial phases of the seabed debate in the General Assembly and in the *Ad Hoc* Seabed Committee, sixty-four countries contributed to the recorded exchange of views

36. Among the organizations represented were the Food and Agriculture Organization, the Intergovernmental Oceanographic Commission of UNESCO, the World Health Organization, the Inter-Governmental Maritime Consultative Organization, the International Atomic Energy Agency, the International Hydrographic Bureau, the World Meteorological Organization and finally, the Scientific Committee on Oceanic Research of the International Council of Scientific Unions, the only non-governmental organization formally represented. Eleven experts participated in their individual capacity; they were nationals of the United States (3), France (2), the Soviet Union (2), the United Kingdom (2), Japan (1), and Iceland (1).

37. Full texts of the *note verbale* and the questionnaire are to be found as Annex II in U.N. Doc. E/4487 (April, 24, 1968).

38. Sixty-three governments responded to the *note verbale*. For list see Annex III in U.N. Doc. E/4487 (April 24, 1968).

between November 1967 - July 1968.³⁹ Of these sixty-four, spokesmen for thirty states advocated the establishment of an international regime for the deep ocean floor. Most of these (twenty-five) were countries relatively uninvolved in marine affairs and without appreciable levels of national expertise in marine science and engineering.⁴⁰ On the other hand, most of the nations with such expertise and with well-developed and active interests in the uses of the ocean showed almost no inclination to move toward an international regime. Thus, the political burden of maintaining the seabed question as a live issue in the United Nations policy process rested primarily on states who, until then relative strangers to marine affairs, were mobilized into action by the dissemination of the technical data and by the resulting images of more or less readily accessible submarine riches threatened by imminent but unequal exploitation by the advanced countries. To some extent, the intensity of the newly formed national interest in the economic resources of the seabed and in the political potential of the seabed issue also manifested itself in the swelling of the membership of the Seabed Committee: starting with thirty-five in 1967, it went to forty-two in 1968 and to eighty-six in 1970.

On the level of specialized agencies and other international organizations, the mobilizing function of the scientific and technological component was somewhat different but also clearly distinguishable. These organizations were called in, or projected themselves into, the policy-making process largely because of the relevance of their expertise.⁴¹ However, the technical data and evaluations they offered were inevitably and inextricably mixed with their policies.⁴²

39. An analysis of the national positions on which this count is based is presented in *Slouka*, *supra* note 10, ch. 2.

40. The five countries with higher levels of oceanographic expertise were Austria, India, Mexico, Netherlands, and Sweden. But of these, only Sweden demanded international controls as a matter of high urgency.

41. See note 36 *supra* for organizations represented through their experts on the Secretary-General's group of experts. This, of course, was not an exceptional instance. When issues of considerable technical complexity come up for policy discussion, the United Nations more or less routinely seeks all the expertise available. The General Assembly resolution to convene in 1973 a comprehensive conference on the Law of the Sea specifically invites six major specialized agencies to cooperate with the Seabed Committee in the preparation of scientific and technical documentation and explicitly calls on still other organizations to join the effort. G.A. Res. 2750 C (XXV), 25 U.N. GAOR Supp. 28 at 25, U.N. Doc. A/8028 (1970). The General Assembly resolution on the preparation of the 1972 Conference on the Human Environment invites the cooperation of all the specialized agencies and all other inter-governmental and non-governmental organizations concerned. G.A. Res. 2581, (XXIV), 24 U.N. GAOR Supp. 30 at 44, U.N. Doc. A/7630 (1969).

42. Consider, for example, the statement made in the First Committee by a spokesman for the Intergovernmental Oceanographic Commission of UNESCO, the organization

Next, the United Nations staff officers in the sections of the Secretariat responsible for servicing the seabed issue found themselves in positions from which they could manipulate some aspects of the international bargaining by injecting their own judgment as to what would be a desirable course of the future international policy. They projected their views into some of the proceedings directly.⁴³ In other instances, the delegates of some of the less developed countries provided them with opportunities for policy influence when, without adequate guidance from their capitals⁴⁴ and unable to back-up the new policy

seeking to broaden its responsibilities for the planning and coordination of oceanographic research:

The key problem in Malta's proposal is the exploitation of the enormous reaches of the ocean and, particularly, the mineral resources of the ocean floor. Most of the legal, political, social, economic and other aspects evoked in this connexion are associated with the problem of resources. One cannot, however, envisage any solution without realizing that to do so mankind should have at its disposal all the knowledge of the ocean accumulated over the years, and much new knowledge which may be gathered only through persistent scientific research A lot must be done in promoting scientific investigations, in improving and developing the necessary logistics of such investigations, in establishing a policy framework for effective international co-operation, and in providing technical assistance to those countries whose scientific and technical development lags behind. One could not, after all, have started building electrical power stations before inventing electricity. Neither should one start to exploit the ocean floor before the solid scientific foundation for this exploitation is established.

Mr. Varchaver's statement, U.N. Doc. A/C.1/PV. 1527 at 5-6 (November 14, 1967) (emphasis added).

43. An illustrative case of mixing technical expertise with value judgments made by the officers of the Secretariat was the implementation of ECOSOC resolution 1112 (XL) which helped stimulate among the developing states an active interest in the deep ocean floor issue. That resolution called for a survey of "the present state of knowledge" of the sea resources and their exploitability and also asked that "any gaps in available knowledge which merit early attention by virtue of their importance to the development of ocean resources, and of the practicality of their early exploitation," be also identified. In the context of the resolution, and as was later stressed by the sponsors (especially the United States), the reference to "gaps in available knowledge" meant "scientific and technical knowledge." However, the Secretariat chose to identify as gaps "the legal status" of the sea-bed resources and the "ways and means" of ensuring that the resources benefit the developing countries—gaps not so much in knowledge as in social organization. See U.N. Doc. A/C.1/952 (October 5, 1967). To implement this interpretation of its mandate, the Secretariat added a number of paragraphs amounting to a clear advocacy of a sea-bed regime placed under a public international body and based on the principle of universal sharing in the benefits. While the technical substance of the survey was prepared by Dr. Frank Wang, Marine Geologist of the U.S. Geological Survey serving as a special consultant to the Secretary-General, the closing paragraphs regarding the preferred political solution were the work of the Ad Hoc Unit on Marine Science and Technology. The entire document, U.N. Doc. E/4449/Add. 1 (February 19, 1968), was issued as a report by the Secretary-General.

44. Data show clearly the scope of the technical inadequacies contributing to the lack of back-stop available to many delegations from their home governments. A world-

tasks with the technical information needed, they turned to the professional United Nations staff for enlightenment.⁴⁵ Some of the professionals in the United Nations thus became middlemen between knowledge and policy, and in many cases the medium and the message again were thoroughly mixed.

Finally, there remains the subtle but possibly penetrating influence exercised by individual scientists cast in the roles of international and national consultants or functioning as members of their own non-governmental scientific organizations. For instance, the status of the non-governmental Scientific Committee on Oceanic Research as an official consultant to the Intergovernmental Oceanographic Commission was strengthened when the seabed issue entered the United Nations. In its efforts to expand the role and impact of the Committee, the organization's energetic leadership was clearly aided by the recognized need for scientific and technical information as a guiding light for the policy-making efforts.⁴⁶

In sum, one of the functions of the scientific and technical component was to blend a diversity of goals into one single policy arena. The usual clash between those defending the status quo and others demanding a change in the direction of economic justice and even equality became an array of intertwined interests and demands. Among the diverse priorities pressed by different actors was the strengthening of the United Nations through independent financing derived from the exploitation of the internationalized seabed. Some organizations sought new functions in order to obtain a fresh lease on life or more power. For some states, security concerns came first. To still others, preservation of the widest possible freedom of oceanic research was the declared fundamental value. There was much more: those who saw little of real interest in the ocean sought to participate in the policy-making process in order to have a lever in international negotiations for values unrelated to marine affairs. The making of the seabed policy was certainly democratized, but the cost of such democratization may often be a diluted, ineffective consensus.

wide survey made in 1964 by the U.S. National Academy of Sciences identified 2,563 senior professional oceanographers. Over half of the total was concentrated in six countries: Canada, Federal Republic of Germany, Japan, U.S.S.R., United Kingdom, United States. Fifty-nine states had none, and twenty-six states had less than five oceanographers each. See U.N. Doc. E/4487 at 64 (April 24, 1968).

45. This statement is based on a series of interviews this author conducted at the United Nations between 1968 and 1970. Many of the actual cases are not presently free to be individually reported. However, for some illustrative instances whose description is more extensive than this article could accommodate, see SLOUKA, *supra* note 10, ch. 3.

46. The best available source indicating the expanding role of SCOR is its *Proceedings*, especially vol. 5 - 7, issued by SCOR at La Jolla, California.

Scientific Data and the Politics of the Future

Where scientific and technical information generates an international policy-making process, the futuristic dimension of that process becomes its dominant characteristic. In this sense, the seabed issue has been an exceptional case among other policy problems before the United Nations. Almost every policy-making effort is undertaken in order to regulate the subsequent conduct of states. But the stimulus which brings most policy issues before the United Nations is usually an actual or imminent conflict in the real world.⁴⁷ International systems or order are still more effectively produced by actual disorder than by preventive, anticipatory regulation. In the amorphous political process of the international community, the pragmatic still leads over the programmatic.

In a technological and geopolitical sense, the deep ocean floor was in 1966-67 and is today far from becoming a field of active contention among nations stemming from material utilization of space and resources.⁴⁸ In fact, some observers argue that actual or imminent conflict over the seabed resources will be necessary to generate agreement. The time for the crystallization of order "will not come until the major posers have made discoveries of minerals in areas which are too close to each other for comfort, or until they are able to produce minerals in such profusion as to require some system of balancing world production against world demand."⁴⁹ That the seabed issue is

47. The Middle East, Kashmir, Congo, West Iran, the arms race and decolonization are typical instances in which the United Nations was to play the conflict-resolving function. However, the case of Antarctica, so often referred to as analogous to the problem of the sea-bed and a model for its resolution, was also spurred much more by an actual conflict between countries than by their foresight. The "temporary" internationalization of Antarctica through the 1959 Treaty was a response to a prolonged and progressively worsening conflict between the United Kingdom and the Latin American countries claiming portions of Antarctica. The Treaty successfully doused the smoldering clashes between states driven against one another by their notions of national prestige in a competition for frozen acreage nobody really knew what to do with except to explore and show off on political maps as national property. The call for free scientific exploration of an Antarctica without any military weapons provided a face-saving way out to states fighting for a vast emptiness, and it also gave a chance to others, such as the Soviet Union, to suppress the urge to join the contest. A particularly good study of the politics of Antarctica and its analogy to other issues is P. JESSUP & H. TAUBENFELD, *CONTROLS FOR OUTER SPACE AND THE ANTARCTIC ANALOGY* (1959).

48. Of course, in specific areas of the marginal seas, such as the North Sea, material interaction of states in the exploitation of the space and resources of the sea-bed has already brought about political settlements and legal arrangements.

49. Northcutt Ely, "The Administration of Mineral Resources Underlying the High Seas," paper presented to the National Institute on Marine Resources of the

more a conflict in the minds of men than in the sea and that it rests on national interpretations of various types of scientific and technical data rather than on physical interactions of states, was recognized in the early stages of the United Nations debate. Mr. Akwei of Ghana stated the case most eloquently:

In the past, the United Nations has been what I may call conservative in the sense that it has mainly concerned itself with the past and the present: where we could have looked ahead and taken firm steps to deal with matters still in their embryonic stages, we have been wont to shirk such action We all know too well how dearly that attitude has cost us. Having delayed too long, we have often been confronted with far more complicated situations which we have then frantically tried to solve but, alas, too late. Thanks to the Maltese initiative, we have a unique opportunity to get out of the rut, to look ahead and to take decisive action now to prevent future difficulties.⁵⁰

We do not yet know and probably will not know for some time whether and under what conditions scientific and technical data will have a sufficient thrust to sustain a policy issue in its intended course until it reaches consensus. However, it is obvious that technical information does compel governments to bargain and at least initially have enough force to politicize issues. The geopolitical concepts emphasizing physical accessibility as the primary impulse for the

American Bar Association, June 1967, Long Beach, California. Compare the following view:

I cannot agree with those who say that international law will not and should not be developed until a conflict situation has arisen, that is, until mining has actually begun. It is inconceivable to me that we cannot design institutions that will serve to guide development rather than to follow it.

Brooks, *Deep Sea Manganese Nodules: From Scientific Phenomenon to World Resource*, *THE LAW OF THE SEA: THE FUTURE OF THE SEA'S RESOURCES* 32 (L. Alexander ed. 1968) (Proceedings of the 2nd Annual Conference of the Law of the Sea Institute, June 1967).

⁵⁰ U.N. Doc. A/C.1/PV. 1526 at 36 (November 13, 1967). Mr. Akwei's optimism does not necessarily reflect the optimism of inexperience with which some of the newly independent countries entered the process of international policy-making. Sir Leslie Glass, with the centuries of British pragmatism in foreign involvements behind him, made very similar comments:

Here in the United Nations we spend so much time trying to solve old problems—problems born of the past errors and wickedness of mankind—that it is immensely stimulating and encouraging to be asked to look forward—forward to the new world made possible for mankind by technological advance. I think we should all be deeply indebted to the representative of Malta for jolting us out of our preoccupation with the present and the past and forcing us to raise our eyes and look at the wider horizons of the future.

U.N. Doc. A/C.1/PV. 1524 at 8 (November 8, 1967).

politicization of space need to be refined. Jean Gottmann, a political geographer, stated some time ago, "Our political world is a limited one: it extends only over the space accessible to men. Accessibility is the determining factor: areas to which men have no access do not have any political standing or problems."⁵¹ This statement is acceptable only if the term "access" is broadened enough to include cognition. The focus must be shifted from physical accessibility to the phenomenological level of perceived opportunities and imagined values.⁵² The futuristic, anticipatory character of international policy-making stimulated by scientific and technological data has at least two important consequences, one for the structure of the policy-making process, and another, much more fundamental, for the very nature of the international system of order and the prospects of its development.

Under the first category, the seabed issue strongly suggests that a pronounced futuristic dimension of a policy issue still further multiplies and diversifies the field of participants. This effect is actually but a variation of the mobilizing role of scientific and technical information in international politics. The governments active in policy-making, whose interests are aroused by the dissemination of data, determine their policies according to different timetables; some engage in long-range planning while others are more concerned about their immediate needs. Each, however, must have made some kind of judgment before it formulated its own seabed policy about the alternative futures toward which the international community was heading. A government proceeding on the assumption that international military conflict will remain a major mode of resolving disputes is likely to shape its policy priorities very differently from one which sees international organization as a growing and in the foreseeable future, an effective or even dominant method of maintaining international order. Where one state anticipated that the seabed policy now being negotiated will be implemented and will yield prac-

51. Gottman, *The Political Partitioning of Our World: An Attempt at Analysis*, 4 *WORLD POLITICS* 512 (1952). Gottmann applied the same notion of physical accessibility to the outer space:

When the first explorers land on the moon, the earth's satellite will pass from the field of astronomy to the geography textbooks and lunar political problems will appear and grow steadily.

52. For good studies and discussions of the role of perceptions and images in decisionmaking see, *e.h.*, Boulding, *National Images and International Systems*, 3 *J. OF CONFLICT RESOLUTION* 121 (1959); Boulding, *The Learning and Reality-Testing Process in the International System*, 21 *J. OF INT'L AFFAIRS* 16-39 (1967); K. BOULDING, *THE IMAGE: KNOWLEDGE IN LIFE AND SOCIETY* (1956). See also Holsti, *Cognitive Dynamics and Images of the Enemy*, 21 *J. OF INT'L AFFAIRS* 16-39 (1965).

tical results only in the early or late eighties, another may have been motivated only by its perceptions of the early seventies.⁵³ This diversity exists, of course, in every multilateral bargaining. But it is much more pronounced where policies now being determined are to control the behavior of states in a future not only relatively distant but also politically and technologically so very difficult to predict.⁵⁴ With each nation its own forecaster, the multilateral policy-making process no longer simply has one hundred thirty known potential participants. Depending how they project their national interests and needs into different images of the future, they also fall into different time-zones differently programmed. The diversity may border on total cacophony.

The second hypothesis derived from the seabed issue is the underlying and far-reaching possibility that, indeed, we may see here the beginning of a trend toward international policy-making being more and more often stimulated by scientific and technical information than by conflicts among states. The question of the seabed was not brought into the United Nations in an attempt to cool down and resolve a highly contentious issue threatening to boil over into a crisis. On the contrary, a fresh contest among nations was started in the diplomatic forum itself by combining scientific and technological information with the effective U.N. mechanisms for the dissemination and manipulation of such data for policy purposes. This whole question goes far beyond the scope of the present study surveying the seabed politics of the General Assembly in order to reach some limited judgments about the prospects of the current efforts toward a redefinition of the order of the sea. But even if it cannot be examined, it must at least be posed: Can scientific and technical knowledge, internationally disseminated among the policy-makers of individual nations and properly interpreted as to its social significance, replace actual state involvement, interaction and conflict as a catalyst of order?

The Sea and the Scientific Imperative

As a catalyst of political interests in the deep ocean floor, the scientific and technological component affected the structure of the policy-making process by bringing into it a wide range of participants

53. In 1969, for instance, the U.S. Under Secretary of State, Alexis Johnson, predicted that there will be no international agreement on the deep ocean floor before 1980. Mr. Johnson made this statement on May 23, 1969 in the U.S. Marine Resources Council. 11 OCEAN SCIENCE NEWS, June 27, 1969, at 3.

54. On the effects of the low predictability of technological change on international law-making see Wohlstetter, *Technology, Prediction, and Disorder*, THE DISPERSION OF NUCLEAR WEAPONS (R. N. Rosencrance ed. 1964). Problems involved in the forecasting of political change are discussed in Friedlander, *Forecasting in International Relations*, 2 FUTURIBLES; STUDIES IN CONJECTURE 1-111 (B. de Juvenel ed. 1965).

with diverse goals. It has also helped to expand the substance of the policy-making effort. For example, the attempts in the United Nations to arrive at an international seabed policy may be seen as a process of technology assessment and control. The economic, political and social consequences of science and technology relating to the deep ocean floor are considered in terms of the policy-makers' specific values and goals, and appropriate management schemes are then proposed. But this requires that the policy-makers be continuously in touch with scientific and technical data and with experts capable of interpreting them. As a result, not only the data but also scientific and technological modes of thought and action are injected into the political process, especially where they fit the purposes of the decision-makers.

As the seabed issue evolved in the United Nations, this symbiosis of science and politics manifested itself in two major ways. The political task of designing an acceptable regime for the deep ocean floor was expanded in line with the scientific grasp of the inter-relatedness of oceanic phenomena. Many participants had the inclination to seek further scientific and technical data as effective tools in bringing about an international consensus on a seabed policy.

Modern marine science has global, comprehensive dimensions. To advance oceanographic knowledge, marine scientists must study the various natural phenomena within the context of the world ocean seen as a larger unity.⁵⁵ This mode of systemic thinking, so well exemplified in modern ecological perspectives,⁵⁶ is then carried over into the world of policy making. The primary responsibility for this transfer of scientific concepts into political affairs does not rest with the scientists themselves. Much more often it is the policy-makers and the students of politics who attempt to build the policy design along the lines of the scientific perspective. The argument often sounds beautifully simple and eminently sound: "After all, the world ocean is a system, a bio-

55. Professor Wooster of the Scripps Institution of Oceanography and President of SCOR stated the scientific requirement for studying the ocean as a whole:

The processes operating in the waters are of large scale and are driven by forces of planetary dimensions. Life in the ocean is affected by these processes, so that the type, number and distribution of organisms may be controlled by events occurring in distant places. Because of this immense unity, investigation of the world ocean is inherently an international affair, requiring cooperation ranging from the simplest exchange of information to the most complex integration of research programs.

Wooster, *The Ocean and Man*, 221 SCIENTIFIC AMERICAN, Sept. 1969, at 218.

56. The various U.N. documents and other materials related to the preparations for the 1972 U.N. Conference on the Human Environment at Stockholm provide plentiful evidence of the tendency to use ecological concepts as indicators of the scope and characteristics of the required institution through which to manage the uses of the environment.

system. Its continued equilibrium, therefore, requires a matching administrative system to regulate its use." 57

However, it is not so clear that what is necessary in science is possible in politics. That the world ocean is a unity is an ascertained fact as uncompromising as other sets of scientific data. But policies are essentially sets of compromises. It would undoubtedly be ideal if social response could always match the underlying scientific and technological facts.⁵⁸ For instance, considering the unity and wholeness of the biosphere, the use of its resources could be rationalized on a world-wide scale.⁵⁹ However, for a task of such proportions the social instruments are not available; the law-making and institution-building capability of the international society is still rather underdeveloped in relation to the tasks facing it.

During the opening years of the seabed debate in the United Nations, this scientific imperative of comprehending the unity of the ocean was an underlying, pervasive influence on the scope of the policy-making process. It was generally accepted that whatever system of order is eventually created for the deep ocean floor, it must be of global dimensions. While references to regional systems were occasionally

57. Cheever, *International Organizations for Marine Science: An Eclectic Model*, THE LAW OF THE SEA: NATIONAL POLICY RECOMMENDATIONS 378 (L. Alexander ed. 1970) (Proceedings of the Fourth Annual Conference of the Law of the Sea Institute, June 1969).

58. Two prominent scientists in their roles of international administrators forcefully argued that international regimes for the control of tuna fishing should be tailored to the nature and size of the resource, a highly migratory fish crossing oceans and even travelling among oceans. Their call for a world tuna convention or a world tuna commission had logic on its side, but not the politics of tuna: tuna-fishing countries capable of a modicum of cooperation in the Pacific follow such diametrically opposed practices in the Atlantic that an effort to bring them all under one regime may easily wreck even the Pacific arrangements. The two scientists referred to are John L. Kask, the former Director of Investigations of the Inter-American Tropical Tuna Commission and his successor in that position, James Joseph. For their proposals see Kask, *Tuna—A World Resource*, Occasional Paper, no. 2 (Law of the Sea Institute, University of Rhode Island, May 1969); and James Joseph, *International Arrangements for the Management of Tuna* (mimeographed paper, 1971).

59. Such recommendation by a group of scientists is contained in UNESCO, Final Report of the Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Resources of the Biosphere, Paris, 4-13 September 1968, U.N. Doc. SC/MD/9 at 3-4 (January 6, 1969). Still another statement in the same report illustrates the tendency to make social action correspond to a given state of scientific facts: "There being a wholeness in nature, as shown by ecosystems, there must be consideration of the entire systems of nature because limited single-purpose actions are no longer tolerable." *Id.* at 6.

made,⁶⁰ particular solutions were looked upon mainly as deviations from general rules and the possibility that they may have a dominant role was never seriously advanced. At the same time, the inclination to think in terms of large-scale systems contributed to the drift of the policy focus from the deep ocean floor to the entire ocean. When the General Assembly decided to call for the convening of a comprehensive conference on the law of the sea it did so "conscious that the problems of ocean space are closely interrelated and need to be considered as a whole."⁶¹ There is no doubt that many of the states who demanded a comprehensive review of the law of the sea were motivated primarily by their economic and political interests rather than by a desire to follow the scientific perspective. However, the scientific and technological component clearly fortified such demands.

The second major effect of the scientific mode of thinking on the policy-making process was the continuous demand for more technical data as tools which would somehow speed up or smooth out the formation of consensus. The various interests involved in the seabed debate were originally mobilized into acting by scientific and technical data. Scientific and technical information was obviously essential for the definition of a sound international regime governing the uses of the deep ocean floor. However, it was just as obvious that the input of the technical data into the policy-making had to be closely controlled and limited. After all, every policy is of necessity made in conditions of relative ignorance; to seek more data means to delay decisions.

In the seabed debates, the underlying assumption of the data's utility for the policy-making was again inadequately questioned and was not at all systematically examined. And again, some countries utilized this assumption as a support for their own particular goals.

The need for further scientific and technical data had some respectable proponents in the spokesmen for the Intergovernmental Oceanographic Commission of UNESCO⁶² and elsewhere in the international scientific community.⁶³ Among states engaged in the policy discussions in the General Assembly and its Seabed Committee,

60. The entire debate in the General Assembly following the Maltese presentation of the sea-bed issue in 1967, and its continuation in the Ad Hoc Seabed Committee in 1968, represents the evidence that a global response to the problem was an unquestioned proposition. The Italian policy statements were the only significant, articulate exception in their stress on the advisability of approaching the issue through particular and regional regimes. U.N. Doc. A/AC.135/SR.7, at 50, (March 26, 1968); U.N. Doc. A/AC.135/1/Add.9 at 3 (July 16, 1968). The Italian statements elicited no public echo in the General Assembly.

61. G.A. Res. 2750 C (XXV), 25 U.N. GAOR Supp. 28 at 25, U.N. Doc. A/8028 (1970).

62. See, e.g., statement of Mr. Varchaver, *supra* note 43.

63. An illustrative expression of faith in the policy-healing attributes of scientific

the division between those calling for further accumulation of scientific and technical data as a prerequisite to political deliberations, and others ready to move ahead, was rather interesting. The countries with well-developed marine science and technology wanted additional facts first and policy actions later. States with little relevant expertise were ready to move ahead.⁶⁴

The division was very obviously a political one between vested interests and demands for a change in the distribution of values among members of the international community. However, the need for more data was an effective instrument designed to slow down the policy-making process. The Soviet Union went further than any other country in claiming that years of scientific and technical work were necessary before enough would be known for the policy-making process to resume.⁶⁵ The United States similarly first responded to Ambassador Pardo's proposal by suggesting that the setting up of a permanent U.N.

knowledge may be found in the report of the January 1969 meeting of the Executive Committee of the Scientific Committee on Oceanic Research:

Much of the recent international controversy over the potential resources of the deep ocean floor appeared to be based on inadequate information. Scientific investigations relating to the deep ocean floor and its potential resources are being conducted by a number of laboratories in various parts of the world. It would appear feasible to publish annually a volume of collected reprints of papers resulting from such investigations. The widespread distribution of such volumes might introduce a more realistic note into future international discussions of the deep ocean floor. The Executive Committee recommended that UNESCO consider the desirability and feasibility of implementing this proposal.

SCOR, 5 *Proceedings* 6-7 no. 1 (April 15, 1969).

64. Based on a complete analysis of the policy statements of all countries participating in the U.N. sea-bed debate in 1967-68. Reported fully in SLOUKA, *supra* note 10, chs. 2 and 3.

65. The initial statement was made by Mr. Mendelevich in the First Committee, as reported in U.N. Doc. A/C.1/PV. 1525 at 17-18 (November 10, 1967). The position was more fully elaborated later by Mr. Malik who stated that on the basis of documents available Soviet experts had reached certain preliminary conclusions:

The first was that, despite the work carried on by many Governments and international organizations, scientific knowledge of the sea-bed and its mineral resources was still extremely limited. The second conclusion had to do with the technical and economic possibilities of exploiting marine mineral resources. The present state of technology was not such as to allow the large-scale, viable exploitation of resources at great depths. So far only small-scale exploitation on the continental shelf was feasible The third conclusion reached by USSR experts was that inter-governmental co-operation in the study of the sea-bed and its resources should be strengthened. His delegation therefore proposed that, in its report to the General Assembly, the Ad Hoc Committee should place particular stress on the importance of expanding such co-operation between States and between the specialized agencies of the United Nations and the other inter-governmental bodies concerned.

U.N. Doc. A/AC.135/SR.11 at 8 (June 20, 1968).

committee on the oceans would represent "an effective action to enhance our knowledge of the ocean and its floor . . ." ⁶⁶ France even asked that the whole seabed issue be entrusted to an intergovernmental committee of experts.⁶⁷ The only country which, early in the debate, fully and openly expressed the fear that long inquiries into various aspects of marine science and technology may unduly delay the policy-making effort was Sweden.⁶⁸ Then, in 1969, the Belgian delegate in his function of the Chairman of the Economic and Technical Subcommittee of the Seabed Committee spelled out the problem of what should come first, data or policy action:

The Ad Hoc Committee's report . . . reveals on practically every page our ignorance of the marine environment and of the processes explaining the natural phenomena which characterize it, and of the natural resources buried in the bedrock of the oceans. The need to fill the substantial gaps in our present knowledge by scientific research and exploration has been constantly emphasized . . . Does this mean that the Committee is now entitled to wait for the result of this research before starting to carry out its mandate? Do not think that this is just a rhetorical question: on many occasions we have heard the argument that any commitment as regards a regime for the exploitation of undersea resources would be premature so long as their value and the techniques for exploiting them are not better known. This is why I consider it necessary to refute this argument.⁶⁹

Little more was said about this problem in the Seabed Committee or when the issue of the ocean floor came up for discussion in the First Committee. The remarkable thing was that nobody requested the Secretary-General to order and submit a study on the problem of managing the data base for a multilateral policy-making process.

66. Statement by Mr. Goldberg, U.N. Doc. A/C.1/PV. 1524 at 22 (November 8, 1967).

67. Statement by Mr. Palewski, U.N. Doc. A/AC.1/PV. 1526 at 18-21 (November 13, 1967).

68. Statements by Mrs. Myrdal, U.N. Doc. A/C.1/PV. 1527 at 47 (November 14, 1967); U.N. Doc. A/C.1/PV. 1542 at 22-25 (December 7, 1967). See also official comment sent by the Swedish Government to the U.N. Secretary-General in U.N. Doc. A/AC.135/1 at 20-21 (February 25, 1968).

69. Statement by Mr. Denorme, U.N. Doc. A/AC.138/SC.2/3 at 1-2 (March 12, 1969). Mr. Denorme also commented that the 1967 Outer Space Treaty was signed without too much knowledge about the outer space, and that the 1958 Geneva Convention on the Continental Shelf was signed, and the 1945 Truman Proclamation on the same subject was made, when we did not know more about the continental shelf than we know today about the continental slope, continental rise and the abyssal plain. *Id.* at 2-3.

THE OCEAN POLITICS FOR THE SEVENTIES

There are no indications that the ocean politics in the seventies will materially differ from the experiences of the 1966-69 seabed overture. The scientific and technological component of the policy-making process is likely to affect that process in about the same way. It will tend to keep the field of active participants very large, perhaps universal, and the involvement of many other interests very diverse. Nor is there much chance that the seabed issue will be effectively isolated from other thorny problems of the law of the sea, given the diversity of participants, the perceived unity of the world ocean, and the nature of modern marine technology. Nor is it likely that a way will be found how to determine the needed levels of scientific and technological data to be brought into the policy-making process.

All this points in the direction of a very protracted bargaining effort. If the 1973 Conference on the Law of the Sea really takes place that year, it is unlikely to be very productive. However, if it does produce new draft conventions, they are bound to be very vague and to require excessive time before receiving the necessary minimum number of ratifications. The time between the coming into force of the Convention on the Continental Shelf and the moment the need for an international policy governing the shelf had been recognized was about nineteen years; the time-spans taken by the negotiation and coming into force of the other law of the sea treaties signed in Geneva in 1958 were similar. No persuasive evidence suggests that in the seventies the international community will legislate faster. There is evidence that as scientific progress and technological change continuously accelerate, their lead over global policy responses widens.

If this general assessment of the situation is at least partially correct another prediction follows almost automatically. Where global policy-making processes are perceptibly slower than scientific and technological change which requires regulation—and the seabed issue falls fully into this category—a strong trend toward the proliferation of international policy subsystems sets in. In their need for some certainty and stability, the states will simply try to regulate their behavior in various geographical and functional areas by different means as the needs arise. To put it bluntly, the continuation of the United Nations seabed politics into the seventies is not likely to lead to a unification of international oceanic order but to its diffusion, and to the emergence of many functional, regional, local, bilateral, and even unilateral responses to the need for orderly policy change.

In no sense does this mean that the global policy-making process seeking to redefine the oceanic system of order is an exercise in futility

or even an undesirable development. The very opposite is true. If, as the trend indicates, the various members of the international community will find it necessary to set policies and make agreements as they run into problems in their ocean uses, the global debate continuously searching out and defining areas of consensus and formulating basic general principles of conduct will be more necessary than ever. The international community can hardly hope to have, in any foreseeable future, what individual states are still striving for with such great difficulty, a system of technology assessment which would guide the national societies in the choice of their policies and actions. The global policy debates in the United Nations are probably the closest thing to a process of technology assessment one can expect to have on the international level. An incessant flow of international confrontations, compromises and other interactions interspersed with scientific and technical reports and projections, reflect the changes in facts, and in policies. We do not have anything in international politics but this complex interplay to channel national behavior in areas rich in technology into more reasonable and orderly patterns.

The one great gap that needs to be filled soon is in our understanding how to create international systems of order from below, how to lead toward a global orchestration of the various responses to scientific and technological change by states acting unilaterally or in bilateral, regional, or other limited and often very temporary contexts. To understand this better is to understand better the reality around us.