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Learning to Learn: Improving International Governance



Peter M. Haas & Ernst B. Haas

The character of contemporary international relations is far more complex than that confronted by the architects of the UN in 1945. Problems are interlinked to an extent previously unimagined by those designers, but the organizations they helped create were charged with solving problems as they were defined at the time of the founding. The UN was designed to cope with problems of the recent past that the architects felt could be treated as if they were discrete: collective security was designed to avoid the presumed military causes of World War II; balance-of-payments stability was pursued to prevent the competitive devaluations of the Great Depression. The current agenda now includes issues that were not imagined at San Francisco, including macroeconomic management, sustainable development, ecological disaster avoidance, and nuclear proliferation. The new problems reflected by these issues exist, to a large extent, by virtue of the successful reduction of barriers to trade and improved individual “quality of life” that the UN system helped to develop. Moreover, virtually all of the original concerns apparent at San Francisco—collective security, stable world commodity markets, public health, expanding trade, and stable currencies—remain with us.

The intertwined and interdependent dimension of contemporary international existence, characterized as the global “problematique,” was recognized during preparations for the 1972 United Nations Conference on the Human Environment (UNCHE). In a preparatory report for the conference, the United States National Academy of Sciences observed:

Environmental problems are beginning to lay a heavy and unfamiliar burden upon the organizations through which societies determine policies and make decisions. This happens at a time when the magnitude and complexity of social problems already critically tax the capacity of our institutions to deal with them effectively. Yet we are less likely to be faced with a sudden collapse of natural systems than with an accelerating decline into chaos with recourse to arbitrary power, as institutions falter under the pressures of problems that increasingly tend to become unmanageable.¹

We wish to help in the design of international organizations (IOs) to ensure that they are able to respond quickly and effectively to these new challenges. The original organizational missions and aims of IOs need to be amended once it becomes apparent that those missions and aims have lost relevance because new problems and actors have arisen to claim a place on the global agenda, and even to shape it.

In the absence of a dominant state willing to lead, a strong shared universal vision, or a world government, collective responses to the global problematique depend on international institutional mechanisms. Only flexible institutions with expanding organizational visions can respond effectively to these problems and help guide their member states toward more productive governance likely to benefit the international community as a whole.

While ad hoc and disjointed responses to these challenges are likely to occur through most processes of international relations, robust and resilient responses are possible in multilateral settings characterized by well-developed processes of organizational learning. In such cases, many problems should still be resolvable through existing organizations, without having to construct new superorganizations.

We catalog the features of organizations that have successfully learned to improve their programmatic activities for environmental management in order to provide a positive example of organizational design for encouraging effective governance after the Cold War. We seek to determine to what extent lessons derived from these organizations' experience in dealing with environmental problems may be generalized to other international issue areas.

Our approach differs from most prevailing theories of international institutions and governance because of its avowedly constructivist stance.² We focus on the shared beliefs that inform the practices of institutions, thus augmenting attention to the formal rules by which an exogenously determined set of values is authoritatively determined and applied. We regard a problematique as an intersubjective phenomenon and look at the social process by which knowledge informs visions and contributes to organizational practices. We also take seriously the organizational factors that enable a given institution to translate a shared vision effectively into actual governance. We develop a model to indicate the process by which epistemic communities contribute to organizational learning, and we develop a coding scheme to specify organizational factors that are likely to facilitate the conversion of shared visions into broad patterns of action.

The Problematique: The Nature of the Challenge to Governance

The setting in which international governance occurs has become more complex since 1945. In simpler times, the main role players were virtually

only governmental delegates, especially when the main issues on the agenda of IOs were kept in almost watertight compartments: collective security, balance-of-payments stability, development aid and lending, commodity prices, decolonization, and human rights. New nonstate actors are becoming numerous and vocal, and experts no longer invariably mirror the preferences of their governments. Because of the world's growing reliance on the knowledge of specialists, networks of experts as learners and transmitters of knowledge have acquired enormous significance. States themselves are porous and often unable to satisfy their citizens by relying on their national capacities alone. State actors will remain the most important ones on the world scene, but their centrality and range of autonomous choice will decline in the face of transgovernmental, transnational, and nongovernmental actors.

The scope of many current problems is now felt across space, time, and functional domain. A given set of interdependent problems, places, acts, and policies—such as those associated with sustainable development—is what we call a *problematique*. Because of their close linkages, several *problematiques* become the focus of analysis rather than each problem being taken discretely.

Many kinds of problems were traditionally viewed as purely local or, at the most, national in scope. Now they are seen as infecting entire regions or the entire globe, and the atmosphere and stratosphere as well. Effects of actions have both long-term and more immediate consequences.³ The functional dimension for characterizing problems overlaps with both space and time. For instance, when we seek to specify the “problems” of peace, economic growth, sustainable development, or intergenerational equity, we must show how such diverse “places” as water, atmosphere, and terrestrial ecosystems interact with such human “acts” as agricultural and industrial production, armaments and the arms trade, and demographic trends. In turn, we explore how these look in various social time frames. Policy spaces, such as public health measures, macroeconomic choices, and military operations, now demand to be studied in terms of these complications. Issues no longer stay in tightly sealed compartments.

Not all issue packages in the global *problematique* are equally intertwined. Nondecomposable problems are those for which effective solutions must take account of all linkages. Partially decomposable problems have solutions that ignore some of the links and concentrate on others.⁴ Full decomposability facilitates action, but the action is less and less frequently effective under conditions of complex substantive issue linkage. Decisionmakers in a learning organization must be able to tell the difference between various degrees of decomposability.

When things are seen as more complexly linked, the attribution of desired effects to single causes and linear forces of influence becomes untenable. Old organizational technical routines and patterns of resolving

political differences become obsolete. For instance, when the continued convertibility of currencies becomes causally linked to the absence of budgetary deficits, low inflation, and economic growth at the national level, and the ensemble is linked to a certain volume of international lending, the definition of “macroeconomic management” becomes more complex. When the avoidance of aggression is seen as related to stopping civil wars, and domestic peacemaking to the guarantee of human rights, the causal network informing the so-called problem of peace becomes denser. Earlier notions of causality do not disappear; they are subsumed under the more complex picture.

Increased complexity may well increase uncertainty about effective remedies, as the certainties of the past are discarded. One core consequence of a more complex picture of causality is the need to link issues on negotiating agendas—issues that in simpler and earlier times were kept in their separate compartments. Complex causality implies greater uncertainty. The attempt to cope with greater uncertainty calls for a more complex linking of policy issues into comprehensive issue packages, which, in turn, complicates international negotiations because it calls for large package deals.

Why Focus on Learning?

We are concerned with describing the experience of IOs that grappled with the environmental problematique, illustrating activities that failed to do so, and offering suggestions on how to improve IO capacity to deal with this and other problematiques. Because most IOs in the past failed to cope adequately, learning to learn—that is, learning to do better—is the core of our concern.

True, states—or, more accurately, those who act in their name—may be steadfast about what they want to achieve by means of multilateral cooperation. They may merely wish to continue a pattern of action that motivated them when they created the IO. If actors’ values and the interests to which they give rise do not change much, no learning may be called for.

We live in the presence of the global problematique. Whoever is concerned with the interplay of resource use, population growth, processes of democratization, the desire for higher living standards and a better quality of life for all, and the management of civil and interstate conflict is engulfed by it. Any multilateral effort to cope with even a subset of these problems cannot escape its logic. Consequently, if we wish to understand how multilateral activity can address the problems that constitute the global problematique, we must show how learning can take place in IOs and how that learning can be diffused to the membership. IOs can help

guide states through the challenging maze posed by the current international agenda by developing effective road maps for governance. IOs can become agents for the redefinition of global problems.

Learning Defined and Described

Learning is a political process whereby “consensual knowledge” is applied by policymakers to change their policy projects. We use the term *learning* as verbal shorthand to describe a process by which actors, playing roles, engage in institutionalized behavior that shows their recognition that problems currently on the IOs’ agenda are much more complexly linked than was recognized at an earlier time. Organizational learning is the process by which the learning becomes ingrained in IOs. Institutional learning is the broader international process by which state entities and other actors learn and assimilate some of these lessons. With regard to the environmental issues, learning entails an appreciation of complexity and an effort to integrate problems into a more comprehensive whole. In other issues it is possible that learning might entail an appreciation of simplicity as well as a process of issue subtraction on the policy agenda.

The capacity to learn is based on the willingness to make use of available (or obtainable) knowledge—the structured authoritative information about causes and effects. That knowledge is not simply uninterpreted data or information; it is information that has been subjected to a methodical analysis and arrangement, albeit epistemologically biased toward one of several possible notions of causality. As the content of the several problematiques grows denser and the presumed causal connections among pieces of knowledge more numerous, mastery of the totality of knowledge for purposes of global policy becomes an immense task.

That is why the degree of consensus about that knowledge is of vital importance. Consensual knowledge is structured information about causes and effects among physical and social phenomena that enjoys general acceptance as true and accurate among the members of the relevant professional community. To become consensual, information must be analyzed, arranged, and structured in accordance with epistemological principles that command wide acceptance in society. In our day and age, this has meant that the various strands of positivism enjoy a preferential position. Still, no consensus remains unchallenged for long. No body of knowledge is built on a permanent consensus regarding its substance or the procedures used to create it. We might expect an international order resulting from the process of institutional learning in any given policy area to be stable for perhaps a decade.

There are, of course, alternative modes of learning to the methodical analysis of the relationship between causes and effects using positivist principles.

A change in problem-solving behavior can also be induced by means of trial-and-error experimentation, without involving any profound study of causality. It can also follow a simple change in perceived interest on the part of actors, not necessarily the result of deep cogitation about cause and effect. Probably these more superficial modes of learning are encountered far more commonly than the reliance of consensual knowledge in multilateral problem solving. Neither of these processes is likely to provide adequate collective responses to the challenge of the *problematique*, because they yield gradual and partial policy approaches to a more complex shared vision.

Consensual knowledge is very helpful in shaping the program of an IO, but it is not absolutely essential. Competing bodies of knowledge, none of which is yet hegemonic, are also likely to precipitate self-reflection about past program failures, which is infinitely superior to trial-and-error learning and the mindless addition of new objectives and programs to the failed earlier ones.

Knowledge and Multilateral Problem Solving

We think of the organizational learning process as animated by small groups performing roles in IOs on behalf of national bureaucracies, interest groups, business firms, and nongovernmental organizations (NGOs) that serve as advocacy groups. Typical roles include providing representation, articulating interests, furnishing informational feedback to the clients back home, and (occasionally) making decisions that matter. The role players include (1) instructed delegates representing their governments, (2) uninstructed expert consultants who speak for their professions, (3) lobbyists who articulate their clients' values and interests, and (4) members of IO secretariats interacting with all of these but receiving instructions (in principle) only from their executive heads. In simpler times, when the objectives of states did not change much, these role players only mirrored the interests, perceptions, and forces external to the IO. In our day we are concerned also with showing how role-playing inside the IO can shape events.

The most important role players purveying consensual knowledge are groups of like-minded professionals, usually self-recruited around some paradigm linking their lore to some aspect of a *problematique*. We call them "epistemic communities."⁵ Not only do the members generally accept a common causal paradigm, but they also strive to insinuate that aspect of consensual knowledge into the public bureaucracies and legislative channels that produce public policy. One epistemic community, the Club of Rome, originally articulated the idea of the global *problematique*, which we regard as describing the character of contemporary international relations.⁶

Epistemic communities may function exclusively within single countries or as transnational entities, such as communities of atmospheric scientists or Keynesian economists. The advice of a dominant and authoritative epistemic community may temporarily monopolize the initiation of the learning process in an IO. Members of the group in national and international bureaucracies take the first steps in suggesting a new way to envision a problematique and offer possible ways to manage it.

In the absence of such a knowledge monopoly, competing epistemic communities seek to take over bureaucracies in order to promote their preferred knowledge scheme. Eventually, one group may capture the key national bureaucracy with regard to a particular issue, or perhaps even the entire national governmental apparatus responsible for the linked issues that make up the relevant problematique. Eventually, other governments are also "captured." They then form a coalition with the first captured to make the relevant multilateral organizations act as the agents of the new lore. Alternatively, they may capture an international secretariat and use it as a springboard to reach national governments by way of technical and financial assistance.

The process is ragged and almost never complete. Several problematiques usually coexist and may even compete in the nested system of IOs. Four problematiques have flourished in the UN since 1950: the devotion to collective security, economic development and the redistribution of wealth from North to South, decolonization/democratization/human rights protection, and protection of the environment. The commitment to sustainable development suggests that a new metaproblematique may be forming from some of these four, as certain epistemic communities try to repackage elements of knowledge drawn from these earlier bodies of lore. It remains to be seen how tightly linked the causal chains among elements in that problematique turn out to be, or whether there remains a possibility of decomposing the elements into smaller clusters of linked issues.

Organizational learning requires that the efforts of epistemic communities be accepted and advocated by a coalition of hegemonic member states rather than being endorsed merely by majorities of weak states. After the programs have been validated by such a coalition, a learning IO then becomes an active transmitter of new ways of defining and solving problems by persuading most member governments of the appropriateness of the consensual knowledge involved. The ultimate stage in the evolution of learning comes when the IO is given something akin to executive power to induce member governments to accept the implications of that knowledge. Perhaps the fact that this stage is rarely reached is due to the fact that knowledge hardly ever remains consensual once it passes out of the control of the initiating epistemic community.

We acknowledge that our conceptualization of learning contains a rationalist bias, more consistent with the Western intellectual tradition than

with cultural matrixes from other parts of the world. The appreciation and the use of structured knowledge are dependent on the learners' exposure to a modern education. If not science in its full cornucopia, then an appreciation of scientific research methods is probably a prerequisite for the utilization of consensual knowledge. Learning, in short, is associated with the prevalence of a culture in which specialists and experts with very modern educations (regardless of geographic location) are honored and respected by officials similarly educated. If decisionmakers in IOs or their constituencies do not share this bias, then they are unlikely to find persuasive our design for institutions that are able to learn. We are persuaded that our bias is justified because the epistemological presuppositions that accompany our notion of consensual knowledge seem to be emulated widely by non-Western cultures. They are the subject of demands and programs urged on UN specialized-agency by spokespersons from Asia and Africa.

How Have IOs Learned in the Past?

Learning is rare. To learn is to put consensual knowledge to work defining and solving problems seen as interconnected. In most organizations, decisionmakers have failed to apply consensual knowledge to a more effective policy enterprise. Instead, they have tended to respond to environmental challenges through a process we call "adaptation," a response that fails to recognize the significant links within the problematique. To adapt is to change routines of problem solving without bothering to reexamine one's beliefs about cause and effect. No effective scan of the technical and scientific communities for new ideas is undertaken to muster political support for organizational reforms; rigid operating procedures are not adjusted to recognize a changed task domain.

Adaptation in IOs

Adaptation is by no means to be despised as suboptimal, or even as irrational behavior. When faced with disappointment about organizational effectiveness, actors typically respond by first altering the means they use to realize their common interests. If that change does not do the trick, the ends the program are to serve may come under scrutiny and be altered or mixed with new ends. What distinguishes adaptation from learning is the absence of any searching self-reflection about the proper way to compose, decompose, or recompose problem sets. It is unlikely to generate effective new organizational routines to cope with partially decomposable or non-decomposable problematiques. Adaptation typically follows one of two patterns: incremental growth or turbulent nongrowth. Incremental growth

proceeds slowly, as an IO gradually acquires new tasks—while under conditions of turbulent nongrowth, the IO lurches from one highly politicized problem to another. The differences in organizational characteristics of the two patterns are described in the following section.

Characteristics of an IO Capable of Learning

Learning by and in the IO is not possible unless there is an unimpeded flow of ideas and information “upward” from universities, think tanks, national bureaucracies, and advocacy groups. Such groups serve as an early warning system of potential challenges to the organization as well as a conduit of new responses. Ideas and information circulate freely in a learning IO, as opposed to one that adapts. Contact between secretariat members and purveyors of ideas is continuous; executive heads do not attempt to limit or structure such contacts to suit their agendas. Successful learners are able to scan the technical or scientific community effectively, muster political support for organizational and program reforms, apply new approaches to rigid operating procedures, and affect significantly the domain for which those procedures were designed.

Controversy between advocates of rival world order ideologies is the essence of change. Learning IOs thrive on such controversy, provided no more than two ideologies confront one another, and provided the two are not so different as to prevent compromise altogether. Acceptance of sustainable development is compatible with liberalism and with dependency reduction, but liberalism probably cannot compromise with antidependency policies. Learning IOs are led by a dominant coalition of the member states that are most important for the enactment of the victorious ideology. The privileged coalition allows NGOs allied with them to represent their interests too but seeks to exclude NGOs that oppose the coalition’s leadership. Decisions are made on the basis of consensus in order to avoid the divisiveness of majority voting that prevails in turbulent-nongrowth organizations and the qualified majorities and vetoes that dominate incremental-growth IOs.

Executive heads of learning IOs take strong initiatives in alerting the world to new problematiques. While being careful to remain close to the dominant coalition of important governments, they seek to persuade their leaders to back the initiatives proposed. Executive heads excel in mediating between important governments and in fashioning compromises between them. The secretariats may be somewhat penetrated by member governments but resist being staffed with political exiles. On balance, staff members are recruited on the basis of merit alone and remain largely autonomous despite some dependence on their states of origin. Expert consultants in learning IOs are members of epistemic communities who have

captured all or part of the secretariats. NGO representatives are also increasingly used as consultants in fashioning new programs, as participants in program implementation, and as whistle-blowers and monitors.

Because of the unreliability of revenues raised on the basis of annual assessments, learning IOs prefer to rely on capital subscriptions or voluntary contributions from members of the dominant coalition, whether large or small states. They would gladly accept a form of taxation or user fee as an additional source of revenue. Budgeting avoids logrolling and disjointed incrementalism while stressing various forms of program budgeting. While these IOs, like incremental-growth and turbulent-nongrowth organizations, are able to administer their own programs with their own staffs, they also delegate administration to member states. More than the others, however, learners like to arrange for a sharing of tasks among members of the secretariat and member states on whose soil the program is being implemented. The "teaching" role of the IO is best carried out in this manner.

Learners also differ from adapters in the manner in which they construct consensual knowledge, combine knowledge with political goals, make decisions, strike bargains, and construct new problem sets. Learning IOs depend on consensual knowledge for upgrading their programs, while the adapting IOs do not. That is why epistemic communities and professional NGOs are so vital to their work. The relationship between member states' political goals and consensual knowledge is also different in learning IOs from the dominant pattern among adapters. We can conceive of such goals as discrete and stable at one extreme, and as rapidly changing into ever larger interconnected clusters at the other. The second situation obtains in learning IOs dedicated to mastering various problematiques. Decisionmaking must respect this state of affairs. Hence, decisions take into account knowledge-defined long-range factors rather than political expediency or immediate benefit. Decisions feature bargains based on linking diverse issues on the agenda; this is done by actors taking seriously the substantive causal connections among separate issues instead of linking them opportunistically merely to construct minimum winning coalitions. Because of the vital role of consensual knowledge, the various coalition partners can negotiate with one another in such a manner as to take for granted that most participants are motivated by similar objectives and act on the basis of generally shared and understood information.

One vital consideration in examining consensus among decisionmakers about the applicable problematique is the question of its decomposability. Most bureaucrats, especially in the adapting IOs, prefer to consider all sets as decomposable because this allows them to split a complicated problem set into small subsets that established units feel able to solve on the basis of established routines. Extreme decomposability is good for

uninnovative bureaucrats and bad for solving problems. But complete non-decomposability means that every issue and problem is linked to every other issue and problem. Hence, only a very complex problematique does justice to the complexity of links. Taking it apart is to condemn reform to fail. But if we fear that no organization or epistemic community today has the intellectual and political power to solve such high-level clusters or nests of problems, then to insist on nondecomposability is the equivalent of wishing to fail. Learning IOs, therefore, avoid the Scylla of decomposability and the Charybdis of nondecomposability in favor of partial decomposability (or near nondecomposability), a halfway house of provisionalism likely to offend purists.

What about the authority and the legitimacy likely to be enjoyed by learners? Learning IOs increase their authority to mount programs that are more ambitious, more intrusive of state sovereignty, and more likely to make states dependent on them. It cannot be taken for granted, however, that the legitimacy enjoyed by such IOs in the eyes of their members will increase in proportion. Increases in authority may also trigger fear and dislike among clients and supporters.

Organizational Learning and Environmental Management

Investigating organizational responses to the environmental crisis provides an ideal empirical test for our learning propositions because environmental media transmit problems broadly, creating new organizational challenges for organizations responsible for particular domains. Operational international organizations were challenged to upgrade their programs to reflect the growing concern about and appreciation for the problematique as heralded by the widespread environmental disasters of the 1960s and growing public demand in the West for a concerted response, especially after the 1987 publication of the Brundtland Commission report highlighted this new concern with controlling the collateral environmental damage of economic growth. The Brundtland Commission report and the ensuing preparations for the 1992 United Nations Conference on Environment and Development (UNCED) constituted an organizational crisis for many UN agencies, who were publicly expected to demonstrate their green credentials. All organizations were forced by their various constituencies to reform their procedures in order to reduce environmental harm. Organizations also feared a loss of institutional turf to other agencies.

Below we consider the environmental response since 1987 of thirteen IOs: the nine principal operational agencies that are also the core group of the secretary-general's Inter-Agency Committee on Sustainable Development

as well as the United Nations Fund for Population Activities (UNFPA), the International Maritime Organization (IMO), the World Food Programme (WFP), and International Fund for Agricultural Development (IFAD). Together, these organizations' budgets equaled \$7.65 billion for the 1990–1991 biennium and were more than \$6.4 billion for 1994.⁷

Organizations That Learned

Yet only a small number of organizations can be said to have learned. Only the UN Environment Programme (UNEP) and the World Bank can be said to have fully learned to integrate environmental considerations with their traditional responsibilities. The original mandate of UNEP charged it with catalyzing the UN system into integrating environmental considerations into its activities while developing new approaches for sustainable development, monitoring environmental quality, training national officials in more environmentally benign development techniques, and developing international environmental law. In addition to fulfilling these charges, it now develops and publicizes ecosystem-based management for regional seas and river basins.⁸ Since 1989, the World Bank requires environmental impact assessments on all its major projects, funds environmental protection projects, and helps to administer the Global Environment Facility for financing the share of development projects likely to improve global environmental quality.⁹

The World Meteorological Organization (WMO) and the World Health Organization (WHO) each demonstrates some learning but has not moved as far as UNEP or the World Bank. In 1990, following the Second World Climate Conference, the WMO redirected a significant proportion of its activities to research and monitoring of global climate change—a dramatic shift from its prior focus on weather monitoring. By 1993, climate and environmental activities accounted for 30 percent of the organization's scientific and technical budget and 13.5 percent of its overall budget. The WHO reveals its reorientation through the introduction of a wide variety of projects aimed at preventing a number of environmentally caused threats to public health. Innovative programs have been developed by UNESCO to harmonize species preservation with indigenous peoples' survival through the establishment of biosphere reserves as well as support widespread research on marine environmental quality. Most other organizations merely adapted to the environmental crisis by adding a few disjointed activities to their traditional package of activities. Table 1 summarizes the major organizational changes that have occurred.

The widespread introduction of environmental impact assessment procedures is actually a weak indication of learning, because these activities are seldom well integrated into the organization's overall activities.

Table 1 Efforts of Organizations to Internalize Environmental Considerations into Their Programs

Organizations that formally changed their organizational mandate to control environmentally destructive effects of its activities	Organizations that adopted new programmatic activities that capture many of the consensually identified causal links between traditionally mandated responsibilities and new problems identified within the problematique	Organizations that introduced Environmental Impact Assessment procedures
IBRD (1989 Operational Directive on Environmental Assessment)	UNEP (programs draw links between environmental quality and a wide variety of human activities)	UNEP, UNFPA (1989), IBRD (1989), FAO (1989) UNDP, WFP, UNESCO, WHO, WMO, IFAD (1990)
UNEP (1973 original mandate)	WHO (new programs draw links between environmentally mediated threats to public health arising from a wide range of social activities)	
WMO	IBRD (considers environmental packages within structural adjustment lending)	

Sources: United Nations, *Everyman's United Nations: A Handbook on the United Nations, Its Structure and Activities* (New York: various years); Food and Agricultural Organization, *FAO Policies and Actions, Stockholm 1972-Rio 1992* (Rome: FAO, 1992); United Nations Development Programme, *The Challenge of the Environment: 1991 UNDP Annual Report* (New York: UNDP Division of Public Affairs, May 1992); Timothy Rothermel, "UNDP Plays Its Part," *World Health* (April 1986); UNESCO, *The Intergovernmental Oceanographic Commission: A Strategy for the Ocean*; UNESCO, *An Initiative of the Intergovernmental Oceanographic Commission: Global Ocean Observing System*; UNESCO, *Marine Science and Ocean Services for Development* (Paris: UNESCO, 4 January 1985); UNESCO, *Environment and Development* (informational packet distributed at Rio); Michael Mercier and Morrell Draper, "Chemical Safety: The International Outlook," *World Health* (August-September 1984); "Watchdog," *World Health* (March 1985); *Twenty Years after Stockholm: 1972-1992* (Berlin: Erich Schmidt Verlag, 1982); Ludwik A. Teclaff and Eileen Teclaff, "International Control of Cross-Media Pollution—An Ecosystem Approach," *Natural Resources Journal* 27 (winter 1987): 21-53; Alexandre Kiss and Dinah Shelton, *International Environmental Law* (New York: Transnational, 1991); Lee A. Kimball, *Forging International Agreement* (Washington, D.C.: World Resources Institute, 1992).

Notes: FAO—Food and Agriculture Organization; IBRD—International Bank for Reconstruction and Development; IFAD—International Fund for Agricultural Development; UNDP—UN Development Programme; UNEP—UN Environment Programme; UNESCO—UN Educational, Scientific and Cultural Organization; UNFPA—UN Fund For Population Activities; WFP—World Food Programme; WHO—World Health Organization; WMO—World Meteorological Organization.

Conducting such assessments often remains the responsibility of small and marginalized environmental units that lack leverage over the rest of the organization. It is only IOs that have installed environmental experts in operational divisions that can learn.

The World Bank provides an example of how these institutional characteristics help to promote learning. U.S. NGOs sounded the alarm in the early 1980s that large-scale Bank-funded projects in Brazil were contributing to massive destruction of the Amazon rain forest. With the U.S. government, they pressed the International Bank for Reconstruction and Development (IBRD) governing board to pay greater attention to environmental consequences of its funded development projects. Bank president Barber Conable hired new environmental personnel—at first establishing an environmental department, which became marginalized and lacked any leverage over the operational divisions, and later placing environmental staff in each of the Bank's operational divisions in which they drafted new environmental impact assessment procedures—and introduced training programs in environmental management for borrowers. By 1994, nearly two hundred environmental specialists had been added to the staff, many of them members of an ecological epistemic community with beliefs about the relations between environment and development that are significantly more holistic than those of the traditional economists and engineers on the staff. Since 1989, nearly 75 percent of the Bank's projects have been reappraised to compensate for potential environmental damage, and a structural adjustment loan to Madagascar (formerly the Malagasy Republic) was refined to support environmental administration and conservation. Advising and consulting ties between the Bank staff and NGOs have become much closer, and ecosystems experts are increasingly consulted in project design.

UNESCO offers a curious example of how units within an organization can learn while the organization as a whole is adaptive. The environmental units are less confined by the deadlocked higher-level politics of the organization and also interact with scientist experts belonging to ecological epistemic communities who are independent of close governmental briefings, unlike many of the relationships in the rest of the organization. UNESCO learned by creating the Man and the Biosphere Programme. The program is a holistic exercise in studying conditions and developing policies that improve human interactions with the natural and social environment.

The new programmatic activities undertaken by the learning organizations capture many of the causal links between traditionally mandated responsibilities and new problems consensually identified within the problematique. The programs' grasp of spatial dimensions varies according to the geographic nature of specific issues and related organizational responsibilities. At the same time, few programs address the temporal dimensions of these problems.

Learning Organizations as Teachers

The learning organizations tried to disseminate the lessons they had drawn about environmental management with other organizations and with states who rely on the organizations for operational activities.

The diffusion of learning between organizations has occurred primarily through three channels: interagency coordination, programs jointly administered with other agencies, and environmental monitoring. None have performed well in inculcating other IOs with a more comprehensive approach to environmental management.

Since its creation, UNEP has been responsible for coordinating environmental activities with other UN agencies in order to encourage them to integrate environmental concerns into their package of activities. Neither the Environment Co-ordination Board (1972–1977) nor the Designated Officials on Environmental Matters (since) has been effective at persuading other agencies to take environmental matters seriously because of UNEP's lack of organizational leverage within the UN system and the lack of financial resources to be used as incentives for other agencies to change their behavior. The World Bank has served a similar role in the Committee of International Development Institutions on the Environment (CIDIE) since 1980, with similarly unimpressive responses by other multilateral development banks. The Bank has the potential to leverage other financial institutions into environmental learning through its influence over jointly financed projects.

Incremental changes in other agencies' activities have occurred as a result of interagency programs initiated by UNEP, WHO, and WMO. These three bodies have coordinated joint activities with a number of other agencies in the UN system, instilling a seed for more comprehensive approaches elsewhere. UNEP has more than doubled the monetary value of its expenditures on programs through partnerships with other agencies, although many of these have occurred in tandem with WHO and WMO. A distinguishing feature of UNEP's joint ventures is its enthusiasm about including the scientific community along with environmental, grassroots, and corporate NGOs in its activities. As a consequence, NGOs gain access to organizations of whom they are suspicious, yet they do not feel that they are compromised by association due to UNEP's insulating role.

Organizations like UNEP, WHO, and WMO also monitor the quality of the environment, thereby alerting other agencies to problems falling within their purview. These outreach efforts by learning organizations appear to have, at best, the effect of stimulating or reinforcing adaptive efforts in other agencies.

Learning IOs Teach States

These learning organizations exert influence on the states that rely on their operational activities. Organizations that have learned have helped national bureaucracies learn in several ways—leading in turn (at times) to changes in national policy from which individuals and firms have changed their behaviors as well, in ways that are more environmentally friendly.¹⁰

Organizations exercise a demonstration effect by which they identify and justify policies that national decisionmakers may adopt. For instance, the recommendation by the WHO regarding exposure limits for various chemicals has served as the basis for legislation and policy in many developing countries. While this organizational activity is, properly speaking, more often a case of imitation by governments rather than the reflection and the application of newly discovered consensual knowledge at the national level, it is an important channel by which organizational learning is converted to new measures on the ground that may more effectively manage environmental risks.

IO programs for national officials train them to adopt and apply the new techniques that have been developed or identified by the organizations. Persuaded of the viability of such measures, they may serve as a political constituency within national administrations for the adoption and enforcement of the organizationally identified measures. Public education efforts serve a long-term function of changing individual consumption habits, while contributing in the shorter term to the creation of new domestic constituencies for environmental protection, at least in democratic societies where they may have influence over governmental activity.

Finally, many national bureaucrats and scientists learn by doing as they participate in projects coordinated or funded by the organizations. Thousands of developing country officials and scientists have attended UNEP-sponsored training seminars in environmental monitoring and comprehensive approaches to environmental management. International financial institutions and institutions with resources that are highly desirable to national governments can offer linkages to encourage countries to adopt and comply with the new lessons imparted by learning organizations.

Conclusions About Organizations that Learned

Almost all IOs have responded to crises only after the troubles have become painfully obvious, rather than anticipating them. Ideally, of course, a learning IO would possess the ability to head off crises, presupposing the capability to recognize crisis-producing conditions before the emergency erupts and to bring flexible new exercises to bear.

The difference between IOs that functioned in the two adaptive modes and IOs that learned is in the scope of their response; learning IOs redefined their missions in light of the new interdependencies to their original mission that the crisis helped to illuminate, whereas adaptive organizations only introduced slight modifications to their standard routines. A number of identifiable features characterize the international institutions that learned to develop more comprehensive environmental management efforts in response to crises. These features are largely absent from the

institutions that merely adapted. The variation between organizations can be seen in the appendix. Learning organizations were able to promptly assess changes in their policy environment through their own monitoring systems, through an open flow of environmental information from the scientific community or local NGOs, or from other IOs on whom they rely for information about environmental quality (such as the way the World Bank relies on UNEP and UNEP's joint monitoring programs, with other IOs). They were able to apply nonpartisan consensual knowledge to the problem by soliciting information from ecological epistemic communities. They were staffed by relatively autonomous and capable secretariats who were able to obtain authorization from their governing bodies (which were not riven by irresolvable political disputes) and disseminate their advice through networks and the publicity commanded by their authority and legitimacy.

It seems likely that IOs learn more effectively if they are preponderantly influenced by member states that possess a democratic culture, because such states tend to be less dogmatic and more flexible. The corollary of this assumption is the expectation that IOs learn better if they are dominated by member coalitions that favor the free flow of ideas and information, or are at least indifferent to imposing an ideological orthodoxy.

Information used by IOs frequently comes from knowledge claimants such as scientist experts and NGOs. Scientist experts should be widely consulted and should be largely independent of guidance or be part of an epistemic community. The organization should rely on consensual knowledge for designing new activities—while continuing to monitor national performance through extensive consultations with governments and NGOs—and on reporting by governments and NGOs. The organization should at least be able to engage in adverse publicity to stigmatize nonperformers and to monitor the quality of its policy domain in order to evaluate performance. If NGOs serve as complainants, new information will also be made available.

We now offer a set of tentative conclusions about how lessons learned in and by IOs can be transmitted most effectively to their member states. If an appreciation of modern education and science seems a likely prerequisite for learning in an IO, the same holds true for the culture of member states that is expected to benefit from programs that incorporate prior learning. Lessons are more likely to be learned if much of the population no longer lives in a premodern and preindustrial manner, if it is largely "socially mobilized." The existence of a democratic culture, usually associated with advanced social mobilization, is helpful but not essential. The prevalence of competing political parties and interest groups able to communicate with the bureaucracy and with elected politicians certainly favors the circulation of new ideas and modes of thinking. However, exposure to

lessons transmitted by IOs is still possible in countries that also have socially mobilized populations but lack democratic cultures, if the bureaucracy is highly centralized and determined to diffuse the lessons. Conversely, a centralized-authoritarian bureaucracy can block the diffusion of lessons, whereas this is much more difficult for a democratic bureaucracy. Consensual knowledge is likely to be given an appreciative hearing by politicians, whether democratic or not, desperately looking for solutions to crisis problems. Centralized, nondemocratic states may be capable of a more rapid application of lessons learned from IOs than their democratic counterparts, which must rely on building at least a minimal domestic consensus behind their new proposals, although the lessons may be more enduring and remain more firmly “stuck” in democratic societies. An interest by political leaders in using such knowledge remains an essential prerequisite for effective transmission of lessons in any political setting. Without such a motivation, consensual knowledge will not find its way into national programs.

How Widely Can the Environmental Management Problematique Be Generalized?

Our discussion of organizations that learned to manage the environmental problematique and successfully passed their lessons on to the member states has been confined to activities that deal with the problems of late capitalism/industrialism. But this is a highly limited domain. Dealing with environmental degradation in the context of the economics of highly developed (and mostly democratic) countries is different from prescribing institutions capable of learning when we deal with such things as sustainable development, democratization, national self-determination, and collective security. These environmental lessons are not easily transferable to other issues because the environmental issues share a set of features that facilitate organizational learning but that are not widely encountered.

For Learning to Occur, There Must Be Value Consensus and a Stable Knowledge Base

Issue areas vary with respect to the extent of consensual knowledge available for conceptualizing and managing them. They also differ with respect to the extent of the political and value agreement about the issues. Before assigning problems or problematiques to IOs that have been able to learn in the past, we must be certain that it is in the nature of the problem “to be learned.” If we do not observe this stricture, we will undoubtedly overload IOs with tasks; the inability to carry them out will diminish the

authority and undermine the legitimacy of international institutions. But even in the absence of the ideal learning pattern, it is still necessary that new and old tasks continue to be carried out; IOs able to adapt fall short of our ideal, but they ought still to be able to handle this kind of problem.

For learning to occur through the institutionalization of ideas held by epistemic communities, two key background conditions must be satisfied. The values of dominant decisionmakers and epistemic communities must agree, otherwise governments will not tolerate the policy innovations recommended by secretariats and executive heads. Technical consensual knowledge must exist, the claims of which can be intersubjectively evaluated by secretariats, governments, and their advisory experts. In the absence of this condition, knowledge claims for policy will lack any legitimacy and cannot claim any authority with putative institutional reformers.

Overall, the domain in which our learning model is likely to command explanatory power and possess some real utility for institutional design is confined to the upper two left cells in Table 2 within the domain of the organization's established mandates. The diagram indicates issues and organizations in which learning may be possible.

These organizations may fit in different cells when confronting various problematiques, including the environmental problematique we discussed earlier. These organizations may fit in different cells when confronting other problematiques.

Making Sustainable Development into a Problematique that Is Conducive to a Learning Experience

Few dispute the knowledge that establishes causal links between styles of economic development, pollution, ill health, and ecosystemic health. The ties between ecological problem sets and a broader economic problematique—Sustainable Development (SD)—encompass costs of industrial production and the competitiveness of a nation's industries in international trade. This problematique, however, is much more contested in value and in knowledge terms than environmental management taken alone. Equally important, to the extent that this consensus is weak, those who purvey that knowledge to politicians—scientists, engineers, economists—are less of a privileged group in their access to policymaking than are articulate and well-informed interest groups.

Despite a number of pre-Rio conferences at which ambitious statements were issued about the need to develop and apply systematic efforts to internalize environmental considerations into organizations' traditional package of activities, very few of these efforts have yet been introduced. For many organizations, Rio and Sustainable Development were merely an opportunity to repackage their traditional activities in the wrapping of

Table 2 Domain of the Learning Model

	Extent of Technical Consensual Knowledge		
	High	Medium	Low
Disciplinary domains	Natural science, engineering, ecology	Economics Social sciences	Humanities, law
Values of dominant decisionmakers, NGOs, and epistemic communities agree.	Organizational change via learning is most likely.	Organizational change via learning is possible.	Organizational change via learning is impossible, but adaptation is possible (i.e., elimination of slavery).
Values of dominant decisionmakers, NGOs, and epistemic communities disagree.	With high saliency and uncertainty, organizational learning is possible, but institutional responses may be reversed. With low saliency and low uncertainty, learning is impossible.	Adaptation is possible.	Adaptation is possible (i.e., human rights, collective security).

Note: Disciplines at the right end of the scale have no epistemic communities.

environmental support, and they have only reluctantly pursued some of the measures proposed at the nationally hosted conferences in which they participated.

Sustainable Development, while now characterized by value dissensus and less-than-consensual knowledge, nevertheless might become the kind of concept that, when made part of its mandate, could enable an organization to become a true learner. Introducing global institutions to turn SD into more than a value-laden slogan, to turn it into an ongoing activity, implies upgrading environmental management by adding new issue areas and new connecting tissue among them. Such upgrading calls for the augmentation of environmental management with development economics, planned technology transfers, resource allocation, and resource planning that takes the future needs of all of humankind into account. In short, changing SD into an organizational mandate—and creating the setting of a major learning experience for the organization so blessed, and of its member states—is an act of creating a nearly nondecomposable problem set from what was previously thought to be a series of decomposable ones. UNCED suggested that the world approves of such a huge act of conceptual and programmatic aggregation.

SD then implies that hitherto separate substantive issues and disciplines be combined. It also implies that the concepts and methods needed to link these disciplines analytically be invented. Only thus can the causal patterns thought to be operative be highlighted. Yet, unlike environmental management, SD remains a highly contested concept until a value consensus about its nature emerges. How can institutions be changed to advance such an agenda?

1. Forums, such as the International Council of Scientific Unions and its committees, could be made to proliferate. To do so would be to generalize all over the world the privileged position occupied by scientists and engineers in industrialized countries. It would provide opportunities for contact and discussion from which a more global substantive consensus might emerge.

2. Local interests ought to be increasingly empowered to contribute to policy debates on SD issues. Empowerment is likely to confer increasing legitimacy and authority on IOs that seek to practice and teach SD, because the lessons imparted to national governments will have the blessing of local interests. Advice and support from IOs will no longer fall into a national vacuum. Western and non-Western attitudes, thus focused on a common and urgent problem set, may be made to overlap.

3. The representation of nongovernmental interests at the IO level ought to be enhanced, thus giving a number of such interests (labor, industry, consumers, and trade associations as well as ecological advocacy groups) a direct voice in the elaboration of international measures with direct impact on their ecological and economic interests. The model of the International Labour Organization (ILO) might be kept in mind here, or of the institutionalized role of such interests in the International Telecommunications Union (ITU).

*Not All Problems Are as Tightly Linked
as the Environmental Problematique Suggests*

Once the likelihood of a crisis has been recognized, care must be taken to conceptualize the resulting new problematiques so as to make eventual national and multilateral action possible. Understanding the crisis demands that all available causal schemas, no matter how unpopular, be examined for their relevance. Knowledge used must include science, but not all applicable knowledge must be "scientific" in terms of the logic, methods, and causal problems found relevant. Coping with the crisis calls for the design of policies that are not so complex as to make success depend on the effectiveness of every single component of the plan. For example, it is currently fashionable to combine military security issues with ecological ones by speaking of an "international security" problematique, and to substitute "cooperative security" for the more familiar collective security.

Such overaggregation suggests that ecological problems escape solution unless we banish war, that peacekeeping or peacemaking are not possible unless we achieve Sustainable Development. To think of all the possible problematiques as constituting a single system of causes and remedial actions is to learn the wrong lessons.

Earlier we argued that not all issues are equally nondecomposable. Learning ought to develop the institutional ability to treat complex problems as if they were partly nondecomposable, and develop appropriate responses, rather than commit the errors of treating everything as an integral system or as totally decomposable. Effective learning should involve the institutional ability to judge the extent to which a given problematique is wholly or partly decomposable. Is each link in a functionally conceived chain of causation truly necessary as the focus of policies that seek to deal with the problematique (nondecomposability)? Or are solutions conceivable that ignore some of the links and concentrate on others (partially decomposable)? The answer is crucial in the design of public policy in complex situations involving great uncertainties. If we believe that some links matter more than others, then we simplify our problem because the policies can be concentrated. We also save organizational resources and reduce apparent uncertainty.

But if we believe that we have to understand the entire system before we can act to influence any part of it, and if we also think that every part depends causally on every other, then we cannot disaggregate or unlink any component—spatial, temporal, or functional. The latter vision is particularly gruesome for political architects of international governance: there is still no political constituency behind such a grand vision (absent *gaia*), and virtually no one can suggest how to formulate policy effectively when every action influences everything else, much less administer such policies.

Luckily, we feel, there is growing consensus that not all problems are equally interconnected—they are partially decomposable—and the specialized agencies appear to be learning to assemble more comprehensive measures recognizing the problematique one piece at a time. Analysts from many developing countries express legitimate concerns that environmental problematiques be cast sufficiently broadly to include the prevailing economic development styles associated with patterns of environmental degradation.¹¹

There are many other actual and potential problematiques less inclusive than the ones made popular decades ago by the Club of Rome. Some seem poor candidates for any kind of learning, because they lack the necessary value consensus and consensual substantive knowledge.

When we have good reason to suspect that a value consensus remains an elusive goal, the institutional devices suggested above are unlikely to

be useful in developing more comprehensive institutional programs. Our prescription for the institutional pursuit of nearly nondecomposable problem sets ought to be rejected when we have reason to fear that substantive issue aggregation—no matter how easily justified by Club of Rome-type models—is not accepted by many experts and does not enjoy widespread support. Decomposability ought to be pursued instead. The issue areas of collective security, human rights protection, democratization, and the fostering of ethnic self-determination do not warrant being made into a single comprehensive problematique, or expressed in a single highly aggregated UN program. We take this position because we are convinced that these fields are more highly contested on moral grounds than even SD and that the effort to make integrated UN programs of them would condemn the UN to overload, disappointment by member governments, disrepute, and failure.

Summary and Conclusion

We have attempted to show that by no means all kinds of knowledge—and the human collectivities that provide and diffuse it—are likely to lead to learning to manage interdependence more effectively. We have stressed that the knowledge apt to lead to learning is not universally shared or even available everywhere. And we have argued that there are many kinds of knowledge and policies that are not likely to become more consensual or more interconnected and nearly nondecomposable. We have urged that organizations charged with missions that reflect sharply contested knowledge and values be left as they are currently constituted.

What lessons for institutional reform may be drawn from this study to improve global governance? The limiting conditions for organizations that can learn appear to be the absence of irreconcilable political differences among the dominant member countries and stable, impartial information flows to an effective secretariat.

Organizations that learned were ruled by a dominant coalition whose members were in agreement on the main principles of world order. Effective discussions are hamstrung, and political compromises by which more comprehensive programmatic missions may be crafted are impossible without such agreement. At a minimum, learning requires an institutional design that provides for the provision of nonpartisan scientific information about the state of the physical environment, the regularized feedback of information regarding activities by governments and firms, and the building of developing countries' capacity to conduct monitoring and research and to apply it indigenously to their policy process. Parties should be able to keep track of each other's activities and hold governments accountable for enforcing their international commitments.

Secretariats ought to be recruited on the basis of merit alone. Connections between secretariats and NGOs and the scientific community, from which new ideas and warnings can be received, should be close, especially when monitoring is delegated to NGOs. Both greater independent monitoring of national performance to augment reports by governments and more public education to inform groups about problems also benefit from close secretariat/NGO ties. Closer administrative ties to local authorities may accelerate the diffusion of institutional learning.

Learning and institutional reform must come from within. Both learning, and efforts to educate others by organizations other than UNEP, IBRD, WHO, and WMO have largely proved to be failures. Other bodies should be reformed to allow for greater input from more diverse groups, which might eventually result also in the acquisition of mandates to monitor national performance. Organizations characterized by irreconcilable disagreements over desirable world orders or ineptitude may not even be made capable of learning to manage interdependence, rather than merely adapting to it.

But it is clearly not possible to foretell with any confidence which fields are likely to become more consensual. We cannot guess which conceptual and cognitive breakthroughs that now seem unlikely may still come about in the not-too-distant future. Hence, what we really need are IOs that are flexible enough to learn new interconnections and profit from new interdependencies among functions, values, time periods, and places, even though we cannot foresee the problematiques to which they might be responding. The truest learning organization, we believe, is the one blessed with people and institutional routines that will recognize and identify such brand-new problematiques before the problems have become too serious to yield to a multilateral response. 🌐

Notes

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Mingst, Ron Mitchell, Craig Murphy, John Perry, Larry Scheinman, Susan Sell, and Mark Zacher. The interpretations remain our own.

1. *Institutional Arrangements for International Environmental Cooperation* (Washington, D.C.: National Academy of Sciences, 1972), p. 1.

2. Our take on social constructions of "reality" are akin to those of Donald T. Campbell, *Methodology and Epistemology for Social Science* (Chicago: University of Chicago Press, 1988); Richard Rorty, *Objectivism, Relativism, and Truth* (Cambridge: Cambridge University Press, 1991); Hilary Putnam, *Reason, Truth and History* (Cambridge: Cambridge University Press, 1981); and Stephen Toulmin, *Human Understanding* (Princeton: Princeton University Press, 1972). For empirical confirmation of this approach, see Ronald N. Giere, *Explaining Science* (Chicago: University of Chicago Press, 1988).

3. John Gerard Ruggie characterizes this dimension of modernity as "social time." See Ruggie, "Social Time and International Policy," in Margaret Karnes, ed., *Persistent Patterns and Emergent Structures in a Waning Century* (New York: Praeger, 1986); also see Ruggie, "International Structure and International Transformation," in James N. Rosenau and Ernst-Otto Czempiel, eds., *Global Changes and Theoretical Challenges: Approaches to World Politics for the 1990s* (Lexington, Mass.: Lexington Books, 1989).

4. This entire section is an adaptation of Herbert Simon's work. See, for one of many sources, his "Rationality in Psychology and Economics," in Robin M. Hogarth and Melvin W. Reder, eds., *Rational Choice* (Chicago: University of Chicago Press, 1986).

5. Peter M. Haas, "Do Regimes Matter?" *International Organization* 43, no. 3 (summer 1989); Ernst B. Haas, *When Knowledge Is Power* (Berkeley: University of California Press, 1990); Peter M. Haas, ed., *Knowledge, Power, and International Policy Coordination* (Columbia: University of South Carolina Press, 1995).

6. Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III, *The Limits to Growth* (New York: Signet, 1972); Mihajlo Mesasrovic and Eduard Pestel, *Mankind at the Turning Point* (New York: Dutton, 1974); Jan Tinbergen, *RIO: Reshaping the International Order* (New York: Dutton, 1976); Aurelio Peccei, *The Human Quality* (Oxford: Pergamon, 1977); and James W. Botkin, Mahdi Elmandjra, and Mircea Malitza, *No Limits to Learning: Bridging the Human Gap, A Report to the Club of Rome* (New York: Pergamon, 1979). More recent reports on the subject include Alexander King and Bertrand Schneider, *The First Global Revolution* (New York: Pantheon, 1991), and Jim MacNeill, Pieter Winsemius, and Taizo Yakushiji, *Beyond Interdependence: The Meshing of the World's Economy and the World's Ecology* (New York: Oxford University Press, 1991). The history of the global-modeling research program, which was closely associated with the global problematique, is reviewed in Donella Meadows, John Richardson, and Gerhart Bruckmann, *Groping in the Dark* (Chichester, U.K.: John Wiley & Sons, 1982). For critical rejoinders to the Club of Rome's formulation of the problematique, see Sam Cole, *Global Models and the International Economic Order* (New York: Pergamon, 1977); Christopher Freeman and Marie Jahoda, eds., *World Futures* (New York: Universe, 1978); Brian P. Bloomfield, *Modelling the World* (Oxford: Basil Blackwell, 1986); Richard K. Ashley, "World Modeling and Its Politics," *International Organization* 37, no. 3 (summer 1983): 495-536; Nicholas N. Onuf, "Reports to the Club of Rome," *World Politics* 36, no. 1 (October 1982): 121-146.

7. Figures for the 1990-1991 biennium from "Program Resources of the United Nations System," UN Document E/1991/42/Add.1, 10 April 1991, pp. 7-9, cited by Lee A. Kimball, *Forging International Agreement* (Washington, D.C.:

World Resources Institute, 1992), p. 36. The 1994 budget figures were calculated from the Fridtjof Nansen Institute, *Green Globe Yearbook 1994* (Oxford: Oxford University Press, 1994). While budgets are not the same as resources, particularly for the multilateral development bodies, they do provide a rough indicator of the degree of organizational energy committed in this area and the extent to which it has grown more vigorous over time.

8. Mostafa K. Tolba, et al., *The World Environment 1972–1992: Two Decades of Challenge* (London: Chapman & Hall, 1992); UNEP, “UNEP Profile,” Nairobi, UNEP, 1987; Peter M. Haas, “Institutions—United Nations Environment Programme,” *Environment* 36, no. 7 (September 1994): 43–45.

9. Bruce Rich, *Mortgaging the Earth* (Boston: Beacon, 1994); Susan George and Fabrizio Sabelli, *Faith & Credit* (Boulder: Westview, 1994); Herman E. Daly, “Farewell Lecture to World Bank,” 14 January 1994, mimeo. Strikingly, traditional critics of the World Bank have not been overly skeptical of the Bank’s efforts to integrate environmental considerations into its activities.

10. See Peter M. Haas, Robert O. Keohane, and Marc A. Levy, eds., *Institutions for the Earth: Sources of Effective International Environmental Protection* (Cambridge: MIT Press, 1993); Peter M. Haas, *Saving the Mediterranean: The Politics of International Environmental Cooperation* (New York: Columbia University Press, 1990).

11. For instance, Osvaldo Sunkel, “Beyond the World Conservation Strategy: Integrating Development and Environment in Latin America and the Caribbean,” in Peter Jacobs and David A. Muñoz, eds., *Conservation with Equity*, proceedings of the Conference on Conservation and Development, Ottawa, Canada, 31 May–5 June 1986; Latin American and Caribbean Commission on Development and Environment, *Our Own Agenda* (Washington, D.C., and New York: Inter-American Development Bank and United Nations Development Programme, 1991).

Appendix: Environmental Management Problematique: Organizational Learning or Adaptation, 1987-1992

	UNEP	IBRD	WMO
<i>IO Characteristic</i>			
World order ideology	moderate dependency reversal v. liberalism, compromise possible	liberalism modified by selective incentives to LDC governments	weather prediction v. global change
Mode of representation	equality biased toward Third World, NGOs represent	sharply stratified by state power, NGOs do not represent	equality of states
Executive head's leadership	crisis manager	crisis manager	reactive to LDCs
Secretariat	recruitment by merit, unpenetrated	recruitment by merit, unpenetrated	recruitment by merit, unpenetrated
Status of experts	represent epistemic communities	represent epistemic communities	represent epistemic communities, independent
Source of revenue	annual assessments, voluntary contributions, other IOs	capital subscriptions, borrowing	annual assessments, UNDP voluntary contributions
Administration of local tasks	mostly indirect	shared	indirect, shared
Monitoring state compliance	consultations, regular reporting, publicity sanction	consultations, ad hoc reporting	irrelevant
Role of NGOs	lobbying, advisers to staff, consultants, participation in meetings	advisers to staff, consultants	lobbyists, ICSU personnel as program administrators
Knowledge	more consensual	more consensual, integration with economics	toward consensus
<i>Mode of IO Decisionmaking</i>			
Organizational experience	extensive programs covering many environmental/human interactions	commitment to reducing environmental externalities of loans, stress their environmental benefits	sharp increase in resources devoted to climate and environmental programs
Issue linkage	mostly fragmented, some substantive	fragmented, becoming more substantive	fragmented, some substantive
Problem definition	nearly nondecomposable sets	nearly nondecomposable sets	nondecomposable
Authority, legitimacy	authority growing, legitimacy unclear	authority growing, legitimacy disputed in parts of Third World	authority declining

	UNDP	UNPPA	IAEA
<i>IO Characteristic</i>			
World order ideology	liberalism v. dependency reduction	resource conservation, welfare enhancement	AIC nuclear hegemony v. dependency reduction
Mode of representation	donor-recipient balance, no NGO representation	same as UNDP	stratified by state power, no NGO representation
Executive head's leadership		reactive/passive	reactive to AIC members
Secretariat	recruitment by national quotas, some penetration	recruitment by national quotas, no penetration	recruitment by national quotas, exile staffing, penetration
Status of experts	independent	epistemic community	instructed by states, some epistemic community
Source of revenue	voluntary contributions	voluntary contributions, UNDP	annual assessments, voluntary contributions
Administration of local tasks	shared	shared	direct
Monitoring state compliance	consultations	evaluations	regular reporting, inspections, sanctions
Role of NGOs	lobbyists, project administration	consultants, project administration	none
Knowledge	not more consensual	less consensual	consensus improving
<i>Mode of IO Decisionmaking</i>			
Organizational experience	environmental externalities to be considered in project design	guidelines for conservation strategies, family planning program	radioactive emissions, radiation safety, reactor improvement
Issue linkage	none	none	fragmented
Problem definition	decomposable	decomposable	decomposable
Authority, legitimacy	both low	authority high, legitimacy mixed	both improving

	WHO	ILO	UNESCO
<i>IO Characteristic</i>			
World order ideology	"primary health care," "health for all by 2000"	social-democratic reformism	liberalism v. dependency reduction, redistribution
Mode of representation	stratified by power of states, NGOs can penetrate delegations	stratified by power of states, NGOs represent their national interests	egalitarian, NGOs can serve on delegations
Executive head's leadership	crisis manager	reactive to G-77	M'Bow reactive to G-77, Mayor reactive to West
Secretariat	recruitment by merit, full autonomy	recruitment by merit, some penetration	recruitment by national quotas and exiles, heavily penetrated
Status of experts	represent epistemic communities	NGO-instructed	independent, instructed, some epistemic communities
Source of revenue	annual assessments, UNDP, voluntary contributions	same	same
Administration of local tasks	mostly indirect	direct	shared
Monitoring state compliance	regular reporting, some complaining, investigations, publicity sanction	regular reporting, complaining, hearings, investigations, publicity sanction	consultations, some reporting
Role of NGOs	consultants, lobbyists, complainants	lobbyists, legislators, complainants, mediators	lobbyists, consultants, some administration
Knowledge	not more consensual	not more consensual	more consensual
<i>Mode of IO Decisionmaking</i>			
Organizational experience	public health redefined to include environmental hazards	environmental threats to health/safety	programs on marine pollution, species preservation, mapping biomes
Issue linkage	little linkage	tactical	tactical
Problem definition	nondecomposable	decomposable	decomposable, some nearly nondecomposable
Authority, legitimacy	both high	authority low, legitimacy high	both low

	FAO	IFAD	WFP	IMO
Appendix continued				
<i>IO Characteristic</i>				
World-order ideology	liberalism v. dependency reduction	dependency reduction		liberalism
Mode of representation	stratified by power of states	tripartite egalitarian, NGOs do not represent		stratified by maritime state power, NGOs participate in meeting
Executive head's leadership	reactive to G-77		crisis manager	passive mediator
Secretariat	recruitment by national quotas, exile staffing, partly penetrated			recruitment by national quotas, somewhat penetrated
Status of experts	mostly independent			NGO-instructed
Source of revenue	annual assessments, UNDP, voluntary contributions, subsidies from firms	voluntary contributions	NGO-instructed voluntary contributions	annual assessments, UNDP
Administration of local tasks	shared		shared	direct
Monitoring state compliance	consultations	none		regular reporting, publicity sanction
Role of NGOs	lobbyists, consultants		lobbyists, consultants, complainants	lobbyists, consultants
Knowledge	not more consensual			toward more consensus
<i>Mode of IO Decisionmaking</i>				
Organizational experience	environmental projects added to earlier tasks, not more consensual	applies environmental principles to projects	seeks to avoid harmful environmental effects from normal projects	ship-caused marine pollution
Issue linkage	tactical			tactical
Problem definition	decomposable	decomposable	decomposable	nearly nondecomposable
Authoritv. legitimacy	both low			both high