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# **Conclusion: epistemic communities, world order, and the creation of a reflective research program**

Emanuel Adler and Peter M. Haas

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*The empires of the future are the empires of the mind.*  
—Winston Churchill

## **Epistemic communities and international relations theory**

International relations lacks a credible theory and set of explanations for the sources of international institutions, state interests, and state behavior under conditions of uncertainty. Indeed, in a recent overview of international relations approaches, Robert Keohane acknowledged the need for a “reflective” approach and lamented the absence of “a research program [that shows] in particular studies that it can illuminate important issues in world politics.”<sup>1</sup> The epistemic communities approach amounts to a reflective response to the challenge posed by Keohane. In this volume, not only do we develop “particular studies that . . . can illuminate important issues in world politics,” but we also offer a research program with which students of world politics can empirically study the role of ideas in international relations.

Between international structures and human volition lies interpretation. Before choices involving cooperation can be made, circumstances must be assessed and interests identified. In this regard, to study the ideas of epistemic communities and their impact on policymaking is to immerse oneself in the inner world of international relations theory and to erase the artificial boundaries between international and domestic politics so that the dynamic between structure and choice can be illuminated.

We thank Robert Keohane, Kalypso Nicolaïdis, and M. J. Peterson for their comments on earlier drafts of this article.

1. See Robert O. Keohane, *International Institutions and State Power* (Boulder, Colo.: Westview Press, 1989), p. 173. This quote is drawn from Keohane’s 1988 presidential address to the International Studies Association.

Epistemic communities are less a “new” international actor or unit of analysis than they are a vehicle for the development of insightful theoretical premises about the creation of collective interpretation and choice. The epistemic communities approach is in fact “methodologically pluralistic.”<sup>2</sup> In pursuing this approach, we seek to bridge the gap between positivist-empirical and relativist-interpretive phenomenological approaches, such as neorealism, liberal institutionalism, neofunctionalism, and cognitive analysis, and to integrate some of their most important insights. At the same time, we strongly emphasize that we do not seek a general theory of international politics. Rather, our goal is to specify a set of constrained conditions under which order is possible, based on the creation of collective meaning, and to make clear our methodology and substantive propositions about a reflective research program.

Methodological pluralism and theoretical synthesis, which we take to be our strength, may nevertheless prevent us from achieving the level of parsimony often desired by international relations theorists.<sup>3</sup> But what we may lose in parsimony, we may gain in depth and understanding. We hope to persuade our readers that epistemic communities amount to a theoretical focal point which renders our integrative enterprise more intelligible and, indeed, parsimonious. Furthermore, our heuristic contributions to this volume show that a reflective research program based on the concept of epistemic communities is progressive—that is, it generates new findings about familiar cases drawn from such diverse areas as security, international political economy, and the environment.<sup>4</sup>

As many of the articles in this volume make clear, no single theoretical approach—and certainly none of the approaches mentioned above—taken alone offers an adequate explanation of international coordination. Neorealist approaches are notorious for their inability to deduce state interests from international structures without resorting to auxiliary assumptions about domestic politics, communication and socialization, and domestic economic and technological changes.<sup>5</sup> Furthermore, they assume that international actors or units lack even a minimal capacity for deducing different expectations from the same structural change or for reflecting on alternative modes of behavior. While such an elegantly parsimonious approach may have been

2. See Yosef Lapid, “The Third Debate,” *International Studies Quarterly* 33 (September 1989), pp. 235–54.

3. See Kenneth N. Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Wesley, 1979); and Keohane, *International Institutions and State Power*, chap. 3.

4. See Imre Lakatos, “Falsification and the Methodology of Scientific Research Programmes,” in Imre Lakatos and Alan Musgrave, eds., *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science, London, 1965*, vol. 4 (London: Cambridge University Press, 1970), pp. 91–196.

5. Regarding this point, see in particular the following articles in this issue of *IO*: M. J. Peterson, “Whalers, Cetologists, Environmentalists, and the International Management of Whaling”; Peter M. Haas, “Banning Chlorofluorocarbons: Epistemic Community Efforts to Protect Stratospheric Ozone”; and Ethan Kapstein, “Between Power and Purpose: Central Bankers and the Politics of Regulatory Convergence.”

adequate for simpler times, the complex nature of current international relations has made such an approach obsolete by seriously questioning the assumption that the system is transparent enough that actors can clearly identify their own interests and accurately interpret the signals and behavior of others. The approach we propose does not fail to take into account the causal importance of structure. But, at the same time, it does not make the neorealist mistakes of deducing expectations only from structures and of defining structure in reference only to material distributions of power.

Many scholars have supplemented neorealist approaches with rational choice assumptions, usually making for good formal and heuristic theorizing.<sup>6</sup> By incorporating exogenously determined preference orderings into their analyses, they have disregarded some of the most important sources of expectations lying at the individual (subjective) and institutional (intersubjective) levels.<sup>7</sup> The approach has been problematic at best, since preferences and payoffs are seldom obvious, the nature of the game is often obscure, and institutions are not fully responsive to new problems.<sup>8</sup> The theory-building process we are involved in can nevertheless be extremely useful for rational choice analysis because, ultimately, we provide the necessary prerequisites for rational choice, explaining where alternatives and payoffs come from.

Neoliberal institutional approaches, according to Joseph Grieco, "basically argue that even if the realists are correct in believing that anarchy constrains the willingness to cooperate, states nevertheless can work together and can do so especially with the assistance of international institutions."<sup>9</sup> We have no quarrel with this argument. But we begin where neoliberal institutional approaches leave off; namely, we relate institutions to the dynamic interaction between domestic and international political games, and we describe these games not only in terms of material interests but also as part of the bargaining and negotiation that take place among different epistemic understandings and practices "carried" by epistemic communities and later by policymakers as well. This approach allows us to bridge rational choice and reflective institutional approaches and to explain the source not only of interests but also of

6. See, for example, Russell Hardin, *Collective Action* (Baltimore, Md.: Johns Hopkins University Press, 1982); Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984); Kenneth A. Oye, ed., *Cooperation Under Anarchy* (Princeton, N.J.: Princeton University Press, 1986); and Duncan Snidal, "The Limits of Hegemonic Stability Theory," *International Organization* 39 (Autumn 1985), pp. 491-517.

7. See Friedrich Kratochwil and John G. Ruggie, "International Organization: A State of the Art on an Art of the State," *International Organization* 40 (Autumn 1986), pp. 753-76. See also Stephan Haggard and Beth A. Simmons, "Theories of International Regimes," *International Organization* 41 (Summer 1987), pp. 491-517.

8. See Arthur A. Stein, *Why Nations Cooperate* (Ithaca, N.Y.: Cornell University Press, 1990); Robert Jervis, "Realism, Game Theory, and Cooperation," *World Politics* 40 (April 1988), pp. 317-49; and Harold Nicolson, *Diplomacy*, 2d ed. (London: Oxford University Press, 1955), pp. 24-27.

9. Joseph M. Grieco, "Anarchy and the Limits of Cooperation," *International Organization* 42 (Summer 1988), p. 486. See also Keohane, *International Institutions and State Power*, chaps. 1 and 7.

institutions. Moreover, we aspire to explain the substance of such institutions in terms of the collective understanding of the participating parties as well as their interests.

We are indebted to the neofunctionalist and cognitive approaches, and in studying epistemic communities we follow the trail pioneered by Ernst B. Haas and John Gerard Ruggie.<sup>10</sup> In contrast to neofunctionalism, however, we do not seek to explain the processes by which authority is transferred from the nation-state to international institutions as problems become more technical and amenable to the creation of scientifically based common meanings. And we are not merely interested in analyzing scientific and political styles of thought as they combine to create various types of world order.<sup>11</sup> Instead, we regard learning as a process that has to do more with politics than with science, turning the study of political process into a question about *who learns what, when, to whose benefit, and why*. Our concern is with reasoning, but not with the purely rational forms of reasoning that are assumed by much of the rational choice and neorealist traditions or with the forms that are taken as a teleological taproot for much of the neofunctionalist work. While we focus on rationality, we are agnostic about the form that such rationality will take. By rationality we mean an internally consistent pattern of reasoning. It need not be logico-deductive.<sup>12</sup>

Our critique of the approaches mentioned above should not be interpreted as reflecting a preference for poststructuralist, postpositivist, and radical interpretive analyses, although we do hope to build a bridge between structural and interpretive approaches. Rejecting the view of international relations as the mere reflections of discourses and habits—wherein the word is power and the only power is the word—we nevertheless have incorporated into our reflective approach the notion that the manner in which people and institutions interpret and represent phenomena and structures makes a difference for the outcomes we can expect in international relations.<sup>13</sup> Thus, we adopt an ontology that embraces historical, interpretive factors, as well as structural forces, explaining change in a dynamic way. This ontology reflects an epistemology that is based on a strong element of intersubjectivity. So long as even a

10. See Ernst B. Haas, *Beyond the Nation State* (Stanford, Calif.: Stanford University Press, 1964); and John Gerard Ruggie, "International Responses to Technology," *International Organization* 29 (Summer 1975), pp. 557–84.

11. See the following works of Ernst B. Haas: "Why Collaborate? Issue-Linkage and International Regimes," *World Politics* 32 (April 1980), pp. 357–405; and *When Knowledge Is Power* (Berkeley: University of California Press, 1990).

12. For an alternative view, see Robert O. Keohane, "Neorealism and World Politics," in Robert O. Keohane, ed., *Neorealism and Its Critics* (New York: Columbia University Press, 1986), p. 11.

13. See Richard K. Ashley, "The Poverty of Neorealism," *International Organization* 38 (Spring 1984), pp. 225–86; Richard K. Ashley and R. B. J. Walker, "Speaking the Language of Exile: Dissident Thought in International Studies," *International Studies Quarterly* 34 (September 1990), pp. 259–68; and James Der Derian and Michael J. Shapiro, *International/Intertextual Relations: Postmodern Readings of World Politics* (Lexington, Mass.: Lexington Books, 1989).

tenuous link is maintained between objects and their representation, we can reject an exclusive focus on words and discourse. By defending an epistemological and ontological link between words and the objects with which they are commonly associated, we believe that learning may occur through reflection on empirical events rather than through their representation.

Finally, epistemic communities should not be mistaken for a new hegemonic actor that is the source of political and moral direction in society.<sup>14</sup> Epistemic communities are not in the business of controlling societies; what they control is international problems. Their approach is instrumental, and their life is limited to the time and space defined by the problem and its solutions. Epistemic communities are neither philosophers, nor kings, nor philosopher-kings.

### Epistemic communities and policy coordination

Policy coordination is, ultimately, based on consent and mutual expectations.<sup>15</sup> The main theoretical question of international politics, which goes to the core of the epistemic communities approach, is "Where do expectations come from?" We try to show here that expectations in international politics come from interpretive processes involving political and cultural structures, as well as from institutions "dedicated to defining and modifying values and the meaning of action."<sup>16</sup> Our argument suggests a "structurationist" approach which contends that just as structures are constituted by the practice and self-understandings of agents, so the influence and interests of agents are constituted and explained by political and cultural structures. If we define the role played by epistemic communities as one of policy coordination, then, the task is to show not only the structural characteristics of the coordination game but also the processes by which agents and their expectations are created and by which the alternatives and outcomes of games are defined.

With the aid of this theoretical framework, we may be able to identify expectations of interests and payoffs from the shared interpretations created by epistemic communities, if we can show that these interpretations have a good chance of being selected authoritatively through national political structures and processes. By way of a hypothesis, then, we can say that the greater the extent to which epistemic communities are mobilized and are able to gain influence in their respective nation-states, the greater is the likelihood that

14. See Enrico Augelli and Craig Murphy, *America's Quest for Supremacy and the Third World* (London: Pinter, 1988), chap. 6. See also Jacques Ellul, *The Technological Society* (New York: Knopf, 1964); John Kenneth Galbraith, *The New Industrial State*, 3d ed. (Boston: Houghton Mifflin, 1978); and Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace & World, 1963).

15. Purely national assessments of the "correct" form of regulation play a role in policy coordination as well, but these are treated below.

16. James G. March and Johan P. Olsen, "The New Institutionalism: Organizational Factors in Political Life," *American Political Science Review* 78 (September 1984), pp. 734–49.

these nation-states will in turn exert power on behalf of the values and practices promoted by the epistemic community and will thus help in their international institutionalization. In international coordination games concerning issues with a technical nature, cooperative outcomes may depend, then, on the extent to which nation-states, after taking everything into consideration, including the urge to defect, apply their power on behalf of a practice that epistemic communities may have helped create and perpetuate. This may happen because the understandings and values that generate practices, once they are shared by powerful states, may have the effect of an international structure, providing the reasons, habits, expectations, and compelling arguments for cooperation. If we know the winning epistemic community, we can deduce the likely policy alternatives available for political selection. The articles in this volume have closely traced the process by which such visions emerge and are diffused, serving as a base for broader theoretical generalizations. In each case, the authors have taken care to specify a given community's beliefs independently of its actions and prior to its policy involvement.

### **Epistemic communities and policy evolution**

The most fruitful metaphor for thinking about epistemic communities is that of evolution. Indeed, as Adler has argued elsewhere, "At any point in time and place of a historical process, international actors . . . may be affected by politically relevant collective sets of understandings of the physical and social world that are subject to political selection processes and thus to evolutionary change."<sup>17</sup>

We stress that we approach evolution as a metaphor, rather than as a formal model, because "failed" ideas do not become extinct but are merely shelved for future reference. Moreover, they are subject to reinterpretation later on.<sup>18</sup> Thus, in this case, we do not relate to the tradition of evolutionary biology, which is most commonly applied in social science. Instead, we rely on developmental biology, in which evolutionary changes to structures, once in place, are largely irreversible and virtually determine the array of subsequent choices available to the species. For instance, once birds acquired a bone structure (morphology) for flight, they could not return to the primordial ooze. This path-dependent evolutionary model implies that the effects of epistemic

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17. Emanuel Adler, "Cognitive Evolution: A Dynamic Approach for the Study of International Relations and Their Progress," in Emanuel Adler and Beverly Crawford, eds., *Progress in Postwar International Relations* (New York: Columbia University Press, 1991), p. 47.

18. Subsequent invocations of these ideas are subject to historically contingent factors applying at the time of their use. See, for instance, Hall's discussion about the variety of Keynesian interpretations and Haas's discussion about the variety of forms of nationalism and the different ways in which they are applied over time in the following works: Peter A. Hall, ed., *The Political Power of Economic Ideas* (Princeton, N.J.: Princeton University Press, 1989); and Ernst B. Haas, "What Is Nationalism?" *International Organization* 40 (Summer 1986), pp. 707–44.

involvement are not easily reversed. To the extent to which multiple equilibrium points are possible in the international system, epistemic communities will help identify which one is selected.<sup>19</sup> Subsequent outcomes reflect the initial vision of the epistemic community that helped frame and institutionalize the issue-area.

Such a process of policy evolution has four primary steps: policy innovation, diffusion, selection, and persistence. To operationalize this framework, we can view foreign policy as a process by which intellectual innovations (which epistemic communities help produce) are carried by domestic and international organizations (in which epistemic communities may reside) and are selected by political processes to become the basis of new or transformed national interests. Likewise, under specified conditions, we can view international politics as the process by which the innovations of epistemic communities are diffused nationally, transnationally, and internationally to become the basis of new or changed international practices and institutions and the emerging attributes of a new world order. This view of foreign and international politics becomes more compelling as international issues are increasingly characterized by their technical aspects, complexity, uncertainty, and interdependence. With increasing interdependence, and because of diplomatic contacts aimed at dealing with technical complexity and uncertainty, nations transmit to each other the innovations selectively retained at the national level.<sup>20</sup> Once the expectations and values injected by epistemic communities into the policy process are internationally shared, they help coordinate or structure international relations.

The domestic and international steps of the policy evolution process can be made more intelligible with the help of Robert Putnam's description of international politics as a "two-level game." At the national level, Putnam indicates, "domestic groups pursue their interests by pressuring the government to adopt favorable policies, and politicians seek power by constructing coalitions among those groups," and at the international level, "national governments seek to maximize their own ability to satisfy domestic pressures while minimizing the adverse consequences of foreign developments."<sup>21</sup> Two-level games, however, are not only about fixed interests and power; they are also about the selection, spread, and retention of expectations and values at national and international levels. The domestic game therefore refers to how expectations and values enter into the political process through active participation of domestic and transnational epistemic communities and how through the policy process these ideas help define the national interest, which then

19. See Adler, "Cognitive Evolution"; Paul A. David, "Clio and the Economics of Qwerty," *Economic History* 75 (May 1985), pp. 332-37; and Stephen D. Krasner, "Sovereignty: An Institutional Perspective," *Comparative Political Studies* 21 (April 1988), pp. 77-80.

20. For an earlier description of this approach, see Adler, "Cognitive Evolution," pp. 50-60.

21. Robert Putnam, "Diplomacy and Domestic Politics: The Logic of Two-Level Games," *International Organization* 42 (Summer 1988), p. 434.



becomes a conceptual and normative input to the international game. In the international game, governments not only act out of concern for the domestic political environment, but they are also motivated by the need to solve international problems, whose interpretations and meanings are embedded in the national interest. As part of this game, governments transmit expectations and values that compete to become the basis of international behavior. Choices made at the international level have implications for domestic politics as well. By identifying the array of possible international solutions domestic coalitions are realigned.

Within such a framework, epistemic communities play an evolutionary role as a source of policy innovations and a channel by which these innovations diffuse internationally. As most of the articles in this volume indicate, the policy ideas of epistemic communities generally evolve independently, rather than under the direct influence of government sources of authority. The impact of epistemic communities is institutionalized in the short term through the political insinuation of their members into the policymaking process and through their ability to acquire regulatory and policymaking responsibility and to persuade others of the correctness of their approach. In the longer term, the institutionalization of epistemic community influence occurs through socialization, which has been defined by G. John Ikenberry and Charles Kupchan as “a process of learning in which norms and ideals are transmitted from one party to another.”<sup>22</sup> Socialization is particularly important for international policy coordination because enduring solutions to cooperation games depend on a common epistemic framework that allows the units to behave rationally and to formulate “rational” expectations.<sup>23</sup>

As epistemic communities consolidate and expand their political and bureaucratic influence internationally, additional ideas may be incorporated into the core community beliefs. In the case of trade in services, for example, as members from the European and developing nations were added to the community, they introduced more diverse ideas. While other changes may occur and the groups initially involved may be replaced with others more familiar with day-to-day policy concerns, the evolutionary impact of epistemic community ideas persists. This is clearly seen in the case of the General Agreement for Tariffs and Trade (GATT). Nations continue to comply with the free trade principles of GATT, despite the incentives for free riding and despite increasing domestic pressures to pursue protectionist policies. In the U.S. executive branch of government, the continued involvement of economists

22. G. John Ikenberry and Charles A. Kupchan, “Socialization and Hegemonic Power,” *International Organization* 44 (Summer 1990), p. 289.

23. There are two prominent features, identified by Waltz, which help ground expectations. According to Waltz, “In itself a structure does not clearly lead to one outcome rather than another. Structure affects behavior within the system, but does so indirectly. The effects are produced in two ways: through socialization of the actors and through competition among them.” See Waltz, *Theory of International Politics*, p. 74.

trained in the Keynesian tradition has helped promote compliance with GATT in the face of a great degree of public outcry.<sup>24</sup>

The influence of epistemic communities persists through the institutions that they help create and inform with their preferred world vision. Even if community members were initially consulted to clarify policy alternatives in a given domain, rather than to identify state interests, once their ideas are assimilated and institutionalized, they continue to influence state practices in that domain through institutional habit and inertia.<sup>25</sup>

### *Steps in the process of policy evolution*

*Policy innovation.* Epistemic communities exert influence on policy innovation by (1) framing the range of political controversy surrounding an issue, (2) defining state interests, and (3) setting standards.

In the case of a specific issue-area—such as postwar economic management, arms control, pollution control, or regulation of trade in services—how governments think of interests, policy objectives, and ways of conducting policy coordination depends on how they conceive of the context in which particular efforts must be made. By identifying the nature of the issue-area and framing the context in which new data and ideas are interpreted, epistemic communities bound the range of collective discourse on policy, as well as guide decision makers in the choice of appropriate norms and appropriate institutions within which to resolve or manage problems.<sup>26</sup> The identification of national interests is a natural consequence of how issues are framed. Framing the context may also create a climate favorable to the further acceptance and diffusion of epistemic community beliefs.

For example, by depicting the world in terms of an international market, members of the expert community involved in efforts regarding postwar economic management alerted policymakers to the possibilities of mutual gains

24. See Judith Goldstein, "The Political Economy of Trade," *American Political Science Review* 80 (March 1986), pp. 161–84. See also I. M. Destler, *American Trade Politics: System Under Stress* (Washington, D.C.: Institute for International Economics, 1986); Jagdish Bhagwati, *Protectionism* (Cambridge, Mass.: MIT Press, 1989); and John Gerard Ruggie, "Embedded Liberalism Revisited: Institutions and Progress in International Economic Relations," in Adler and Crawford, *Progress in Postwar International Relations*, pp. 201–34. Other strong explanations for persistent trade behavior, largely relating it to particularistic interests, are offered in the following works: Stephen D. Krasner, "The Tokyo Round," *International Studies Quarterly* 23 (December 1979), pp. 491–531; I. M. Destler and John S. Odell, *Anti-Protection: Changing Forces in United States Trade Politics* (Washington, D.C.: Institute for International Economics, 1987); and Helen V. Milner, *Resisting Protectionism* (Princeton, N.J.: Princeton University Press, 1988). However, these works fail to capture the institutional resistance to challenges to free trade.

25. See James N. Rosenau, "Hegemons, Regimes, and Habit-Driven Actors," *International Organization* 40 (Autumn 1986), pp. 849–94.

26. For related treatments, see Tom Baumgartner et al., "Meta-Power and the Structuring of Social Hierarchies," in Tom R. Burns and Walter Buckley, eds., *Power and Control: Social Structures and Their Transformation* (Beverly Hills, Calif.: Sage, 1976), pp. 215–88; and John Gaventa, *Power and Powerlessness* (Urbana: University of Illinois Press, 1980).

and the need for strategic, coordinated action. They subsequently informed actors of possible linkages and trade-offs with related issues and helped bring about coordinated efforts.

In the case of arms control, an epistemic community based in the United States framed the issue of, and instilled an interest in, superpower cooperation around the theme of nuclear arms control. Subsequently, this community, together with Soviet experts who on the basis of American ideas had created an epistemic community of their own, shaped the policymakers' perceptions of international security and of state interests. In the absence of war, policymakers' expectations about war tend to follow directly from the theoretically informed advice they receive. By offering expert advice and framing the context, the epistemic communities influenced policymakers' expectations, and this in turn influenced their behavior. With respect to state interests, the communities not only helped convince U.S. and Soviet leaders that it was in their mutual interest to avoid nuclear war but also generated a new interest in arms control. In the United States, this interest was in sharp contrast to the idea of general disarmament, which never materialized as a state interest and as a course of action. The ideas of the arms control experts are reflected in the U.S.–Soviet antiballistic missile (ABM) treaty and in subsequent superpower agreements reached throughout the Cold War period.

The ability of epistemic communities to alter perceptions and frame the context for collective responses to international problems is also evident with regard to issues concerning environmental pollution. Before 1972, chlorofluorocarbons (CFCs) were not universally regarded as pollutants.<sup>27</sup> Particularly outside the developed world, these chemicals, which are used in refrigeration, air conditioning, and computer chip manufacturing, were positively valued as signs of industrialization. More generally, belching smokestacks were seen as evidence of progress. Since that time, the governments of many of the less developed countries have recognized CFCs as pollutants that contribute to the depletion of stratospheric ozone and have begun to coordinate their actions to prevent or ameliorate CFC emissions. Moreover, as a consequence of the framing activities of the ecologic epistemic community, specific issues regarding the environment have been entrusted to new or different organizations. The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, for example, was concluded under the auspices of the United Nations Environment Programme (UNEP), rather than under the auspices of the Organization for Economic Cooperation and Development (OECD) or GATT, within which the formal issue of chemical

27. Regarding perceptions of pollution, see Mary Douglas, "Environments at Risk," in *Implicit Meanings: Essays in Anthropology* (London: Routledge & Kegan Paul, 1975), pp. 230–48. Regarding changes from 1972 to 1982 in leaders' responses to physical evidence of environmental degradation, see Mostafa Kamal Tolba, ed., *Evolving Environmental Perceptions from Stockholm to Nairobi* (London: Butterworths, 1988).

trade would normally occur.<sup>28</sup> Consequently, joint decisions have stressed environmental protection, even at the expense of trade liberalization.

Epistemic communities also have a direct influence in the identification of national interests. Decision makers unfamiliar with the dimensions of a new problem deferred to the ideas of an epistemic community in the case of trade in services. By characterizing a set of international services as "trade," rather than as a public monopoly or natural monopoly, the epistemic community nested the services within the broader dynamics associated with GATT. Alternatively, the issue of services in trade could have been taken up by the United Nations Conference on Trade and Development (UNCTAD) or another international organization, thereby leading to regulatory outcomes instead of market-oriented ones. Thus, through its identification of the parameters of the issue, the epistemic community not only helped policymakers identify their interests and tactics but also provided a broad outline for GATT coverage of trade in services. As negotiations over the issue increasingly focused on specific details and the epistemic community became less directly involved, its influence nevertheless continued. In the evolutionary language raised earlier, the institutionalized morphology for which the epistemic community was responsible proved immutable.

In telecommunications and other issue-areas, epistemic communities have played a similar role in framing the context and influencing state choices. As Peter Cowhey argued in an earlier issue of *IO*, the telecommunications regime was originally grounded on notions of natural monopoly and was strongly influenced by the perceptions of economists. Without the influence of an epistemic community of engineers concerned about design and international coordination of telecommunications equipment and standards, the regime would not have moved in the direction of multilateral agreements.<sup>29</sup> In other areas as well, the ideas of small communities of economists have had far-reaching effects. For example, Raul Prebisch's vision of economic development, as embraced by numerous economists, has had an enduring impact on styles of development in Latin America. Prebisch's ideas became instilled in the Economic Commission for Latin America and were embraced by a number of Latin American governments, and this in turn informed negotiations in numerous projects such as those sponsored by UNCTAD.<sup>30</sup>

28. See Susanne Rublack, "Controlling Transboundary Movements of Hazardous Waste: The Evolution of a Global Convention," *The Fletcher Forum of World Affairs* 13 (Winter 1989), pp. 113–26; and Christopher Hilz and Mark Radka, "The Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal," in Lawrence E. Susskind, Esther Siskind, and J. William Breslin, eds., *Nine Case Studies in International Environmental Negotiation* (Cambridge, Mass.: MIT–Harvard Public Disputes Program, May 1990), pp. 75–98.

29. Peter F. Cowhey, "The International Telecommunications Regime," *International Organization* 44 (Spring 1990), pp. 169–200.

30. See Sidney Dell, "Economists in the United Nations," in A. W. Coats, ed., *Economists in International Agencies* (New York: Praeger, 1986). For a slightly different view that stresses the

Epistemic communities have influenced policy innovation not only through their ability to frame issues and define state interests but also through their influence on the setting of standards and the development of regulations. As Otto Frankel pointed out in a recent study, the creation of gene banks for the preservation of genetic resources through the International Board for Plant Genetic Resources was based on the shared assessments and standards set by a group of plant geneticists concerned with the most effective way of preserving plant germplasm.<sup>31</sup> Studies presented in this volume provide numerous additional examples of epistemic community influence on standards and regulations: a community of development-oriented economists and administrators of food aid programs developed new criteria for the allocation and transfer of food aid resources; a community of experts in the field of arms control provided the nuts and bolts details of the ABM treaty; and a community of cetologists was responsible for the adoption of new management procedures and regulations concerning the taking of whales.

Studies in this volume also provide numerous examples of cases in which epistemic communities were responsible for narrowing the range within which political bargains could be struck. Regarding the establishment of regulations to protect stratospheric ozone, it was the environmental experts who identified the array of chemicals implicated in ozone depletion and who established levels at which chemical emissions had to be controlled while still leaving room for political bargaining and compromise. And in the case of the Bretton Woods agreement, the core of the monetary system—with its focus on fixed exchange rates, no devaluation without consultation, and free convertibility with the dollar backstopped by gold—followed from expert consensus, while compromises regarding balance-of-payments support and the relative responsibility of deficit and creditor countries were resolved purely through political muscle.

*Policy diffusion.* In the absence of the international communication and socialization processes that epistemic communities help promote, new ideas and policy innovations would remain confined to a single research group, a single international organization, or a single national government and would therefore have no structural effects. While members of epistemic communities actively engage in efforts at the national level, they also diffuse their policy advice transnationally through communication with their colleagues in scientific bodies and other international organizations, during conferences, and via publications and other methods of exchanging lessons and information. The

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variation with which Prebisch's ideas were received in different Latin American countries, see Kathryn Sikkink, *Ideas and Institutions: Developmentalism in Brazil and Argentina* (Ithaca, N.Y.: Cornell University Press, 1991). See also Robert L. Rothstein, *Global Bargaining: UNCTAD and the Quest for a New International Economic Order* (Princeton, N.J.: Princeton University Press, 1979).

31. Otto H. Frankel, "Genetic Resources: Evolutionary and Social Responsibilities," in Jack R. Kloppenburg, Jr., ed., *Seeds and Sovereignty: The Use and Control of Plant Genetic Resources* (Durham, N.C.: Duke University Press, 1988), pp. 19–46.

transnational links allow them to exert concurrent pressure on governments, even if such action is not formally planned by members of the community. The diffusion of intellectual innovations helps governments redefine their expectations, reach common understandings, and coordinate their behavior accordingly.

The cases described in this volume and elsewhere show that there are many paths and methods of diffusion. The diffusion of ideas between the United States and Britain was a key factor in the development of a postwar economic order and, more recently, internationally agreed banking regulations. The cases regarding ozone and trade in services show clearly how the innovations of epistemic communities can diffuse from a small number of key national actors to a much wider group, eventually reaching and appealing to the critical mass of governments needed to undertake effective international coordination of policies. Regarding strategic weapons, the case study presented here illustrates how the American epistemic community was able to diffuse its conceptual understanding to the Soviet Union, thereby creating a wide range of transnational links between the superpowers' strategic establishments and a shared idea on which to base arms control practices. Other studies have demonstrated how American researchers in the fields of nuclear physics, energy conservation, and atmospheric research have also transmitted new techniques to their Soviet counterparts.<sup>32</sup>

Epistemic community members play both indirect and direct roles in policy coordination by diffusing ideas and influencing the positions adopted by a wide range of actors, including domestic and international agencies, government bureaucrats and decision makers, legislative and corporate bodies, and the public. From the studies presented here, several conclusions can be drawn in this regard. First, if an epistemic community acquires power in only one country or in only one international body, then its international influence is merely the function of that country's or body's influence over others. If, however, the community can simultaneously influence several governments through its transnational membership, then it can more directly contribute to informal convergence of policy preferences.

Second, if an epistemic community's ideas become strongly embedded in the regulatory agencies of an individual country, they can directly influence the setting of standards and development of policies in that country. Again, if influence is exerted on the agencies of numerous countries, informal convergence is fostered.

Third, if the epistemic community members succeed in capturing parties that play a major role in negotiations over specific issues—as occurred in the ozone

32. See, for example, Robert H. Socolow, "US-Soviet Collaboration in Energy Conservation, Research and Development," in *Proceedings of the Conference on Technology-Based Confidence Building: Energy and Environment* (Los Alamos, Calif.: Los Alamos National Laboratory, November 1989), pp. 402-8.

case, when the community's ideas were eventually championed by the United States as well as by the major producer of CFCs—they can have a direct impact on agenda setting and negotiations and an indirect impact on the behavior of smaller countries and manufacturers via the pressures exerted by the hegemon and via the market signals generated by the actions of the dominant manufacturer. In contrast, in penetrating the government or executive body of a less powerful actor—be it a state or corporation—epistemic communities are likely to influence only the domestic and international policies of that actor, since smaller states lack the leverage to influence the form of collective arrangements or the behavior of other states and since smaller corporations have less impact on the market. Nevertheless, through domestic influence, the communities help promote enforcement of the collective arrangements by inhibiting the temptation for smaller states to free ride and by pressuring smaller corporations to comply.

And, fourth, an epistemic community does not have to be large to have an impact on international policy coordination. While the membership of the communities varied greatly in the cases presented here, it was typically under thirty-five people and could even be much less. What matters is that the members are respected within their own disciplines and have the ability to influence those within their immediate disciplines and extend their direct and indirect influence in an ever-widening pattern, eventually reaching major actors in the policy coordination process. What also clearly matters is timing. As all of the studies presented in this volume demonstrate, crises and dramatic events have the effects of alerting decision makers to the limitations of their understanding of the issue-area and of either triggering their search for advice from an epistemic community of experts or increasing their reliance on a community with an established foothold. Crises and new developments not only accelerate the diffusion process but also lend urgency to the task of reevaluating current policies and coming up with alternatives.

This was evident, for example, in the case involving arms control. The fact that the Soviets had developed the technology to launch Sputnik and intercontinental ballistic missiles escalated the perceived threat of a Soviet surprise attack on the United States. This, coupled with uncertainty about the technological potentials and the behavior of the opponent, precipitated the search for advice concerning strategic weapons. It was the Cuban missile crisis, however, that vividly showed, in practice, what the arms control experts had begun to argue, in theory, eventually leading to the new arms control policy. Similarly, bank failures, debt crises, and uncertainties about the operations of the international financial system triggered a search for expertise in banking regulation. Regarding whaling, the dramatic drop in the level of catches caused increasing concern and uncertainty about the sustainability of whaling operations and resulted in the adoption of new procedures to manage whaling. And the news of the “hole” in the ozone alerted decision makers to the seriousness

of the environmental threat.<sup>33</sup> In this case, it is striking that the epistemic community was responsible for highlighting, rather than alleviating, the uncertainties about the extent of ozone depletion and its effects.

Even in the case of postwar economic management, in which Ikenberry argues that epistemic communities were overwhelmed by broad political forces, a nascent community of liberal economists had greater influence in the monetary arena than in trade because money was a more technical and less politicized issue. Stressing the technicalities involved in monetary policy, John Maynard Keynes attributed the deference paid to economists and the relatively easy triumph of economists over isolationists in Congress to the fact that monetary issues at the time were “so damn boring.” Because the management of international trade was inherently political, given that it was bound up with notions of the political basis for order and explicitly grounded in the philosophy of the nineteenth-century British political economists, it was also more controversial.

*Policy selection.* Epistemic communities create reality, but not as they wish. Political factors and related considerations, such as the degree to which decision makers are unfamiliar with and uncertain about the issues at hand, prove important in policymakers’ solicitation and use of advice from epistemic communities.

On the one hand, if there are no existing policies and decision makers are unfamiliar with an issue, not having treated it in the past, an epistemic community can frame the issue and help define the decision makers’ interests. If no institutions yet exist in which responses to a given problem can be pursued internationally, the community can also provide a new institutional framework for dealing with the problem. In these ways, it can exert maximal influence during the policy innovation, diffusion, and selection stages. On the other hand, if decision makers are more familiar with an issue, they tend to call on an epistemic community whose ideas “implicitly align” with their own preexisting political agenda and will help them further it.<sup>34</sup> The members of the community may thus be engaged more in justifying, fleshing out, and promoting policies than in choosing them. In short, the decision makers’ primary goal of soliciting advice from an epistemic community may be the political goal of building domestic or international coalitions in support of their policies.

In more traditional structural terms, then, decision makers facilitate the entry of some epistemic communities through more traditionally political channels while they create barriers to the entry of others into the policy arena.

33. In the case of ozone, as with environmental issues in general, the unexpected onset of environmental degradation generated concern about the unanticipated consequences of human action and the search for new advice. See Harvey Brooks and Chester Cooper, *Science for Public Policy* (New York: Pergamon Press, 1987), p. 8; and Cynthia Enloe, *The Politics of Pollution in a Comparative Perspective* (New York: David McKay, 1975), p. 21.

34. Cowhey, “The International Telecommunications Regime,” p. 172.



That communities expressing ideas close to the mainstream have a greater propensity to acquire influence than those further away appears to be true, based on the studies presented in this volume, since most of the policy approaches promoted by the various epistemic communities in these cases were moderate and reformist.

In some instances, the uncertainty of decision makers generally applied to the nature of possible coalitions, likely allies, and the behavior of other actors on whom a country's welfare depended. Here, epistemic communities were instrumental, first in creating domestic political coalitions in support of new international policies, next in expanding the network of support to a collection of states whose interests could be concurrently promoted through policy coordination, and finally in facilitating compromises between contending views.

As many of the studies demonstrate, expert communities served to facilitate or legitimate package deals that were based on the linkages which their causal understanding of the issues revealed or justified. By revealing the focal points for compromise, they broadened the bargaining space in which these package deals could be forged.<sup>35</sup> In the banking case, this took the form of a space between international needs for liquidity, the banks' needs for solvency, and the public's reluctance to bail out the banks. In the case of the Bretton Woods system, the Keynesians managed to sail between the Scylla of domestic exporters and the Charybdis of political isolationists. In whaling, the residual impact of the cetologists' ideas affected the bargaining sufficiently to bring about a moratorium on the taking of certain species of whales, whereas earlier such a compromise was not widely considered.

Even though the influence that epistemic communities exerted in the decision making process was contingent on domestic politics and even though they tended to be more involved in providing the details of regulations to be coordinated than in determining the larger shape of the policy space to be managed,<sup>36</sup> they were able to nudge decision makers into new patterns of behavior by identifying policies that would expand the number of possible supporters and foreclose the creation of major political cleavages. In the case of food aid, as Raymond Hopkins points out, "The members of the epistemic community were not oblivious to the domestic political factors that provided

35. This occurred in the case involving pollution control in the Mediterranean, as the ecological epistemic community created an agenda for a program sufficiently rich that other groups could benefit from supporting the program. See the following works of Peter M. Haas: "Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control," *International Organization* 43 (Summer 1989), pp. 384–87; and *Saving the Mediterranean: The Politics of International Environmental Cooperation* (New York: Columbia University Press, 1990).

36. Oran Young differentiates between integrative bargaining, which is possible during the period of discovery, and zero-sum bargaining, which occurs during the period of actual negotiations over distributional consequences of management. See Oran R. Young, "The Politics of International Regime Formation: Managing Natural Resources and the Environment," *International Organization* 43 (Summer 1989), pp. 349–76.

donor countries with an incentive or rationale for supporting food aid programs, perhaps even increasing the amount of aid that would otherwise have been available to recipients.”<sup>37</sup> Recognizing, for example, that the U.S. farmers’ need for export revenue was an incontrovertible social fact, they wisely targeted their energies toward addressing issues such as how the funds budgeted for food aid could be used most efficiently and steered away from issues that would call into question whether food aid should exist.

In the case of the Law of the Sea, epistemic consensus on the economics of seabed mining yielded a broader set of potential bargaining outcomes that would promote a broader array of interest-based negotiations and help identify specific compromise points on which international policy coordination could be grounded.<sup>38</sup> Based on this case and others presented in this volume, epistemic communities that facilitate compromises between contending views are likely to succeed better than epistemic communities that devote the majority of their efforts to trying to convince other parties that their own interests would be satisfied by recourse to the community’s preferred policies. In this regard, communities embodying integrative, often inchoate, ideas may be more successful than others, since their ideas may be more easily applied by politicians to build broader coalitions and also make it easier for the community to accomplish other objectives as well. Nuclear arms control was a compromise between doves wishing general disarmament and hawks calling for military superiority, while the Bretton Woods agreement was a compromise between free trade and protectionism.

As with policy diffusion, with policy selection the ability of epistemic communities to nudge decision makers into new patterns of behavior was also dependent on timing. The cases show that it was much easier for politicians to accept a community’s policy approach after military or economic conditions changed sufficiently to minimize the costs of compliance with the approach. Strategic parity, for example, facilitated the political selection of arms control ideas in both the United States and the Soviet Union. The discrediting of isolationist economic policies following their failure in the 1930s contributed to the acceptance of the ideas embodied in the Bretton Woods agreement.<sup>39</sup> The decline of the whaling industry greatly increased the political ease of following epistemic community advice, just as the anticipation of alternatives to CFCs facilitated the ban on CFC use.

Some have questioned the extent to which the ideas of epistemic communities with a strong base in the United States are not simply an extension of U.S.

37. See Raymond Hopkins, “Reform in the International Food Aid Regime: The Role of Consensual Knowledge,” in this issue of *IO*.

38. See the following works of James K. Sebenius: “The Computer as Mediator: Law of the Sea and Beyond,” *Journal of Policy Analysis and Management*, vol. 1, 1981, pp. 77–95; and “Negotiation Arithmetic,” *International Organization* 37 (Spring 1983), pp. 281–316.

39. John S. Odell, “From London to Bretton Woods: Sources of Change in Bargaining Strategies and Outcomes,” *Journal of Public Policy* 8 (July–December 1988), pp. 287–315.

hegemonic and cultural influence. Evidence presented here and elsewhere is mixed. Adler argued that the diffusion of ideas from the U.S. arms control epistemic community to the Soviets had a certain hegemonic quality because it came from the U.S. community's conception of America's own security. While there was occasional overlap between the interests of the hegemon and those of the epistemic community in other cases, in none of them could the epistemic community be reduced to the status of a ventriloquist's dummy. Ethan Kapstein in fact concluded in his study of banking that expert communities are most influential as hegemons decline. And in his study of international financial institutions, Miles Kahler pointed out that the heterodox economic policy espoused by economists of and advisers to the International Monetary Fund (IMF) has run counter to the objectives of the United States in the development of economic adjustment policies in Peru.<sup>40</sup>

*Policy persistence.* New ideas and policies, once institutionalized, can gain the status of orthodoxy. As noted earlier, it is through the process of socialization and often through the persistent efforts of epistemic communities that this occurs. For example, while arms control ideas continue to be refined by new generations of arms controllers, the practice of arms control, like diplomacy, has become a practice of government that is almost taken for granted by policymakers. And as Hopkins points out in his analysis of reform of the food aid regime, "Once shifts in food aid practices and principles have occurred, they have been largely irreversible."

One of the factors affecting how long an epistemic community remains influential is the degree of consensus among community members. In the case described by M. J. Peterson, the development of new models and more refined techniques for estimating the maximum sustainable yield of whale species exacerbated the tensions that already existed within the epistemic community. This led to a schism and the collapse of the community into bickering interest groups as well as smaller, discrete epistemic communities. Not only in the case of whaling but also in the similar cases of telecommunications and World Bank development assistance, the collapse of consensus caused regimes to veer away from the narrow range of beliefs and norms expressed by the epistemic community.<sup>41</sup> Indeed, the involvement of new epistemic communities caused the World Bank to lurch from support of one series of development goals and policies to another, varying from building infrastructures to eliminating poverty

40. Miles Kahler, "International Financial Institutions and the Politics of Adjustment," in Joan M. Nelson et al., eds., *Fragile Coalitions: The Politics of Economic Adjustment* (New Brunswick, N.J.: Transaction Books, 1989), pp. 139–59.

41. See Cowhey, "The International Telecommunications Regime"; Robert L. Ayres, *Banking on the Poor* (Cambridge, Mass.: MIT Press, 1983); and William Ascher, "New Development Approaches and the Adaptability of International Agencies," *International Organization* 37 (Summer 1983), pp. 415–40.

to encouraging export-oriented growth. Throughout this episode, the development-oriented food aid epistemic community sought to promote its own preferred economic policies, in competition with other epistemic communities and subject to the strong institutional pressures within the World Bank.<sup>42</sup>

When an epistemic community loses its consensus, its authority is diminished and decision makers tend to pay less attention to its advice. Economic, political, and other crises also have an effect on the authority and influence accorded to an epistemic community and sometimes lead decision makers to seek advice from a new group of experts. As John Odell pointed out in his study of the Bretton Woods negotiations, a painful national experience is likely to discredit the ideas and groups identified or affiliated with the policies giving rise to that experience.<sup>43</sup> Conversely, a success is likely to bolster the ideas. Of course, epistemic communities which prove themselves right are probably likely to last longer than those which prove wrong.<sup>44</sup> In most cases, however, there is a lag in the proof.

### *Policy evolution as learning*

The sources of collective learning in international relations can be found in the evolutionary processes characterized by the diffusion, selection, and persistence of political innovations. Thus, changes in the epistemological assumptions and interpretations that help frame and structure collective understanding and action constitute the most meaningful notion of learning in international relations.<sup>45</sup> This definition implies that national policymakers can absorb new meanings and interpretations of reality, as generated in intellectual, bureaucratic, and political institutions, and therefore can change their interests and adjust their willingness to consider new courses of action. Such learning increases the capacity and motivation to understand competing alternatives to a currently entertained inference and becomes a creative process by which alternatives and preferences, or "interests," are generated.

Learning means not only the acquisition of new information about the environment but also the acceptance of new and innovative ways of drawing linkages between causes and effects and means and ends. Indeed, experiences or observations are secondary to the theories or hypotheses which people

42. See Ayres, *Banking on the Poor*; and Ascher, "New Development Approaches and the Adaptability of International Agencies." For a more critical view that dismisses any policy learning which does not promote individual health and equality, see Guy Gran, "Beyond African Famines," *Alternatives* 11 (April 1986), pp. 275-96.

43. Odell, "From London to Bretton Woods."

44. See Judith Goldstein, "The Impact of Ideas on Trade Policy," *International Organization* 43 (Winter 1989), p. 71.

45. See Adler, "Cognitive Evolution," pp. 50-54. For other learning approaches, see Haas, "Why Collaborate?"; Joseph S. Nye, Jr., "Nuclear Learning," *International Organization* 41 (Summer 1987), pp. 371-402; and Haas, *Saving the Mediterranean*, pp. 58-63.

already have in their minds and which are used to organize such experiences. Consensus over these theories is also necessary in any social context because all knowledge is subject to bias and, regardless of its content, the difference between theories and facts is one of intersubjective confidence rather than of objective veridicality.<sup>46</sup>

Various political groups and institutions may learn different lessons or interpret reality differently. It is therefore crucial to know who learns what; whose learning gets translated into policy and why; whose learning gets a chance to affect other countries; and how political processes determine whose interpretations of reality are more viable in a particular historical context. At the international level, the capacity of interacting institutions in *different* countries to learn, share norms and practices, and effectively modify their behavior depends on the diffusion of cause-and-effect understandings from country to country. The importance of these understandings lies not merely in being true but also in being shared.

Seen in this light, learning in international relations is essential for rational choice. In a nonhegemonic international system such as our own, the coordination of expectations and the choice of appropriate actions in situations of mutually contingent strategy are made possible by the transmission between nations of both the cognitive content of their causal models and values and a compressed interpretation of their historical experience. Rationality thus rests on transferred meaning and experience and should be analyzed in terms of shared practical understandings, theories, and expectations that reflect the policymakers' current agenda of priorities. Such "practical reasoning," argues Charles Reynolds, "is not made in a void but in a world of states whose politics are, partly at least, a product of shared assumptions, constraints, and expectations of proper action."<sup>47</sup>

As the studies presented in this volume emphasize, there are many paths by which learning occurs. For example, individual members of epistemic communities learn from their transnational encounters with one another and pass their lessons and advice on to the institutional bodies over which they have influence. The bureaucratic or cognitive changes in one institutional body may in turn be passed on to others. With respect to the outcomes of this learning process, two types should be distinguished: the adoption of new instrumental ends (new practices) and the adoption of new principled ends (new goals).<sup>48</sup> In

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46. See Arie E. Kruglanski and Icek Ajzen, "Bias and Error in Human Judgment," *European Journal of Social Psychology* 13 (January–March 1983), pp. 1–44. See also Peter M. Haas, "Introduction: Epistemic Communities and International Policy Coordination," in this issue of *IO*.

47. Charles Reynolds, *The Politics of War: A Study of the Rationality of Violence in Inter-State Relations* (New York: St. Martin's Press, 1989), p. 263.

48. Hall refers to these as "administrative learning, driven by a concern to find technical solutions to policy problems; and political learning, characterized by the evolution of collective moral visions." See Peter A. Hall, *Governing the Economy: The Politics of State Intervention in Britain and France* (Cambridge: Polity Press, 1986), p. 275.

this sense, then, the origins of collective behavior may lie in the learning acquired from knowledge-based networks such as epistemic communities. As Peter Katzenstein has argued, "Conflict and cooperation emerge . . . from the never-ending process of redefining social and political identities that generates consensually shared and contextually appropriate standards of action."<sup>49</sup>

### **Toward further study of epistemic communities**

New technology and the increasingly complex and technical nature of issues of global concern not only increase decision makers' uncertainty about their policy environment but also contribute to the diffusion of power, information, and values among states, thereby creating a hospitable environment for epistemic communities.<sup>50</sup> While the studies presented in this volume have pointed to a variety of circumstances under which epistemic communities have emerged and exerted influence, much research on epistemic communities remains possible.

In the field of international security, epistemic communities involved in areas other than strategic nuclear arms control may have left their mark. It would be interesting, for example, to explore the existence of epistemic communities in the nuclear nonproliferation field, to trace the influence of the Pugwash group, or to document scientific interaction regarding U.S.–Soviet arms control in the Gorbachev era. It would be equally worthwhile to explore whether and to what extent epistemic communities have influenced the security decisions of alliances, such as the North Atlantic Treaty Organization (NATO). There is evidence, for instance, that the "European–American Workshop," a community of experts chaired by Albert Wohlstetter, induced NATO to deploy Pershing II missiles at the end of the 1970s as a counter to the threat of the Soviet SS-20s.<sup>51</sup>

Certainly there is research to be pursued on the subject of epistemic communities emerging from international institutions but focusing on or operating within specific regions. For example, studying the efforts of economic experts within the UN Economic Commission for Latin America might add to our knowledge of how epistemic communities find a home in international institutions dedicated to the development of a single region. Research on the idea of a single Europe, tracing the efforts of Jacques Delors and the European

49. Peter J. Katzenstein, "International Relations Theory and the Analysis of Change," in Ernst-Otto Czempiel and James N. Rosenau, eds., *Global Changes and Theoretical Challenges* (Lexington, Mass.: Lexington Books, 1989), p. 295. While Katzenstein was characterizing the poststructural arguments offered by Richard Ashley in that volume, the point is more general.

50. Haas, *Saving the Mediterranean*, chap. 8.

51. See Fred Kaplan, "Warring Over New Missiles for NATO," *The New York Times Magazine*, 9 December 1979, pp. 46, 55, 57, 84, 86, 88, and 90.

Commission, may also add to our understanding of region-related epistemic communities, as may research on various functional areas within the European Community, such as the areas of law, finance, and high technology.

Similarly, research on epistemic communities emerging in developing countries and in non-Western societies is needed. As the case of ozone protection indicated, CFCs had been developed in the United States and employed extensively in refrigeration, air conditioning, and consumer goods that had primarily benefited the First World before their effect on the ozone was even questioned. Banning the use of CFCs on a global scale thus posed different dilemmas for First World and Third World countries. Likewise, culture and value heterogeneity can pose different dilemmas for groups within Western and non-Western societies, such as in the case of human rights. Studying Third World epistemic communities of human rights lawyers would help expand our theoretical understanding about the intersection of law, science, and other disciplines, epistemic communities, and political action.

And studies on groups involved in additional problems of increasing global concern—such as acquired immunodeficiency syndrome (AIDS), deforestation, climate change, and drug trafficking, to name only a few—will also no doubt elucidate the workings of epistemic communities.

Creating a research program based on epistemic communities will require considerable work. While identifying epistemic communities and enlarging the number of case studies would be a good start, the theoretical propositions relating epistemic communities to learning, decision making, institutionalization of practices, and so forth will also need to be refined. It remains to be established to what extent the form of rationality adopted by an epistemic community—in terms of its causal beliefs and validation of these beliefs—serves as the substantive basis for institutionalized international practices and as the basis for collective rationality. An even more ambitious task would be to use the epistemic community framework to revise the epistemological and ontological assumptions that inform theoretical propositions about international politics.

### **Epistemic communities and world order**

While traditional studies of the balance of power in international relations may increase our understanding of whose preferred vision of world order is likely to prevail, they do not address the question of how the preferred and alternative visions are formed and how they change in response to new technology and new understandings of cause-and-effect relationships. Our argument here is that epistemic communities increasingly shape policymakers' visions and that studying epistemic communities may therefore lead to a greater understanding of the evolution of international political order, which Ruggie has defined as

“the manner in which and the range of issues over which the community of nations exercises collective choice.”<sup>52</sup>

Epistemic communities influence policymakers through communicative action.<sup>53</sup> As Judith Innis points out, the key idea in this regard is that communication and action “are so closely intermeshed that they cannot be conceptually distinguished”<sup>54</sup> and that the negotiations of meanings, understandings, and beliefs are intertwined with the negotiations of actions at every step along the way. By elucidating the cause-and-effect understandings in a particular issue-area and familiarizing policymakers with the reasoning processes by which decisions are made elsewhere, epistemic communities contribute both to the transparency of actions and to the stable expectations of others’ behavior. Such common inferences can in turn contribute to cooperation even without formal organizations.

The impact that an epistemic community has depends on a variety of factors, including the number and strength of the states it can “catch” in its “net” of consensual understanding. The more extensive the reach of an epistemic community, the more power that will be exercised by states on behalf of the community’s consensual understanding. Again, it is worth stressing that the community is involved in the negotiation of meanings and has as its goal the solution of a particular problem. The state remains the authoritative source of policymaking. To the extent that the advice of an epistemic community justifies a particular policy pursued by the state, it also legitimates the power that the state exercises in moving toward that policy.<sup>55</sup> That epistemic community advice can expand, rather than diminish, state control in particular spheres was shown in the cases involving arms control, the environment, and the economy.

In the absence or aftermath of a hegemonically created world order, an alternative order based on shared cause-and-effect understandings, practices, and expectations may be possible. While epistemic communities can help constitute such an order, whether or not that order will be a better international order depends largely on the extent to which it is also based on shared values, rather than individual state interests, and on moral vision. Among the necessary conditions for minimal progressive change in international relations are the redefinition of values and the reconciliation of national interests with

52. See John Gerard Ruggie, “Changing Frameworks of International Collective Behavior,” in Nazli Choucri and Thomas W. Robinson, eds., *Forecasting in International Relations* (San Francisco: W. H. Freeman, 1978), p. 386.

53. See J. Habermas, *The Theory of Communicative Action: Reason and the Rationalization of Society*, T. McCarthy, trans. (Boston: Beacon Press, 1984).

54. Judith E. Innis, *Knowledge and Public Policy*, 2d ed. (New Brunswick, N.J.: Transaction Books, 1990), p. 34.

55. A power is legitimate to the degree that, by virtue of the doctrines and norms by which it is justified, the power-holder can call upon sufficient other centers of power, as reserves in case of need, to make its own power effective. See Arthur L. Sinchcombe, *Constructing Social Theories* (Chicago: University of Chicago Press, 1960).



human interests in general, such as security, welfare, and human rights.<sup>56</sup> To the extent that epistemic communities make some of the world problems more amenable to human reason and intervention, they can curb some of the international system's anarchic tendencies, temper some of the excesses of a purely state-centric order, and perhaps even help bring about a better international order.

56. See Adler, "Cognitive Evolution"; and Emanuel Adler, Beverly Crawford, and Jack Donnelly, "Defining and Conceptualizing Progress in Postwar International Relations," in Adler and Crawford, *Progress in Postwar International Relations*, pp. 1–42.