

## Chapter Two

### Collective-Action Models vs. Social-Practice Models

HOW CAN INSTITUTIONS, which are not actors in their own right, guide the behavior of those whose actions give rise to environmental problems and, in so doing, play significant roles in solving (or, for that matter, causing) problems ranging from the depletion of living resources (e.g. fish and forests) to the disruption of largescale ecosystems (e.g. the Earth's climate system)? Or, to phrase the question in more generic terms, what are the mechanisms through which social institutions or governance systems affect the course of interactive decisionmaking among two or more human actors in a variety of settings? To pose these questions is to launch an enquiry into the role of institutions as causal forces in human affairs. Practitioners of all the social sciences have devoted increased attention to these questions in recent years and produced answers that seem convincing to their own colleagues. Yet the overall result has been a proliferation of disparate perspectives rather than an emerging consensus concerning the causal role of institutions.

Those whose interests in these matters stem from a desire to understand and ultimately to solve largescale environmental problems have developed two principal clusters or families of models intended to illuminate the causal role of social institutions and, in the process, to account for variations in the effectiveness of specific environmental regimes. One cluster - I will call them collective-action models - encompasses constructs that draw on the intellectual capital of economics and public choice and treat actors as decisionmakers basing their choices on utilitarian calculations (Rutherford 1994). The other cluster - I will label them social-practice models - includes constructs that stem from anthropology and sociology and emphasize the roles of culture,

norms, and habits as sources of behavior (Powell and DiMaggio 1991). As is true of all analytic as well as genetic groupings, there are significant differences among the members of each of these families. Some of these differences are rooted in analytic distinctions; others merely typify the interests of those who have created particular models. The social-practice cluster, in particular, constitutes an extended family featuring substantial variation among the individual models included. Yet the members of each of these families have enough in common to make it helpful to group them into these two broad clusters.

In this chapter, I seek to (1) highlight the essential differences between these two ways of thinking about the role of social institutions as causal forces, (2) explore the implications of these differences for our understanding of the effectiveness of environmental regimes, and (3) consider the prospects for evaluating explanations derived from collective-action models and social-practice models in the interests of enhancing our ability to solve actual environmental problems. Overall, the analysis yields mixed results. Each cluster of models captures significant elements of reality; neither is sufficient by itself to provide an adequate basis for understanding the institutional dimensions of environmental change. Wherever possible, I turn to largescale environmental concerns, such as ozone depletion, climate change, the loss of biological diversity, and the disruption of large marine ecosystems, as sources of illustrations for the analysis to follow (Victor and Salt 1994, Mitchell 1995, Parson and Greene 1995, Raustiala and Victor 1996). But the basic argument applies wherever institutions emerge as significant drivers in causing or confronting environmental change.

## 1. Differentiating the Models

Proponents of the new institutionalism have articulated many overlapping - though by no means identical - definitions of institutions. For purposes of this discussion, however, it will suffice to say that institutions are sets of rules, decisionmaking procedures, and programs that give rise to recognized practices, assign roles to the participants in these practices, and govern interactions among the occupants of specific roles (Young 1994a). But what is it that makes institutions and, more specifically, international regimes more or less effective in the sense of exerting influence over the outcomes arising from interactions among their members as well as those operating under the auspices of their members?

One way to approach this question is to think of regimes as devices created by actors seeking to avoid or alleviate collective-action problems (Hardin 1982). It is well known that interactive decisionmaking among actors striving to maximize their own welfare can and often does produce outcomes that are suboptimal for all concerned or, in other words, less desirable for all participants than one or more of the feasible alternatives. Although the situation known as prisoner's dilemma is commonly treated as the paradigmatic collective-action problem, there are numerous circumstances which generate incentives to act in ways that seem rational from an individualistic perspective but yield collective outcomes that are unattractive to all (Schelling 1978). The best-known environmental exemplar has become familiar to analysts and practitioners alike as the "tragedy of the commons" (Hardin 1968, Hardin and Baden 1977). Regimes, on this account, are arrangements that those experiencing or expecting to experience collective-action problems create in the interests of avoiding joint losses or reaping joint gains.

They are successful or effective to the extent that their operation lowers the probability of uncooperative behavior of the type that leads to losses of welfare for all parties concerned.

Another way of thinking about the role of international regimes as causal forces is to treat them as arrangements giving rise to social practices that shape the identities of participating actors, generate common discourses in terms of which to address environmental problems, and draw participants into routinized activities which do not involve utilitarian calculations on a day-to-day basis (Powell and DiMaggio 1991, Wendt 1999). On this account, rules and decisionmaking procedures affect behavior, in part, by performing constitutive functions (Kratochwil 1989, Onuf 1989). But even in situations where actors have well-defined identities that are independent of the provisions of particular regimes, the creation of a new regime can shape the ways participating actors think of their roles and the willingness of others to accept the appropriateness of the resultant role behavior. The new law of the sea crystallized in the 1982 UN Convention on the Law of the Sea (UNCLOS), for instance, creates exclusive economic zones (EEZs) covering about a third of the world ocean and accords extensive – though not unlimited - jurisdiction over these zones to the adjacent coastal states. States that have accepted this institutional arrangement do not engage in calculations on a case-by-case basis regarding the benefits and costs of acknowledging the existence of specific EEZs. For the most part, they simply accept the jurisdiction of coastal states in these zones and proceed to consider their options on the basis of this assumption.

An effort to unpack these general formulations reveals that the collective-action models and the social-practice models diverge in terms of the assumptions they make about several

differentiable matters. For ease of exposition, I divide these differences in the discussion to follow into three broad categories: (1) assumptions about the identity and the character of the relevant actors, (2) assumptions about the sources of actor behavior, and (3) assumptions about the social environment and the extent to which actors are affected by the operation of social constraints.

### ***1.1. Actor Identity***

The collective-action models focus on the behavior of regime members which they generally treat as unitary actors whose identities – often described in terms of role premises or utility functions - predate and are largely unaffected by participation in specific institutional arrangements. Regime members are the signatories to the constitutive agreements, including conventions, treaties, or formal declarations, that bring regimes into existence. Ordinarily, these actors are states as in the cases of the signatories to UNCLOS, the 1992 UN Framework Convention on Climate Change (UNFCCC), and the 1992 Convention on Biological Diversity (CBD). Unitary actors are behaving units that have integrated utility functions and that make choices among available options in such a way as to promote their own welfare. States, on this account, exist over long periods of time; they are apt to be members of numerous regimes dealing with environmental concerns as well as a variety of other matters. Entry into a particular regime may affect the incentives of these actors as they assess the benefits and costs of the options available to them in specific situations. But membership will not have significant effects on the overall identity or general interests of states whose existence not only predates the formation of specific regimes but also rests on a variety of considerations that extend well beyond the purview of regimes dealing with specific problems. Regime members, on this

account, make utilitarian calculations regarding the benefits and costs of complying with the rules of specific regimes and of living up to the commitments they have made in joining these regimes; they do not approach these matters as obligations or duties to be met as a matter of course.

The social-practice models differ from their counterparts with regard to all these assumptions about the identity and nature of the actors. While states may be the members of most international regimes in formal terms, the actors whose behavior gives rise to environmental problems and whose responses are critical to solving them typically include corporations, nongovernmental organizations, and even individuals. Thus, all consumers of energy produced through the burning of fossil fuels, from multinational corporations down to individual home owners, generate emissions of greenhouse gases that enter the Earth's atmosphere. A key concern in thinking about environmental regimes, then, is to understand how states as the formal members of regimes are able to use their membership in regimes as a means of influencing the behavior of various nonstate actors (Victor, Raustiala, and Skolnikoff 1998). Nor is it helpful to regard states themselves as unitary actors pure and simple. Although it may do no harm to conceive of them as unitary actors for some purposes, states are complex actors whose constituent elements have different and sometimes conflicting interests with regard to individual regimes. It will come as no surprise that public agencies whose mandates cover environmental protection will react differently to the terms of an agreement like the UNFCCC than agencies whose objectives are framed in terms of promoting the interests of commerce and industry. The familiar metaphor of the two-level game only scratches the surface of this phenomenon (Putnam 1988). Even more fundamental is the assumption common to the social-

practice models that membership in regimes can and often does have constitutive impacts. The issue here has been debated extensively in recent years under the rubric of the agent-structure problem (Wendt 1987, Dessler 1989). But the key point for this discussion concerns the extent to which actors come to express their interests and even conceive of their identities in terms of regime membership.<sup>1</sup> An actor that approaches participation in a regime as part of its role will not organize its thinking in terms of questions about compliance and living up to commitments; it will engage in behavior deemed appropriate to the roles it occupies as a matter of course (Wendt 1999).

## *1.2 Sources of Behavior*

The collective-action models rest on utilitarian premises in the sense that they regard actors as decisionmaking units approaching choices in cost/benefit terms and seeking in each case to select that option which will best promote their own welfare and, more specifically, maximize the net benefits to be derived from the choice at hand. Within this general framework, many variations are possible. Some models assume that the options available to decisionmakers are produced exogenously and not subject to change; others allow the actors themselves to exercise some influence over both the framing of the problems and the identification of options. Because welfare is a highly abstract concept that is notoriously difficult to operationalize in concrete situations, collective-action models commonly resort to some surrogate for welfare, such as income or wealth defined in monetary terms. There are differences as well regarding the extent to which actors engaged in interactive decisionmaking are treated as maximizers of absolute gains or of relative gains (Baldwin 1993). Are states involved in efforts to protect the

---

<sup>1</sup> . As Powell and DiMaggio put it, this point can be framed in terms of “the notion that actors and their interests are institutionally constructed” (Powell and DiMaggio, 1991: 28).

Earth's climate system or to maintain biological diversity more concerned with their standing relative to that of others or with the condition of the environment in absolute terms? There are no simple, much less correct, answers to questions of this sort. But in every case, the collective-action models assume that actors are driven by the logic of consequences in the sense that their choices are based on efforts to assess the benefits and costs associated with individual options.

Here, too, the social-practice models rest on strikingly different premises. The differences are captured, in part, in the idea of the logic of appropriateness as opposed to the logic of consequences (March and Olsen 1998). Thus, the social-practice models often assume that actors comply with rules or live up to commitments because they are authoritative or legitimate or, to put it another way, because such behavior is deemed normatively correct or proper (Franck 1990). But there is more to the distinction between the two families of models than this. Many social-practice models incorporate an alternative source of behavior by assuming that actors commonly adhere to the rules of regimes as a matter of habit or because such behavior has come to be taken for granted as a result of socialization or routinization. Even more fundamental in these terms are the consequences of discourses and role definitions. States that respect each other's EEZs generally do so because they tend to comply with international law as a matter of course and because they have accepted the proposition that coastal states possess jurisdiction over adjacent marine areas, so that the authority to govern specific activities occurring within the EEZ has become an accepted component of the role of coastal state. Yet behavior that is routinized need not become fixed or unchanging. Sociological perspectives regularly include the prospect of social learning (Haas and Haas 1995, Clark et al. forthcoming) both with regard to matters of fact (e.g. the impact of greenhouse gas emissions on the Earth's climate system) and

with regard to normative concerns (e.g. the extent to which individual actors have an obligation to refrain from disturbing global commons). The social-practice models encompass a wider range of perspectives on the sources or roots of actor behavior than the collective-action models. Whereas the collective-action models all share the tenets of utilitarianism, it is fair to say that the social-practice models constitute a more extended family that includes several distinct branches. But what joins the social-practice models together as a single family and sets them apart from members of the collective-action family is the assumption that behavior is driven by forces that do not feature efforts to calculate benefits and costs and to make choices in such a way as to maximize net benefits.

### ***1.3 Social Constraints***

The collective-action models assume either that specific choices stand alone in the sense that they are not embedded in a larger social environment or that the effects of the social environment can be endogenized in the calculations actors make regarding the benefits and costs associated with specific options available to them. What does this mean in practice? Consider a game-theoretic formulation such as prisoner's dilemma as a case in point. All the information needed to determine the outcome of the interactive decisionmaking process is included in the matrix representing the game in normal form (Luce and Raiffa 1957). The implication of this is that the individual participants do not have access to any information about one another, about the history of their relationship, or about the larger social setting in which they are operating, except insofar as such information is embedded in the matrix. Nor is any such information considered relevant in determining the content of collective outcomes. To be sure, this is an

extreme case. But it serves to illustrate what is meant by the observation that the relationships described in collective-action models are self-contained.

In the social-practice models, by contrast, context not only matters but it often becomes a source of external or exogenous constraints on the behavior of those engaged in interactive decisionmaking taking place within the arena of a particular regime. Thus, the regimes dealing with the control of ozone-depleting substances and the protection of biological diversity are embedded in the larger setting of international society whose members are sovereign states accustomed to exercising unrestricted authority over their own internal affairs (Ruggie 1983, Hurrell 1993). Any effort to devise rules that allow outsiders to intervene in the affairs of member states in the name of protecting stratospheric ozone or biodiversity is likely to meet with vigorous opposition justified in terms of rules and norms pertaining to sovereignty in a society that lacks any higher authority (Hurrell 1992, Conca 1995). Similarly, changes occurring at this broader level may well prove significant for the operation of specific regimes. If, as some observers maintain, sovereignty is presently undergoing major changes that enhance the acceptability of efforts to impose international standards or norms on the individual members of international society, this will have far-reaching consequences for efforts to devise effective regimes aimed at solving problems like the loss of biological diversity (Lyons and Mastanduno 1995, Litfin ed. 1998). Similar remarks are in order regarding other features of the broader social environment, such as the status of nonstate actors (Cutler, Haufler, and Porter 1999) or the acceptance of general rules pertaining to the interpretation and implementation of international conventions and treaties. But in each case, the basic point is the same. The performance of

specific regimes dealing with more or less well-defined problems is sensitive to a variety of constraints emanating from the broader social environment in which they operate.

A major virtue of the collective-action models is that they are relatively compact and parsimonious, a condition that makes them more tractable and more conducive to formalization than the social-practice models. Whereas the social-practice models point to a number of types of actors and several distinct sources of behavior, the collective-action models direct attention to easily identifiable and relatively small sets of unitary actors whose behavior is based on the familiar precepts of utilitarianism. This is surely an advantage, especially for those interested in the development of formal theories regarding the roles that institutions play as causal forces. But for those whose primary goal is to understand how international regimes can solve environmental problems and why some regimes prove more successful than others, there is a substantial price to pay for this advantage. Partly, this is a matter of operationalization. It is difficult, under real-world conditions, to provide empirical content for the utility functions of states in a manner that does not involve arbitrary procedures. In part, the problem stems from the importance of factors that are typically omitted from collective-action models. With regard to problems such as climate change and the loss of biological diversity, for instance, a critical issue centers on the ability and willingness of states to translate international commitments into domestic rules and regulations capable of redirecting the behavior of those – including corporate executives, operators of municipal power plants, individual home or car owners – whose actions give rise to emissions of greenhouse gases or the destruction of habitat vital to different species. To the extent that such factors turn out to be major determinants of the effectiveness of international regimes, efforts to explain levels of effectiveness that rely solely on collective-

action models will fail. Under the circumstances, there are good reasons for analysts of international regimes to pay increased attention to the social-practice models, even while continuing to explore the uses of the more elegant collective-action models.

## **2. Exploring the Implications**

What are the implications of these differences in the theoretical foundations of the two families of models for efforts to understand the role of institutions as causal forces in international society? More specifically, how does the choice of models affect our expectations regarding the ability of international regimes to solve environmental problems? I make no effort in this section to present a comprehensive account of differences in the predictions flowing from specific models of interactive decisionmaking. Rather, I examine a few key issues that have proven contentious among students of international regimes and, in the process, show how the choice of theoretical assumptions affects our thinking about these matters. Specifically, I focus on four substantive themes: (1) compliance and the fulfillment of commitments, (2) the consequences of different policy instruments, (3) behavioral consistency, and (4) the durability of regimes.

### ***2.1 Compliance***

Analysts who work with collective-action models generally regard compliance with regime rules and the fulfillment of international commitments as problematic. While they naturally agree that compliance will constitute the rational choice for utility maximizers in some situations, they are apt to see the underdeveloped character of enforcement mechanisms in international society as a critical problem that is likely to limit - if not to undermine - the

effectiveness of environmental regimes. And the deeper or more extensive the cooperation, the more serious this problem is likely to become (Downs, Rocke, and Barsoom 1996). Those who operate from a social-practice perspective, by contrast, typically maintain that enforcement is not the key to compliance and argue that there is nothing unusual or troubling about international society with regard to the achievement of compliance with regime rules or the fulfillment of commitments (Chayes and Chayes 1995).

To be concrete, members of the first group can be expected to argue that success in dealing with climate change will require not only the adoption of precise targets and timetables but also the development of a meaningful system of sanctions to ensure that subjects live up to these commitments. Those who think in social-practice terms, on the other hand, are more likely to focus on the question of whether the climate change regime promotes the emergence of a discourse that comes to dominate the way in which parties think about the issue and draws participating actors into a set of procedures for dealing with emissions of greenhouse gases that are increasingly taken for granted. The consequences of the regime, on this account, will flow from routinized behavior rather than from explicit decisions about compliance. What are the sources of this striking difference of views regarding compliance, and what would be needed to test the relative merits of these divergent perspectives (Mitchell 1996)?

Utilitarian actors will comply with rules and fulfill commitments if, and only if, they are convinced that the present value of compliance exceeds the value of noncompliance (Young 1979). They will routinely discount the costs of noncompliance by taking into account the probability that violations will go undetected and that the sanctions associated with violations

will be modest even when they are detected. Given the well-known attractions of free riding or, in other words, the prospect of reaping the benefits to be derived from cooperation even while failing to comply oneself (Olson 1965), it is to be expected that actors will often discount the benefits associated with compliance as well. None of this means that problems of compliance will always be acute in such settings. In the case of rules developed to solve coordination problems where there is no incentive to cheat, for instance, even utility maximizers will comply as a matter of course (Stein 1982).

Under the circumstances, however, it will come as no surprise that students of international regimes have searched vigorously for mechanisms that will increase the benefits of compliance or raise the costs of noncompliance (Oye 1986). Efforts to enhance transparency can make it difficult for actors to violate rules clandestinely. Measures aimed at lengthening the shadow of the future can raise the costs of noncompliance, especially for actors using relatively low discount rates in calculating the present value of future costs and benefits (Axelrod 1984). Linking institutional arrangements together can raise the price of noncompliance by increasing the probability that the consequences of violations in one issue area will spill over in such a way as to degrade cooperation in other areas of importance to individual actors. But useful as such devices are in specific situations, it is easy to see why those who approach compliance in these terms often conclude that the availability of credible sanctions is a key determinant of the effectiveness of international regimes. It worth noting in passing that sanctions need not take the form of penalties administered by agents authorized or licensed by international society to play this role. The threat of reprisals or retaliatory actions carried out by other regime members – or even by nonstate actors - may be sufficient to deter noncompliant behavior in some situations.

But this does nothing to reduce the emphasis on the role of enforcement among those who think in these utilitarian terms.

Several factors account for the comparatively relaxed attitude toward this problem characteristic of those who think in social-practice terms. To the extent that regimes influence the interests and even the identities of their members, the problem of persuading actors to comply with their rules and procedural requirements does not arise. Just as it makes no sense to think of a chess player refusing to comply with the rules of chess, there is little reason to worry about cheating or noncompliance with the rules of regimes that have powerful constitutive effects. But short of this, social practices regularly produce compliant behavior through mechanisms featuring the operation of feelings of propriety on the one hand and the development of habits or routinized behavior on the other. To the extent that rules are accepted as legitimate or authoritative, those whose actions are governed by the logic of appropriateness rather than the logic of consequences will comply with them without making an effort to calculate whether the benefits of doing so outweigh the costs. Equally important is the impact of socialization or the processes through which compliance becomes habitual or routinized in the sense that subjects engage in required behavior or refrain from proscribed behavior without thinking about the matter on a case-by-case basis (Hart 1961). In effect, this line of thinking suggests that socialization plays much the same role in international society as it does in other social settings. Calculated decisions constitute the exception rather than the rule. Under ordinary circumstances, actors comply as a matter of course or develop what students of public policy sometimes call standard operating procedures (SOPs) that guide their actions in the absence of conscious decisionmaking (Allison 1971).

## ***2.2 Policy Instruments***

A vigorous debate has arisen between those who favor policy instruments based on command-and-control regulations and those who prefer what have come to be known as incentive mechanisms. As applied to international environmental regimes, incentive mechanisms take the form of agreements on overall targets (for example, a percentage reduction in emissions of greenhouse gases or a commitment to preserve habitat of critical importance to the protection of biodiversity) which allow subjects to make their own choices about how to fulfill these commitments. Command-and-control regulations, by contrast, feature agreements that require subjects to take specified actions (for instance, installing segregated ballast tanks in new oil tankers or incorporating smokestack scrubbers into the design of new power plants). Broadly speaking, those who work with collective-action models take the view that incentive mechanisms are preferable to command-and-control regulations not only in terms of effectiveness (that is, getting the job done) but also in terms of efficiency (that is, achieving the desired results at the lowest cost). Those who favor social-practice models, on the other hand, are more favorably inclined toward command-and-control regulations. What are the sources of this difference, and what can we say about the testability of the two views?

For those who think in utilitarian terms, everything comes down to incentives in the final analysis. But the specific case for incentive mechanisms as a source of effectiveness in international environmental regimes rests on a combination of arguments focused at the individual level and propositions framed in terms of social welfare (Opschoor and Turner 1994, Rose forthcoming, Tietenberg forthcoming)). Incentive mechanisms allow individual subjects to

make their own choices about how to respond to overall goals and targets and, in the process, to minimize the costs of complying with regime rules and commitments. In effect, encouraging actors to pursue efficiency in responding to requirements and prohibitions bolsters effectiveness by lowering the costs to individual actors of adjusting their behavior in such a way as to conform to the prescriptive provisions of institutional arrangements. Handled properly, incentive mechanisms can also become a source of revenue for the governments of states that are members of a regime.<sup>2</sup> Of course, such revenue may simply flow into the general fund and have no effect on the performance of environmental regimes. Nonetheless, this prospect does suggest that incentive mechanisms can provide material resources needed to assist subjects that are weaker – domestically as well as internationally - to live up to regime rules and commitments. Among other things, this can ease the burden on wealthier regime members arising from the adoption of effectiveness-enhancing measures, such as the compensation fund of the ozone regime and the arrangements dealing with technology transfer of the climate change regime.

Those who work with social-practice models, on the other hand, find the use of incentive mechanisms troubling, and for several reasons. The use of incentive mechanisms as a standard procedure may have the effect of commoditizing compliance and the fulfillment of commitments. Encouraging subjects to respond to obligations in utilitarian terms may legitimize behavior on the part of individuals that falls well short of the overall requirements. In extreme cases, it may even lead actors to conclude that behavior on their part that causes the depletion of living resources or the pollution of ecosystems is acceptable, so long as they are willing to pay for it through such procedures as joint implementation or the payment of fees or fines that can be

---

<sup>2</sup> . Common examples are charges levied on certain types of behavior and income derived from the sale of tradable permits.

used to subsidize environmentally benign actions on the part of others. The result is a condition in which the role of legitimacy or authoritativeness as a force conducive to compliance or the fulfillment of commitments is – perhaps seriously – diminished. What is more, relying on incentive mechanisms will encourage subjects to make careful and repeated calculations about the relative merits of alternative responses to institutional prescriptions, a condition that raises questions about the role of habitual or routinized behavior in living up to the terms of commitments. On this account, a certain amount of inefficiency regarding the selection of means to be used in achieving goals is a small price to pay for a high level of conformance on the part of individual subjects (Mitchell 1994).

### ***2.3 Behavioral Consistency***

Another issue on which there are sharp differences in the explanations flowing from theoretical models involves what may be called behavioral consistency. Those who adopt a collective-action perspective - and especially its unitary-actor variant - generally expect actors to make careful calculations about participation in individual regimes at an early stage and then to exhibit a high degree of consistency with respect to actions taken on the basis of the conclusions flowing from these calculations. To them, the behavior of the United States in refusing initially to sign the Convention on Biological Diversity, then reversing itself on this matter, and finally refusing to ratify the convention is anomalous. Much the same is true of the behavior of Australia and France in agreeing to the Antarctic minerals convention only to turn against the agreement and begin to campaign for its replacement within months after accepting the final text (Stokke and Vidas 1996). From a social-practice perspective, on the other hand, there is nothing surprising about behavior of this sort. In fact, those who think in these terms are more likely to

look upon behavioral consistency on the part of regime members as a puzzle or a proper target of analysis. What accounts for this contrast, and which view comes closer to matching reality in the world of international environmental regimes?

The collective-action perspective on behavioral consistency flows directly from the assumption that regime members are unitary actors whose identities and basic interests are not significantly affected by participation in regimes dealing with specific problems. Of course, actors of this sort can experience shifts in the calculations they make about participation in individual regimes. New information about the impacts of climate change, for instance, may lead unitary actors to become more (or less) interested in implementing the provisions of measures such as those set forth in the 1997 Kyoto Protocol. Unitary actors may even experience changes in the evaluative criteria they use in judging the significance of factual information. There is no reason to assume that such actors are incapable of learning when it comes to the treatment of environmental problems. Even so, it is reasonable to expect a relatively high level of behavioral consistency on the part of actors that have generally stable utility functions and that are not plagued with internal dissonance. From this perspective, the rather consistent role of the United States as a laggard with regard to the development of international measures to cope with climate change seems perfectly understandable.

The key to the social-practice perspective on this matter lies in the fact that it pays particular attention to actors treated as collective entities whose behavior with regard to international issues is the product of (often complex) internal interactions among a variety of

interest groups or stakeholders.<sup>3</sup> The behavior of the United States in the case of the CBD is easy enough to understand, for instance, in terms of the transition from the Bush Administration to the Clinton Administration followed by a sharp shift in the composition of Congress which undermined prospects for ratification of this convention. And this is a comparatively simple case of the internal dynamics of collective actors that can – and often does – make behavioral consistency with respect to participation in environmental regimes the exception rather than the norm. Quite apart from these political considerations, institutions regularly take on lives of their own with the result that rules in use and the discourses that underpin them change substantially over time. Not surprisingly, individual actors will vary in their responses to such developments. Some will take the lead in encouraging change; others will become strict constructionists seeking to defend the regime in its original form. In many instances, however, developments of this kind will trigger vigorous debates within individual regime members, a process that can promote various forms of behavioral inconsistency as one or another faction gains the upper hand.

#### ***2.4 Durability***

Students of collective action typically regard international regimes as fragile arrangements that are likely to fall by the wayside whenever one (or a few) key members lose interest or become disillusioned with their performance. In extreme cases, they are apt to treat regimes as epiphenomena (Strange 1983) and to chide those who are optimistic about the role of regimes in solving international problems for falling prey to “the false promise of institutions” (Mearsheimer 1994/1995). Here, again, the contrast between this view and the social-practice perspective is striking. Those who think in terms of social practices typically regard institutions

---

<sup>3</sup> . . . Of course, it is possible to construct rational-choice models of interactions among interest groups. But much of the elegance and tractability associated with unitary-actor models is lost in the process.

as sticky or persistent; many arrangements are highly resistant to pressures for change, even when such pressures emanate from actors that are undoubtedly influential members of the relevant groups. Institutions, on this account, can and often do acquire lives of their own that allow them to exercise influence over the behavior of members and other subjects long after the circumstances that led to their creation have disappeared. To take a concrete example, many students of collective action regard the climate change regime as a delicate construct that may well collapse or fade into obscurity if the Kyoto Protocol does not enter into force or if the United States does not become a more cooperative partner in this enterprise. Those who start from a social-practice perspective, by contrast, point to the evolution in the climate regime that has occurred since the signing of the UNFCCC in 1992 and see evidence that the participants are already becoming enmeshed in a complex set of activities that they cannot easily ignore or disown. What accounts for this divergence, and what steps might be taken to test the merits of the two perspectives?

One way to characterize the collective-action perspective on this issue is to say that it presents a picture in which regimes are lightly institutionalized. Specific regimes are surface manifestations of bargains struck among key members of the group of actors concerned with the issue at hand (Strange 1983). As a result, changes in the distribution of bargaining strength among the major participants or alterations in the positions of one or more of the key players with respect to the issue at hand are likely to erode the political foundations of arrangements created to deal with problems like climate change or the loss of biological diversity. In recent years, the volatile and often obstructionist policies of the United States have presented a particularly severe challenge to the development of effective environmental regimes. Thus, the

refusal of the United States to ratify the CBD itself along with the more recently negotiated protocol on biosafety raise profound questions about the viability of the biodiversity regime. Somewhat similar comments are in order regarding the unwillingness of the United States to ratify the Kyoto Protocol on climate change. Regimes, on this account, have little capacity to control their own destinies; their fortunes rise or fall in response to fluctuations in both the capacity and the political will of their members or other actors that are influential in the relevant issue area. International regimes are typically short-term arrangements whose contributions to solving environmental problems remain quite limited.

For its part, the social-practice perspective points to the roles of shared discourses, socialization, and institutional cultures in order to account for the stickiness of institutional arrangements. The point is not that institutions become rigid or inflexible structures, though there certainly are cases in which regimes fail to adapt successfully to important changes affecting the issues they address. As many observers have pointed out, rules in use often evolve in ways that are hard to connect to the formal provisions of constitutive agreements even though subjects may understand them perfectly well (Ostrom 1990). But the essential point here is that participation in a regime is apt to influence the way members think about their roles and lead to the development of an institutional culture that guides the actions of relevant actors in the absence of specific calculations dealing with the benefits and costs of participation. Those who adopt this perspective are impressed by the considerable evolution that has occurred in the climate regime during the 1990s. In less than a decade, this regime has become the center of a remarkable growth in international activities relating to climate which are linked to the regime informally in some instances (e.g. the assessments of the Intergovernmental Panel on Climate Change) and in

more formal terms in others. On this account, the failure of the United States to ratify the Kyoto Protocol does not loom as a fatal flaw. Despite its reluctance to accept formal commitments regarding emissions of greenhouse gases, the United States has contributed greatly to the growth of scientific knowledge relating to climate change and may find itself enmeshed in the evolving regime for climate change in ways that are difficult to ignore or escape.

It seems accurate to conclude from this account that the social-practice models accord institutions a larger role than the collective-action models as causal forces in shaping the course of events in situations involving interactive decisionmaking. This difference arises from the fact that the social-practice models point to mechanisms that have deeper behavioral roots than the utilitarian calculations that constitute the core of the collective-action models. Of course, it would be a mistake to infer from this conclusion that the social-practice mechanisms will lead to greater success in solving international environmental problems than the collective-action mechanisms. Sticky institutional arrangements can and often do become part of the problem in dealing with environmental issues rather than part of the solution (Young et al. 1999). Deeply entrenched international rules that are routinely incorporated into regimes dealing with specific problems, such as the prohibition against interference in the domestic affairs of member states and the proviso that states cannot be forced to accept commitments against their will, are obviously serious constraints when it comes to the design of regimes dealing with matters like climate change and especially biodiversity, where a major source of the problem involves actions occurring within member states that their governments are unable or unwilling to regulate.

### **3. Evaluating Divergent Expectations**

It is difficult to devise tests that will yield unambiguous conclusions about the relative merits of these families of models and that unbiased observers will accept as decisive. A number of factors contribute to this situation. There are significant questions about what it means to test families of models in contrast to individual models. It is hard to distill competing hypotheses from specific models that are formulated in sufficiently precise and operational terms to allow for straightforward testing. There are ongoing debates about the boundaries of the universe of cases – the set of international environmental regimes – to which these hypotheses should apply, and there is considerable heterogeneity among the cases that most analysts would agree should be included in this universe (Levy, Young, and Zürn 1995). Beyond this lie the familiar problems arising from the facts that it is impossible to conduct controlled experiments involving international regimes and that it is hard to collect comparable data on a large enough sample of cases to allow for the application of statistical procedures and other variation-finding techniques of comparative analysis (King, Keohane, and Verba 1994).

Under the circumstances, it will come as no surprise that the outcome of efforts to evaluate the competing claims of the two families of models is often a kind of stalemate in which those who prefer specific models adhere to their positions as a matter of faith and talk past one another in their efforts to convince others of the validity of their positions. The recent debate between proponents of the management model and the enforcement model of compliance constitutes a particularly striking case in point (Chayes and Chayes 1995, Downs, Rocke, and Barsoom 1996, Mitchell 1996). But the problem extends to the most basic assumptions of the two families of models. This is an unsatisfactory state of affairs not only from the point of view

of scholars but also from the perspective of practitioners who must make difficult choices both about the design of regimes and about their administration once they enter into force or become operational. What can we do to alleviate this state of affairs and, in the process, add significantly to our understanding of the roles that regimes can play in solving international environmental problems?

As a first step, I suggest that we launch a search for critical tests of the sort familiar to natural scientists facing similar problems within their research programs. The essential idea here is to look for a small number of points – no more than two or three - with regard to which competing models or theories offer strikingly different predictions that lend themselves to empirical investigation. Having identified such targets of analysis, it is then possible to structure the incentives of members of the research community in such a way that they will be motivated to compete with one another in devising persuasive answers to the question of which of the divergent predictions is correct. Handled properly, this procedure can generate both a focused debate and a healthy competition in which individuals researchers or teams of researchers are rewarded for their efforts to produce and defend their own answers. The overarching scientific community stands to gain as a primary beneficiary of these efforts.

Proceeding in this fashion, I propose two critical tests of the predictions about international environmental regimes arising from the collective-action models and the social-practice models. My first candidate centers on the relationship between compliance and enforcement. The collective-action models predict that with the exception of regimes dealing with coordination problems where there is no incentive to cheat, violations of rules and failures

to fulfill commitments will be common in the absence of one or more well-developed enforcement mechanisms. More specifically, these models suggest that we can expect to find an inverse relationship between levels of compliance in the absence of such enforcement mechanisms and the costs to subjects – including both regime members and relevant actors operating under their jurisdiction – of complying with specific rules or fulfilling substantive commitments. In other words, the higher the costs of compliance and the stronger the incentive to cheat, the greater the importance of enforcement (Downs, Rocke, and Barsoom 1996).<sup>4</sup> According to the social-practice models, by contrast, there should be no clearcut relationship between compliance and enforcement. This does not mean that these models predict that compliance with rules and commitments will be high regardless of the presence or absence of effective enforcement mechanisms. Rather, it simply means that there should be no discernible relationship between compliance and enforcement.

My second candidate to serve as a focus for critical testing centers on the stickiness or persistence of international environmental regimes. The collective-action models predict that regimes are fragile constructs or even that they will emerge as epiphenomena in the sense that they often collapse or become - for all practical purposes - dead letters when the bargains that underlie them disintegrate either because there is a shift in the distribution of bargaining power or because one (or more) of the key member states changes its policies regarding support of the regime. The social-practice models, by contrast, predict that regimes can survive and even thrive following such changes in bargaining power or key policies. This does not mean that the social-practice models predict that institutional arrangements will persist under all conditions. Rather, it

---

<sup>4</sup> . Where compliance is inexpensive or even cost free, of course, models based on utilitarian assumptions will predict that violations will occur infrequently, if at all.

means that there should be no systematic relationship between shifts in the bargaining strength or interests of major actors and the fate of individual regimes, a condition that would be met if a sizable proportion of the regimes under consideration survive following major shifts in the political relationships that give rise to them.

What methods are most appropriate to the conduct of such exercises in critical testing? In my judgment, we are unlikely to find any silver bullets in this field of study. What this means is that no single method can be expected to produce answers to the questions posed in the preceding paragraphs that will prove convincing to unbiased observers. Does this mean we have reached an impasse in our efforts to understand the effectiveness of international environmental regimes? I do not think so. What is needed now, in my view, is a research program that features a mix of natural experiments, laboratory experiments, and thought experiments combined with a common commitment to comparing and contrasting the findings flowing from the use of this suite of methods. Although they may not be definitive, findings that reflect a convergence of results arising from the use of several distinct methods will certainly merit particular attention.

Despite some obvious limitations, each of these categories of methods holds significant promise for those seeking to improve our understanding of the causal significance of international environmental regimes. Natural experiments turn on the identification of substantial variance regarding a chosen variable, such as the presence of different types of enforcement mechanisms, among sets of institutional arrangements that are otherwise quite similar (Breitmeier, Levy, Young, and Zürn 1996). Ideally, this variance should encompass a number of distinct levels in contrast to a simple dichotomy (for instance, the presence or absence of

significant enforcement mechanisms). Laboratory experiments, by contrast, are apt to take the form of simulations, with or without the inclusion of significant roles for human players (Axelrod 1984, 1997). The virtue of such research lies in the opportunity it affords to vary individual factors (for instance, the nature of enforcement mechanisms) in a controlled manner, even though the achievement of this advantage comes at the price of uncertainty about the extent to which the simulated world maps onto the real world. For their part, thought experiments offer the prospect of a disciplined consideration of the way in which real-world situations would have developed if one or another of their key features (for example, the character of the enforcement arrangements) had taken a different form. Although it is not easy to achieve rigor in such efforts, the recent literature on the uses of counterfactuals suggests that thought experiments do have a role to play as elements in larger research strategies (Tetlock and Belkin 1996).

What conclusions are likely to arise from this way of dealing with the divergent predictions of collective-action and social-practice models regarding the effectiveness of international environmental regimes? It would be premature to jump to conclusions regarding the answer to this question. I expect the returns to come in relatively slowly, so that it is reasonable to expect that a sustained commitment to a research program extending over a period of five to ten years will be required to answer the central question with any confidence. Even so, it is worth posing the following question even at this early stage. How should we react in the likely event that sustained research produces mixed results or, in other words, generates some evidence that supports the predictions of the collective-action models and other evidence that favors the predictions of the social-practice models?

One response to this question features work toward a synthesis of the two sets of models, taking essential elements from each and building new models that combine these elements. The attractions of this approach are obvious. But this sort of synthesis is difficult to achieve, and little progress has been made so far in exploring this option among those interested in international environmental problems. Interestingly, some students of interactive decisionmaking have begun to think in these terms in work that focuses on other issue areas or other levels of social organization (Ostrom 1998). Perhaps the most promising initiatives along these lines start from the comparatively parsimonious assumptions of the collective-action models and seek to introduce ideas derived from cultural or sociological analyses. The relatively long tradition of work on the ideas of bounded rationality and satisficing belong to this line of inquiry (Simon 1957). So also does the more recent work which seeks to “examine the implications of placing reciprocity, reputation, and trust at the core of an empirically tested, behavioral theory of collective action” (Ostrom 1998: 1).

Short of producing an overall synthesis of the two families of models, we can ask questions about the domains of validity of these divergent schools of thought. It makes sense to differentiate three distinct lines of inquiry in this realm, each of which is worthy of exploration in considerable depth. One strategy is to launch a search for specific intervening variables that can help to account for mixed results arising from efforts to conduct critical tests. It may turn out, for instance, that high levels of transparency can deter utility maximizers from violating rules, even when there are substantial gains to be reaped from non-compliance and enforcement mechanisms in the ordinary sense of the term are poorly developed. Thus, even utilitarians may be affected by the prospect of disapproval, social opprobrium, or the development of a reputation for being

untrustworthy. Second, we can ask whether certain identifiable types or classes of situations generate incentives to cheat that are particularly difficult to overcome in the absence of effective enforcement mechanisms. This is the crux of the recent debate about the prevalence of the tragedy of the commons. In essence, strict utilitarians argue that there is little prospect of avoiding the tragedy of the commons in the absence of meaningful sanctions or fundamental changes in incentive structures, whereas those who think more in social-practice terms are unconvinced by the need to resort to coercion in the ordinary sense of the term as a means to avoid the tragedy of the commons. Yet a third response centers on the ideas that the role of enforcement mechanisms in deterring violations and the character of the sanctions most likely to prove effective differ from one issue area to another. Those who draw a distinction between high politics and low politics, for example, often have propositions of this sort in mind.

Naturally, it would be desirable to create a unified theory to explain how or under what conditions international regimes can solve environmental problems. Work on this sort of synthesis - treated as a long-term goal - should go forward. In the meantime, however, there is much useful analysis to be done in pinpointing the conditions under which the behavioral mechanisms or pathways highlighted by the collective-action models and by the social-practice models are likely to prevail (Young 1999a). A clearer understanding of these conditions would not only deepen our knowledge of the role of institutions in international society, it would also provide a basis for producing results of considerable value to members of the policy community responsible for devising and implementing solutions to largescale environmental problems.