The demand for international regimes

Robert O. Keohane

We study international regimes because we are interested in understanding order in world politics. Conflict may be the rule; if so, institutionalized patterns of cooperation are particularly in need of explanation. The theoretical analysis of international regimes begins with what is at least an apparent anomaly from the standpoint of Realist theory: the existence of many "sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actor expectations converge," in a variety of areas of international relations.

This article constitutes an attempt to improve our understanding of international order, and international cooperation, through an interpretation of international regime-formation that relies heavily on rational-choice analysis in the utilitarian social contract tradition. I explore why self-interested actors in world politics should seek, under certain circumstances, to establish international regimes through mutual agreement; and how we can account

The original idea for this paper germinated in discussions at a National Science Foundation-sponsored conference on International Politics and International Economics held in Minneapolis, Minnesota, in June 1978.

I am indebted to Robert Holt and Anne Krueger for organizing and to the NSF for funding that meeting. Several knowledgeable friends, particularly Charles Kindleberger, Timothy J. McKeown, James N. Rosse, and Laura Tyson, provided bibliographical suggestions that helped me think about the issues discussed here. For written comments on earlier versions of this article I am especially grateful to Robert Bates, John Chubb, John Conybeare, Colin Day, Alex Field, Albert Fishlow, Alexander George, Ernst B. Haas, Gerald Helleiner, Harold K. Jacobson, Robert Jervis, Stephen D. Krasner, Helen Milner, Timothy J. McKeown, Robert C. North, John Ruggie, Ken Shepsle, Arthur Stein, Susan Strange, Harrison Wagner, and David Yoffie. I also benefited from discussions of earlier drafts at meetings held at Los Angeles in October 1980 and at Palm Springs in February 1981, and from colloquia in Berkeley, California, and Cambridge, Massachusetts.

International Organization 36, 2, Spring 1982
0020-8183/82/020325-31 $1.50

for fluctuations over time in the number, extent, and strength of international regimes, on the basis of rational calculation under varying circumstances.

Previous work on this subject in the rational-choice tradition has emphasized the "theory of hegemonic stability": that is, the view that concentration of power in one dominant state facilitates the development of strong regimes, and that fragmentation of power is associated with regime collapse.[1] This theory, however, fails to explain lags between changes in power structures and changes in international regimes; does not account well for the differential durability of different institutions within a given issue-area; and avoids addressing the question of why international regimes seem so much more extensive now in world politics than during earlier periods (such as the late 19th century) of supposed hegemonic leadership.[2]

The argument of this article seeks to correct some of these faults of the hegemonic stability theory by incorporating it within a supply-demand approach that borrows extensively from microeconomic theory. The theory of hegemonic stability can be viewed as focusing only on the supply of international regimes: according to the theory, the more concentrated power is in an international system, the greater the supply of international regimes at any level of demand.[3] But fluctuations in demand for international regimes are not taken into account by the theory; thus it is necessarily incomplete. This article focuses principally on the demand for international regimes in order to provide the basis for a more comprehensive and balanced interpretation.

Emphasizing the demand for international regimes focuses our attention on why we should want them in the first place, rather than taking their desirability as a given. I do not assume that "demand" and "supply" can be specified independently and operationalized as in microeconomics. The same actors are likely to be the "demanders" and the "suppliers." Furthermore, factors affecting the demand for international regimes are likely simultaneously to affect their supply as well. Yet supply and demand language allows us to make a distinction that is useful in distinguishing phenomena that, in the first instance, affect the desire for regimes, on the one hand, or the ease of supplying them, on the other. "Supply and de-

[1] See especially Robert O. Keohane, "The Theory of Hegemonic Stability and Changes in International Economic Regimes, 1967–1977," in Ole R. Holsti, Randolph Siverson, and Alexander George, eds., *Changes in the International System* (Boulder: Westview, 1980); and Linda Cahn, "National Power and International Regimes: The United States and International Commodity Markets," Ph.D. diss., Stanford University, 1980.

[2] Current research on the nineteenth century is beginning to question the assumption that Britain was hegemonic in a meaningful sense. See Timothy J. McKeown, "Hegemony Theory and Trade in the Nineteenth Century," paper presented to the International Studies Association convention, Philadelphia, 18–21 March 1981; and Arthur A. Stein, "The Hegemon's Dilemma: Great Britain, the United States, and the International Economic Order," paper presented to the American Political Science Association annual meeting, New York, 3–6 September 1981.

[3] The essential reason for this (discussed below) is that actors that are large relative to the whole set of actors have greater incentives both to provide collective goods themselves and to organize their provision, than do actors that are small relative to the whole set. The classic discussion of this phenomenon appears in Mancur Olson Jr., *The Logic of Collective Action: Political Goods and the Theory of Groups* (Cambridge: Harvard University Press, 1965).

mand'' should be seen in this analysis as a metaphor, rather than an attempt artificially to separate, or to reify, different aspects of an interrelated process.[4]

Before proceeding to the argument, two caveats are in order. First, the focus of this article is principally on the *strength* and *extent* of international regimes, rather than on their *content* or *effects*. I hope to contribute to understanding why international regimes wax and wane, leaving to others (in this volume and elsewhere) the analysis of what ideologies they encompass or how much they affect ultimate, value-laden outcomes. The only significant exception to this avoidance of questions of content comes in Section 5, which distinguishes between control-oriented and insurance-oriented regimes. Second, no claim is made here that rational-choice analysis is the only valid way to understand international regimes, or even that it is preferable to others. On the contrary, I view rational-choice analysis as one way to generate an insightful interpretation of international regimes that complements interpretations derived from analyses of conventions and of learning (illustrated in the articles in this volume by Young and Haas). My analysis is designed to be neither comprehensive nor exclusive: I suggest hypotheses and try to make what we know more intelligible, rather than seeking to put forward a definitive theory of international regimes.

The major arguments of this article are grouped in five sections. First, I outline the analytical approach by discussing the virtues and limitations of ''systemic constraint-choice analysis.'' Section 2 lays the basis for the development of a constraint-choice theory of international regimes by specifying the context within which international regimes operate and the functions they perform. In Section 3 elements of a theory of the demand for international regimes are presented, emphasizing the role of regimes in reducing transactions costs and coping with uncertainty. In Section 4, I use insights from theories of information and uncertainty to discuss issues of closure and communication. Section 5 suggests that control-oriented regimes are likely to be increasingly supplemented in the 1980s by insurance regimes as the dominance of the advanced industrial countries in the world political economy declines.

1. Systemic constraint-choice analysis: virtues and limitations

The argument developed here is deliberately limited to the *systemic* level of analysis. In a systemic theory, the actors' characteristics are given by assumption, rather than treated as variables; changes in outcomes are explained not on the basis of variations in these actor characteristics, but on the basis of changes in the attributes of the system itself. Microeconomic theory, for instance, posits the existence of business firms, with given utility

[4] I am indebted to Albert Fishlow for clarifying this point for me.

functions, and attempts to explain their behavior on the basis of environmental factors such as the competitiveness of markets. It is therefore a systemic theory, unlike the so-called "behavioral theory of the firm," which examines the actors for internal variations that could account for behavior not predicted by microeconomic theory.

A systemic focus permits a limitation of the number of variables that need to be considered. In the initial steps of theory-building, this is a great advantage: attempting to take into account at the outset factors at the foreign policy as well as the systemic level would lead quickly to descriptive complexity and theoretical anarchy. Beginning the analysis at the systemic level establishes a baseline for future work. By seeing how well a simple model accounts for behavior, we understand better the value of introducing more variables and greater complexity into the analysis. Without the systemic microeconomic theory of the firm, for instance, it would not have been clear what puzzles needed to be solved by an actor-oriented behavioral theory.

A systems-level examination of changes in the strength and extent of international regimes over time could proceed through historical description. We could examine a large number of cases, attempting to extract generalizations about patterns from the data. Our analysis could be explicitly comparative, analyzing different regimes within a common analytical framework, employing a methodology such as George's "focused comparison."[5] Such a systematic comparative description could be quite useful, but it would not provide a theoretical framework for posing questions of why, and under what conditions, regimes should be expected to develop or become stronger. Posing such fundamental issues is greatly facilitated by *a priori* reasoning that makes specific predictions to be compared with empirical findings. Such reasoning helps us to reinterpret previously observed patterns of behavior as well as suggesting new questions about behavior or distinctions that have been ignored: it has the potential of "discovering new facts."[6] This can be useful even in a subject such as international politics, where the variety of relevant variables is likely to confound any comprehensive effort to build deductive theory. Deductive analysis can thus be used in interpretation as well as in a traditional strategy of theory-building and hypothesis-testing.

This analysis follows the tradition of microeconomic theory by focusing on constraints and incentives that affect the choices made by actors.[7] We

[5] Alexander L. George, "Case Studies and Theory Development: The Method of Structured, Focused Comparison," in Paul Lauren, ed., *Diplomacy: New Approaches in History, Theory, and Policy* (New York: Free Press, 1979).

[6] Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in Lakatos and Alan Musgrave, eds., *Criticism and the Growth of Scientific Knowledge* (Cambridge: Cambridge University Press, 1970).

[7] Stimulating discussions of microeconomic theory can be found in Martin Shubik, "A Curmudgeon's Guide to Microeconomics," *Journal of Economic Literature* 8 (1970): 405–434; and Spiro J. Latsis, "A Research Programme in Economics," in Latsis, ed., *Method and Appraisal in Economics* (Cambridge: Cambridge University Press, 1976).

assume that, in general, actors in world politics tend to respond rationally to constraints and incentives. Changes in the characteristics of the international system will alter the opportunity costs to actors of various courses of action, and will therefore lead to changes in behavior. In particular, decisions about creating or joining international regimes will be affected by system-level changes in this way; in this model the demand for international regimes is a function of system characteristics.

This article therefore employs a form of rational-choice analysis, which I prefer to term "constraint-choice" analysis to indicate that I do not make some of the extreme assumptions often found in the relevant literature. I assume a prior context of power, expectations, values, and conventions; I do not argue that rational-choice analysis can derive international regimes from a "state of nature" through logic alone.[8] This paper also eschews deterministic claims, or the *hubris* of believing that a complete explanation can be developed through resort to deductive models. To believe this would commit one to a narrowly rationalistic form of analysis in which expectations of gain provide both necessary and sufficient explanations of behavior.[9] Such beliefs in the power of Benthamite calculation have been undermined by the insufficiency of microeconomic theories of the firm—despite their great value as initial approximations—as shown by the work of organization theorists such as Simon, Cyert, and March.[10]

Rational-choice theory is not advanced here as a magic key to unlock the secrets of international regime change, much less as a comprehensive way of interpreting reality. Nor do I employ it as a means of explaining particular actions of specific actors. Rather, I use rational-choice theory to develop models that help to explain trends or tendencies toward which patterns of behavior tend to converge. That is, I seek to account for typical, or modal, behavior. This analysis will not accurately predict the decisions of all actors, or what will happen to all regimes; but it should help to account for overall trends in the formation, growth, decay, and dissolution of regimes. The deductive logic of this approach makes it possible to generate hypotheses about international regime change on an *a priori* basis. In this article several such hypotheses will be suggested, although their testing will have to await further specification. We shall therefore be drawing on microeconomic theories and rational-choice approaches heuristically, to help us con-

[8] I am indebted to Alexander J. Field for making the importance of this point clear to me. See his paper, "The Problem with Neoclassical Institutional Economics: A Critique with Special Reference to the North/Thomas Model of Pre-1500 Europe," *Explorations in Economic History* 18 (April 1981).

[9] Lance E. Davis and Douglass C. North adopt this strong form of rationalistic explanation when they argue that "an institutional arrangement will be innovated if the expected net gains exceed the expected costs." See their volume, *Institutional Change and American Economic Growth* (Cambridge: Cambridge University Press, 1971).

[10] Two of the classic works are James March and Herbert Simon, *Organizations* (New York: Wiley, 1958); and Richard Cyert and James March, *The Behavioral Theory of the Firm* (Englewood Cliffs, N.J.: Prentice-Hall, 1963).

struct nontrivial hypotheses about international regime change that can guide future research.

The use of rational-choice theory implies that we must view decisions involving international regimes as in some meaningful sense voluntary. Yet we know that world politics is a realm in which power is exercised regularly and in which inequalities are great. How, then, can we analyze international regimes with a voluntaristic mode of analysis?

My answer is to distinguish two aspects of the process by which international regimes come into being: the imposition of constraints, and decision making. Constraints are dictated not only by environmental factors but also by powerful actors. Thus when we speak of an "imposed regime," we are speaking (in my terminology) of a regime agreed upon within constraints that are mandated by powerful actors.[11] Any agreement that results from bargaining will be affected by the opportunity costs of alternatives faced by the various actors: that is, by which party has the greater need for agreement with the other.[12] Relationships of power and dependence in world politics will therefore be important determinants of the characteristics of international regimes. Actor choices will be constrained in such a way that the preferences of more powerful actors will be accorded greater weight. Thus in applying rational-choice theory to the formation and maintenance of international regimes, we have to be continually sensitive to the structural context within which agreements are made. Voluntary choice does not imply equality of situation or outcome.

We do not necessarily sacrifice realism when we analyze international regimes as the products of voluntary agreements among independent actors within the context of prior constraints. Constraint-choice analysis effectively captures the nonhierarchical nature of world politics without ignoring the role played by power and inequality. Within this analytical framework, a systemic analysis that emphasizes constraints on choice and effects of system characteristics on collective outcomes provides an appropriate way to address the question of regime formation.

Constraint-choice analysis emphasizes that international regimes should not be seen as quasi-governments—imperfect attempts to institutionalize centralized authority relationships in world politics. Regimes are more like contracts, when these involve actors with long-term objectives who seek to structure their relationships in stable and mutually beneficial ways.[13] In

[11] For a discussion of "spontaneous," "negotiated," and "imposed" regimes, see Oran Young's contribution to this volume.

[12] For a lucid and original discussion based on this obvious but important point, see John Harsanyi, "Measurement of Social Power, Opportunity Costs and the Theory of Two-Person Bargaining Games," *Behavioral Science* 7, 1 (1962): 67–80. See also Albert O. Hirschman, *National Power and the Structure of Foreign Trade* (1945; Berkeley: University of California Press, 1980), especially pp. 45–48.

[13] S. Todd Lowry, "Bargain and Contract Theory in Law and Economics," in Warren J. Samuels, ed., *The Economy as a System of Power* (New Brunswick, N.J.: Transaction Books, 1979), p. 276.

some respects, regimes resemble the "quasi-agreements" that Fellner discusses when analyzing the behavior of oligopolistic firms.[14] In both contracts and quasi-agreements, there may be specific rules having to do with prices, quantities, delivery dates, and the like; for contracts, some of these rules may be legally enforceable. The most important functions of these arrangements, however, are not to preclude further negotiations, but to establish stable mutual expectations about others' patterns of behavior and to develop working relationships that will allow the parties to adapt their practices to new situations. Rules of international regimes are frequently changed, bent, or broken to meet the exigencies of the moment. They are rarely enforced automatically, and they are not self-executing. Indeed, they are often matters for negotiation and renegotiation; as Puchala has argued, "attempts to enforce EEC regulations open political cleavages up and down the supranational-to-local continuum and spark intense politicking along the cleavage lines."[15]

This lack of binding authority associated with international regimes has important implications for our selection of analytical approaches within a constraint-choice framework: it leads us to rely more heavily on microeconomic, market-oriented theory than on theories of public choice. Most public-choice theory is not applicable to international regime change because it focuses on the processes by which authoritative, binding decisions are made within states.[16] Yet in international politics, binding decisions, arrived at through highly institutionalized, rule-oriented processes, are relatively rare and unimportant, and such decisions do not constitute the essence of international regimes. Traditional microeconomic supply and demand analysis, by contrast, assumes a situation in which choices are made continuously over a period of time by actors for whom "exit"—refusal to purchase goods or services that are offered—is an ever-present option. This conforms more closely to the situation faced by states contemplating whether to create, join, remain members of, or leave international regimes. Since no binding decisions can be made, it is possible to imagine a market for international regimes as one thinks of an economic market: on the basis of an analysis of relative prices and cost-benefit calculations, actors decide which regimes to "buy." In general, we expect states to join those regimes in which they expect the benefits of membership to outweigh the costs. In such an analysis, observed changes in the extent and strength of international

[14] William Fellner, *Competition among the Few* (New York: Knopf, 1949).

[15] Donald J. Puchala, "Domestic Politics and Regional Harmonization in the European Communities," *World Politics* 27,4 (July 1975), p. 509.

[16] There are exceptions to this generalization, such as Tiebout's "voting with the feet" models of population movements among communities. Yet only one chapter of fourteen in a recent survey of the public-choice literature is devoted to such models, which do not focus on authoritative decision-making processes. See Dennis C. Mueller, *Public Choice* (Cambridge: Cambridge University Press, 1980). For a brilliantly innovative work on "exit" versus "voice" processes, see Albert O. Hirschman, *Exit, Voice, and Loyalty* (Cambridge: Harvard University Press, 1970).

regimes may be explained by reference to changes either in the characteristics of the international system (the context within which actors make choices) or of the international regimes themselves (about which the choices are made).

This constraint-choice approach draws attention to the question of why disadvantaged actors join international regimes even when they receive fewer benefits than other members—an issue ignored by arguments that regard certain regimes as simply imposed. Weak actors as well as more powerful actors make choices, even if they make them within more severe constraints. (Whether such choices, made under severe constraint, imply obligations for the future is another question, one not addressed here.)[17]

2. The context and functions of international regimes

Analysis of international regime-formation within a constraint-choice framework requires that one specify the nature of the context within which actors make choices and the functions of the institutions whose patterns of growth and decay are being explained. Two features of the international context are particularly important: world politics lacks authoritative governmental institutions, and is characterized by pervasive uncertainty. Within this setting, a major function of international regimes is to facilitate the making of mutually beneficial agreements among governments, so that the structural condition of anarchy does not lead to a complete "war of all against all."

The actors in our model operate within what Waltz has called a "self-help system," in which they cannot call on higher authority to resolve difficulties or provide protection.[18] Negative externalities are common: states are forever impinging on one another's interests.[19] In the absence of authoritative global institutions, these conflicts of interest produce uncertainty and risk: possible future evils are often even more terrifying than present ones. All too obvious with respect to matters of war and peace, this is also characteristic of the international economic environment.

Actors in world politics may seek to reduce conflicts of interest and risk

[17] Anyone who has thought about Hobbes's tendentious discussion of "voluntary" agreements in *Leviathan* realizes the dangers of casuistry entailed in applying voluntaristic analysis to politics, especially when obligations are inferred from choices. This article follows Hobbes's distinction between the structure of constraints in a situation, on the one hand, and actor choices, on the other; but it does not adopt his view that even severely constrained choices ("your freedom or your life") create moral or political obligations.

[18] Kenneth N. Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Wesley, 1979).

[19] Externalities exist whenever an acting unit does not bear all of the costs, or fails to reap all of the benefits, that result from its behavior. See Davis and North, *Institutional Change and American Economic Growth,* p. 16.

by coordinating their behavior. Yet coordination has many of the characteristics of a public good, which leads us to expect that its production will be too low.[20] That is, increased production of these goods, which would yield net benefits, is not undertaken. This insight is the basis of the major "supply-side" argument about international regimes, epitomized by the theory of hegemonic stability. According to this line of argument, hegemonic international systems should be characterized by levels of public goods production higher than in fragmented systems; and, if international regimes provide public goods, by stronger and more extensive international regimes.[21]

This argument, important though it is, ignores what I have called the "demand" side of the problem of international regimes: why should governments desire to institute international regimes in the first place, and how much will they be willing to contribute to maintain them? Addressing these issues will help to correct some of the deficiencies of the theory of hegemonic stability, which derive from its one-sidedness, and will contribute to a more comprehensive interpretation of international regime change. The familiar context of world politics—its competitiveness, uncertainty, and conflicts of interest—not only sets limits on the supply of international regimes, but provides a basis for understanding why they are demanded.

Before we can understand why regimes are demanded, however, it is necessary to establish what the functions of international regimes, from the perspective of states, might be.[22]

At the most specific level, students of international cooperation are interested in myriads of particular agreements made by governments: to

[20] Olson, *The Logic of Collection Action;* Bruce M. Russett and John D. Sullivan, "Collective Goods and International Organization," with a comment by Mancur Olson Jr., *International Organization* 25,4 (Autumn 1971); John Gerard Ruggie, "Collective Goods and Future International Collaboration," *American Political Science Review* 66,3 (September 1972); Duncan Snidal, "Public Goods, Property Rights, and Political Organization," *International Studies Quarterly* 23,4 (December 1979), p. 544.

[21] Keohane, "The Theory of Hegemonic Stability"; Charles P. Kindleberger, *The World in Depression, 1929–1939* (Berkeley: University of California Press, 1974); Mancur Olson and Richard Zeckhauser, "An Economic Theory of Alliances," *Review of Economics and Statistics* 48,3 (August 1966), reprinted in Bruce M. Russett, ed., *Economic Theories of International Politics* (Chicago: Markham, 1968). For a critical appraisal of work placing emphasis on public goods as a rationale for forming international organizations, see John A. C. Conybeare, "International Organizations and the Theory of Property Rights," *International Organization* 34,3 (Summer 1980), especially pp. 329–32.

[22] My use of the word "functions" here is meant to designate consequences of a certain pattern of activity, particularly in terms of the utility of the activity; it is not to be interpreted as an explanation of the behavior in question, since there is no teleological premise, or assumption that necessity is involved. Understanding the function of international regimes helps, however, to explain why actors have an incentive to create them, and may therefore help to make behavior intelligible within a rational-choice mode of analysis that emphasizes the role of incentives and constraints. For useful distinctions on functionalism, see Ernest Nagel, *The Structure of Scientific Explanation* (New York: Harcourt, Brace, 1961), especially "Functionalism and Social Science," pp. 520–35. I am grateful to Robert Packenham for this reference and discussions of this point.

maintain their exchange rates within certain limits, to refrain from trade discrimination, to reduce their imports of petroleum, or progressively to reduce tariffs. These agreements are made despite the fact that, compared to domestic political institutions, the institutions of world politics are extremely weak: an authoritative legal framework is lacking and regularized institutions for conducting transactions (such as markets backed by state authority or binding procedures for making and enforcing contracts) are often poorly developed.

Investigation of the sources of specific agreements reveals that they are not, in general, made on an *ad hoc* basis, nor do they follow a random pattern. Instead, they are "nested" within more comprehensive agreements, covering more issues. An agreement among the United States, Japan, and the European Community in the Multilateral Trade Negotiations to reduce a particular tariff is affected by the rules, norms, principles, and procedures of the General Agreement on Tariffs and Trade (GATT)—that is, by the trade regime. The trade regime, in turn, is nested within a set of other arrangements—including those for monetary relations, energy, foreign investment, aid to developing countries, and other issues—that together constitute a complex and interlinked pattern of relations among the advanced market-economy countries. These, in turn, are related to military-security relations among the major states.[23]

Within this multilayered system, a major function of international regimes is to facilitate the making of specific agreements on matters of substantive significance within the issue-area covered by the regime. International regimes help to make governments' expectations consistent with one another. Regimes are developed in part because actors in world politics believe that with such arrangements they will be able to make mutually beneficial agreements that would otherwise be difficult or impossible to attain. In other words, regimes are valuable to governments where, in their absence, certain mutually beneficial agreements would be impossible to consummate. In such situations, *ad hoc* joint action would be inferior to results of negotiation within a regime context.

Yet this characterization of regimes immediately suggests an explanatory puzzle. Why should it be worthwhile to construct regimes (themselves requiring agreement) in order to make specific agreements within the regime frameworks? Why is it not more efficient simply to avoid the regime stage and make the agreements on an *ad hoc* basis? In short, why is there any demand for international regimes apart from a demand for international agreements on particular questions?

An answer to this question is suggested by theories of "market failure" in economics. Market failure refers to situations in which the outcomes of

[23] Vinod Aggarwal has developed the concept of "nesting" in his work on international regimes in textiles since World War II. I am indebted to him for this idea, which has been elaborated in his "Hanging by a Thread: International Regime Change in the Textile/Apparel System, 1950–1979," Ph.D. diss., Stanford University, 1981.

market-mediated interaction are suboptimal (given the utility functions of actors and the resources at their disposal). Agreements that would be beneficial to all parties are not made. In situations of market failure, economic activities uncoordinated by hierarchical authority lead to *in*efficient results, rather than to the efficient outcomes expected under conditions of perfect competition. In the theory of market failure, the problems are attributed not to inadequacies of the actors themselves (who are presumed to be rational utility-maximizers) but rather to the structure of the system and the institutions, or lack thereof, that characterize it.[24] Specific attributes of the system impose transactions costs (including information costs) that create barriers to effective cooperation among the actors. Thus institutional defects are responsible for failures of coordination. To correct these defects, conscious institutional innovation may be necessary, although a good economist will always compare the costs of institutional innovation with the costs of market failure before recommending tampering with the market.

Like imperfect markets, world politics is characterized by institutional deficiencies that inhibit mutually advantageous coordination. Some of the deficiencies revolve around problems of transactions costs and uncertainty that have been cogently analyzed by students of market failure. Theories of market failure specify types of institutional imperfections that may inhibit agreement; international regimes may be interpreted as helping to correct similar institutional defects in world politics. Insofar as regimes are established through voluntary agreement among a number of states, we can interpret them, at least in part, as devices to overcome the barriers to more efficient coordination identified by theories of market failure.[25]

The analysis that follows is based on two theoretical assumptions. First, the actors whose behavior we analyze act, in general, as rational utility-maximizers in that they display consistent tendencies to adjust to external changes in ways that are calculated to increase the expected value of outcomes to them. Second, the international regimes with which we are concerned are devices to facilitate the making of agreements among these actors. From these assumptions it follows that the demand for international regimes

[24] Of particular value for understanding market failure is Kenneth J. Arrow, *Essays in the Theory of Risk-Bearing* (New York: North Holland/American Elsevier, 1974).

[25] Helen Milner suggested to me that international regimes were in this respect like credit markets, and that the history of the development of credit markets could be informative for students of international regimes. The analogy seems to hold. Richard Ehrenberg reports that the development of credit arrangements in medieval European Bourses reduced transaction costs (since money did not need to be transported in the form of specie) and provided high-quality information in the form of merchants' newsletters and exchanges of information at fairs: "during the Middle Ages the best information as to the course of events in the world was regularly to be obtained in the fairs and the Bourses" (p. 317). The Bourses also provided credit ratings, which provided information but also served as a crude substitute for effective systems of legal liability. Although the descriptions of credit market development in works such as that by Ehrenberg are fascinating, I have not been able to find a historically-grounded theory of these events. See Richard Ehrenberg, *Capital and Finance in the Age of the Renaissance: A Study of the Fuggers and Their Connections,* translated from the German by H. M. Lucas (New York: Harcourt, Brace, no date), especially chap. 3 (pp. 307–333).

at any given price will vary directly with the desirability of agreements to states and with the ability of international regimes actually to facilitate the making of such agreements. The condition for the theory's operation (that is, for regimes to be formed) is that sufficient complementary or common interests exist so that agreements benefiting all essential regime members can be made.

The value of theories of market failure for this analysis rests on the fact that they allow us to identify more precisely barriers to agreements. They therefore suggest insights into how international regimes help to reduce those barriers, and they provide richer interpretations of previously observed, but unexplained, phenomena associated with international regimes and international policy coordination. In addition, concepts of market failure help to explain the strength and extent of international regimes by identifying characteristics of international systems, or of international regimes themselves, that affect the demand for such regimes and therefore, given a supply schedule, their quantity. Insights from the market-failure literature therefore take us beyond the trivial cost-benefit or supply-demand propositions with which we began, to hypotheses about relationships that are less familiar.

The emphasis on efficiency in the market-failure literature is consistent with our constraint-choice analysis of the decision-making processes leading to the formation and maintenance of international regimes. Each actor must be as well or better off with the regime than without it—given the prior structure of constraints. This does not imply, of course, that the whole process leading to the formation of a new international regime will yield overall welfare benefits. Outsiders may suffer; indeed, some international regimes (such as alliances or cartel-type regimes) are specifically designed to impose costs on them. These costs to outsiders may well outweigh the benefits to members. In addition, powerful actors may manipulate constraints prior to the formation of a new regime. In that case, although the regime *per se* may achieve overall welfare improvements compared to the immediately preceding situation, the results of the joint process may be inferior to those that existed before the constraints were imposed.

3. Elements of a theory of the demand for international regimes

We are now in a position to address our central puzzle—why is there any demand for international regimes?—and to outline a theory to explain why this demand exists. First, it is necessary to use our distinction between "agreements" and "regimes" to pose the issue precisely: given a certain level of demand for international agreements, what will affect the demand for international regimes? The Coase theorem, from the market-failure literature, will then be used to develop a list of conditions under which international regimes are of potential value for facilitating agreements in world politics. This typological analysis turns our attention toward two central problems, *transactions cost* and *informational imperfections*. Questions of information, involving uncertainty and risk, will receive particular attention, since their exploration has rich implications for interpretation and future research.

The demand for agreements and the demand for regimes

It is crucial to distinguish clearly between international regimes, on the one hand, and mere *ad hoc* substantive agreements, on the other. Regimes, as argued above, facilitate the making of substantive agreements by providing a framework of rules, norms, principles, and procedures for negotiation. A theory of international regimes must explain why these intermediate arrangements are necessary.

In our analysis, the demand for agreements will be regarded as exogenous. It may be influenced by many factors, particularly by the perceptions that leaders of governments have about their interests in agreement or nonagreement. These perceptions will, in turn, be influenced by domestic politics, ideology, and other factors not encompassed by a systemic, constraint-choice approach. In the United States, "internationalists" have been attracted to international agreements and international organizations as useful devices for implementing American foreign policy; "isolationists" and "nationalists" have not. Clearly, such differences cannot be accounted for by our theory. We therefore assume a given desire for agreements and ask: under these conditions, what will be the demand for international regimes?

Under certain circumstances defining the demand and supply of agreements, there will be no need for regimes and we should expect none to form. This will be the situation in two extreme cases, where demand for agreements is nil and where the supply of agreements is infinitely elastic and free (so that all conceivable agreements can be made costlessly). But where the demand for agreements is positive at some level of feasible cost, and the supply of agreements is not infinitely elastic and free, there may be a demand for international regimes *if* they actually make possible agreements yielding net benefits that would not be possible on an *ad hoc* basis. In such a situation regimes can be regarded as "efficient." We can now ask: under what specific conditions will international regimes be efficient?

One way to address this question is to pose its converse. To ask about the conditions under which international regimes will be *worthless* enables us to draw on work in social choice, particularly by Ronald Coase. Coase was able to show that the presence of externalities alone does not necessarily prevent Pareto-optimal coordination among independent actors: under certain conditions, bargaining among these actors could lead to Pareto-optimal solutions. The key conditions isolated by Coase were (a) a legal framework establishing liability for actions, presumably supported by governmental authority; (b) perfect information; and (c) zero transactions costs (including organization costs and costs of making side-payments).[26] If all these conditions were met in world politics, *ad hoc* agreements would be costless and regimes unnecessary. *At least one of them must not be fulfilled if international regimes are to be of value, as facilitators of agreement, to independent utility-maximizing actors in world politics.* Inverting the Coase theorem provides us, therefore, with a list of conditions, at least one of which must apply if regimes are to be of value in facilitating agreements among governments:[27]

(a) lack of a clear legal framework establishing liability for actions;
(b) information imperfections (information is costly);
(c) positive transactions costs.[28]

In world politics, of course, *all* of these conditions are met all of the time: world government does not exist; information is extremely costly and often impossible to obtain; transactions costs, including costs of organization and side-payments, are often very high. Yet the Coase theorem is useful not merely as a way of categorizing these familiar problems, but because it suggests how international regimes can improve actors' abilities to make mutually beneficial agreements. Regimes can make agreement easier if they provide frameworks for establishing legal liability (even if these are not perfect); improve the quantity and quality of information available to actors; or reduce other transactions costs, such as costs of organization or of making side-payments. This typology allows us to specify regime functions—as devices to make agreements possible—more precisely, and therefore to understand demand for international regimes. Insofar as international regimes can correct institutional defects in world politics along any of these three dimensions (liability, information, transactions costs), they may become efficient devices for the achievement of state purposes.

Regimes do not establish binding and enforceable legal liabilities in any strict or ultimately reliable sense, although the lack of a hierarchical struc-

[26] Ronald Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3 (October 1960). For a discussion, see James Buchanan and Gordon Tullock, *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (Ann Arbor: University of Michigan Press, 1962), p. 186.

[27] If we were to drop the assumption that actors are strictly self-interested utility-maximizers, regimes could be important in another way: they would help to develop norms that are internalized by actors as part of their own utility functions. This is important in real-world political-economic systems, as works by Schumpeter, Polanyi, and Hirsch on the moral underpinnings of a market system indicate. It is likely to be important in many international systems as well. But it is outside the scope of the analytical approach taken in this article—which is designed to illuminate some issues, but not to provide a comprehensive account of international regime change. See Joseph Schumpeter, *Capitalism, Socialism, and Democracy* (New York: Harper & Row, 1942), especially Part II, "Can Capitalism Survive?"; Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (1944; Boston: Beacon Press, 1957); and Fred Hirsch, *Social Limits to Growth* (Cambridge: Harvard University Press, 1976).

[28] Information costs could be considered under the category of transaction costs, but they are so important that I categorize them separately in order to give them special attention.

ture does not prevent the development of bits and pieces of law.[29] Regimes are much more important in providing established negotiating frameworks (reducing transactions costs) and in helping to coordinate actor expectations (improving the quality and quantity of information available to states). An explanation of these two functions of international regimes, with the help of microeconomic analysis, will lead to hypotheses about how the demand for international regimes should be expected to vary with changes in the nature of the international system (in the case of transactions costs) and about effects of characteristics of the international regime itself (in the case of information).

International regimes and transactions costs

Neither international agreements nor international regimes are created spontaneously. Political entrepreneurs must exist who see a potential profit in organizing collaboration. For entrepreneurship to develop, not only must there be a potential social gain to be derived from the formation of an international arrangement, but the entrepreneur (usually, in world politics, a government) must expect to be able to gain more itself from the regime than it invests in organizing the activity. Thus organizational costs to the entrepreneur must be lower than the net discounted value of the benefits that the entrepreneur expects to capture for itself.[30] As a result, international cooperation that would have a positive social payoff may not be initiated unless a potential entrepreneur would profit sufficiently. This leads us back into questions of supply and the theory of hegemonic stability, since such a situation is most likely to exist where no potential entrepreneur is large relative to the whole set of potential beneficiaries, and where "free riders" cannot be prevented from benefiting from cooperation without paying proportionately.

Our attention here, however, is on the demand side: we focus on the efficiency of constructing international regimes, as opposed simply to making *ad hoc* agreements. We only expect regimes to develop where the costs of making *ad hoc* agreements on particular substantive matters are higher than the sum of the costs of making such agreements within a regime framework and the costs of establishing that framework.

With respect to transactions costs, where do we expect these conditions to be met? To answer this question, it is useful to introduce the concept of *issue density* to refer to the number and importance of issues arising within a given policy space. The denser the policy space, the more highly interdependent are the different issues, and therefore the agreements made about

[29] For a discussion of "the varieties of international law," see Louis Henkin, *How Nations Behave: Law and Foreign Policy*, 2d ed. (New York: Columbia University Press for the Council on Foreign Relations, 1979), pp. 13–22.

[30] Davis and North, *Institutional Change and American Economic Growth*, especially pp. 51–57.

them. Where issue density is low, *ad hoc* agreements are quite likely to be adequate: different agreements will not impinge on one another significantly, and there will be few economies of scale associated with establishing international regimes (each of which would encompass only one or a few agreements). Where issue density is high, on the other hand, one substantive objective may well impinge on another and regimes will achieve economies of scale, for instance in establishing negotiating procedures that are applicable to a variety of potential agreements within similar substantive areas of activity.[31]

Furthermore, in dense policy spaces, complex linkages will develop among substantive issues. Reducing industrial tariffs without damaging one's own economy may depend on agricultural tariff reductions from others; obtaining passage through straits for one's own warships may depend on wider decisions taken about territorial waters; the sale of food to one country may be more or less advantageous depending on other food-supply contracts being made at the same time. As linkages such as these develop, the organizational costs involved in reconciling distinct objectives will rise and demands for overall frameworks of rules, norms, principles, and procedures to cover certain clusters of issues—that is, for international regimes—will increase.

International regimes therefore seem often to facilitate side-payments among actors within issue-areas covered by comprehensive regimes, since they bring together negotiators to consider a whole complex of issues. Side-payments in general are difficult in world politics and raise serious issues of transaction costs: in the absence of a price system for the exchange of favors, these institutional imperfections will hinder cooperation.[32] International regimes may provide a partial corrective.[33] The well-known literature on "spillover" in bargaining, relating to the European Community and other integration schemes, can also be interpreted as being concerned with side-

[31] The concept of issue density bears some relationship to Herbert Simon's notion of "decomposability," in *The Sciences of the Artificial* (Cambridge: MIT Press, 1969). In both cases, problems that can be conceived of as separate are closely linked to one another functionally, so that it is difficult to affect one without also affecting others. Issue density is difficult to operationalize, since the universe (the "issue-area" or "policy space") whose area forms the denominator of the term cannot easily be specified precisely. But given a certain definition of the issue-area, it is possible to trace the increasing density of issues within it over time. See, for example, Robert O. Keohane and Joseph S. Nye, *Power and Interdependence: World Politics in Transition* (Boston: Little, Brown, 1977), chap. 4.

[32] On questions of linkage, see Arthur A. Stein, "The Politics of Linkage," *World Politics* 33,1 (October 1980): 62–81; Kenneth Oye, "The Domain of Choice," in Oye et al., *Eagle Entangled: U.S. Foreign Policy in a Complex World* (New York: Longmans, 1979), pp. 3–33; and Robert D. Tollison and Thomas D. Willett, "An Economic Theory of Mutually Advantageous Issue Linkage in International Negotiations," *International Organization* 33,4 (Autumn 1979).

[33] GATT negotiations and deliberations on the international monetary system have been characterized by extensive bargaining over side-payments and complex politics of issue-linkage. For a discussion see Nicholas Hutton, "The Salience of Linkage in International Economic Negotiations," *Journal of Common Market Studies* 13, 1–2 (1975): 136–60.

payments. In this literature, expectations that an integration arrangement can be expanded to new issue-areas permit the broadening of potential side-payments, thus facilitating agreement.[34]

It should be noted, however, that regimes may make it more difficult to link issues that are clustered separately. Governments tend to organize themselves consistently with how issues are treated internationally, as well as vice versa; issues considered by different regimes are often dealt with by different bureaucracies at home. Linkages and side-payments become difficult under these conditions, since they always involve losses as well as gains. Organizational subunits that would lose, on issues that matter to them, from a proposed side-payment are unlikely to support it on the basis of another agency's claim that it is in the national interest. Insofar as the dividing lines between international regimes place related issues in different jurisdictions, they may well make side-payments and linkages between these issues less feasible.

The crucial point about regimes to be derived from this discussion of transactions costs can be stated succinctly: the optimal size of a regime will increase if there are increasing rather than diminishing returns to regime-scale (reflecting the high costs of making separate agreements in a dense policy space), or if the marginal costs of organization decline as regime size grows. The point about increasing returns suggests an analogy with the theory of imperfect competition among firms. As Samuelson notes, "increasing returns is the prime case of deviations from perfect competition."[35] In world politics, increasing returns to scale lead to more extensive international regimes.

The research hypothesis to be derived from this analysis is that increased issue density will lead to greater demand for international regimes and to more extensive regimes. Since greater issue density is likely to be a feature of situations of high interdependence, this forges a link between interdependence and international regimes: increases in the former can be expected to lead to increases in demand for the latter.[36]

The demand for principles and norms

The definition of international regimes provided in the introduction to this volume stipulates that regimes must embody principles ("beliefs of fact, causation, and rectitude") and norms ("standards of behavior defined in

[34] Ernst B. Haas, *The Uniting of Europe* (Stanford: Stanford University Press, 1958).

[35] Paul A. Samuelson, "The Monopolistic Competition Revolution," in R. E. Kuenne, ed., *Monopolistic Competition Theory* (New York: Wiley, 1967), p. 117.

[36] Increases in issue density could make it more difficult to supply regimes; the costs of providing regimes could grow, for instance, as a result of multiple linkages across issues. The 1970s Law of the Sea negotiations illustrate this problem. As a result, it will not necessarily be the case that increases in interdependence will lead to increases in the number, extensiveness, and strength of international regimes.

terms of rights and obligations") as well as rules and decision-making procedures.[37] Otherwise, international regimes would be difficult to distinguish from any regular patterns of action in world politics that create common expectations about behavior: even hostile patterns of interactions could be seen as embodying regimes if the observer could infer implied rules and decision-making procedures from behavior.

Arguments about definitions are often tedious. What is important is not whether this definition is "correct," but that principles and norms are integral parts of many, if not all, of the arrangements that we regard as international regimes. This raises the question of why, in interactions (such as those of world politics) characterized by conflict arising from self-interest, norms and principles should play any role at all.

The constraint-choice framework used in this article is not the best approach for describing how principles and norms of state behavior evolve over time. The legal and sociological approaches discussed in this volume by Young are better adapted to the task of historical interpretation of norm-development. Nevertheless, a brief analysis of the function of principles and norms in an uncertain environment will suggest why they are important for fulfilling the overall function of international regimes: to facilitate mutually advantageous international agreements.

An important principle that is shared by most, if not all, international regimes is what Jervis calls "reciprocation": the belief that if one helps others or fails to hurt them, even at some opportunity cost to oneself, they will reciprocate when the tables are turned. In the Concert of Europe, this became a norm specific to the regime, a standard of behavior providing that statesmen should avoid maximizing their interests in the short term for the sake of expected long-run gains.[38]

This norm requires action that does not reflect specific calculations of self-interest: the actor making a short-run sacrifice does not know that future benefits will flow from comparable restraint by others, and can hardly be regarded as making precise calculations of expected utility. What Jervis calls the norm of reciprocation—or (to avoid confusion with the concept of reciprocity in international law) what I shall call a norm of generalized commitment—precisely forbids specific interest calculations. It rests on the premise that a veil of ignorance stands between us and the future, but that we should nevertheless assume that regime-supporting behavior will be beneficial to us even though we have no convincing evidence to that effect.

At first glance, it may seem puzzling that governments ever subscribe either to the principle of generalized commitment (that regime-supporting behavior will yield better results than self-help in the long run) or to the corresponding norm in a given regime (that they should act in a regime-supporting fashion). But if we think about international regimes as devices to

[37] Stephen D. Krasner, article in this volume, p. 186.
[38] Robert Jervis, article in this volume, p. 364.

facilitate mutually beneficial agreements the puzzle can be readily resolved. Without such a norm, each agreement would have to provide net gains for every essential actor, or side-payments would have to be arranged so that the net gains of the package were positive for all. Yet as we have seen, side-payments are difficult to organize. Thus, packages of agreements will usually be difficult if not impossible to construct, particularly when time is short, as in a balance of payments crisis or a sudden military threat. The principle of generalized commitment, however, removes the necessity for specific clusters of agreements, each of which is mutually beneficial. Within the context of a regime, help can be extended by those in a position to do so, on the assumption that such regime-supporting behavior will be reciprocated in the future. States may demand that others follow the norm of generalized commitment even if they are thereby required to supply it themselves, because the result will facilitate agreements that in the long run can be expected to be beneficial for all concerned.

The demand for specific information

The problems of organization costs discussed earlier arise even in situations where actors have entirely consistent interests (pure coordination games with stable equilibria). In such situations, however, severe information problems are not embedded in the structure of relationships, since actors have incentives to reveal information and their own preferences fully to one another. In these games the problem is to reach some agreement point; but it may not matter much which of several is chosen.[39] Conventions are important and ingenuity may be required, but serious systemic impediments to the acquisition and exchange of information are lacking.[40]

The norm of generalized commitment can be seen as a device for coping with the conflictual implications of uncertainty by imposing favorable assumptions about others' future behavior. The norm of generalized commitment requires that one accept the veil of ignorance but act *as if* one will benefit from others' behavior in the future if one behaves now in a regime-supporting way. Thus it creates a coordination game by ruling out potentially antagonistic calculations.

Yet in many situations in world politics, specific and calculable conflicts of interest exist among the actors. In such situations, they all have an interest in agreement (the situation is not zero-sum), but they prefer different types of agreement or different patterns of behavior (e.g., one may prefer to

[39] The classic discussion is in Thomas C. Schelling, *The Strategy of Conflict* (1960; Cambridge: Harvard University Press, 1980), chap. 4, "Toward a Theory of Interdependent Decision." See also Schelling, *Micromotives and Macrobehavior* (New York: Norton, 1978).

[40] For an interesting discussion of regimes in these terms, see the paper in this volume by Oran R. Young. On conventions, see David K. Lewis, *Convention: A Philosophical Study* (Cambridge: Cambridge University Press, 1969).

cheat without the other being allowed to do so). As Stein points out in this volume, these situations are characterized typically by unstable equilibria. Without enforcement, actors have incentives to deviate from the agreement point:

> [Each] actor requires assurances that the other will also eschew its rational choice [and will not cheat, and] such collaboration requires a degree of formalization. The regime must specify what constitutes cooperation and what constitutes cheating.[41]

In such situations of strategic interaction, as in oligopolistic competition and world politics, systemic constraint-choice theory yields no determinate results or stable equilibria. Indeed, discussions of "blackmailing" or games such as "prisoners' dilemma" indicate that, under certain conditions, sub-optimal equilibria are quite likely to appear. Game theory, as Simon has commented, only illustrates the severity of the problem; it does not solve it.[42]

Under these circumstances, power factors are important. They are particularly relevant to the supply of international regimes: regimes involving enforcement can only be supplied if there is authority backed by coercive resources. As we have seen, regimes themselves do not possess such resources. For the means necessary to uphold sanctions, one has to look to the states belonging to the regime.

Yet even under conditions of strategic interaction and unstable equilibria, regimes may be of value to actors by providing information. Since high-quality information reduces uncertainty, we can expect that there will be a demand for international regimes that provide such information.

Firms that consider relying on the behavior of other firms within a context of strategic interaction—for instance, in oligopolistic competition—face similar information problems. They also do not understand reality fully. Students of market failure have pointed out that risk-averse firms will make fewer and less far-reaching agreements than they would under conditions of perfect information. Indeed, they will eschew agreements that would produce mutual benefits. Three specific problems facing firms in such a context are also serious for governments in world politics and give rise to demands for international regimes to ameliorate them.

(1) Asymmetric information. Some actors may have more information about a situation than others. Expecting that the resulting bargains would be unfair, "outsiders" may therefore be reluctant to make agreements with "insiders."[43] One aspect of this in the microeconomic literature is "quality uncertainty," in which a buyer is uncertain about the real value of goods

[41] Arthur A. Stein, article in this volume, p. 312.

[42] Herbert Simon, "From Substantive to Procedural Rationality," in Latsis, ed., *Method and Appraisal in Economics;* Spiro J. Latsis, "A Research Programme in Economics," in ibid.; and on blackmailing, Oye, "The Domain of Choice."

[43] Oliver E. Williamson, *Markets and Hierarchies: Analysis and Anti-Trust Implications* (New York: Free Press, 1975).

being offered. In such a situation (typified by the market for used cars when sellers are seen as unscrupulous), no exchange may take place despite the fact that with perfect information, there would be extensive trading.[44]

(2) Moral hazard. Agreements may alter incentives in such a way as to encourage less cooperative behavior. Insurance companies face this problem of "moral hazard." Property insurance, for instance, may make people less careful with their property and therefore increase the risk of loss.[45]

(3) Deception and irresponsibility. Some actors may be dishonest, and enter into agreements that they have no intention of fulfilling. Others may be "irresponsible," and make commitments that they are unlikely to be able to carry out. Governments or firms may enter into agreements that they intend to keep, assuming that the environment will continue to be benign; if adversity sets in, they may be unable to keep their commitments. Banks regularly face this problem, leading them to devise standards of "creditworthiness." Large governments trying to gain adherents to international agreements may face similar difficulties: countries that are enthusiastic about cooperation are likely to be those that expect to gain more, proportionately, than they contribute. This is analogous to problems of self-selection in the market-failure literature. For instance, if rates are not properly adjusted, people with high risks of heart attack will seek life insurance more avidly than those with longer life expectancies; people who purchased "lemons" will tend to sell them earlier on the used-car market than people with "creampuffs."[46] In international politics, self-selection means that for certain types of activities—for example, sharing research and development information—weak states (with much to gain but little to give) may have greater incentives to participate than strong ones. But without the strong states, the enterprise as a whole will fail. From the perspective of the outside observer, irresponsibility is an aspect of the problem of public goods and free-riding;[47] but from the standpoint of the actor trying to determine whether to rely on a potentially irresponsible partner, it is a problem of uncertainty and risk. Either way, information costs may prevent mutually beneficial agreement, and the presence of these costs will provide incentives to states to demand international regimes (either new regimes or the maintenance of existing ones) that will ameliorate problems of uncertainty and risk.

4. Information, openness, and communication in international regimes

International regimes, and the institutions and procedures that develop in conjunction with them, perform the function of reducing uncertainty and

[44] George A. Ackerlof, "The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism," *Quarterly Journal of Economics* 84,3 (August 1970).

[45] Arrow, *Essays in the Theory of Risk-Bearing.*

[46] Ackerlof, "The Market for 'Lemons' "; Arrow, *Essays in the Theory of Risk-Bearing.*

[47] For an analysis along these lines, see Davis B. Bobrow and Robert T. Kudrle, "Energy R&D: In Tepid Pursuit of Collective Goods," *International Organization* 33,2 (Spring 1979): 149–76.

risk by linking discrete issues to one another and by improving the quantity and quality of information available to participants. Linking issues is important as a way to deal with potential deception. Deception is less profitable in a continuing "game," involving many issues, in which the cheater's behavior is closely monitored by others and in which those actors retaliate for deception with actions in other areas, than in a "single-shot" game. The larger the number of issues in a regime, or linked to it, and the less important each issue is in proportion to the whole, the less serious is the problem of deception likely to be.

Another means of reducing problems of uncertainty is to increase the quantity and quality of communication, thus alleviating the information problems that create risk and uncertainty in the first place. Williamson argues on the basis of the organization theory literature that communication tends to increase adherence to group goals: "Although the precise statement of the relation varies slightly, the general proposition that intragroup communication promotes shared goals appears to be a well-established empirical finding."[48] Yet not all communication is of equal value: after all, communication may lead to asymmetrical or unfair bargaining outcomes, deception, or agreements entered into irresponsibly. And in world politics, governmental officials and diplomats are carefully trained to communicate precisely what they wish to convey rather than fully to reveal their preferences and evaluations. Effective communication is not measured well by the amount of talking that used-car salespersons do to customers or that governmental officials do to one another in negotiating international regimes. Strange has commented, perhaps with some exaggeration:

> One of the paradoxes of international economic relations in the 1970s has been that the soft words exchanged in trade organizations have coexisted with hard deeds perpetuated by national governments. The reversion to economic nationalism has been accompanied by constant reiterations of continued commitment to international cooperation and consultation. The international bureaucracies of Geneva, New York, Paris and Brussels have been kept busier than ever exchanging papers and proposals and patiently concocting endless draft documents to which, it is hoped, even deeply divided states might subscribe. But the reality has increasingly been one of unilateral action, even where policy is supposedly subject to multilateral agreement.[49]

The information that is required in entering into an international regime is not merely information about other governments' resources and formal negotiating positions, but rather knowledge of their internal evaluations of the situation, their intentions, the intensity of their preferences, and their

[48] Oliver E. Williamson, "A Dynamic Theory of Interfirm Behavior," *Quarterly Journal of Economics* 79 (1965), p. 584.

[49] Susan Strange, "The Management of Surplus Capacity: or How Does Theory Stand Up to Protectionism 1970s Style?", *International Organization* 33,3 (Summer 1979): 303–334.

willingness to adhere to an agreement even in adverse future circumstances. As Hirsch points out with respect to the "Bagehot Problem" in banking, lenders need to know the moral as well as the financial character of borrowers.[50] Likewise, governments contemplating international cooperation need to *know* their partners, not merely know *about* them.

This line of argument suggests that governments that successfully maintain "closure," protecting the autonomy of their decision-making processes from outside penetration, will have more difficulty participating in international regimes than more open, apparently disorganized governments. "Closed" governments will be viewed with more skepticism by potential partners, who will anticipate more serious problems of bounded rationality in relations with these closed governments than toward their more open counterparts. Similarly, among given governments, politicization of issues and increases in the power of political appointees are likely to reduce the quality of information and will therefore tend to reduce cooperation. Thus as an issue gains salience in domestic politics, other governments will begin to anticipate more problems of bounded rationality and will therefore perceive greater risks in cooperation. International cooperation may therefore decline quite apart from the real intentions or objectives of the policy makers involved.

This conclusion is important: international policy coordination and the development of international regimes depend not merely on interests and power, or on the negotiating skills of diplomats, but also on expectations and information, which themselves are in part functions of the political structures of governments and their openness to one another. Intergovernmental relationships that are characterized by ongoing communication among working-level officials, "unauthorized" as well as authorized, are inherently more conducive to information-exchange and agreements than are traditional relationships between internally coherent bureaucracies that effectively control their communications with the external world.[51]

Focusing on information and risk can help us to understand the performance of international regimes over time, and therefore to comprehend better the sources of demands for such regimes. Again, reference to theories of oligopoly, as in Williamson's work, is helpful. Williamson assumes that cooperation—which he refers to as "adherence to group goals"—will be a function both of communication and of the past performance of the oligopoly; reciprocally, communication levels will be a function of cooperation. In addition, performance will be affected by the condition of the environment. Using these assumptions, Williamson derives a model that has two points of equilibrium, one at high levels and one at low levels of cooperation.

[50] Fred Hirsch, "The Bagehot Problem," *The Manchester School* 45,3 (1977): 241–57.

[51] Notice that here, through a functional logic, a systemic analysis has implications for the performance of different governmental structures at the level of the actor. The value of high-quality information in making agreements does not force governments to become more open, but it gives advantages to those that do.

His oligopolies are characterized by substantial inertia. Once a given equilibrium has been reached, substantial environmental changes are necessary to alter it:

> If the system is operating at a low level of adherence and communication (i.e., the competitive solution), a substantial improvement in the environment will be necessary before the system will shift to a high level of adherence and communication. *Indeed, the condition of the environment required to drive the system to the collusive solution is much higher than the level required to maintain it once it has achieved this position. Similarly, a much more unfavorable condition of the environment is required to move the system from a high to a low level equilibrium than is required to maintain it there.*[52]

It seems reasonable to suppose that Williamson's assumptions about relationships among communication, cooperation or adherence, and performance have considerable validity for international regimes as well as for cartels. If so, his emphasis on the role of information, for explaining persistent behavior (competitive or oligopolistic) by groups of firms, helps us to understand the lags between structural change and regime change that are so puzzling to students of international regimes. In our earlier work, Nye and I observed discrepancies between the predictions of structural models (such as what I later called the "theory of hegemonic stability") and actual patterns of change; in particular, changes in international regimes tend to lag behind changes in structure.[53] But our explanation for this phenomenon was essentially *ad hoc:* we simply posited the existence of inertia, assuming that "a set of networks, norms, and institutions, once established, will be difficult either to eradicate or drastically to rearrange."[54] Understanding the role of communication and information in the formation and maintenance of international regimes helps locate this observation in a theoretical context. The institutions and procedures that develop around international regimes acquire value as arrangements permitting communication, and therefore facilitating the exchange of information. As they prove themselves in this way, demand for them increases. Thus, even if the structure of a system becomes more fragmented—presumably increasing the costs of providing regime-related collective goods (as suggested by public goods theory)—increased demand for a particular, well-established, information-providing international regime may, at least for a time, outweigh the effects of increasing costs on supply.

These arguments about information suggest two novel interpretations of puzzling contemporary phenomena in world politics, as well as providing the

[52] Williamson, "A Dynamic Theory of Interfirm Behavior," p. 592, original italics.

[53] *Power and Interdependence*, especially pp. 54–58 and 146–53. Linda Cahn also found lags, particularly in the wheat regime; see "National Power and International Regimes."

[54] *Power and Interdependence*, p. 55.

basis for hypotheses that could guide research on fluctuations in the strength and extent of international regimes.

Understanding the value of governmental openness for making mutually beneficial agreements helps to account for the often-observed fact that effective international regimes—such as the GATT in its heyday, or the Bretton Woods international monetary regime[55]—are often associated with a great deal of informal contact and communication among officials. Governments no longer act within such regimes as unitary, self-contained actors. "Transgovernmental" networks of acquaintance and friendship develop, with the consequences that supposedly confidential internal documents of one government may be seen by officials of another; informal coalitions of like-minded officials develop to achieve common purposes; and critical discussions by professionals probe the assumptions and assertions of state policies.[56] These transgovernmental relationships increase opportunities for cooperation in world politics by providing policy makers with high-quality information about what their counterparts are likely to do. Insofar as they are valued by policy makers, they help to generate demand for international regimes.

The information-producing "technology" that becomes embedded in a particular international regime also helps us to understand why the erosion of American hegemony during the 1970s has not been accompanied by an immediate collapse of international regimes, as a theory based entirely on supply-side public goods analysis would have predicted. Since the level of institutionalization of postwar regimes was exceptionally high, with intricate and extensive networks of communication among working-level officials, we should expect the lag between the decline of American hegemony and the disruption of international regimes to be quite long and the "inertia" of the existing regimes relatively great.

The major hypothesis to be derived from this discussion of information is that demand for international regimes should be in part a function of the effectiveness of the regimes themselves in providing high-quality information to policy makers. The success of the institutions associated with a regime in providing such information will itself be a source of regime persistence.

Three inferences can be made from this hypothesis. First, regimes accompanied by highly regularized procedures and rules will provide more information to participants than less regularized regimes and will therefore, on

[55] On the GATT, see Gardner Patterson, *Discrimination in International Trade: The Policy Issues* (Princeton: Princeton University Press, 1966); on the international monetary regime, see Robert W. Russell, "Transgovernmental Interaction in the International Monetary System, 1960–1972," *International Organization* 27,4 (Autumn 1973) and Fred Hirsch, *Money International*, rev. ed. (Harmondsworth, England: Pelican Books, 1969), especially chap. 11, "Central Bankers International."

[56] Robert O. Keohane and Joseph S. Nye, "Transgovernmental Relations and International Organizations," *World Politics* 27,1 (October 1974): 39–62.

information grounds, be in greater demand. Thus, considerations of high-quality information will help to counteract the normal tendencies of states to create vague rules and poorly specified procedures as a way of preventing conflict or maintaining freedom of action where interests differ.

Second, regimes that develop norms internalized by participants—in particular, norms of honesty and straightforwardness—will be in greater demand and will be valued more than regimes that fail to develop such norms.

Third, regimes that are accompanied by open governmental arrangements and are characterized by extensive transgovernmental relations will be in greater demand and will be valued more than regimes whose relationships are limited to traditional state-to-state ties.[57]

Perhaps other nontrivial inferences can also be drawn from the basic hypothesis linking a regime's information-provision with actors' demands for it. In any event, this emphasis on information turns our attention back toward the regime, and the process of institutionalization that accompanies regime formation, and away from an exclusive concern with the power structure of world politics. The extent to which institutionalized cooperation has been developed will be an important determinant, along with power-structural conditions and issue density, of the extent and strength of international regimes.

From a future-oriented or policy perspective, this argument introduces the question of whether governments (particularly those of the advanced industrial countries) could compensate for the increasing fragmentation of power among them by building communication-facilitating institutions that are rich in information. The answer depends in part on whether hegemony is really a necessary condition for effective international cooperation or only a facilitative one. Kindleberger claims the former, but the evidence is inconclusive.[58] Analysis of the demand for international regimes, focusing on questions of information and transactions costs, suggests the possibility that international institutions could help to compensate for eroding hegemony. International regimes could not only reduce the organization costs and other transactions costs associated with international negotiations; they could also provide information that would make bargains easier to strike.

How effectively international regimes could compensate for the erosion of hegemony is unknown. Neither the development of a theory of international regimes nor the testing of hypotheses derived from such a theory is likely to resolve the question in definitive terms. But from a contemporary policy standpoint, both theory development and theory testing would at least

[57] These first three inferences focus only on the *demand* side. To understand the degree to which norms, for example, will develop, one needs also to look at supply considerations. Problems of organization, such as those discussed in the public goods literature and the theory of hegemonic stability, may prevent even strongly desired regimes from materializing.

[58] Kindleberger has asserted that "for the world economy to be stabilized, there has to be a stabilizer, one stabilizer." *The World in Depression*, p. 305.

help to define the dimensions of the problem and provide some guidance for thinking about the future consequences of present actions.

5. Coping with uncertainties: insurance regimes

Creating international regimes hardly disposes of risks or uncertainty. Indeed, participating in schemes for international cooperation entails risk for the cooperating state. If others fail to carry out their commitments, it may suffer. If (as part of an international growth scheme) it reflates its economy and others do not, it may run a larger-than-desired current-account deficit; if it liberalizes trade in particular sectors and its partners fail to reciprocate, import-competing industries may become less competitive without compensation being received elsewhere; if it curbs bribery by its multinational corporations without comparable action by others, its firms may lose markets abroad. In world politics, therefore, governments frequently find themselves comparing the risks they would run from lack of regulation of particular issue-areas (i.e., the absence of international regimes) with the risks of entering into such regimes. International regimes are designed to mitigate the effects on individual states of uncertainty deriving from rapid and often unpredictable changes in world politics. Yet they create another kind of uncertainty, uncertainty about whether other governments will keep their commitments.

In one sense, this is simply the old question of dependence: dependence on an international regime may expose one to risks, just as dependence on any given state may. Governments always need to compare the risks they run by being outside a regime with the risks they run by being within one. If the price of achieving short-term stability by constructing a regime is increasing one's dependence on the future decisions of others, that price may be too high.

Yet the question of coping with risk also suggests the possibility of different types of international regimes. Most international regimes are *control-oriented.* Through a set of more or less institutionalized arrangements, members maintain some degree of control over each other's behavior, thus decreasing harmful externalities arising from independent action as well as reducing uncertainty stemming from uncoordinated activity. A necessary condition for this type of regime is that the benefits of the regularity achieved thereby must exceed the organizational and autonomy costs of submitting to the rules, both for the membership as a whole and for each necessary member.

Control-oriented regimes typically seek to ensure two kinds of regularity, internal and environmental. Internal regularity refers to orderly patterns of behavior among members of the regime. The Bretton Woods international monetary regime and the GATT trade regime have focused, first of all, on members' obligations, assuming that, if members behaved according to the rules, the international monetary and trade systems would be orderly. Where all significant actors within an issue-area are members of the regime, this assumption is warranted and mutual-control regimes tend to be effective.

Yet there are probably few, if any, pure cases of mutual-control regimes. Typically, an international regime is established to regularize behavior not only among the members but also between them and outsiders. This is a side-benefit of stable international monetary regimes involving convertible currencies.[59] It was an explicit purpose of the nonproliferation regime of the 1970s, in particular the "suppliers' club," designed to keep nuclear material and knowledge from diffusing rapidly to potential nuclear powers. Military alliances can be viewed as an extreme case of attempts at environmental control, in which the crucial benefits of collaboration stem not from the direct results of cooperation but from their effects on the behavior of outsiders. Alliances seek to induce particular states of minds in nonmembers, to deter or to intimidate.

Observers of world politics have often assumed implicitly that all significant international regimes are control-oriented. The economic literature, however, suggests another approach to the problem of risk. Instead of expanding to control the market, firms or individuals may diversify to reduce risk or may attempt to purchase insurance against unlikely but costly contingencies. Portfolio diversification and insurance thus compensate for deficiencies in markets that lack these institutions. Insurance and diversification are appropriate strategies where actors cannot exercise control over their environment at reasonable cost, but where, in the absence of such strategies, economic activity would be suboptimal.[60]

In world politics, such strategies are appropriate under similar conditions. The group of states forming the insurance or diversification "pool" is only likely to resort to this course of action if it cannot control its environment effectively. Second, for insurance regimes to make sense, the risks insured against must be specific to individual members of the group. If the catastrophic events against which one wishes to insure are likely (should they occur at all) to affect all members simultaneously and with equal severity, risk sharing will make little sense.[61]

[59] Charles P. Kindleberger, "Systems of International Economic Organization," in David P. Calleo, ed., *Money and the Coming World Order* (New York: New York University Press for the Lehrman Institute, 1978); Ronald McKinnon, *Money in International Exchange: The Convertible Currency System* (New York: Oxford University Press, 1979).

[60] Arrow, *Essays in the Theory of Risk-Bearing*, pp. 134–43.

[61] In personal correspondence, Robert Jervis has suggested an interesting qualification to this argument. He writes: "If we look at relations that involve at least the potential for high conflict, then schemes that tie the fates of all the actors together may have utility even if the actors are concerned about catastrophic events which will affect them all. They can worry that if some states are not affected, the latter will be much stronger than the ones who have been injured. So it would make sense for them to work out a scheme which would insure that a disaster would not affect their relative positions, even though this would not mean that they would all not be worse off in absolute terms." The point is certainly well taken, although one may wonder whether such an agreement would in fact be implemented by the states that would make large relative gains in the absence of insurance payments.

International regimes designed to share risks are less common than those designed to control events, but three examples from the 1970s can be cited that contain elements of this sort of regime:

(1) The STABEX scheme of the Lomé Convention, concluded between the European Community and forty-six African, Caribbean, and Pacific states in 1975. "Under the STABEX scheme, any of the 46 ACP countries dependent for more than 7.5 percent (2.5 percent for the poorest members of the ACP) of their export earnings on one of a list of commodities, such as tea, cocoa, coffee, bananas, cotton, and iron ore, will be eligible for financial help if these earnings fall below a certain level."[62] STABEX, of course, is not a genuine mutual-insurance regime because the guarantee is made by one set of actors to another set.

(2) The emergency sharing arrangements of the International Energy Agency, which provide for the mandatory sharing of oil supplies in emergencies, under allocation rules devised and administered by the IEA.[63]

(3) The Financial Support Fund of the OECD, agreed on in April 1975 but never put into effect, which would have provided a "lender of last resort" at the international level, so that risks on loans to particular countries in difficulty would have been "shared among all members, in proportion to their quotas and subject to the limits of their quotas, however the loans are financed."[64]

Control-oriented and insurance strategies for coping with risk and uncertainty have different advantages and liabilities. Control-oriented approaches are more ambitious; when effective, they may eliminate adversity rather than simply spread risks around. After all, it is more satisfactory to prevent floods than merely to insure against them; likewise, it would be preferable for consumers to be able to forestall commodity embargoes rather than simply to share their meager supplies fairly if such an embargo should take place.

Yet the conditions for an effective control-oriented regime are more stringent than those for insurance arrangements. An effective control-oriented regime must be supported by a coalition that has effective power in the issue-area being regulated, and whose members have sufficient incentives to exercise such power.[65] Where these conditions are not met, insurance regimes may be "second-best" strategies, but they are better than no strategies at all. Under conditions of eroding hegemony, one can expect the increasing emergence of insurance regimes, in some cases as a result of the

[62] Isebill V. Gruhn, "The Lomé Convention: Inching toward Interdependence," *International Organization* 30,2 (Spring 1976), pp. 255–56.

[63] Robert O. Keohane, "The International Energy Agency: State Influence and Transgovernmental Politics," *International Organization* 32,4 (Autumn 1978): 929–52.

[64] OECD *Observer*, no. 74 (March–April 1975), pp. 9–13.

[65] The optimal condition under which such a coalition may emerge could be called the "paper tiger condition": a potential external threat to the coalition exists but is too weak to frighten or persuade coalition members to defect or to desist from effective action. OPEC has been viewed by western policy makers since 1973 as a real rather than paper tiger, although some observers keep insisting that there is less to the organization than meets the eye.

unwillingness of powerful states to adopt control-oriented strategies (as in the case of STABEX), in other cases as replacements for control-oriented regimes that have collapsed (as in the cases of the IEA emergency sharing arrangements and the OECD Financial Support Fund or "safety net"). Economic theories of risk and uncertainty suggest that as power conditions shift, so will strategies to manage risk, and therefore the nature of international regimes.

6. Conclusions

The argument of this paper can be summarized under six headings. First, international regimes can be interpreted, in part, as devices to facilitate the making of substantive agreements in world politics, particularly among states. Regimes facilitate agreements by providing rules, norms, principles, and procedures that help actors to overcome barriers to agreement identified by economic theories of market failure. That is, regimes make it easier for actors to realize their interests collectively.

Second, public goods problems affect the supply of international regimes, as the "theory of hegemonic stability" suggests. But they also give rise to demand for international regimes, which can ameliorate problems of transactions costs and information imperfections that hinder effective decentralized responses to problems of providing public goods.

Third, two major research hypotheses are suggested by the demand-side analysis of this article.

(a) Increased issue density will lead to increased demand for international regimes.
(b) The demand for international regimes will be in part a function of the effectiveness of the regimes themselves in developing norms of generalized commitment and in providing high-quality information to policymakers.

Fourth, our analysis helps us to interpret certain otherwise puzzling phenomena, since our constraint-choice approach allows us to see how demands for such behavior would be generated. We can better understand transgovernmental relations, as well as the lags observed between structural change and regime change in general, and between the decline of the United States' hegemony and regime disruption in particular.

Fifth, in the light of our analysis, several assertions of structural theories appear problematic. In particular, it is less clear that hegemony is a necessary condition for stable international regimes under all circumstances. Past patterns of institutionalized cooperation may be able to compensate, to some extent, for increasing fragmentation of power.

Sixth, distinguishing between conventional control-oriented international regimes, on the one hand, and insurance regimes, on the other, may help us to understand emerging adaptations of advanced industrialized countries to a global situation in which their capacity for control over events is much less than it was during the postwar quarter-century.

None of these observations implies an underlying harmony of interests in world politics. Regimes can be used to pursue particularistic and parochial interests, as well as more widely shared objectives. They do not necessarily increase overall levels of welfare. Even when they do, conflicts among units will continue. States will attempt to force the burdens of adapting to change onto one another. Nevertheless, as long as the situations involved are not constant-sum, actors will have incentives to coordinate their behavior, implicitly or explicitly, in order to achieve greater collective benefits without reducing the utility of any unit. When such incentives exist, and when sufficient interdependence exists that *ad hoc* agreements are insufficient, opportunities will arise for the development of international regimes. If international regimes did not exist, they would surely have to be invented.