

Alternative Theoretical Perspectives on the Political Economy of International Environmental Policy

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In seeking to explain international behavior with regards to forging international environmental agreements, it is common to assume that countries act like unitary actors. While assuming that states act much like unitary actors certainly facilitates theoretical tractability, it involves forsaking analysis of the domestic determinants of international behavior. Clearly, the international political economy of international environmental agreements has its roots in the very real, and quite often pivotal, domestic political forces behind countries' international negotiating positions. In this paper, we canvass the alternative theoretical perspectives within the political science and economics literatures that may enable us to more clearly connect (and thus explain) the domestic determinants of international behavior. We compare and contrast various perspectives for understanding the political economy of international public good provision involving the protection of the environment, illustrating various points through reference to the Montreal Protocol to preserve the ozone layer. The paper charts recent theoretical developments in the literature as well as directions for future research.

Keywords: *International Public Goods, International Environmental Policy, Domestic-International Linkage, Unitary Actor, Methodological Individualism*

1. INTRODUCTION

In trying to explain international behavior with regards to creating international environmental agreements it is common to assume that countries act like unitary actors. This is the case with most theoretical perspectives in the political science (more specifically, international relations) literature. This is also typically the case with those seeking to model country behavior with an economics framework. While assuming that states act much like unitary actors certainly facilitates theoretical tractability, it involves forsaking analysis of the domestic determinants of international behavior.

Clearly, the international political economy of international environmental agreements has its roots in the very real, and quite often pivotal, domestic political forces behind countries' international negotiating positions. These political forces, in turn, often reflect the underlying economic interests of the various parties directly or indirectly involved.

Are there theoretical frameworks capable of explaining how domestic political preferences, driven by economic interests, determine outcomes in international public good provision generally, and/or international environmental protection efforts specifically? This is the question that this paper seeks to answer. Toward that end, in the following section, we canvass the alternative theoretical perspectives within the political science and economics literatures that may enable us to more clearly connect (and thus explain) the domestic determinants of international behavior. In discussing the applicability of these perspectives, occasional reference will be made to international environmental agreements such as the Montreal Protocol on Substances that Deplete the Ozone Layer. This agreement, originally signed in September 1987 and entering into force in January 1989, has been modified several times in subsequent protocols. It is widely heralded as a successful example of the

international environmental cooperation; indeed, its framework-protocol precedent served as a model for the UN Framework Convention and Kyoto Protocol agreements on climate change.¹

In the third section, we focus especially on the growing literature concerning the political economy of international agreements. The literature is rather diverse, with works in international relations (IR) and economics occasionally finding common ground in their use of game theory. From the IR side are works somewhat in the same vein as Putnam's (1988) seminal work on two-level games. From the economics side there are increasingly sophisticated works that build on the models originally developed by Grossman and Helpman (1994) and others to explain the political economy of international trade agreements. In the fourth and final section, we provide concluding comments as well as discussion on directions for future research.

2. ALTERNATIVE THEORETICAL PERSPECTIVES ON INTERNATIONAL PUBLIC GOOD PROVISION

Over the last quarter century, there has been a marked increase in international cooperation on environmental issues and other issues involving the provision of public goods. In attempting to explain the underlying behavior which characterizes this cooperation, international relations scholars as well as economists have turned to the available theoretical frameworks in their fields. Much of the research, especially in the field of public economics, is premised on the notion that international environmental cooperation, as with environmental cooperation generally, is essentially a collective action problem involving the provision of a public good.² However, the fact that it is a problem of *international* public good provision suggests that we apply public goods theory in a way which accounts for the defining characteristics of international behavior.

Thus far, the research has primarily focused on the behavior of institutions and social aggregates, especially the principal unit of analysis in matters of international policy, the nation-state. However, there has been continuing concern regarding how we might try to open up the black box of the nation-state and examine the behavioral processes that occur within that institutional aggregate and which ultimately explain the preferences and decision-making of the nation-state. As we will discuss below, especially within the public economics literatures, nation-states are typically treated as rational, unitary actors. However, there is a growing literature within another subfield of economics that seeks to examine the intra-

¹ This paper does not implicitly assume that the Montreal Protocol is necessarily representative of most instances of international environmental cooperation. Rather, it merely posits that some of the factors that affected the Montreal Protocol's development, such as the existence of domestic political forces that shaped individual country positions as well as international policy outcomes, can be found in most cases of international environmental policymaking.

² With international environmental problems, when one country reduces its damage to a shared environmental resource, not just that country but all countries sharing the environmental resource stand to benefit. In that sense, the country in question is contributing to the international public good of environmental protection. For example, when one country limits its emissions of ozone depleting substances, it is contributing to the public good of ozone layer preservation, thus benefiting all countries.

country decision-making processes which ultimately form, and seek to rationally advance, the objectives of a given country given the constraints of the policy problem and international policy-making arena. Moreover, just how a country — or alternatively, the “State” representing a country — behaves can be affected by both domestic and international characteristics and constraints. Domestically, the levels of political and economic development are characteristics which may prove decisive in shaping just how a country's interests are domestically defined and internationally projected. In other words, the attributes of the actor — here conceived of as the nation-state — help determine the goals it seeks to advance and the constraints it faces in attempting to do so. Also important are the international characteristics of the policy problem and policy process themselves, as well as the characteristics of the broader international structure of politico-economic relations. These relations serve to both shape a country's conception of its self-interest and determine the extent to which it can successfully act upon and realize this self-interest.

How sovereign, autonomous nations approach the choice of whether to enter into agreement with other nations in the face of environmental interdependence is a matter which stands at the intersection of various bodies of theory arising from several disciplines. Research in this area comes largely from the expected fields, including economics, game theory, and international relations. The research, like the subject under study, is of fairly recent origin. Thus, not surprisingly, the research has tended to make use of theories originally developed for somewhat different purposes. In the case of international relations, a field historically dominated by security concerns, theories originally devised to explain international behavior with respect to security concerns are now being applied to environmental matters. In the case of economics, theories designed to explain the behavior of individuals when faced with the challenge of public good provision are being applied in an effort to explain international behavior in the face of environmental interdependence.

Clearly, theorizing about nation-states is made tractable by the assumption that they can be treated as unitary actors. This permits ready application of theory developed with methodological individualism in mind.³ Within the field of international relations this tradition of treating states as unitary actors finds a ready home in the dominant school of thought, Realism, as well as, but to a lesser extent, in the other major school of thought, Liberalism. However, the field of international relations (IR) is rich with many theoretical strands within these schools,⁴ in addition to several major alternative theoretical approaches.

Perhaps the ideal theoretical framework would be firmly rooted in public goods theory, though the way in which it was developed and applied would be informed by the theoretical insights of international relations theory. Moreover, in truth, it is somewhat misleading to suggest that public goods theory and IR theory exist wholly separate or that connections have not been established before. Such connections have been made, most notably in the common ground which both fields have in their respective affinity for, and use of, game theory.⁵ Indeed, several scholars have applied provided insightful use of even elementary game

³ As discussed below, “methodological individualism” is the dominant principle upon which neo-classical economics is based. From the perspective of IR, the counterpart is the notion of “methodological nationalism” (Zurn 2002).

⁴ For example, scholars within the realist school distinguish themselves as neo-realists, structural realists, modified structural realists, and so on. Within liberalism the picture is even more variegated.

⁵ For a discussion of the dominant perspectives in IR and their relationship to basic game theory, see Stein 1990.

theory in discussing the underlying challenges in gaining international cooperation on matters such as climate change and ozone layer depletion (Sandler 1992a; Kelleher 2001).

What follows is a brief description of how nations are typically treated as behavioral units in public goods theory. This will be followed by a review of some of the major theoretical perspectives in international relations theory. In the course of discussing each perspective, we will consider their applicability to, and explanatory power for, international environmental policy. Finally, we will discuss the theoretical tools offered by the so-called "new" political economy. Largely consonant with what is considered to be the field of public choice, this literature has only begun to be applied to international policy issues but already shows considerable promise, especially--as is argued here--in cases like ozone depletion and climate change.

2.1. Unitary Actors, Benevolent Dictators and Median Voters

True to its Benthamite roots, neoclassical economics remains firmly in the tradition of methodological individualism. Quite naturally, the rationalism which can be assumed on the part of individuals is often imputed to organizations, most notably firms. In theorizing about international matters, rationality and unity of purpose is typically assumed of countries. The counterpart of assuming profit maximization by that collectivity called the firm is the assumption of social welfare maximization on the part of that collectivity called the nation-state. Moreover, just as there are economists who point to the necessity of examining firm behavior more closely before uncritically accepting the assumption of profit maximization, there are theorists who are interested in relaxing the simplifying assumption of social welfare maximization when considering international behavior. However, those working with alternative simplifying assumptions regarding country behavior in matters of international public good provision are in largely uncharted territory.

2.1.1. Methodological Individualism and States as Unitary Actors in Public Goods Theory

Obviously, treating states as unitary actors greatly facilitates tractability in modeling. Whether one is modeling the behavior of individuals or firms, the assumption of a unitary, rational actor makes possible modeling otherwise not practicable. Interestingly, on the one hand, in economics there is an insistence on the value, even superiority, of methodological individualism over other social science approaches which assume that groups act as individuals do. Indeed one of the seminal works in public goods theory, Olson's *Logic of Collective Action*, grew out of a realization that "the notion that groups of individuals will act to achieve their common or group interests, far from being a logical implication of the assumption that the individuals in a group will rationally further their individual interests, is in fact inconsistent with that assumption" (Olson 1971 (1965): 2).

On the other hand, in economics it is often assumed that groups act much as individual, rational actors. Indeed the theory of the firm depends critically on this assumption. Of course, the apparent contradiction can easily be explained by contrasting the nature of the groups Olson had in mind, namely voluntary associations providing public goods, with organizations such as firms or governments — both of which depend on some combination of contractual agreement, privately offered benefits, sanction and/or compulsion. Indeed it was the very recognition of the different nature of the relationships which characterize voluntary associations versus the nature of the relationships which characterize these other

institutions which led Olson to develop theory along these lines in the first place.

Nevertheless, there is a certain irony in the fact that while work has continued on the original types of groups he considered — labor unions, pressure groups, and to lesser extent, charities — arguably the largest applied literature has centered on military alliances. Olson himself, along with Richard Zeckhauser, produced this literature's seminal article, "An Economic Theory of Alliances" (1966). The irony rests in the fact that Olson chose to advance this new theoretical framework — a framework devoted precisely to explicating intra-group dynamics — by deliberately ignoring the profound intra-group dynamics that characterize that very large group, the nation-state. To be sure, Olson cannot be accused of hypocrisy or internal inconsistency because, again, states are quite different from voluntary associations providing public goods to their members, thus a theory of the state was well beyond the ken of his theory.

It is interesting to note that, on the one hand, Olson's theory represents a perfect example of the advantages of methodological individualism. Critical examination of the incentives facing individuals, and an insistence that the choices and welfare of individuals are paramount, produced a theory which challenged orthodox approaches that analytically treated groups much as one would treat individuals. And yet, on the other hand, much of the empirical work has focused not on groups of individuals, but rather on groups of groups (national societies). With this point in mind, a return to Olson and Zeckhauser's original article is quite striking. Their thesis was as follows:

In the case of NATO, the proclaimed purpose of the alliance is to protect the member nations from aggression by a common enemy. Deterring aggression against any one of the members is supposed to be in the interest of all. The analogy with a nation-state is obvious. These goods and services, such as defense that the government provides in the common interest of the citizenry, are usually called "public goods." An organization of states allied for defense similarly produces a public good, only in this case the "public" — the members of the organization — are states rather than individuals (Olson and Zeckhauser 1966: 267).

This is where the discussion begins and ends on the question of whether one can reasonably treat nations analytically much as one would treat individuals. It is implicitly assumed that there is an essential similarity between a group of nation-states providing themselves with an international public good and a group of individuals providing themselves an interpersonal public good. Moreover, the similarity is such that no changes need to be made when applying to the former problem, theory developed for the latter problem.

Several points deserve mention. First, while it is "obvious" that defense is a public good regardless of whether it is provided by a single nation to its citizens or whether it is provided by an alliance to its member states, it is far from obvious that the nature of the collective action problem in each case is essentially the same. On closer examination, one can see that in the case of domestic provision of defense, the coercive instrument of government, though presumably democratically controlled, is charged with the task of making the provision. This situation differs fundamentally from voluntary provision among rationally self-interested individuals. Indeed, Olson's theory is predicated precisely on explicating the different behavioral patterns one can expect in these different situations.

A second point — one more of interest in explaining environmental policy — regards the theoretical consistency, realism, and explanatory utility of the assumption that entire nations

can be treated as, indeed behave just as, individual actors (human beings). Conspicuous by its absence is any discussion regarding whether there are important intra-group dynamics at the domestic level which may affect the larger international collective action problem.⁶ Furthermore, one might have expected at least some discussion or defense of the assumption that states, when confronted with international public goods problems, can be expected to act much as individuals. Another obvious complaint goes to the realism of this assumption. However, if one is willing to accept the role of an unapologetic positivist, such concerns over the lack of “realism” of assumptions need not deter us from their use. Rather, again, the more important issues are those regarding theoretical consistency, those issues revolving around insisting on the importance of intra-group dynamics on one level while blithely ignoring them on another.

A final matter regarding the wisdom of the states-as-individuals assumption is the issue of theoretical utility. Certainly, this assumption serves us well in constructing tractable models of international public good provision. In fact, economists are hardly alone in making use of this simplifying assumption. As mentioned earlier and discussed in greater detail below, the dominant theoretical perspectives in international relations also largely rely on some form of this assumption. But before turning to a discussion of these perspectives, it is worthwhile to track briefly the development and refinement of unitary actor models in the public goods literature generally, and in the alliance literature in particular.

2.1.2. Unitary Actors and Institutional Structure

As discussed in a review of the public goods literature by Sandler (1992b, ch. 5), there are two principal means of viewing collectivities such as states. The first is the oligarchy approach, in which a decision maker (sometimes called a benevolent dictator) or group of decision makers (oligarchy) attempts to maximize the welfare of the represented group. As Sandler (1992b: 146) explains:

This approach implicitly identifies the decision maker’s utility or welfare function as reflecting the interests of those whom he or she represents, and is most appropriate for a representative democracy (Pommerehne 1978). When the oligarchy maximizes its utility, the constituency’s utility is also assumed to be maximized. The oligarchy approach is no different in practice from an individual choosing his or her private contribution (subscription) to a pure public good. Both the oligarchy model and the individual subscription model imply the same essential arguments in the demand function.

The other principal means of viewing state behavior involves assuming that the demand for the collective good is that of the median voter. Appropriate to direct democracy, the median voter’s preference also implies social welfare maximization provided fairly

⁶ Interestingly, a literature finally emerged which explores this issue of public good provision by groups of groups vis-à-vis groups of individuals. For example, Torsvik (1994) explores the implications of two different political or institutional frameworks by which a group can decide how it will contribute to a public good being provided by a host of groups: 1) by referendum (members in each group can vote directly over the size of the group contribution); or 2) through representative democracy (members elect a decision maker who subsequently decides the actual contribution). These differences do prove important.

restrictive conditions are met with regards to such things as the voting procedure and dimensionality of the issue (Mueller 1989; Inman 1985). In short, both methods for viewing what Sandler terms “institutional structure” involve an assumption that nations are agents which faithfully transmit a democratically decided, social welfare-maximizing demand for the public good.⁷

Interestingly, work has been done on trying to distinguish which institutional structure applies for various collective action problems. The “as if” proposition that the median voter is decisive has itself been critically examined (Inman 1978). Additionally, work has been done to both develop and apply empirical tests capable of distinguishing which institutional structure would seem to apply in selected public goods problems. An important example of this work is the study of NATO by Murdoch, Sandler, and Hansen (1991) wherein they successfully distinguished empirically whether the median voter or oligarchy model applies for various countries in the alliance.

Overall, foregoing criticisms notwithstanding, the application of public goods theory to international phenomena has profited greatly by these alternative simplifying assumptions regarding the institutional structure, or decision-making behavior, of countries. These theoretical tools, and more generally the assumption that countries can be treated as unitary actors, have permitted important contributions which have enhanced our understanding of international collective action problems, including and especially international environmental problems.

2.2. Realist Theories of State Behavior

The assumption that countries can be viewed as unitary actors is also employed to useful effect in international relations theory. Indeed, both of the major theoretical perspectives in IR, Realism and Liberalism, use some variant of this assumption. Where they differ from public goods theory is, *inter alia*, in their willingness to characterize in non-economic terms what these actors are maximizing and in the importance they place on asymmetries among actors and the international structures they give rise to.

2.2.1. Realism's Core Arguments

Looking first at Realism, we find that this school of thought and its variants remain largely rooted in the three assumptions which define the “hard core” of Classical Realism (Keohane 1993: 191-2). First, there is the state-centric assumption: states are the most important actors in world politics. Second, there is the rationality assumption: world politics can be analyzed as if states were unitary rational actors capable of weighing costs and benefits and maximizing utility, though doing so under conditions of uncertainty and without perfect information. Finally, there is the power assumption: states seek power (defined as both the ability to influence others and the resources that can be used to exercise influence); and they calculate their interests in terms of power, whether as end or as necessary means to a variety of other ends.

These core assumptions are coupled with the dominant metaphor in Realism, anarchy. With sovereignty resting ultimately with nation-states who are not beholden to a supra-national authority, the international realm resembles a state of nature wherein “the strong do

⁷ As the generic term “institutional structure” suggests, these methods can be assumed on the part of any collectivity, not just countries.

what they have the power to do and the weak accept what they have to accept.”⁸ In fact, the self-styled *raison d'être* for IR lies precisely in the very different nature of international politics. Realists, more than others, see international politics as sharply distinct from domestic politics. As Waltz (1979) explains:

National politics is the realm of authority, of administration, and of law. International politics is the realm of power, of struggle, and of accommodation. The national realm is variously described as being hierarchic, vertical, centralized, heterogeneous, directed, and contrived; the international realm, as being anarchic, horizontal, decentralized, homogeneous, undirected, and mutually adaptive.

2.2.2. *Constrained Behavior and the International System*

The importance for Realists of power — an amorphous concept which both includes and transcends pure economic well-being — is most clearly seen in the works which trace outcomes in various international spheres at various points in time to the distribution of power in the international system. A distribution of power which is multipolar will produce different outcomes in areas such as conflict or trade than one which is bipolar or marked by hegemony (Mansfield 1994). Interestingly, some of this literature has been heavily influenced by economics, particularly industrial organization theory. In fact, Waltz (1979: 118) states: “Balance-of-power theory is micro theory precisely in the economist's sense. The system, like a market in economics, is made by the actions and interactions of its units, and the theory is based on assumptions about their behavior.”

2.2.3. *Realism and the Provision of Public Goods*

Realist thought, with its assumptions of a state-centric world of rationally acting nation-states, has been especially receptive to the kinds of modeling efforts often found in public goods theory. With similarities in the assumptions employed, both theoretical perspectives can make ready use of game theory.⁹ Moreover, with respect to the provision of public goods, both theoretical perspectives arrive at similar conclusions regarding the effect of asymmetries on the provision of public goods.

Though theorists continue to develop a more nuanced understanding, Olson's conclusions of thirty years ago regarding the effect of “size” disparities remain largely accepted. Olson (1971 (1965): 29), argued that in public good provision there is a “systemic tendency for ‘exploitation’ of the great by the small.” Moreover, other things being equal, the greater the disparity in size the more likely that one or more members of group will ensure that some level of the public good is provided. Interestingly, though taking a rather different analytical path, several Realist scholars have reached similar conclusions with respect to whether provision of international public goods will take place (Kindleberger 1973, 1986; Krasner 1976). However, some Realists have developed ideas that are rather at odds with Olson's notion that we can expect an “‘exploitation’ of the great by the small.” For example, taking a rather expansive concept of what constitutes a public good, IR studies of the provision of public goods have produced the theory of hegemonic stability, which argues that:

... cooperation in international organizations or regimes is created and maintained by

⁸ The quote is from Thucydides' *History of the Peloponnesian War* (Art and Jervis 1993: 38).

⁹ For a full discussion of the relationship between Realism and game theory, see Jervis 1988.

hegemonic states who create public goods (such as cooperative money and trade regimes) that provide benefits for all. Although the costs of cooperation fall most heavily on the hegemonic state, disproportionate benefits accrue to that state. The theory predicts that economic cooperation will flourish in the presence of a hegemon; protectionism and conflict will increase as hegemony declines (Dillon, Ilgen and Willett 1991: 85).

With respect to environmental issues, several observers have argued that a primary reason for the relative success of ozone protection efforts was the active involvement and encouragement of first, the US, and later, the US along with major EC countries (Benedick 1991; Parson 1993). These dominant powers actively courted — some may say mildly coerced — participation by other countries in the development of the international ozone regime. Without the interest and resources of these powers, it is unlikely the ozone regime would be as far-reaching as it is, if it was created at all.

2.3. Liberalism, Institutionalism and Regimes

Depending on where one chooses to draw the boundaries and the term one feels is most applicable, the other main school of thought in IR is variously called liberalism, institutionalism, or pluralism. Relying on the characterization of this literature provided by Stein (1990), Liberalism, like Realism, presumes self-interested, rational behavior on the part of nation-states, which are again considered the primary units of analysis. However, “in realism, the presumption appears in the formulation that states respond rationally to the challenges posed by the anarchic environment in which they must compete and struggle. In Liberalism, it comes with the view that actors rationally pursue their self-interest” (Stein 1990: 10).

2.3.1. Core Arguments and Alternative Strands

Elaborating on this subtle but important distinction, Stein (1990: 12) explains:

Yet despite their common focus on self-interested states interacting in an anarchic environment, realists and liberals come to different conclusions about the nature of international politics. Realists see a world of conflict...conflict [which is] rooted in the very nature of international politics, in the constant struggle for power and survival that characterizes a world of autonomous independent actors making self-interested choices. Liberals, on the other hand, see autonomous self-interested behavior as consistent with the emergence of order and cooperation. Perceiving a laissez-faire and cooperative world...actors arrive at mutually advantageous arrangements that sometimes involve the development of overarching institutions.

Within the Liberal framework (if it can be described as such), there is a literature which is specifically devoted to understanding these overarching institutions. Indeed, this literature, which develops and applies the concept of “regimes” (Krasner 1983), has been active in describing and explaining international cooperation on international environmental issues (e.g., Young 1989).

2.3.2. Interdependence and Cooperation

Whereas Realists were apt to couple the assumption of states as unitary, rational actors with concerns regarding the balance of power and systemic explanations regarding

constraints on rational, self-help behavior, Liberals, when looking at the environment in which states interact, are more likely to focus on the role of largely exogenous changes in this environment. As Dillon, Ilgen, and Willett (1991: 86) explain:

The international institutions tradition finds the case for cooperation in structures of interdependence that have accompanied the postwar growth of the liberal economy. The internationalization of production, the globalization of capital markets, the rapid diffusion of technology, and the revolution in transportation and communications undermine the autonomy of the state and require cooperative global management to preserve the benefits of the integrated global marketplace.

It is this more pronounced concern with economic relations among countries which accounts for the fact that works in this field often comprise a sub-field called “international political economy.” Moreover, this concern with matters such as trade helps explain why Liberals often see the world as one wherein the emergence of structures occurs naturally as a consequence of the benefits of voluntary cooperation. By contrast, Realists, being more attuned to the zero-sum world of war and security concerns, often see the world in aggressive, state-of-nature terms.

2.3.3. *Liberalism and the Provision of Public Goods*

With respect to the provision of public goods, and in particular, international environmental matters, one could argue that a Liberal conception seems more appropriate. International cooperation to address problems such as ozone depletion can be seen as an attempt by rational, self-interested countries to overcome the collective action problem inherent with voluntary public good provision, a problem reflected in the Prisoner’s Dilemma. Seeing that they face a collective action problem and that an enforceable agreement would produce efficiency-augmenting mutual benefits, these nations have voluntarily and rationally fashioned a cooperative solution. Thus, the Liberal notion of self-interested countries rationally exploiting opportunities for mutually beneficial cooperative arrangements would seem rather apt.

However, as was mentioned earlier, it is not at all clear that international policy to address the ozone problem does in fact represent a successful attempt to overcome the collective action problem connected with voluntary public good provision. Rather, one could argue that countries, although they indeed signed a treaty committing themselves to large reductions in emissions of ozone-depleting substances (ODS), merely agreed to do what they would have done in the absence of a treaty. In other words, the Montreal Protocol merely represents a toothless legitimization of *de facto* behavior. In game-theoretic terms, it can be persuasively argued that country behavior with respect to the terms of the Montreal Protocol remains consistent with Nash behavior (Murdoch and Sandler 1997). Such an outcome would be hardly surprising in the Realist conception, rooted as it is a self-help world ultimately characterized by mutual suspicion.¹⁰

¹⁰ The Realist conception, allied as it is with zero-sum military concerns, may also be more appropriate for viewing two emerging literatures, one which focuses on environmental resources as a source of conflict among nations and the other which focuses on the need to redefine national security to account for environmental concerns (Kakonen 1992; Soroos 1986, 1992; Westing 1986).

3. TOWARDS A POLITICAL ECONOMY MODEL OF INTERNATIONAL BEHAVIOR

3.1. The Domestic-International Linkage and Multi-level Frameworks

For the most part, both the Realist and Liberal conceptions make unapologetic use of the assumption that states are rational, unitary actors. Non-state actors are not viewed as central, nor are the internal dynamics of states. In the dominant approaches, strong separation is maintained between international and national phenomena. While adherents of these approaches freely acknowledge the importance of such things as international institutions themselves, other non-state actors like multinational firms, and domestic political dynamics, they view these as largely peripheral to the activities of states themselves, given their environment. By contrast, several schools of thought have emerged which place strong emphasis on either the role of domestic politics or the activities of transnational actors. Of particular concern for the present purpose are those perspectives which either emphasize the creation of a domestic political equilibrium or emphasize the way in which the domestic and international levels are connected.

3.1.1. Alternative Images and the Micro-Macro Problem

Whether employing Realist, Liberal, or even economics perspectives which make use of the assumption of states-as-actors, there is a natural tendency to reify states and discuss them in the anthropomorphic terms. This gives the appearance to some that the states-as-actor assumption is being treated more as literal description than merely a simplifying assumption. As North (1990: 79) explains:

... states, being part social habit pattern and part conceptual abstraction, cannot think, feel, evaluate, or act in the way that a human does. Yet much of the conventional wisdom and theoretical literature of international politics relies upon a vocabulary that appears to attribute personality, cognitions, affects, and actions to the state. In part, this has been a linguistic convenience because it is difficult to discuss the abstract concept of the state except by reification of its structure and activities. The danger in this convenience is that we may slip into analyzing the state as if it were a living, thinking, deciding and acting organism.

To some extent there may be some truth to the charge that theorists sometimes lapse into failing to recognize that the states-as-actors simplifying assumptions is exactly that — a simplifying assumption and not a description of reality. Perhaps there is less than ever-vigilant cognizance of the fact that the sole value of simplifying assumptions lies in the modeling and theory building they permit. While this charge probably applies more accurately to Realist and Liberal approaches, it would be misleading to suggest that it does not apply to perspectives rooted in economics, despite the fact that such perspectives must themselves be founded on methodological individualism.

Waltz (1959), in attempting to clarify and explain how the various social levels coexist and where theories of international politics lie, developed a conceptual framework consisting of what he termed “images.” The first image consisted of the individual human being; the second image consisted of the individual state, and the third image consisted of the international system. To this framework has been added a fourth image: a global system which both transcends and coexists with the international system. As North (1990: 10)

observes, “This arrangement reminds us that individual human beings are the prime actors on all four image levels as well as in systems on intermediate levels, such as the family and the corporation.”¹¹

If we take seriously the notion that social behavior and welfare are meaningless in a theoretical sense without explicit reference to the behavior and welfare of society’s constituent individuals, then we must confront the often problematic, often ignored challenge of establishing a theoretical framework which explicitly roots social phenomena in individual decision making. As discussed by Caporaso (1989) there are three approaches which take the micro-macro problem seriously and try to explicate the micro-macro connective tissue. In addition to a methodological approach characterized by concern with matters such as the ecological fallacy and a second approach rooted in macro social theory, the third approach is neoclassical economics. As Caporaso (1989: 132) explains, neoclassical economics:

... starts from assumptions about the individual and tries to build upward toward the macro-level. The core idea is that the self-interested individual is central and that, given information about his or her needs or goals, one should be able to derive information about macro characteristics (institutions, social norms, social structure) from the interactions of contracting individuals. (This) approach is individualistic in the sense that the individual is the starting point of analysis as well as the fundamental unit to which all complex social interaction must ultimately refer. Complex social structures, institutions, and norms ultimately represent combinations of actions that can be “factored down” and reexamined as a series of individual-level propositions. The very idea of a “social” or “structural” level, existing as an independent domain of analysis, is held suspect, except as a loose, metaphorical way of expressing aggregates of individual properties.

Despite this assessment, overall, progress has been disappointingly slow on the matter of connecting the micro sources of public good demand to the behavioral outcomes associated with macro entities such as nation-states. Mirroring the lack of interest first displayed in the seminal contribution by Olson and Zeckhauser, questions regarding institutional structure have not garnered a great deal of interest.

In fact, one might go so far as to argue that the concern with institutional structure which eventually followed had less to do initially with explaining behavior than with justifying the use of the assumption that states can be treated as unitary actors. The micro-macro linkage was established and fealty to methodological individualism was maintained by assuming that states were maximizing social welfare, where social welfare was not separate from but indeed was necessarily constituted of individual welfare. Interestingly, the alternative *assumptions* which maintained the micro-macro neoclassical connection, median-voter or oligarchy, later became *hypotheses* which could be empirically tested, as mentioned earlier. In any event, the important point to be gained from this discussion is that there is at least some concern in the international public economics literature with the internal decision-making process whereby preferences are aggregated and social welfare is maximized.

As will be discussed below, interesting research has recently emerged which goes beyond these highly simplified alternative representations of institutional structure and draws instead on the theoretical apparatus of public choice. Potentially, public choice theory, with its

¹¹ Elsewhere, to create an explicit metaphor, these images have been alternatively conceived as Chinese boxes.

explicit accounting of the role of interest groups, voter participation, and the like, may afford us the opportunity to handle tractably the all-important domestic political factors that would appear to account for the positions countries adopted in various environmental negotiations, including those over the Montreal Protocol. Interest groups in particular would seem to have exerted decisive influence on the positions of countries. If, as is discussed below, we can somehow account for this influence theoretically, then progress will have been made.

3.1.2. Bureaucratic Politics, Foreign Policy and Two-Level Games

Before moving on to the public choice-inspired literature, it is worth pausing to consider whether there are theoretical perspectives within International Relations which also afford us the opportunity to explicitly account for the domestic determinants of international behavior. Not surprisingly, within IR and in closely allied fields of political science, there are such perspectives which do not so readily abstract from the actual domestic decision-making which underlies international behavior. The most obvious example of this is the “bureaucratic politics” school of thought within international relations.¹² This perspective opens up the “black box” of intra-nation decision-making and explicitly traces the processes wherein foreign policy positions are reached. As the term suggests, bureaucracies, especially those dealing primarily with foreign affairs, are deemed to be critical in determining which policy strategies are adopted and pursued.

To some extent, the difference between this perspective and the more dominant perspectives of Realism and Liberalism is that the latter implicitly insist that analysis and theoretical progress can be accomplished most readily by abstracting away from the actual domestic decision-making processes. To do otherwise is to find oneself on the slippery slope of reductionism whereby a potentially endless series of causal links are explored, where underlying causes are continually being sought, and where you cease to construct theory but instead describe events in ever greater detail. Moreover, the typical focus on the US, coupled with a tendency to fall into case-study detail, makes general theorizing a difficult enterprise. As Katzenstein (1978: 599) argues:

It is simply not clear to what extent the bureaucratic politics approach universalizes a particular American syndrome (the internal fragmentation of the American state) and how much it particularizes a universal phenomenon (the push and pull which accompany policy making in all advanced industrial states). Models of bureaucratic politics abstract so little from the different strategies of foreign economic policy which need to be explained that they cannot clearly specify either the content of political strategies or the influence of particular intra-bureaucratic factors.

If the bureaucratic politics approach tends to get bogged down in the particulars of domestic decision-making whereas the unitary actor perspectives largely ignore domestic factors altogether, one may ask if there are not theoretical perspectives which fruitfully steer a middle course. Not surprisingly, several attempts have been made along these lines. One such attempt is Putnam’s (1988) concept of “two-level games.” Using elementary concepts from game theory (e.g. the Shapley value) Putnam attempted to explicitly link the domestic and international levels of political decision-making. In an intuitively attractive fashion, he

¹² Standard citations in this literature include Allison (1971) and Halperin et al. (1974).

attempted to construct a general framework wherein one can connect the domestic political equilibrium, foreign policy strategy, and resulting international political outcome. Crucial to this framework is the idea that bargaining is taking place at both the domestic and international levels and hence a country's representatives at the international negotiating table must be cognizant of the often evolving domestic political equilibrium they represent. This idea is well reflected in Benedick's observation that, with respect to negotiations over the ozone agreement, "In addition to foreign policy, State [Department] and EPA had to pay attention to domestic constituencies. They had to maintain two-way information and pay attention to their positions as observers and negotiators."¹³

3.2. The Political Economy of State Behavior

In this, the last section in our discussion of theories of international behavior, we turn our attention more squarely towards the evaluation and development of theory regarding the political economy of international ozone policy. As mentioned above at various points, it would seem that the optimal theory for explaining international behavior with regards to the development of the environmental policy would be one which parsimoniously models the behavior of nation-states, perhaps treating them as unitary actors. In addition, this theory would not only capture and reflect the ultimately paramount intra-country behavioral factors, but it would tie these to the eventual, internationally-mediated policy outcome.

The challenge of tying domestic factors to international behavior and outcomes is not unlike the problem of providing the micro-macro connective tissue. While not explicitly reducible to individual behavior, Putnam's notion of two-level games at least grapples with the problem of tying intra-country bargaining and the resulting domestic political equilibrium to the bargaining and eventual outcome among countries. Putnam's analysis throws interesting light on how domestic support, which is ultimately critical for support (and most likely ultimate ratification) of internationally negotiated positions, is reciprocally related to a country's negotiating position. For example, he demonstrates how a preemptive international agreement struck without sufficient domestic support may in turn alter the balance of that support by promising gains for certain domestic constituencies, while weakening and isolating opposing groups. Alternatively, as highlighted by Paarlberg (1996), in the case of the 1987 Montreal Protocol to protect the ozone layer, unilateral policies taken by a country can generate momentum towards a wider international agreement. For example, the US first began regulating CFCs in 1977 under the auspices of the Clean Air Act. This, along with other measures, ultimately led the Reagan administration, with strong support from chemical manufacturers such as Dupont, to seek a wider international agreement to regulate ozone depleting substances in 1986.

Though working within a different theoretical framework, economists analyzing international environmental issues have also begun to examine the role of domestic political forces in shaping international outcomes. To some extent this literature does not diverge sharply from the more long-standing assumptions regarding institutional structure. States are treated as unitary actors and there is the assumption that a single decision-maker is responsible for determining a state's strategy and policy posture. However, rather than

¹³ Benedick 1991, 53. Also worth mentioning is Benedick's remark about their role as information provider. This comment underscores the fact that they are agents of the President and thus there is scope, given asymmetric information, for classic agency problems such as moral hazard.

assume that this decision-maker is a benevolent dictator or ruling oligarchy who is maximizing some mythical social welfare function, there is a trend toward specifying the arguments of the objective function with a view towards their political viability and impact. In other words, there seems to be discernible movement towards the development of political economy models of international environmental policy-making as opposed to remaining reliant on simple economic models which assume that political entities are behaviorally no different than individuals.

3.2.1. National Interest and the State

One way to differentiate what we will term here political economy models from more straightforward models of economic behavior is again, to focus on the objectives of the state and how these objectives come to be defined. With regards to public good provision, when we model the behavior of individuals we assume that these individuals are maximizing utility. When we are instead speaking of states it is not altogether obvious whose interests are being served and what those interests are. For example, in the case of the Montreal Protocol, Great Britain was strongly opposed to significant controls of ODS throughout much of the 1980s. The reason often cited for this was the fact that there was little public support for such controls while there was significant opposition by British industry, especially the giant chemical producer, ICI. Thus, when we say that “Great Britain was strongly opposed to significant controls” perhaps what we mean is that the British representatives at the international bargaining table were transmitting a British political equilibrium which was dominated by industry concerns. This much seems obvious. Moreover, as discussed by Jachtenfuchs (1990) and Benedick (1991), this transmission of domestic political equilibria would seem to explain the behavior of many countries. Less obvious is just how we can specify a behavioral function which captures this fact.

This matter of correctly specifying a state’s behavioral function is really just a narrower, more technical way of framing an age-old issue regarding international relations: If states are assumed to maximize their “national interest,” then just what is this national interest? In other words, how to specify correctly the behavioral function is actually a narrower framing of the issue of how one defines the “national interest.” To some extent, we are asking the question of whether the “national interest” is necessary synonymous with social welfare maximization. Is it possible that the British negotiating position, while seemingly tied directly to industry concerns, might nevertheless be consistent with social welfare maximization? Or is there any necessary connection between this political equilibrium and social welfare?

Several factors would seem to be important in explaining the policy positions, preferences, and strategies of country behavior. These factors, such as the relative strength of industry vis-à-vis environmental interest groups, the stage of economic development, and the type of government (democratic vs. authoritarian), are particular attributes of the countries themselves. Overall, it would seem that country attributes and internal decision-making processes, coupled with constraints and opportunities posed by the international distribution of power and the particular features of the public good problem, are paramount in explaining international behavior.

Democratic countries such as the US can find themselves particularly hamstrung in international environmental negotiations precisely because elected legislatures, which not infrequently enjoy a measure of independence from the executive branch, typically must ratify any agreement signed by the government. In the case of the US, the Senate must ratify

an international environmental agreement with a two-thirds majority. As Paarlberg (1996) observes, "Congress, not the president, wields the power to tax, spend, and regulate and hence has the dominant say about US environmental policy, both abroad and at home. ... Congressional foot dragging poses a greater challenge than differences among nations to US international environmental policy leadership." For example, President Clinton signed the Convention on Biological Diversity in June 1993, yet despite having a Senate that was controlled by his Democratic Party, despite having the Senate Foreign Relations Committee support ratification, and even despite support from both industries and NGOs, the Senate failed to ratify the Convention in the face of a determined minority of Republican senators.

The three International Relations perspectives discussed, Realism, Liberalism and Bureaucratic Politics, concentrate on three facets of the policy problem that would seem to be important in explaining international outcomes. Bureaucratic Politics gives us some indication of the intra-state decision-making which actuates foreign policy decisions and behavior. This perspective offers explanations as to how domestic political forces interact to forge the domestic political equilibrium. This captures the important features such as the relative autonomy of the foreign ministry and its ideological orientation, the importance and power of interest groups, the involvement and concern of the voting public, the power of the legislative and executive branches, as well as the relationships within the executive branch between the leadership and bureaucracy. In short, we are concerned here with the domestic institutional structure, hence the term sometimes given to the bureaucratic politics and like perspectives, domestic structuralism.

Liberalism, as mentioned earlier, would seem to offer the most complete answer regarding the essential reasons why countries would want to enter into an agreement to correct the problems associated with the collective action problem. This perspective, in accordance with economic theory, suggests the image of independent actors engaging in mutually beneficial cooperative arrangements that will augment welfare. However, this perspective also recognizes the obstacles posed in attempting to forge an enforceable agreement among parties.

Worthy of mention in this context is the literature on "regimes" which has attracted the attention of a number of scholars interested in explaining international cooperation on environmental issues. There are differences of opinion as to whether this literature constitutes an outgrowth of, or an alternative to, the liberalist tradition, but it clearly has exerted a strong influence in the literature on international environmental cooperation (cf. Young and Osherenko 1993). This literature comprises studies that view regimes as informal networks of individuals and organizations centered on specific policy problems (Haas 1992a, 1992b), where competing perspectives are shaped and modulated (Litfin 1994). The literature, to some extent, also includes those studies that focus on the role and effectiveness of formal organizations in promulgating cooperative environmental policies (Paarlberg 1993; Haas et al. 1993).

Finally, Realism would seem to provide us with a well-articulated reminder that countries are equal in international legal status alone, that considerable asymmetries give rise to an international system which strongly constrains and influences the actual choices of countries. However, the Realist perspective may be more relevant when we are discussing security concerns, where there is more scope for the importance of survival and neo-realist concerns with relative gain. Its applicability to international public good problems is less obvious. In this case, power may indeed be important, but not in the anarchic, survivalist sense that Realists often implicitly or explicitly employ. Rather, power may be tied to influence and the

ability to confer and withhold benefits, where these benefits do not necessarily exist in a beggar-thy-neighbor, zero-sum world. Moreover, the principle upon which realism is based, unfettered sovereignty, may itself be coming under pressure in the light of the inability of states to withstand the “greening of sovereignty” (Litfin 1998).

3.2.2. *Emerging Frameworks in New Political Economy*¹⁴

Of course, the ability of any framework to incorporate the myriad factors — both at the domestic and international level — which ultimately determine environmental policy outcomes is constrained by the extent that one wishes to provide a behavioral model that can be generalized across diverse issues (some of which conform to public good provision problems and some of which involve other collective action problems). This ability is also constrained by the extent one wishes to simply describe important factors, or whether one attempts to develop a formal mathematical model. Developing a formal model that yields reasonably testable hypotheses presents an even greater challenge, not to mention problems involved in obtaining pertinent data and overcoming the often not inconsiderable challenges of correctly specifying an empirical model. Given all these challenges, it is hardly surprising that no one has developed anything remotely resembling a general model of public good provision that incorporates the many factors at the international and domestic levels that IR scholars have identified as potentially important.

Nevertheless, recent advances in modeling have taken place across a range of fronts that appear to be moving us towards more models that are capable of incorporating some of the important elements of the domestic-international interface. An exhaustive survey of this literature is beyond the scope of this paper, but several seminal contributions deserve mention. Of particular interest is a stream of the literature that grows out of efforts to model the political economy of trade policy-making. Initially, that literature involved two approaches (surveyed by Hillman 1989), one of which stressed political competition among candidates that were committed to implementing announced trade policies if elected. Organized lobby groups then weigh the probability that each candidate will be elected in determining which candidate to support and how much of campaign funding to donate. Another approach focused on political support, where politicians endogenously determined trade policy in order to maximize political support (though that support did not explicitly involve campaign funding, nor were elections explicitly featured).

A seminal work was added to the literature in the form of Grossman and Helpman’s (1994) common agency model, which modeled incumbent politicians who make policy choices on trade while being aware that their decisions may affect their chances for re-election. These politicians’ objective function is shaped by both campaign contributions and voter well-being. The idea that politicians were not simply faithfully maximizing social welfare, nor were they simply ignoring it by maximizing pure self-interest, but rather that they were engaging in both — naturally, many found this modeling effort intuitively attractive.

In subsequent years, others, recognizing that setting tariff levels in an international trade setting and setting pollution taxes in an international setting share similarities, extended the

¹⁴ The term “new political economy” came into use primarily in the 1980s to distinguish this approach, which uses the tools of economics, especially public choice theory, in analyzing political decision-making; thus contrasting this approach with older, more classical political economy perspectives.

Grossman and Helpman framework to the political economy of environmental policymaking (Fredriksson 1997; Aidt 1998). Until that time, researchers in the positive political economy tradition were abstracting away from political preference formation at the sub-international level, and were concentrating on such things as identifying the conditions under which environmental agreements negotiated in an anarchic world would be stable or self-enforcing (Carraro and Siniscalco 1993; Barrett 1994).¹⁵ While there is still a great deal to be learned within this unitary actor framework, greater attention to the domestic-international linkage, while it complicates modeling efforts, offers considerable promise in enhancing our understanding of real-world policymaking (cf. Zurn 1998, 2002). Similarly, also stimulating is the small but growing literature on how the type of government (e.g. the extent to which it is democratic or autocratic) can impinge on environmental policymaking at the international level (Congleton 1994; Fredriksson 2005). Naturally, the more that these modeling efforts can incorporate the insights found in the long-standing traditions of IR theory, perhaps the more robust they will become.

4. CONCLUSION

As international environmental issues have grown in prominence in the last few decades, so too has interest among social scientists in trying to explain how countries shape policies to deal with these issues. International relations scholars have adapted theoretical frameworks originally developed for somewhat different issue areas, particularly international security and economic arrangements. On the other hand, economists have adapted theoretical frameworks originally developed for micro-level environmental problems to the international arena. Both have made rather unapologetic use of unitary actor models that abstract away from domestic-international linkages. Meanwhile, those examining any one of a number of international environmental issues have developed a keen appreciation of how domestic factors do in fact impinge on international policy outcomes.

The result has been a growing recognition of the need to develop models that are truly politico-economic in the sense that they bridge the gap between the politics-centered approaches found in political science and economics-centered approaches found in the field of economics. Moreover, bridging this gap should simultaneously help illuminate the domestic-international linkages that reality suggests are important in determining policy outcomes. This paper has sought to compare and contrast the various traditional approaches to studying international environmental issues, as well as the emergent approaches that aspire to bridge the gaps in explaining the political economy of international environmental agreements.

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¹⁵ These theoretical works from the rational choice perspective were complemented to some degree by empirical studies of actual compliance with international environmental treaties (cf. the volume by Weiss and Jacobson 1998; in particular, the contribution of Vogel and Kessler 1998).

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