INTERNATIONAL ACTION ON CLIMATE CHANGE AND THE EMERGENCE OF A REGIME

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The threat of global climate change is perhaps the most important environmental problem confronting the international community. Nearly all of the major industrialized countries have agreed to reduce or freeze the level of their carbon dioxide emissions. In this article, Edward Hoyt suggests that such action is evidence that a "proto-regime" on greenhouse gases and climate change is emerging. His analysis applies various theoretical arguments of regime formation to this proposition while it also suggests that an emerging global warming "proto-regime" may be better understood as the product of the interplay between actors at the "unit level" such as the domestic forces of public opinion, interest lobbies, and federal legislators, and actors at the "system level" such as states and international organizations.

In the late 1980s, the threat of global climate change due to the "greenhouse effect" emerged as arguably the most complex and controversial international environmental problem confronting the world community. The climate change issue is complex because nearly every kind of economic activity causes the emission of carbon dioxide, methane, nitrogen oxides, and other substances that some scientists believe exacerbate the heat-trapping effect of the earth's atmosphere and thereby contribute to global warming. The issue is also controversial because scientists disagree over the rate and scope of climate change caused by anthropogenic changes in the composition of the earth's atmosphere. Some contend that the observed changes in temperature on earth are due to atmospheric changes. Others attribute causation to naturally occurring forces.[1]

1. The scope of this paper does not permit a discussion of the state of scientific knowledge on global warming and climate change. For a review of current scientific debate on this topic see William K. Stevens, "Urgent Steps Urged on Warming Threat," *The New York Times*, 11 April 1991, sec. B; William K. Stevens, "Separate Studies Rank '90 as World's Warmest Year," *The New York Times*, 10 January 1991, sec. A; World Resources Institute, *World Resources, 1990-1991*, (Oxford: Oxford University Press, 1990), 11-15; William R. Moomaw, "Policy Responses to

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Despite this scientific uncertainty, many policymakers in both developed and developing countries have advocated immediate action to halt or at least mitigate anticipated climate changes. Indeed, all of the major industrial countries, with the notable exception of the United States (the world's largest emitter of carbon dioxide)[2] have committed themselves to reductions or freezes in carbon dioxide emissions. Such international action is evidence that a *proto-regime* on greenhouse gases and climate change is emerging.

Examining the issue of climate change through the lens of recent literature on regime formation, particularly the theoretical work of Oran Young, this article develops the argument that regimes are not solely a product of international negotiations. The case of the emerging *proto-regime* on global warming, for example, is evidence that regimes can also emerge spontaneously. Yet, while Young's theoretical articulation of regime formation is useful in determining the emergence of a global warming *proto-regime*, it is not complete. Given the highly influential role of the United States and its internal political forces in the evolution of such a regime, Young's failure to incorporate a unit-level analysis greatly inhibits the explanatory value of his theory. Regime formation can be better viewed as the product of the interplay between actors at the *unit level* such as the domestic forces of public opinion, interest lobbies, and federal legislators, and actors at the *system level* such as states and international organizations.

Regimes and their Formation

In answering the question—How do we know a regime when we see one?—there are several important theoretical definitions to consider. The most influential definition of the term "regime" is offered by Stephen Krasner as "sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations."[3] Haggard and Simmons offer a more concise specification: regimes are "multilateral agreements among states which aim to regulate national actions within an issue area."[4] This definition, they argue, allows analysts to distinguish between instances of simple cooperative behavior and true regimes. Though this latter definition claims to distinguish regimes from simple cooperative behavior, by their very nature regimes involve cooperation and thus may be viewed as a subset of a larger assortment of cooperative behavior.

Global Climate Change," *The Fletcher Forum of World Affairs* Vol. 14, No. 2 (Summer 1990): 249-261; Andrew R. Solow and James M. Broadus, "Global Warming: Quo Vadis?" *The Fletcher Forum of World Affairs* Vol. 14, No. 2 (Summer 1990): 262-269.

2. The United States emits roughly 20 percent of total world carbon emissions, followed by the USSR with 12 percent, Brazil with 11 percent, China with 7 percent, and India with 4 percent. Total world emissions are approximately 5400 million metric tons. (See World Resources Institute, *World Resources, 1990-1991.*)
3. Stephen D. Krasner, "Structural Causes and Regime Consequences," *International Regimes*, ed. Stephen D. Krasner (Ithaca, N.Y.: Cornell University Press, 1989), 2.
4. Stephen Haggard and Beth A. Simmons, "Theories of International Regimes," *International Organization* Vol. 41, No. 3 (Summer 1987): 493.

Regime Change

Once regimes can be identified, the issue of their evolution and transformation becomes relevant. Young's work on the taxonomy and evolutionary development of regimes plays a crucial role here, particularly in the context of international cooperation on climate change. His taxonomy outlines the distinction between spontaneous, negotiated, and imposed regimes and places great emphasis on the notion that regimes are dynamic, not static.[5]

Young explains that spontaneous regimes are "distinguished by the facts that they do not involve conscious coordination among participants, do require explicit consent on the part of subjects [issues] or prospective subjects, and are highly resistent to efforts at social engineering."[6] In contrast, negotiated regimes, are "characterized by conscious efforts to agree on their major provisions, explicit consent on the part of individual participants, and formal expression of the results."[7] Such regimes may directly involve the parties in the negotiation process or allow representatives to negotiate on behalf of the participants.

Finally, imposed regimes, which are "fostered deliberately by dominant powers or consortia of dominant powers," typically do not involve the explicit consent of the subordinate actors and generally operate in the absence of any formal expression.[8] The role of a hegemon is usually seen as crucial in this context. Young, however, argues that its role often can be described as one of leadership rather than hegemony.[9]

Recently, observers of international environmental policymaking have concluded that current and future action on global environmental problems necessarily implies the formation of negotiated regimes. For example, a 1989 survey of the development of international environmental regulation by Robert Hahn and Kenneth Richards focused exclusively on negotiated arrangements.[10] Still others argue that imposed regimes are irrelevant in the case of global environmental problems. Limitations on action in an international system predicated on the sovereignty of nations, as well as constraints on the economic, military, and political resources of certain powerful states, make it unlikely that an imposed regime will emerge to alleviate global warming. Thus, the appearance of a spontaneously emerging regime, as Young would define it, governing natural resources such as the atmosphere appears all the more likely.

Yet Young's negotiated, spontaneous, and imposed regimes are ideal types.

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5. Oran R. Young, "Regime Dynamics: The Rise and Fall of International Regimes," *International Regimes*, ed. Stephen D. Krasner (Ithaca, N.Y.: Cornell University Press, 1989), 97-113.
6. Oran Young, *International Cooperation* (Ithaca, N.Y.: Cornell University Press, 1989), 85.
7. *Ibid.*, 86.
8. *Ibid.*, 88.
9. Although one could argue that this detracts from the precision of his characterization of regime types, Young contends that "true hegemony constitutes an extreme case, while leadership encompasses a range of cases in which one party (or small group) possesses substantially greater power than the others." See Young, *International Cooperation*, 88-89.
10. See Robert W. Hahn and Kenneth R. Richards, "The Internationalization of Environmental Regulation," *Harvard International Law Journal* Vol. 30, No. 2 (Spring 1989): 421-446.

Regimes in existence may exhibit aspects of more than one of these types or, more importantly, they may evolve from one type to another. For example, certain maritime regimes first emerged as spontaneous arrangements but were subsequently formalized by international legal processes. For Young, the more interesting question is the possibility of regime evolution and the forces that may cause a regime to change from one type to another or to develop the features of more than one regime.

Here Young's theory differentiates between the role of endogenous and exogenous forces. Internal contradictions, which may indicate that the negotiations leading up to the formation of a regime resulted in some compromise, are endogenous forces acting to change a regime. A regime's material costs are an example of an endogenous factor. If the costs of administering a regime become too high, parties will seek ways to reduce or reallocate that burden, thereby transforming the nature of the regime. By contrast, a shift in the regime's larger international context, such as the determinants of the costliness of maintaining a regime, can be considered an exogenous force. Other exogenous forces may include the broader international economic context in which the regime is situated, the force of technological change, or population growth and the increasing demands it places on certain resource regimes.

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While Young's taxonomy provides useful insight into the various parameters that influence regime formation, whether endogenous or exogenous, it ignores the degree to which a state's power over domestic affairs will influence its propensity to cooperate with other states in creating negotiated regimes. Young's analysis fails to develop this facet of regime creation and evolution because the dimensions of centralization and autonomy of power are viewed exclusively in the context of either an individual state or a "society of states." What ought to be considered, instead, is the superimposition of one social system on another. Thus, Young's propositions about the determinants of regime formation must incorporate an analysis at the unit level in order to capture the multi-level reality of negotiations.[11]

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11. Here, Krasner's notion of "weak" and "strong" states is relevant. See Stephen D. Krasner, *Defending the National Interest: Raw Materials Investments and US Foreign Economic Policy* (Princeton, N.J.: Princeton University Press, 1978). Similarly, Peter Katzenstein's work on the domestic determinants of the policy responses of different nations given similar external stimuli is also apparent; Peter Katzenstein, *Between Power and Plenty: Foreign Economic Policies of Advanced Industrial States* (Madison, Wis.: University of Wisconsin Press, 1978).

As Robert D. Putnam has convincingly argued, international negotiations are likely to be conducted on two levels, or, in Putnam's terms, two playing boards: the international and the domestic. Each side in a negotiation has a *win set* of outcomes that are satisfactory to its domestic constituency.[12]

An overlap of *win sets* creates the possibility of a successful negotiation. In general, the size of the overlap between individual country *win sets* will diminish in direct proportion to the number of nations participating in the negotiation. Thus, a multinational, negotiated regime on a given issue will be the product of the convergence of the individual *win sets* of participating nations.

Putnam's model for the negotiating process sheds light on the dynamics of regime creation and evolution as examined by Young. Putnam observes that a divided domestic political situation in one of the negotiating states "may actually foster international cooperation."[13] That is, negotiated regimes are likely to occur when the domestic constituencies of one state are influenced by other external actors in a negotiation (a concept that Putnam labels "reverberation"). This idea contradicts Young's argument that negotiated regimes may be more prevalent in societies where the state is "highly developed," that is, where externally influenced domestic constituencies do not constrain negotiations.[14] In the determination of a *proto-regime* in international global warming, therefore, Putnam's idea of reverberation fills the theoretical gap left by Young's failure to conduct his analysis at both the system and unit levels.

Also to be considered is whether spontaneous arrangements can coerce a reluctant actor to join the institution, either by "restructuring" the perception of the costs and benefits associated with creating a negotiated regime or as a result of the reverberation effect described by Putnam. A spontaneous institution or regime may provide an important intermediate step towards the formalization of a negotiated regime in that a spontaneous regime reflects a coalescing consensus on a given problem coupled with clearly articulated policy prescriptions on how to address it.

Such an informal, spontaneous arrangement is emerging in the issue area of the atmosphere and the threat of global climate change. This *proto-regime* is developing on both the international and domestic levels in numerous nations. In the United States, for example, there is a growing constituency for stronger measures to prevent global warming at the local level and within certain branches of the federal government. In addition, evidence suggests that the executive branch attaches some importance to the appearance of positive action on the issue. Therefore, there are grounds for believing that the administration's current stand on specific issues related to global warming may change course due to the persistence of externally influenced domestic forces.

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12. Robert D. Putnam, "Diplomacy and Domestic Politics: The Logic of Two-Level Games," *International Organization* Vol. 42, No. 3 (Summer 1988): 433-437.
13. *Ibid.*, 460.
14. Young, *International Cooperation*, 91.

An Emerging International Institution on Greenhouse Gases

Since 1990, several international conferences have convened to discuss an international agreement governing use of the atmosphere as a sink for greenhouse gases. As of November 1991, however, negotiators had not reached an agreement on explicit rules for states party to a convention on climate change, but the underpinnings for such an arrangement have emerged. For this reason, it is possible to discern a spontaneous international *proto-regime* in the issue area of greenhouse gases and climate change. In fact, several international organizations already exist to perform various functions demanded by this *proto-regime.*

What is significant is whether a fully articulated regime with underlying principles, rules, dispute resolution provisions, and some means of encouraging and enforcing compliance of members will emerge in the future to govern the use of the atmosphere. What follows is a brief historical account of the key events that demonstrate the emergence of what could be considered a *proto-regime.*

Early International Cooperation on Greenhouse Gases

In June 1988, representatives from forty-six countries met in Toronto for one of the earliest international conferences on the issue of climate change due to greenhouse gas emissions. The conference's final communiqué included three significant recommendations: 1) negotiation of a "comprehensive global convention as a framework for protocols on the protection of the atmosphere," 2) creation of a "World Atmosphere Fund financed in part by a levy on the fossil-fuel consumption of industrialized countries" to facilitate transfer of energy-efficient technologies to Third World countries, and 3) reduction in carbon dioxide emissions by roughly 20 percent of their 1988 levels by the year 2005.[15] In November, the Intergovernmental Panel on Climate Change (IPCC), a multilateral organization, was established in response to the need for more comprehensive scientific information on the problem. The IPCC was ordered to prepare scientific and policy studies on the issue for an international conference set for the fall of 1990.[16]

In the time that followed, meetings and conferences included increasing numbers of official representatives from a majority of the world's nations. Work on a convention began, and several industrial nations announced policies designed to stabilize or cut emissions from 1988 levels. In March 1989, the Hague declaration signed by delegates from twenty-four countries reiterated the statement made in Toronto in 1980. In May, the Governing Council of United Nations Environment Programme (UNEP) urged the directors of UNEP and the World Health Organization to initiate negotiations as soon as possible. Significantly, the communiqué from the Group of Seven (G-7) meeting in July reached

15. David A. Wirth and Daniel A. Lashof, "Beyond Vienna and Montreal—Multilateral Agreements on Greenhouse Gases," in *Greenhouse Warming: Negotiating a Regime* (Washington, D.C.: World Resources Institute, 1991), 16.

16. *Ibid.*, 12; see also, Richard J. Smith, US Department of State, "The Global Environmental Challenge," speech delivered at The Fletcher School of Law and Diplomacy, March 1991.

a similar conclusion.[17] Finally in November 1989, a ministerial conference in Noordwijk, Holland reiterated the need for rapid negotiations and called for the adoption of a convention by 1991 or, at the latest, 1992.

In an effort to take the initiative on the issue, President Bush hosted a conference at the White House in April 1990. The administration's stance was significantly more conservative than the aggressive positions adopted by other nations at the preceding conferences on the greenhouse issue, although President Bush's closing remarks were stronger than many expected. Reports indicated that the President's remarks reflected pressure from other delegates, including West German Minister of the Environment Klaus Töpfer. Bush's opening remarks advocated the United States' "wait and see" policy, suggesting that aggressive action would be too costly. Later that year, at the Houston Summit, the G-7 communiqué contained similar language as it had the year before.[18]

Negotiations Begin

Although information had been gathered and policy options studied by the middle of 1990, substantive negotiations did not begin until later that year. This shift in emphasis came in the wake of new initiatives intended to encourage developing nations to address various global environmental problems. In July, the World Bank announced the creation of a separate Global Environmental Facility (GEF) and the allocation of one billion dollars to finance projects whose environmental benefits might not be justified by the cost-benefit assessments of each individual nation.[19]

These developments helped generate optimism for progress on controlling greenhouse gases during meetings in the fall and following winter. In November 1990, 137 nations sent delegates to the Second World Climate Conference in Geneva, Switzerland.

Scientists at the conference stressed the need for immediate action and advocated a one percent annual reduction in carbon dioxide emissions beginning in 1990.[20] They also proposed a long-term target of a 20 percent reduction in emissions from 1988 levels by 2005.[21] Politicians were careful to underscore the points on which they agreed. It was obvious, however, that the United States was alone among the major industrialized nations in resisting commitments to trim emissions. Still, no breakdown occurred in Geneva since all of the difficult

17. The text of the G-7 statement read, "We believe that the conclusion of a framework or umbrella convention on climate change to set out general principles or guidelines is urgently required to mobilize or rationalize the efforts made by the international community....Specific protocols containing concrete commitments could be fitted into the framework as scientific evidence requires and permits." Quoted in Wirth and Lashof, 17. See also Peter T. Kilborn, "Nations Call for Action on Environment," *The New York Times*, 16 July 1989, sec. A.
18. Nancy Dunne, "Bush Shifts Stance on Global Warming," *Financial Times*, 19 April 1990.
19. World Bank, *Funding for the Global Environment*, internal document, May 1990. Barber Conable announced the facility's creation on July 29 and noted that Britain, France, West Germany, and Japan had already pledged their support.
20. "Cool It," *The Economist*, 10 November 1990, 51.
21. John Hunt, "Swift Action Call on 'Greenhouse' Gases," *Financial Times*, 5 November 1990.

issues—agreeing upon targets, determining mechanisms for monitoring and enforcement, and setting the agenda for further action—were put off until the next round of talks.[22]

The meeting was described as a success for the United States and its allies on global warming issues.[23] Though no specific targets were set for carbon dioxide or other gases, the final communiqué called for emissions reduction targets or "feasible national programmes or strategies which would have a significant effect on limiting emissions of carbon dioxide or other gases." In addition, the nations made reference to the special situation of developing countries that would require external assistance to deal effectively with the problem.[24]

It is possible to discern a spontaneous international *proto-regime* in the issue area of greenhouse gases and climate change.

Although Washington approved the substance of the final communiqué, the United States paid a political price for its refusal to commit to reducing greenhouse gas emissions. Several European nations, along with Australia and New Zealand, made unilateral declarations to reduce emissions. Their actions put considerable pressure on Washington.[25]

The German objectives of a 25 to 30 percent reduction in emissions from 1987 levels by 2005, accomplished through energy taxes and fees, were the most drastic in the European Community.[26] Denmark announced plans to cut emissions by 20 percent from 1990 levels by the year 2000 while the Netherlands planned to cut theirs between 3 and 5 percent. Japan said it expected to stabilize emissions at 1990 levels by 2000.[27] Likewise, the European Community had agreed in October to stabilize at 1990 levels by the year 2000.[28]

While the United States questioned these targets, several countries, especially Germany and Japan, argued that such measures would stimulate the development of new, energy-efficient technologies that would benefit their economies.[29]

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22. "Cool It."
23. Including the Soviet Union, Saudi Arabia, Venezuela, and a number of other major oil-exporting nations.
24. John Hunt, "Global Effort to Improve Climate," *Financial Times*, 8 November 1990; see also, Marlise Simons, "US View Prevails at Climate Parley," *The New York Times*, 8 November 1990, sec. A.
25. Simons, "US View."
26. "Cool It"; Hunt, "Swift Action Call;" and *International Environment Reporter* Vol. 14, No. 4 (27 February 1991): 120.
27. Marlise Simons, "Conference on Climate Singles Out US as Wastrel of Energy," *The New York Times*, 7 November 1990, sec. A.; "Cool It"; and *International Environment Reporter* Vol. 14, No. 4.
28. *International Environment Reporter* Vol. 14, No. 4.

In the case of Germany, the relatively low-cost reductions that could be made by shutting down East German industrial facilities provided a political windfall on this issue. The group's promised reductions represented 19 percent of world carbon dioxide emissions, a relatively small fraction of the total when compared to the 22 percent share of the United States.[30]

In February 1991, the next round of negotiations took place in Chantilly, Virginia and culminated in an agreement on procedural issues and the creation of two working groups for drafting language for a convention.[31] Press reports suggested that the United States prevented the meeting from addressing substantive issues. While American negotiators said privately that they believed the United States should pursue a more aggressive treaty, they stuck to procedural issues alone on orders from the White House, principally Chief of Staff John Sununu.[32] This stance drew criticism from both US and international environmental organizations.[33]

The United States again successfully blocked the inclusion of specific language on emissions reductions in the final G-7 communiqué of the July summit. In September, American negotiators also resisted specific language at a third session in Nairobi while the European Community (EC) and Japan favored plans to hold carbon dioxide emissions at 1990 levels by 2000.[34]

At the same time, France and the Netherlands took steps to reduce emissions, while the EC introduced a proposal to tax energy in accordance with the carbon content of various fuels.[35] Indeed, the Dutch cabinet moved rapidly on this proposal by introducing proposals for high energy taxes in conjunction with lower taxes on labor, thereby moving toward a tax regime that would impose levies on environmentally destructive economic behavior as opposed to positive economic activity.[36] For its part, the French government created a Commission on Global Warming to develop and implement strategies to reduce energy consumption as well as control greenhouse emissions from the transport sector.[37]

In addition, French, Dutch, Japanese, and EC officials attacked the United States for its recalcitrance on the climate change issue. Hans Alders, chairman of the EC Council of Environmental Ministers accused the United States and Turkey of being the only countries in the OECD not to have pledged to stabilize

29. Simons, "US View."
30. Simons, "Conference on Climate." World emissions of carbon dioxide in 1987 were estimated at 3.7 billion tons.
31. "Delegates Adopt Negotiating Guidelines in First Effort toward Climate Convention," *International Environment Reporter* Vol. 14, No. 4 (27 February 1991): 97.
32. Keith Schneider, "Talks on Climate End in Accord," *The New York Times*, 15 February 1991, sec. A.
33. See, for example, Leslie H. Gelb, "Sununu vs. Scientists," *The New York Times*, 10 February 1991, sec. IV.
34. Associated Press, "US Continues to Resist Mandatory Emissions Cuts," *The New York Times*, 22 September 1991, sec. I.
35. *International Environment Reporter* Vol. 14, No. 18 (11 September 1991): 481.
36. *Ibid.*, 488.
37. *International Environment Reporter* Vol. 14, No. 16 (14 August 1991): 438.

or cut carbon dioxide emissions. Ruud Lubbers, the Dutch Prime Minister and president of the EC Council of Ministers assailed the Bush administration for having resisted specific language in the G-7 communiqué.[38]

The American Position

Reluctance to adopt carbon dioxide emissions policies similar to those of other industrial nations unquestionably reflects the perception in the United States that the cost of doing so would be disproportionately large and that the global cost of effective action would be astronomical.[39] The United States currently contributes the largest share of carbon dioxide emissions. As a result, the United States stipulates that any international agreement must address all sources of greenhouse gases and not just emissions from the consumption of fossil fuels.[40] This would reduce the future US share of overall emissions. The Bush administration has argued that this "comprehensive approach" will ensure that in the year 2000, its emission of greenhouse gases will be no greater than it was in 1987.[41] The United States defends this approach by arguing that it "provides flexibility necessary for each nation to develop a diverse, innovative, and cost-effective mix of measures to meet its global responsibilities."[42]

This is the heart of the United States' energy and greenhouse emissions dilemma: further gains seem to be unlikely, if not impossible, without further government intervention in the market.

Evidence suggests, however, that US reluctance to take unilateral action on carbon dioxide does not reflect the views of all members of the administration and Congress. Some within the administration have articulated policies similar in rationale to those of Germany or Denmark, and recently D. Allan Bromley, Bush's assistant for science policy, articulated a national energy policy predicated on energy conservation.[43]

Prior to its release in early 1991, the administration's national energy strategy was expected to contain some measures to promote energy efficiency. The US Department of Energy began developing the plan at the order of President Bush soon after his inauguration in 1989. In a speech late that year, Deputy Secretary

38. *International Environment Reporter* Vol. 14, No. 15 (31 July 1990): 415.
39. William D. Nordhaus, "Count Before You Leap," *The Economist*, 7 July 1990, 19-22.
40. D. Allan Bromley, "The Making of a Greenhouse Policy," *Issues in Science Technology* (Fall 1990): 61; and "Cool It."
41. US Interagency Task Force on Climate Change, *America's Climate Change Strategy: An Action Agenda*, brochure prepared by the US Department of State, 1991.
42. *Ibid.*
43. Bromley, 60.

of Energy W. Henson Moore outlined this policy, mentioning research and development to "establish economically efficient, environmentally sound technologies for the production and utilization of every energy resource."[44]

However, vehement opposition to these measures developed as the administration reviewed the energy strategy late in 1990. White House Chief of Staff John Sununu and presidential economic advisor Michael Boskin, both criticized the plan's advocacy of regulatory and "anti-market" measures which would be comparatively costly per barrel of oil saved.[45] The response from members of the business community was equally negative.[46]

Still, the Bush energy strategy contained numerous references to improvements in energy efficiency as a means to enhance the nation's energy security and environmental quality. While it failed to propose tougher federal actions regarding energy efficiency, the strategy did contain proposals that could ultimately lead to such changes.[47] All of the recommendations made in the strategy reflected the administration's overriding concern that any actions taken on energy efficiency be justified "by rigorous cost-benefit analysis" with reliance on economic incentives.[48]

This is the heart of the United States' energy and greenhouse emissions dilemma: further gains seem to be unlikely, if not impossible, without further government intervention in the market. The traditional reluctance to interfere with the workings of the "invisible hand" in the energy sector limits the ability of the United States to encourage improvements in efficiency beyond those that would result from technological advances, industrial restructuring, and altered trade patterns. Until the late 1980s, a policy of letting high prices stimulate improvements worked reasonably well.

Improvements in United States energy efficiency, however, have been considerable and compare favorably with changes made in other nations. Between 1980 and 1985, for example, US industry as a whole reduced energy intensity by roughly an average of 25 percent in each of the major sectors.[49] Interestingly, more rapid improvements occurred in the 1980s than in the 1970s, although energy prices were declining after the second oil shock of 1979-1980.[50] Hence, other forces besides the price mechanism were at work.

While higher energy prices did play a part in this change in US energy

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44. W. Henson Moore, "Energy Policy of the Bush Administration," *Energy Policy* (January/February 1990): 3-4.
45. Rose Gutfeld and David Wessel, "Bush Aides Push Energy Agency to Ease Plan," *Wall Street Journal*, 14 December 1990, sec. A.
46. For example, the article "Clean Air Heads," *Wall Street Journal*, 11 December 1990, sec. A, lambastes these and similar measures proposed by the Environmental Protection Agency as invasive, anti-market, and similar to the rationing systems used in centrally-planned economies.
47. US Department of Energy, *National Energy Strategy: Executive Summary, 1991/1992* (Washington, D.C., February 1991).
48. *Ibid.*, 2.
49. US Department of Energy, Energy Information Administration, *Annual Energy Review 1989* (Washington, D.C.: US Government Printing Office, 1990), 38-39.
50. *Ibid.*, 25.

intensity, structural changes in the economy were also important. Service sector growth at the expense of the high-wage manufacturing and natural resource processing industries contributed to a reduction in energy demand. The introduction of new, more efficient production technologies and capital goods reinforced this trend. The decline also partly reflects higher levels of imports of products from energy-intensive industries abroad.[51] Since these improvements were in part the product of America's market-oriented energy policy, the administration argues that future improvements should also be driven by the market. However, low oil prices in the late 1980s and early 1990s may eliminate and perhaps even reverse the incentive to conserve energy.

Policies and Attitudes Outside the Executive Branch

While federal policies on energy efficiency and greenhouse emissions have been cautious, initiatives at the state and local level have been ambitious. More importantly, policy initiatives at these levels are consistent with the administration's emphasis on economically efficient policymaking. For example, some seventeen state governments are considering how to incorporate environmental costs into evaluations of new power plant projects as well as conservation investments.[52]

Although public opinion in certain areas of the country expressed opposition to higher taxes on energy during the 1990 fight over the federal budget, the results of a poll released in January 1991 indicated that the public favored a tougher policy on energy efficiency and global warming.[53] Sixty-nine percent of the individuals polled believed the United States should take action with other industrial countries to curb carbon dioxide emissions. More than 70 percent indicated that they would be willing to pay more for fossil fuels if the added cost was earmarked to prevent serious consequences from global warming.[54]

In Congress, some legislators have echoed this public sentiment. Before the President's energy strategy became public, members of both the House of Representatives and the Senate had introduced initiatives to reduce fossil fuel consumption through development of alternative energy sources as well as enhanced energy efficiency. In August, Senate Majority Leader George Mitchell and ranking member of the Senate Environment Committee, John Chafee of Rhode Island, wrote President Bush to urge greater action.[55]

Clearly, there is mixed sentiment on energy policy in the United States. The existence of vocal lobbies for tougher measures within the administration, in

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51. Henry C. Kelly, Peter D. Blair, and John H. Gibbons, "Energy Use and Productivity: Current Trends and Policy Implications," *Annual Review of Energy* Vol. 14 (1989): 321-328.
52. Matthew L. Wald, "Utilities Given a Warning," *The New York Times*, 4 March 1991, sec. D. New York and Massachusetts already have such provisions.
53. The poll was sponsored by the Alliance to Save Energy, a Washington, D.C. lobbying organization.
54. Alliance to Save Energy, *America at the Crossroads: A National Energy Strategy Poll*, released 11 January 1991.
55. *International Environment Reporter* Vol. 14, No. 16 (14 August 1991): 441.

the larger policy community, and in the public ensures that the issue will not drop from the agenda any time soon. Further, these unit-level actors may drive the United States, which is currently sitting at the negotiating table and "agreeing to play," to formulate a new policy. According to William Nitze, "If the United States goes the next step, it will be drawn into the [emerging] regime."[56]

Analysis: The Emergence of a Proto-Regime

Despite the relative inaction of the United States, an international *proto-regime* to control greenhouse emissions has emerged rapidly in the late 1980s. In Young's terms, it is an *institution* and not a regime because it does not yet have a prescriptive component. So far, national policies have been coordinated more as a gesture of commitment. As gestures, these actions fit into the context of a negotiated institution; yet this institution is also partly spontaneous.

While recent international action on greenhouse gases seems to be proceeding at a slow pace, it appears that the countries which have declared emissions cuts will execute them, regardless of any negotiated agreement. This action has not flowed entirely from formal, multilateral negotiations. Rather, it has been driven by domestic public pressures. In this sense, coordination on the global warming issue has some degree of spontaneity. Still, these moves are clearly designed to set the stage for a negotiated agreement. For that reason, the current situation is more usefully called a *proto-regime*.

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In an ironic reversal from its position during the mid-1980s negotiations regarding the ozone layer, the United States is the reluctant party on the climate change issue. Whereas US diplomats lobbied Europeans on ozone, now many European nations are campaigning for the United States to adopt a more active stance on carbon dioxide emissions. To some extent, their efforts are being matched by domestic environmental lobbyists and powerful politicians within the US government. The effect in both the ozone and climate change issues, however, is the same: political pressure from abroad "reverberates" in the domestic political arena. This phenomenon, combined with a well-developed American lobby for more activist domestic policy on energy use and greenhouse gases, indicates that the formation of international regimes is heavily influenced by domestic (unit-level) political forces.

56. William A. Nitze, president of the Alliance to Save Energy, personal communication. February, 1991.

Domestic Forces in the United States and the Proto-Regime

To date, the argument that energy efficiency can enhance environmental and economic performance has not been embraced by the White House although it has received attention virtually everywhere else in American government. There are two broad camps in the United States: those who believe that policy change is possible at a minimal cost and desirable for a wide range of economic, social, and political reasons (regardless of whether greenhouse warming is a credible threat or not); and those who believe that the costs of immediate action are too large to be justified by the non-controversial (i.e., non-greenhouse related) benefits of such policies. Policymakers on the national level can be identified in both camps.

Local and state level policymakers are slowly moving closer to the first camp as a result of domestic forces such as non-governmental organizations, as well as governmental action below the federal level. Admittedly, the position at the federal level (specifically in the executive branch) will determine US international environmental policy in the future. Whether the debate between the two camps results in a restructuring of policy at the federal level remains to be seen.

A crucial issue in this regard is the role of industry, which helped keep American policy on track during key phases of the ozone depletion negotiations. Some participants in, and observers of, recent greenhouse negotiations believe that large segments of the private sector will view policies promoting energy efficiency with more favor in coming years.

The present reluctance to consider tougher energy efficiency policies also stems from a reluctance to adopt strategies that have been unpopular in the past, such as the Carter-era programs, as well as from evidence that market-oriented policies succeeded in inducing greater efficiency. But reliance on market-oriented policies does not preclude adoption of policies that would have a significant impact on energy efficiency in the United States. In what is perhaps a reflection of the classical liberal economic inclinations of the Reagan and Bush administrations, a whole corpus of environmental policy prescriptions based on micro-economic theory has emerged in the 1980s. These prescriptions have yielded concrete, workable proposals for future policy, some of which have been used by the Bush administration.[57]

In the context of the theoretical debate on the formation and evolution of

57. For example, the Bush administration's Clean Air Act proposals included a tradeable permit scheme for controlling the emissions of acid-rain precursors. A related proposal for automobiles is the "sipper-guzzler" plan proposed by the World Resources Institute, see "Battling for an Energy Policy." The economic literature on tradeable permits has also been applied to the greenhouse case. See Michael Grubb, *The Greenhouse Effect: Negotiating Targets* (London: Royal Institute of International Affairs, 1989), 33-40; Bromley, 61; "Trading Places," *The Economist*, 7 July 1990, 46; "Warm World, Cool Heads," *The Economist*, 27 October 1990, 13-14; Stephen Schneider, "Cooling It," *World Monitor*, July 1990, 37. For the theoretical background, see W.J. Baumol and W.E. Oates, *The Theory of Environmental Policy*, 2nd ed. (Cambridge: Cambridge University Press, 1988), 177 ff; W.D. Montgomery, "Markets in Licenses and Efficient Pollution Control Programs," *Journal of Economic Theory* Vol.5 (1972): 395-418; and T.H. Tietenberg, *Emissions Trading: An Exercise in Reforming Pollution Policy* (Washington, D.C.: Resources for the Future, 1985).

international institutions, the internal policy debate in the United States is significant. There is a constituency for more rapid US action on the climate change issue that echoes the arguments and sentiments of nations that have already pledged action on greenhouse emissions. While the Bush administration has opposed rapid action in the past, it argues that current action is taking place to address the problem. Yet, the administration contends that future policy on the issue must meet the criteria of economic efficiency and effectiveness. As a result, the United States has proposed the introduction of market-oriented mechanisms to reduce emissions of carbon dioxide as well as other greenhouse gases. Such an approach to the problem implies the formation of a strong, international *proto-regime* encompassing the entire international community—not just a coalition of major industrial nations.

A New Brand of Hegemony

The United States ability to influence the course of formal negotiations on greenhouse emissions flows from its position as the largest emitter of greenhouse gases. If American negotiators do not agree to a proposal, then it is more likely that other nations will be inclined to refuse as well. However, the United States is also constrained by the current negotiations to a degree by virtue of participation. By participating, the United States has committed itself to policy declarations that demonstrate recognition of the climate change issue, which will possibly lead to stronger US policy in the future. In fact, the Bush administration has been careful to draw attention to what it is doing on the issue rather than dismiss the need for action at all. Further, Bush has accommodated, if only rhetorically, pressure from foreign governments. Whether he will continue to do so remains to be seen.

The United States has thus assumed the position of hegemon in a new sense: it is the "hegemonic polluter." Previous definitions of hegemony make reference to control over raw materials, capital and goods markets, and possession of competitive advantages in the production of valued commodities.[58] America's importance as a polluter underscores control of markets as a feature of hegemony: the hegemon consumes, and to the extent that this consumption pollutes, the hegemon pollutes. Like the erosion of American control over essential raw materials, capital markets, and competitive advantages, this last feature of hegemony, which would otherwise confer some leverage over other would-be exporters, now also becomes a source of political and economic sensitivity.

The determination of other industrial nations to take action on greenhouse emissions has filled the void left by the US failure to adopt a leadership role on this issue as it did with chlorofluorocarbons. This represents a relative diminution of American stature in the area of environmental policymaking (in which it has been a dominant force during this century). In the future, the preeminent role of other nations in the greenhouse institution might further diminish US

58. Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, N.J.: Princeton University Press, 1984), 32.

influence in this area.

Economic consequences that result are likely to appear in economic and trade issues. As Germany, Japan, and other members of the coalition tighten energy efficiency standards, the consequences for American competitiveness—already apparent in the superior energy-efficiency of imported automobiles during the first oil shock—will be negative. If, for example, those countries were to raise efficiency standards for imported products the impact on the United States would be significant. Markets in the economically troubled Third World and the former East bloc, in which America and other countries would otherwise compete, would also tend to be increasingly receptive to more energy-efficient technologies. The exuberance with which the Japanese, in particular, have moved into this issue area suggests a calculated strategy to enhance their future economic position in a world marked by resource scarcity and the need for environmentally "safe" industrial processes.

Conclusions: The Birth of an Institution

The emergence of a *proto-regime* for greenhouse gas issues is a perfect example of how regimes can and do develop. Yet as this case illustrates, regime formation is as much a political process at the unit level of analysis as it is at the system level. This process occurs in the form of the reverberation and restructuring effects described by Putnam. Putnam viewed these effects within the context of narrowly defined negotiations as opposed to broader, less formalized examples of international cooperation and institution building. However, in the climate change issue these effects are apparent as well.

At present, it is difficult to predict precisely where events will lead. What is certain, however, is that the problem of severe climate change as a result of greenhouse-gas induced global warming has emerged as an area of international cooperation. A number of important industrial nations have reached a broad, but not complete, consensus on certain facts, notions of causation and rectitude, and have articulated what rules should govern action in the issue area. Yet, a *proto-regime* can be distinguished and experience suggests that this *proto-regime* will evolve into a more precise regime.

While the United States has had some success in blocking efforts to develop international prescriptions on energy policy and greenhouse gas emissions, a core group of industrial nations is pushing forward on the issue. Changes are occurring within the United States that will carry US policy in the same direction that other industrial nations have charted more explicitly for their economic and energy policies.