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Controlling Global Climate: The Debate over Pollution Trading

Last November, delegates from 160 nations met in Buenos Aires to negotiate implementation of the global climate treaty signed in Kyoto in 1997. That treaty seeks to stabilize atmospheric concentrations of carbon dioxide (produced by burning fossil fuels) and other heat-trapping gases that may contribute to global warming. Industrialized nations, including Japan, the United States, and members of the European Union, promised at Kyoto that they would cut and permanently limit their production of these "greenhouse gases." Taking 1990 pollution levels as a baseline, these countries agreed to reduce their emissions by 6 to 8 percent by the year 2012.

Developing nations did not sign on to the Kyoto accords, and efforts to secure their cooperation in Buenos Aires were largely a failure. This was hardly surprising. Countries such as China, India, Indonesia, and Malaysia want to make sure they are not saddled with emissions limits that impede their industrial development. They take the plausible view that the welfare of their people depends more on the growth of their economies than on the stability of the atmosphere. Accordingly, they insist that wealthy countries should take the lead in reducing their own emissions, rather than try to limit the energy use (and thus the economic growth) of poorer nations.

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In This Issue

CONTROLLING GLOBAL CLIMATE: THE DEBATE OVER POLLUTION TRADING

Mark Sagoff1

OPEN ADMISSIONS AND REMEDIAL EDUCATION AT CUNY

Robert K. Fullinwider7

THE ETHICS OF REPRESENTATION: REALISM AND IDEALISM IN CHILDREN'S FICTION

Claudia Mills13

THE EXECUTIONER'S DISSONANT SONG: ON CAPITAL PUNISHMENT AND AMERICAN LEGAL VALUES

Franklin E. Zimring19

If developing countries do not join in efforts to control greenhouse pollution, however, these efforts will be futile. Developing countries, as a result of rapid economic and population growth, are likely to surpass the industrialized countries in their emissions levels within about fifteen years, and if they accept no restrictions, they will by themselves emit more than enough greenhouse gases to destabilize the atmosphere. The greenhouse emissions of China alone are increasing so fast that they are likely to exceed those of the United States in a decade or so. Partly for this reason, the leadership of the U.S. Senate has insisted that it will never ratify the climate treaty unless developing nations commit to "substantial participation" in an international emissions-control regime.

Might there still be a way to draw developing countries into a global agreement to reduce greenhouse emissions? One approach—pollution trading—has been endorsed by many economists and energetically promoted by U.S. negotiators. This essay seeks to clarify the economic and moral issues raised by this approach, and then to recommend an alternative strategy to be pursued in future negotiations with the developing world.

How Trading Would Work

At the insistence of the United States, delegates at Kyoto accepted a trading provision that rewards countries willing to reduce greenhouse emissions further than the treaty requires. These countries are allowed to sell credits for their "excess" reductions to other nations, who would then count them toward meeting their own targets. The U.S., for example, might choose to assist the Russians in converting their inefficient coal-burning electric utilities to cleaner and more efficient gas-fired power plants. The Russians would receive the new technology at little or no cost, and the U.S. would be able to take credit for the reduction in emissions from the Russian plants.

William Nordhaus, a Yale University economist, has estimated that developed nations would cut the costs of meeting their treaty obligations by at least 85 percent if they could apply to their own targets credits earned by reducing emissions in other nations. The reason is simple: It costs much less to achieve a 50 percent reduction in pollution from the dirtiest industries in Russia or India than to achieve a 10 or 20 percent reduction in European or U.S. industries that are already technologically advanced. Controlling pollution and increasing energy efficiency generally become incrementally more expensive as industry gets cleaner and leaner.

Because poorer and developing countries offer so many opportunities for the cheapest pollution reduction, the case for pollution trading appears to be obvi-

ous and persuasive. In an article published by Resources for the Future, a Washington policy think tank, economist and law professor Jonathan Weiner notes that a "world market for 'greenhouse gas' emissions abatement services could lower the costs of preventing global climate change, widen the availability of climate-friendly technology, and engage more countries in emission reduction efforts."

Nonetheless, developing countries have rejected the idea of pollution trading. Weiner speculates that their opposition may result from a "misunderstanding," implying that these countries do not appreciate the wisdom of economic theory. Alternatively, he suggests that developing nations may be acting out of self-interest rather than ignorance: Their rejection of pollution trading, he writes, may "mask a desire to gain leverage" in the negotiations to set emissions limits. Other critics point to a concern among developing countries

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that trading will enable the U.S. and other wealthy nations to buy their way out of their obligations to reduce greenhouse emissions at home.

This last concern has been raised by critics in industrialized countries as well as the developing world. Michael Sandel, a professor of government at Harvard, has argued that although the trading scheme certainly makes economic sense, it fails to make moral or political sense. Specifically, Sandel argues that pollution trading, in spite of its obvious efficiency, confronts major ethical objections. We shall see that none of the ethical concerns Sandel raises withstand scrutiny. Yet a different moral problem may pose an insuperable obstacle to the trading of pollution credits as a way to control greenhouse emissions.

Removing a Stigma

First, Sandel contends that emissions trading "turns pollution into a commodity to be bought and sold," and thereby "removes the moral stigma that is properly associated with it." If nations that do not meet their targets are allowed to purchase credits abroad, they will, in effect, be paying a fee for the right to pollute. And a fee—unlike a fine—implies no moral stigma. Instead, it "makes pollution just another cost of doing business, like wages, benefits, and rent."

Sandel notes that our efforts to prevent despoliation of the environment generally depend on preserving the distinction between a fee and a fine. Imagine a



Jim Borgman

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wealthy hiker who tosses a beer can into the Grand Canyon. He would not escape moral censure simply because he was willing to pay a \$100 fine for littering. Indeed, by treating the fine as if it were merely "an expensive dumping charge," he would be guilty of undermining the shared ethic on which our laws against littering rest. In Sandel's view, the Kyoto treaty is intended to promote a similar ethic by stigmatizing practices that contribute to global warming. Emissions trading, he suggests, subverts that ethic when it allows nations that do not meet their targets to purchase credits abroad.

If Sandel's argument seems persuasive, that may be because many of us do think of pollution in moral terms: We condemn it as a kind of invasion or assault that has to be minimized if not eliminated. No one, we say, has a right to deposit his or her effluents on the persons or property of others. From this perspective, pollution constitutes a tort or nuisance—like a punch in the nose.

We may accept this principled argument about pollution in general, however, and yet question whether we should regard greenhouse emissions in the same way. In some measure, greenhouse emissions are the inevitable and unavoidable consequence of economic activity. Thus, it is difficult to argue that they are objec-

tionable in themselves. What is more, within limits, greenhouse emissions are safe for the global environment, since ecological systems, especially vegetation in the oceans and forests, can absorb them. Accordingly, it is not clear why society should condemn or stigmatize greenhouse emissions as it does toxic emissions.

Some environmentalists may reply that no one knows exactly how far greenhouse emissions must be reduced to avoid the risks associated with global warming. Indeed, the idea of a sharp line between safety and danger may make no sense in this context. But experts believe that capping aggregate emissions at 1990 levels worldwide will greatly slow or lower projected warming (while no action at all may well be catastrophic). It is reasonable to regard global emissions under the 1990 cap as posing an acceptable risk, given where we are now, what actions are feasible, and where the world is otherwise headed.

The trading provision of Kyoto accord, while not stigmatizing greenhouse pollution as Sandel would like, seeks to control it when it poses unacceptable risks. Emissions, even when traded, would count neither as unacceptably harmful nor as disrespectful to others so long as the aggregate levels of gases did not exceed the stringent global limit or cap. The basic problem is one of allocating a scarce resource (the ability of

**Graceful Simplicity:
Toward a Philosophy and Politics
of Simple Living**

Jerome M. Segal

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the atmosphere to process emissions), not one of penalizing inherently wrongful acts. The point of pollution trading, or any control strategy, is to maximize economic production while curtailing threats to the stability of the atmosphere. By driving down the costs of reducing pollution, and by providing an incentive for countries and industries to create cleaner technology, trading strategies allow nations to pursue economic growth while bringing global emissions within tolerable limits. Thus, pollution trading—at least for greenhouse gases—would seem to pass moral muster.

Evading Responsibility

This response to Sandel may not fully address one element of his critique: his concern that wealthy nations, by purchasing permits rather than reducing their own emissions, would express a callousness toward norms that govern or ought to govern the global commons. Emissions trading among nations, he writes, may "undermine the sense of shared responsibility that increased global cooperation requires." At first glance, it may not be obvious how the United States, Sweden, and other wealthy countries would undermine global cooperation if they enabled Russia, Poland, and other poorer countries to make their industries cleaner and more energy-efficient. To inform our intuitions on this matter, Sandel offers another analogy.

He asks us to imagine a neighborhood in which each family is permitted a single bonfire each year to burn unwanted leaves but can sell that permit and take the leaves instead to a community compost heap. When a wealthy family buys up the permits, perhaps for its own use or to clean the air, the "market works, and pollution is reduced, but without the spirit of shared sacrifice that might have been produced had no market intervened." The bonfires will be seen "less as an offense against clean air than as a luxury, a status symbol that can be bought and sold." Countries like the United States, which can enjoy bonfires by purchasing the necessary pollution credits, will seem privileged, while those who cannot afford these luxuries may grow to resent this difference.

In the context of global warming, bonfires are in fact a problem. In many developing countries, impoverished peasants burn forests to clear land for farming. These fires cause far more deforestation than all commercial uses of forests combined. Tropical deforestation, of which slash-and-burn farming is a principal cause, accounts for about 20 percent of total carbon emissions to the atmosphere. In addition, most of the wood from trees harvested in tropical forests—that is, those not cleared for farms—is used locally for fuel.

It seems plausible that wealthy countries, to reduce carbon emissions globally, might provide peasants

with the technology they need to increase yields on land better suited to farming than to forest. Wealthy nations might also help these peasants purchase food and fuel. In these ways, wealthy countries in a sense may "buy up" bonfires, as Sandel's example suggests. Why, though, should an effort like this—to help poorer nations develop a sustainable agriculture—engender their resentment? It is not as if the United States wants to buy pollution credits so that it may torch its own forests.

One may object that pollution trading would permit Americans to persist in their wasteful ways—driving gas-guzzling automobiles, for example—while purchasing compensating credits abroad. This objection misses a key point. If the United States were to take no action under the Kyoto treaty, its greenhouse emissions would increase by about 30 percent by the year 2012 (once again taking 1990 levels as the baseline). By agreeing to cut these emissions by 7 percent, the U.S. has undertaken a massive commitment—one that cannot be fulfilled through pollution trading alone. According to an American diplomat who negotiated the original climate treaty in Rio de Janeiro in 1992, the United States simply cannot find enough cheap pollution reductions abroad to reach the target. It will have to make politically unpopular improvements at home, even if it supplements these actions with purchased credits. Thus, it is inaccurate to compare the United States to the wealthy family burning all the bonfires it wishes. Developed countries will have every incentive to adopt at home the same efficiencies that they subsidize abroad.

An Insurmountable Objection

If one accepts the argument thus far, it may seem a matter for profound regret that emissions trading was not implemented in Buenos Aires. In rejecting such a scheme, the developing countries may appear to be alarmingly short-sighted. Such an assessment, however, would be unfair. This is because the defenders of pollution trading have glossed over a fundamental ethical problem—though not one that Sandel mentions.

If a system of pollution credits is to work, nations have to agree to a method of distributing initial allowances among themselves. Each nation has to accept a meaningful limit on its own emissions to provide a baseline from which it can sell or purchase credits. A global cap or limit on greenhouse gases, in other words, must be translated into an initial set of permits which nations can use or trade. Thomas Schelling, who teaches public policy at the University of Maryland, has expressed skepticism about the ability of nations to agree on this initial distribution. "Global emissions trading is an elegant idea," he has written, "but I cannot seriously envision national representatives sitting

down to divide up rights in perpetuity worth a trillion dollars."

Advocates of pollution trading often seem oblivious to this issue. They observe that once nations have accepted an initial allocation of permits, targets, or limits, they will be able to take advantage of emissions trading. But this is like saying that if nations had a can opener, they could use it to open a can. In fact, many developing nations have refused to participate in the

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Kyoto accords not because they oppose pollution trading as such—its advantages are perfectly plain—but because no one has suggested a sensible or fair principle on which to divide up initial emissions allowances under the global cap. Weiner does acknowledge "that it would be difficult to allocate emissions allowances." But, he goes on to say, "this problem is unavoidable in any climate agreement; emissions trading just makes allocations explicit." One would be hard pressed to find a plainer example of assuming the can opener.

Sandel is correct in believing that pollution trading, while economically efficient, fails to make moral and political sense. The reason, though, does not appear among the ones he mentions. The real problem—the intractable one—lies in identifying a principle on which to base an initial system of allowances. None is even under consideration. For this reason, pollution trading, while a no-brainer, is also a non-starter. China, India, and other developing countries have to wonder why they are called upon to cap their emissions at their 1990 baseline, say, at 1 ton per person, while Americans, who polluted twenty times as much in 1990, are rewarded with a 20-ton-per-person cap. These and most other developing nations have refused to accept any limits, even voluntary ones, until their emissions come to equal, on a per capita basis, those of wealthier countries.

Is there a non-arbitrary, morally attractive basis on which to distribute pollution allowances under a cap? People in colder climates may reasonably claim greater need than those in more temperate ones; those who produce necessary goods such as food (agriculture is fuel-intensive) may demand larger allotments than those that produce, say, entertainment. National boundaries seem arbitrary as a basis for distribution, since differences in per capita emissions within countries may be as great as the differences between them. Even if some sense of what justice demands could emerge in this context, moreover, it may not carry the

day against powerful interests which, as Schelling suggests, see a trillion dollars' worth of rights at stake.

Aiming for Efficiency

A way out of this impasse suggests itself. Developing nations will not accept overall limits on their greenhouse emissions. They may recognize, however, that the strongest economies, such as Germany and Switzerland, also have the cleanest, most energy-efficient technologies, and that it is in their interest to obtain such technologies for themselves.

Consider the comparative data on CO₂ emissions. In 1995, Russia managed a 1995 per capita GDP of only \$4,820, yet its CO₂ emissions per capita exceeded 12 tons. Compare this performance with that of Switzerland, which achieved a per capita GDP of about \$25,000, while emitting per capita only 5.5 tons of CO₂. Falling between these two extremes, Germany, with a per capita GDP of \$20,120, produced per capita emissions of 10.3 tons; this works out to about \$1 GDP per pound of CO₂. If Russia had the benefit of German technology and know-how, it could more than quadruple its economic performance with no additional pollution. With Swiss technology and organization, it could enjoy a twelvefold growth in its economy.

Industrialized and developing countries alike, then, should be able to accept as a target a *ratio between a country's per capita GDP and its emissions*. Wealthy countries would assist poorer ones to reach, say, the German ratio of \$1 GDP per pound of CO₂. This target, a distant but eventually achievable goal in developing nations, would constitute a minimum for the wealthier countries, which could promise to improve their own GDP/CO₂ ratios well beyond targets set for the developing world. Under this regime, all countries would move toward making their economies less dependent on fuels that produce greenhouse gases.

It is reasonable to hope that developing nations will sign on to a protocol that requires wealthy countries to subsidize their progress toward greater efficiency and productivity—so long as that protocol does not impose emissions limits inimical to economic growth. The Global Environment Facility (GEF) already operates as a mechanism for nations to cooperate in providing grant and concessional funding for investments in pollution abatement. In exchange for the cooperation of the developing countries, wealthy nations could agree to increase GEF funding for competitive proposals from the developing world.

The Real Choice

It is true that by seeking to improve GDP/emissions ratios, the world may not achieve the goal, envisioned at Kyoto, of stabilizing global greenhouse loadings at or below 1990 levels. But so long as developing countries refuse to freeze their own emissions at those levels, the goal cannot be achieved in any event. Despite the best efforts of the climate treaty negotiators, there is every reason to think that in 2012 or even 2020 the world will be emitting more greenhouse gases than it is today. The question we must ask about any proposed policy is not whether it will stabilize the atmosphere within the next fifteen or twenty years, but whether it will lead to less pollution than we would have under some other policy or in the absence of an agreement.

A worldwide attempt to make economies less and less carbon-intensive has the best likelihood of success. Insistence on pollution trading, in contrast, makes theoretical perfection the enemy of practical progress. As Peter J. Wilcoxon of the Brookings Institution observes, "The real choice is not between a sharp reduction in emissions and a more modest policy, but between a modest policy and no policy at all."

—Mark Sagoff

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