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ARTICLES

An Economic Analysis of Trade Measures to Protect the Global Environment

HOWARD F. CHANG*

ABSTRACT

In this article, Professor Howard Chang addresses the role of trade restrictions in supporting policies to protect the global environment and proposes a more liberal treatment of these environmental trade measures than that adopted by dispute-settlement panels of the General Agreement on Tariffs and Trade (GATT). The GATT Secretariat has recommended that countries like the United States rely on "carrots" rather than "sticks" in order to induce the participation of other countries in multilateral environmental agreements. Professor Chang defends the use of sticks on the ground that they encourage more restrained exploitation of the environment pending a multilateral agreement. First, sticks discourage countries from harming the environment. Second, carrots create perverse incentives. Countries may seek to convince others that they derive large benefits from exploitation by engaging in a great deal of exploitation, so that other countries will offer larger carrots to induce their restraint. Professor Chang also addresses how GATT should limit the use of trade restrictions to prevent the protectionist abuse of trade measures.

INTRODUCTION

This article addresses the role of trade restrictions in supporting policies to protect the global environment. The issue of environmental trade measures was raised most prominently in 1991 and in 1994, each time by a controversial decision by a dispute-settlement panel of the General Agree-

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ment on Tariffs and Trade (GATT).¹ Both GATT panels held that a ban by the United States on imports of tuna from specified countries violated GATT Article XI, which prohibits quantitative import restrictions.² The United States had banned these tuna imports pursuant to national legislation, the Marine Mammal Protection Act of 1972 (MMPA),³ which includes provisions limiting the number of dolphins that may be killed through tuna fishing. The reasoning advanced by each GATT panel has potentially sweeping implications for a wide variety of U.S. environmental laws and international environmental treaties that rely on trade restrictions for enforcement. The looming conflict between trade liberalization and environmental protection has placed these problems high on the GATT agenda.⁴

The ruling by the first GATT panel on August 16, 1991, which held that the U.S. ban on Mexican tuna violated the GATT, shocked and outraged environmentalists in the United States. The decision confirmed environmentalists' suspicions that trade agreements could undermine their efforts to protect the environment worldwide.⁵ In response to the GATT panel's decision, environmental groups called for a grassroots campaign to block the efforts to strengthen the GATT that were being made through the Uruguay Round of trade negotiations.⁶ Numerous commentators proposed amendments to the GATT in response to the 1991 panel's decision.⁷

1. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. pt. 5, 55 U.N.T.S. 187 [hereinafter GATT].

2. See *Report of the Panel, United States—Restrictions on Imports of Tuna*, GATT Doc. DS29/R (submitted to the parties May 20, 1994) [hereinafter *1994 Decision*]; *Report of the Panel, United States—Restrictions on Imports of Tuna*, GATT Doc. DS21/R (submitted to the parties Aug. 16, 1991) in GATT, BASIC INSTRUMENTS AND SELECTED DOCUMENTS 155 (39th Supp. 1993) [hereinafter *1991 Decision*].

3. 16 U.S.C. §§ 1361-1421h (1988 & Supp. IV 1992).

4. The next round of trade negotiations under the GATT will take up the issue of the environment. See *Members Agree on Inclusion in GATT Talks of Environment*, 11 Int'l Trade Rep. (BNA) 98 (Jan. 19, 1994). The United States has agreed with other countries to set up a Committee on Trade and the Environment to address these issues in the World Trade Organization. See *GATT Trade-Environment Panel's Work Will Begin Soon After Mid-April Signing*, 11 Int'l Trade Rep. (BNA) 498 (Mar. 30, 1994).

5. See, e.g., David Phillips, *Dolphins and GATT*, in THE CASE AGAINST FREE TRADE: GATT, NAFTA, AND THE GLOBALIZATION OF CORPORATE POWER 133, 138 (1993) ("[T]he ominous glimpse provided by the tuna/dolphin case could be simply the first of many regarding the sacrifices GATT would have us make in the name of trade.").

6. To mobilize support, these groups placed full-page advertisements in major newspapers and posters all over Washington, D.C. depicting a "GATTZILLA" monster crushing the U.S. Capitol under its foot, clutching a dolphin in one hand and a can of DDT in the other. See DANIEL C. ESTY, GREENING THE GATT: TRADE, ENVIRONMENT, AND THE FUTURE 34-35 (1994); Hilary F. French, *The GATT: Menace or Ally?*, WORLD WATCH, Sept.-Oct. 1993, at 12.

7. See, e.g., Matthew H. Hurlock, Note, *The GATT, U.S. Law and the Environment: A Proposal to Amend the GATT in Light of the Tuna/Dolphin Decision*, 92 COLUM. L. REV. 2098 (1992); Eliza Patterson, *GATT and the Environment—Rules Changes to Minimize Adverse Trade and Environmental Effects*, J. WORLD TRADE, June 1992, at 99.

Nevertheless, a 1992 special report by the GATT Secretariat displayed the same general hostility towards environmental trade measures evinced by the 1991 GATT panel.⁸

To avoid a political backlash in the United States that would jeopardize U.S. approval of the North American Free Trade Agreement (NAFTA), the Mexican government decided not to press for official adoption of the 1991 panel report by the GATT Council. The European Community, however, challenged the MMPA on similar grounds before another GATT panel, which on May 20, 1994, ruled against the United States.⁹ The 1994 decision stirred further opposition among environmentalists to trade agreements in general and posed an additional challenge for the Clinton Administration as it sought ratification of the GATT agreement that emerged from the Uruguay Round of trade negotiations. Environmentalists warned that the Uruguay Round accord would strengthen a trade regime that threatens our environmental laws: when U.S. environmental laws are ruled to be inconsistent with our obligations under that regime, Congress would have to "[e]ither gut the challenged U.S. law or face perpetual trade sanctions against ANY American industry the complaining country chooses."¹⁰ United States Trade Representative Mickey Kantor quickly announced that the United States would seek reconsideration of the 1994 panel report by the same panel or full substantive review by the GATT Council.¹¹ Although the United States may block adoption of the 1994 panel report, like the 1991 panel report, it nevertheless provides a disturbing preview of positions that future panels are likely to take in the new World Trade Organization (WTO), which has been established pursuant to the Uruguay Round accord.¹² As environmentalists in the United States were quick to point out, in the WTO, countries will no longer be able to block adoption of objectionable panel reports, as they could in the past

8. See GATT, *Trade and the Environment*, in 1 INTERNATIONAL TRADE 90-91, at 19 (1992).

9. See 1994 Decision, *supra* note 2.

10. *Why Is Mickey Kantor Deceiving You About GATT?*, N.Y. TIMES, Aug. 1, 1994, at A15 (advertisement by Public Citizen, Greenpeace, and Citizen's Clearinghouse for Hazardous Wastes). After the 1994 panel decision, Lori Wallach, Director of Public Citizen's Trade Program, stated: "This decision is proof positive that environmental laws are undermined by GATT. Many laws will be found illegal by GATT and then Congress must eliminate the laws or face perpetual . . . sanctions." Thomas L. Friedman, *U.S., Japan Back Talks on Trade*, N.Y. TIMES, May 24, 1994, at D1, D16.

11. See Kantor Says United States Will Ask for Full Review in Tuna-Dolphin Ruling, 11 Int'l Trade Rep. (BNA) 814 (May 25, 1994).

12. The Uruguay Round agreement includes the GATT 1947, which is the original 1947 agreement as amended and modified through the Uruguay Round, along with all the ancillary agreements, as modified, relating to the GATT 1947: the General Agreement on Trade in Services (GATS); the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS); an understanding on dispute settlement provisions; a Trade Policy Review Mechanism (TPRM); an annex with four plurilateral agreements; and the WTO Charter itself. See JOHN H. JACKSON ET AL., *LEGAL PROBLEMS OF INTERNATIONAL RELATIONS* 289-92 (3d ed. 1995).

under the GATT.¹³

In both the 1991 case and the 1994 case, the United States invoked GATT Article XX, which provides a list of general exceptions to all GATT obligations. Article XX lists a variety of national measures that are recognized as directed toward legitimate goals. In particular, the United States claimed that the ban on tuna imports was a measure “necessary to protect human, animal or plant life or health” within the meaning of Article XX(b) and “relating to the conservation of exhaustible natural resources” within the meaning of Article XX(g).¹⁴ Although the language in these provisions is broad, the 1991 panel held that these exceptions were intended to apply only to measures to protect animal life and natural resources *within* the jurisdiction of the party applying them.¹⁵ The 1994 panel rejected the geographic restriction adopted by the 1991 panel, but nevertheless ruled against the United States on the ground that the U.S. ban on tuna imports was a trade measure that would succeed in protecting dolphins only by changing the policies of other countries.

This article draws on economic theory to support a more liberal reading of Article XX that includes neither geographic restrictions nor an absolute prohibition on trade sanctions. A more appropriate rule would also permit, for example, unilateral trade restrictions that protect either the global commons or endangered species found abroad. This critique of the panels’ interpretations of the GATT focuses on the criterion of economic efficiency: the analysis evaluates alternative interpretations of the GATT largely on the basis of aggregate costs and benefits, measured in terms of what individuals are willing to pay to avoid particular costs or to gain

13. See *Kantor Says United States Will Ask for Full Review in Tuna-Dolphin Ruling*, *supra* note 11. Under prior GATT practice, any country could block GATT Council adoption of panel decisions ruling against it. Under the new WTO, however, countries can block decisions against them only if there is a consensus that the panel decisions should not be adopted.

14. See *1991 Decision*, *supra* note 2, paras. 3.33, .40, at 170, 172; *1994 Decision*, *supra* note 2, para. 3.7, at 10.

15. See *1991 Decision*, *supra* note 2, paras. 5.25, .32, at 198, 200-01. Some commentators have also defended this view. See, e.g., Ted L. McDorman, *The GATT Consistency of U.S. Fish Import Embargoes to Stop Drifnet Fishing and Save Whales, Dolphins and Turtles*, 24 GEO. WASH. J. INT’L L. & ECON. 477, 522 (1991) (stating that a country may use the GATT Article XX(b) exception only if the measure is necessary to protect animal life or health in the country using the measure). The GATT panel also cited a narrower ground for holding the U.S. ban on Mexican tuna to be a violation of the GATT: the panel complained that the United States linked its ceiling on the number of dolphins that the Mexican tuna-fishing fleet could kill during a particular period to the actual killings by the U.S. tuna-fishing fleet during the same period. The Mexican government could not know whether, at any particular time, their policies satisfied U.S. requirements. See *1991 Decision*, *supra* note 2, paras. 5.28, .33, at 199-201. The broader rationales advanced by the GATT panel might therefore be characterized as mere dicta. See David Palmeter, *Environment and Trade: Much Ado About Little?*, J. WORLD TRADE, June 1993, at 55, 65-66. The panel emphasized these broader theories, however, and the GATT Secretariat also appears to endorse them. See GATT, *supra* note 8.

particular benefits.¹⁶ I will refer to other considerations relevant to the interpretation of the GATT, such as the text of Article XX and normative principles other than economic efficiency,¹⁷ but an emphasis on economic theory seems appropriate in light of the great influence of that theory in advancing the most important arguments in favor of free trade. By framing the analysis in these terms, this article defends the use of trade measures to protect the global environment while appealing to the normative framework that is dominant among many influential critics of environmental trade measures.¹⁸ Furthermore, this article proposes an alternative interpretation of GATT Article XX in terms that balance environmental concerns against the concerns expressed by the GATT panels, while remaining within the normative framework thought most congenial to the case in favor of liberalized trade.

Part I describes some of the trade measures that could be threatened by the GATT panels' interpretations of GATT Article XX, and then explains the MMPA, GATT Article XX, and both GATT panels' decisions in greater detail. Part II offers a critique of the panels' decisions and the position of the GATT Secretariat from the perspective of global economic welfare. First, this policy analysis begins with the critical defect in the 1991 panel's reasoning: although that panel favored multilateral agreements over unilateral trade measures to protect the global environment, it failed to explain how countries are to induce others to join multilateral efforts. The 1994 panel raised similar problems by ruling against the use of trade measures to induce cooperation by other governments. The GATT Secretariat, however, has explained that it favors the use of subsidies as "carrots" over the use of trade measures as "sticks." Second, I offer a critique of the "carrots only" approach endorsed by the GATT Secretariat. Using

16. Those who hold an ethical belief that it is simply wrong to harm the environment would not be satisfied by an economic analysis that merely assigns an economic value to this belief. The analysis in this article makes the conservative assumption that it is appropriate to value the environment only instrumentally, then builds a case for trade measures to protect the environment that does not require agreement with those who attach ethical significance to the environment beyond its utility to humans. Those holding such ethical beliefs will have all the more reason to favor an interpretation of Article XX more liberal than that presented by the GATT panel.

17. For example, I also discuss issues of distributive justice. *see infra* Part IIc1 and accompanying notes, and of national sovereignty. *see infra* Part IVa2bii and accompanying notes.

18. *See, e.g.,* Jagdish Bhagwati, *Trade and the Environment: The False Conflict?*, in *TRADE AND THE ENVIRONMENT: LAW, ECONOMICS, AND POLICY* 159 (Durwood Zaelke et al. eds., 1993) (essay by a leading international economist, who served as Economic Policy Advisor to the Director-General of the GATT); Arvind Subramanian, *Trade Measures for Environment: A Nearly Empty Box?*, *WORLD ECON.*, Jan. 1992, at 135 (article by an Economic Affairs Officer in the GATT Secretariat); *see also* *THE GREENING OF WORLD TRADE ISSUES* (Kym Anderson & Richard Blackhurst eds., 1992) (collection of revised versions of background papers written by international economists and commissioned for the report by the GATT Secretariat, *supra* note 8).

concepts from game theory, I defend unilateral sticks (and multilateral sticks against countries not parties to the environmental protection agreement) as necessary to restrain more effectively exploitation of the environment pending a multilateral agreement. Finally, I address some possible problems posed by the use of sticks in general, and I advance some reasons to think that the use of sticks is nevertheless more likely to promote global economic welfare than the "carrots only" approach.

Part III turns to trade measures in particular and explores the problems that would arise if GATT Article XX allowed the use of trade measures to protect the global environment without any restrictions or qualifications. In particular, I discuss how protectionist interests could capture the domestic political process and exploit such an Article XX exception for their own ends. Finally, Part IV offers an interpretation of Article XX that places appropriate limits on the use of trade measures to guard against protectionism, while allowing the use of those trade measures that pose relatively little risk of protectionism.

I. BACKGROUND

First, a few examples of environmental trade measures will serve to illustrate what is at stake in the tuna/dolphin controversy. These examples will prove to be useful as hypothetical cases in a discussion of possible future GATT disputes. Second, a review of the tuna/dolphin controversy itself will provide the basis for a preliminary critique of each GATT panel's legal reasoning based on the text of Article XX.

A. NATIONAL ENVIRONMENTAL LAWS AND INTERNATIONAL ENVIRONMENTAL AGREEMENTS

On the international level, various trade measures have been used or proposed to protect environmental interests.¹⁹ The Montreal Protocol, which seeks to protect the earth's ozone layer by reducing emissions of chemicals like chlorofluorocarbons (CFCs) and halons, is one example of an international agreement that employs trade measures.²⁰ The Montreal Protocol completely prohibits trade in these controlled chemicals with nonsignatories, while allowing trade in these chemicals to continue (subject to restrictions) among signatories until the year 2000.²¹ These measures place nonsignatories at a commercial disadvantage by denying them access to suppliers and to markets that remain available to signatories, and

19. For a much more comprehensive survey of environmental trade measures, see Steve Charnovitz, *A Taxonomy of Environmental Trade Measures*, 6 GEO. INT'L ENVTL. L. REV. 1 (1993).

20. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. TREATY DOC. NO. 10, 100th Cong., 1st Sess. (1987).

21. See *id.* art. 4, paras. 1-2, at 5.

thus provide incentives for these countries to join the Montreal Protocol.²²

Even more vulnerable to attack under the GATT are unilateral trade measures taken by the United States pursuant to its national environmental laws. These laws go still further in the use of trade measures to protect environmental interests. For example, in 1971 the U.S. Congress added the Pelly Amendment to the Fishermen's Protective Act of 1967,²³ and in subsequent years the United States has invoked the Pelly Amendment with increasing frequency to protect wildlife.²⁴ As subsequently amended, the Pelly Amendment now authorizes the President to prohibit the importation of any product from a foreign country whose nationals conduct fishing operations that "diminish the effectiveness of an international fishery conservation program" or engage in trade that "diminishes the effectiveness of any international program for endangered or threatened species."²⁵ Pursuant to the Pelly Amendment, on August 5, 1993, Secretary of Commerce Ron Brown certified that Norway may be subject to U.S. trade sanctions for its resumption of commercial hunting of minke whales, despite a moratorium on this whaling by the International Whaling Commission.²⁶

Similarly, also pursuant to the Pelly Amendment, President Bill Clinton announced on April 11, 1994 that the United States would prohibit the importation of all wildlife products from Taiwan because the sale of rhinoceros horns and tiger bones in Taiwan was undermining the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).²⁷ The CITES prohibits commercial trade in species threatened with extinction.²⁸ The CITES itself provides that it "shall in no way affect the right of Parties to adopt" still "stricter domestic measures regarding the conditions for trade" for species listed under the CITES and "domestic measures restricting or prohibiting trade" for species not listed

22. It is unclear whether trade restrictions that are authorized by a multilateral agreement are consistent with the GATT panel's interpretation of the GATT. See *infra* notes 83-86 and accompanying text.

23. Pelly Amendment, Pub. L. No. 92-219, § 8, 85 Stat. 786 (1971) (codified as amended at 22 U.S.C. § 1978 (1988 & Supp. IV 1992)).

24. See Steve Charnovitz, *Encouraging Environmental Cooperation Through the Pelly Amendment*, 3 J. ENV'T & DEV. 3 (1994).

25. See 22 U.S.C. § 1978(a)(1)-(2) (1988 & Supp. IV 1992).

26. *President Clinton Delays Whaling Sanctions on Norway*, 10 Int'l Trade Rep. (BNA) 1678 (Oct. 6, 1993). The Clinton administration has yet to impose any sanctions on Norway. See *Also in the News*, 11 Int'l Trade Rep. (BNA) 873, 874 (June 1, 1994).

27. See *President Clinton Announces Sanctions on Taiwan for Rhino, Tiger Parts Trade*, 11 Int'l Trade Rep. (BNA) 576 (Apr. 13, 1994). The United States lifted these sanctions on June 30, 1995, after Taiwan amended its laws to improve wildlife conservation. See *Clinton Lifts Sanctions on Taiwan Following Wildlife Protection Steps*, 12 Int'l Trade Rep. (BNA) 1135 (July 5, 1995).

28. Convention on International Trade in Endangered Species of Wild Flora and Fauna, *opened for signature* Mar. 3, 1973, 27 U.S.T. 1087, 993 U.N.T.S. 243 [hereinafter CITES].

under the CITES.²⁹ The CITES does not authorize these measures so much as it acknowledges that parties may have the right to take these measures already.

The United States is not the only party to the GATT that has employed unilateral trade measures to protect environmental interests. The European Union (EU), even as it criticizes the United States for its unilateral trade measures, has adopted similar measures. Out of concern for the welfare of animals captured using particularly cruel and painful methods, the European Community³⁰ (EC) in 1991 imposed a ban, to take effect in 1996, that will prohibit imports of certain furs from any "country where the leg-hold trap is still used."³¹ The EC regulation was directed at fur from Canada and the United States in particular, in the hope that these two countries would be induced to cooperate in the development of international "humane trapping standards."³² The Canadian government invoked the GATT dispute-settlement process in an effort to block the ban.³³ To resolve the dispute, the EU, the United States, and Canada have agreed to form a working group to formulate standards for traps.³⁴

Other trade measures to protect the environment have been proposed in the U.S. Congress.³⁵ Senator David Boren of Oklahoma introduced a bill that proposed a far more sweeping link between trade and environmental protection abroad than any attempted by previous legislation.³⁶ That bill complained that "United States industry cannot reasonably be expected to incur increasing capital costs of compliance with environmental controls while its foreign competitors enjoy a substantial and widening competitive advantage as a result of remaining unfettered by pollution control obligations."³⁷ In response, the bill declared lax "environmental safeguards" to be an impermissible subsidy and authorized special duties against imports

29. CITES, *supra* note 28, art. XIV, para. 1, 27 U.S.T. at 1108, 993 U.N.T.S. at 253.

30. As of November 1993, when the Maastricht Treaty on European Union came into force, the European Community (EC) became known as the European Union (EU). See JACKSON ET AL., *supra* note 12, at 187-88. This article therefore refers to the European Union (EU) after November 1993 and to the European Community (EC) before November 1993.

31. Council Regulation 3254/91, 1991 O.J. (L 308) 1, 1. The embargo was to take effect in 1995, but the EU delayed its implementation for one year. See *Also in the News*, 12 Int'l Trade Rep. (BNA) 908, 911 (May 24, 1995).

32. *Id.*; see Steve Charnovitz, *Environmental Trade Measures: Multilateral or Unilateral?*, 23 ENVTL. POL'Y & L. 154, 157 (1993).

33. See *Also in the News*, 11 Int'l Trade Rep. (BNA) 968, 969 (June 15, 1994).

34. See U.S., *EU to Extend Compensation Pact Until End of This Year. Officials Say*, 12 Int'l Trade Rep. (BNA) 944 (May 31, 1995).

35. One bill introduced would have suspended duty-free treatment under the Generalized System of Preferences for wood articles imported from any hardwood-exporting country that failed to institute a satisfactory reforestation program. See H.R. 2782, 101st Cong., 1st Sess. (1989).

36. See S. 984, 102d Cong., 1st Sess. (1991).

37. *Id.* § 2(5), at 2-3.

from countries whose policies did not meet U.S. standards.³⁸ This type of proposal treats exports by these producers as “ecodumping,” a form of unfair trade justifying countervailing duties to offset the lower costs enjoyed by the foreign producer.³⁹

B. THE MARINE MAMMAL PROTECTION ACT

The U.S. Congress passed the MMPA with the stated goal of reducing the incidental killing of marine mammals in the course of commercial fishing to insignificant levels approaching zero.⁴⁰ The MMPA includes special provisions to limit the number of dolphins killed through tuna fishing in the eastern tropical Pacific Ocean (ETP). In the ETP, groups of dolphins often swim over schools of yellowfin tuna. Fishing fleets in the ETP take advantage of this phenomenon by looking for dolphins as they come to the surface to breathe and then encircling them with mile-long “purse seine nets” to catch the tuna below. As a result of these practices, U.S. fishermen in the early 1970s killed as many as 400,000 dolphins annually.⁴¹

In 1972, Congress responded with the MMPA,⁴² which subjects the U.S. fishing industry to licensing and regulatory requirements that limit the total allowable number of dolphins killed annually through U.S. fishing practices.⁴³ The MMPA was extremely successful in reducing the number of dolphins killed by U.S. fleets to fewer than 20,500 per year in the 1980s,⁴⁴ and to a mere 1004 by 1991.⁴⁵ While U.S. dolphin killings fell, however, foreign tuna fishing efforts grew. By the mid-1980s, foreign fishing fleets accounted for several times more dolphin deaths than U.S. fishing fleets.⁴⁶ Fishing vessels could reflag and thereby avoid the regula-

38. *Id.* § 3(a), at 3-4. Earlier bills would have imposed duties to offset competitive advantages flowing from lenient environmental standards abroad but were limited to particular products. *See, e.g.*, H.R. 1905, 99th Cong., 1st Sess. 1 (1985) (“A bill to offset the competitive advantage which foreign coal producers have as a result of not having to meet environmental, health, welfare and safety requirements of the kinds imposed on United States coal producers, and for other purposes”); S. 353, 99th Cong., 1st Sess. 1 (1985) (“A bill to increase the duty on imported copper by an amount which offsets the cost incurred by copper producers in the United States in meeting domestic environmental requirements”).

39. ESTY, *supra* note 6, at 163.

40. 16 U.S.C. § 1371(a)(2) (1988 & Supp. IV 1992).

41. Taking and Importing Marine Mammals Incidental to Commercial Fishing Operations, 55 Fed. Reg. 11,921, 11,921 (1990).

42. Marine Mammal Protection Act of 1972, Pub. L. No. 92-522, 86 Stat. 1027.

43. 16 U.S.C. §§ 1371(a)(2), 1374 (1988 & Supp. IV 1992).

44. Taking and Importing Marine Mammals Incidental to Commercial Fishing Operations, 55 Fed. Reg. 11,921, 11,921 (1990).

45. Phillips, *supra* note 5, at 135 (“US dolphin mortality was reduced from 12,643 in 1989 to 5,100 in 1990 to 1,004 in 1991 . . .”).

46. In 1987, the U.S. tuna fleet killed 13,992 dolphins, while foreign fleets killed over 103,000. H.R. REP. NO. 970, 100th Cong., 2d Sess. 15 (1988), *reprinted in* 1988 U.S.C.C.A.N. 6154, 6156.

tions applied to U.S. vessels.⁴⁷ Congress responded with amendments to the MMPA to deal more effectively with the foreign fleets.⁴⁸

As amended, the MMPA now includes a number of restrictions on fish imports. First, the MMPA requires the Secretary of the Treasury to "ban the importation of commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of United States standards."⁴⁹ More specifically, the MMPA prohibits imports of yellowfin tuna harvested with purse seine nets in the ETP unless the government of the country using purse seine nets provides evidence of "a regulatory program governing the incidental taking of marine mammals . . . that is comparable to that of the United States" and that achieves a dolphin kill rate "comparable" to that of the U.S. fleet.⁵⁰ If the foreign program is not comparable, then the United States must ban imports of yellowfin tuna caught by countries whose technology fails to meet U.S. standards. The MMPA requires not only a direct ban on yellowfin tuna imports from nations failing to make this showing—the primary embargo—but also a secondary embargo on yellowfin tuna imports from any "intermediary nation" that fails to certify that it has not imported any yellowfin tuna from the primary nation within the last six months.⁵¹

C. GATT ARTICLE XX AND THE 1991 GATT PANEL DECISION

Pursuant to the MMPA, the United States imposed a ban on the importation of yellowfin tuna harvested with purse seine nets in the ETP by Mexico,⁵² which had the largest fishing fleet in the ETP.⁵³ Mexico complained that the ban violated the GATT, and at Mexico's request, the GATT established a panel in 1991 to address the dispute. That GATT panel concluded that the ban was a quantitative restriction prohibited by GATT Article XI.⁵⁴ The United States argued that the MMPA came

47. Steve Charnovitz, *Dolphin and Tuna: An Analysis of the Second GATT Panel Report*, 24 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 10,567, 10,569 (1994).

48. See Marine Mammal Protection Act Amendments of 1988, Pub. L. No. 100-711, sec. 4(a), § 101(a)(2), 102 Stat. 4755, 4765-66; Act of July 17, 1984, Pub. L. No. 98-364, tit. I, § 101(a)(2), 98 Stat. 440, 440.

49. 16 U.S.C. § 1371(a)(2) (1988 & Supp. IV 1992).

50. *Id.* § 1371(a)(2)(B)(i). After 1990, to be deemed "comparable," the average incidental dolphin mortality rate must not exceed 1.25 times the average for U.S. vessels for the same period. *Id.* § 1371(a)(2)(B)(ii)(II).

51. *Id.* § 1371(a)(2)(C).

52. See Notice of Embargo for Yellowfin Tuna, 56 *Fed. Reg.* 12,367 (1991).

53. See Charnovitz, *supra* note 47, at 10,570.

54. *1991 Decision*, *supra* note 2, para. 5.18, at 196. Article XI states: "No prohibitions or restrictions . . . shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party . . ." GATT, *supra* note 1, art. XI, 61 Stat. pt. 5, at A32, 55 U.N.T.S. at 224, 226.

within the Article XX exceptions to the obligations under the GATT.⁵⁵ In the parts relied upon by the United States, Article XX provides:

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

...

(b) necessary to protect human, animal or plant life or health;

...

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;

....⁵⁶

The GATT panel rejected the notion that Article XX(b) applied to “human, animal or plant life or health outside the jurisdiction of the contracting party taking the measure,” even though that provision “refers to life and health protection generally without expressly limiting that protection to the jurisdiction of the contracting party concerned.”⁵⁷ The panel similarly rejected the “extrajurisdictional application” of Article XX(g) to natural resources outside the jurisdiction of the government taking the measure.⁵⁸

The panel strained to reach its conclusions regarding Article XX through rather questionable reasoning. For example, the panel purported to base its conclusion regarding Article XX(b) on “the drafting history of Article XX(b), the purpose of this provision, and the consequences that the interpretations proposed by the parties would have for the operation of the General Agreement as a whole.”⁵⁹ The only bit of drafting history the panel could invoke, however, was the fact that one earlier draft included some additional language: “For the purpose of protecting human, animal or plant life or health, if corresponding domestic safeguards under similar conditions exist in the importing country.”⁶⁰ Even if we consider this

55. See 1991 Decision, *supra* note 2, paras. 3.33, .40, at 170, 172.

56. GATT, *supra* note 1, art. XX, 61 Stat. pt. 5, at A60-61, 55 U.N.T.S. at 262.

57. 1991 Decision, *supra* note 2, para. 5.25, at 198.

58. *Id.* para. 5.32, at 200-01.

59. *Id.* para. 5.25, at 198.

60. *Id.* para. 5.26, at 198 (quoting the New York Draft of the Charter of the International Trade Organization). The drafters later dropped this added language as “unnecessary,” and the GATT panel infers that “the concerns of the drafters of Article XX(b) focused on the use of sanitary measures to safeguard life or health of humans, animals or plants within the jurisdiction of the importing country.” *Id.* para. 5.26, at 199. This inference, however, is a non sequitur. The drafters dropped the added language because the preamble’s proviso,

limitation relevant, however, it merely implies that any measure must not discriminate between countries without justification. In particular, measures should generally apply to domestic products standards that are at least as stringent as those applied to imported products. The limitation identified in the drafting history of Article XX(b) regulates discrimination among producers based on nationality, but it does not imply anything about the geographic location of the “human, animal or plant life” to be protected.⁶¹

The GATT panel employed similarly dubious reasoning with respect to Article XX(g). First, it pointed to a previous panel’s holding that a trade measure must be “primarily aimed at rendering effective” the “restrictions on domestic production or consumption” in order to be “made effective in conjunction with” those restrictions.⁶² The panel went on to assert that “[a] country can effectively control the production or consumption of an exhaustible natural resource only to the extent that the production or consumption is under its jurisdiction,” and concluded that “Article XX(g) was intended to permit contracting parties to take trade measures primarily aimed at rendering effective restrictions on production or consumption within their jurisdiction.”⁶³ Given this interpretation, it is hard to see why the panel ruled against the United States: the trade measures mandated by the MMPA are indeed “primarily aimed at rendering effective restrictions on production . . . within their jurisdiction,” namely, the restrictions on U.S. tuna fishers, who are within the prescriptive jurisdiction of the United States.

The panel held implicitly that the natural resource itself must be within the territorial jurisdiction of the country employing the trade measure. Article XX(g), however, requires only that the measure be “made effective in conjunction with restrictions on domestic production or consump-

which prohibits “arbitrary or unjustifiable discrimination between countries” and any “disguised restriction on international trade,” already expressed the same limitation on all Article XX exceptions. See Steve Charnovitz, *Exploring the Environmental Exceptions in GATT Article XX*, J. WORLD TRADE, Oct. 1991, at 37, 44.

61. Steve Charnovitz has criticized the GATT panel’s “domestic only” reading of “life or health” in Article XX(b) and “natural resources” in Article XX(g), pointing to “the long history of environmental laws and treaties concerned with seals, match workers, fisheries, etc.—in other countries as well as in the international ‘commons.’” Charnovitz, *supra* note 60, at 52. Charnovitz offers an excellent review of this history. See *id.* at 39-43. Charnovitz adds that “the United States—the author of the language ultimately adopted—clearly believed that Article XX(b) would countenance existing U.S. trade laws,” which included unilateral as well as multilateral measures to protect wildlife outside U.S. jurisdiction. *Id.* at 44-45.

62. 1991 Decision, *supra* note 2, para. 5.31, at 200 (quoting *Report of the Panel, Canada—Measures Affecting Exports of Unprocessed Herring and Salmon*, GATT Doc. L/6268, para. 4.6 (adopted Mar. 22, 1988), in GATT, BASIC INSTRUMENTS AND SELECTED DOCUMENTS 98, 114 (35th Supp. 1989)).

63. *Id.*

tion,"⁶⁴ not that the government applying the measure exercise effective control over the *natural resource*. Thus, the 1991 panel adopted an interpretation of "effective" supported neither by the text of Article XX(g) nor by the prior panel decision that it cited, which merely required the trade measure to be *primarily aimed at* rendering domestic restrictions effective. That prior panel decision only imposed conditions on the *purpose* of the trade measure, not on its effectiveness.

The settlement ultimately negotiated between Mexico and the United States suggests that the panel report may never be adopted by the GATT Council.⁶⁵ Thus, the MMPA remains in place. The question of its legality, however, was far from moot: the United States was soon defending the MMPA before another GATT panel.

D. THE 1994 GATT PANEL DECISION

Before the 1991 panel decision, the National Marine Fisheries Service (NMFS) announced on June 12, 1991 that it would begin to enforce the MMPA against several intermediary nations, including members of the EC.⁶⁶ In 1992, the United States expanded the list of intermediary nations, and the EC and the Netherlands asked the GATT Council to establish a panel to address their complaints about the MMPA.⁶⁷ The panel, established in 1992, did not produce a report until 1994.

Like the 1991 panel, the 1994 panel held that the MMPA violated GATT Article XI and did not fall within the exceptions listed in Article XX. Unlike the 1991 panel, however, the 1994 panel rejected the notion that the "animal or plant life or health" described in Article XX(b) or the "natural resources" described in Article XX(g) must lie within the territo-

64. GATT, *supra* note 1, art. XX(g), 61 Stat. pt. 5, at A61, 55 U.N.T.S. at 262.

65. In 1992, all states whose vessels fish for tuna in the ETP, including the members of the Inter-American Tropical Tuna Commission (IATTC), signed an agreement, to take effect in 1993, to reduce dolphin mortality in the ETP. The 1992 agreement includes Columbia, Costa Rica, Ecuador, Mexico, Nicaragua, Panama, the United States, Vanuatu, and Venezuela. *See 1994 Decision, supra* note 2, paras. 2.3, .4, at 3 & n.2. Although Mexico left the IATTC in 1978, it has pledged to rejoin. Charnovitz, *supra* note 47, at 10,571. As a result of this agreement, the Bush administration sought legislation to lift the tuna import ban, but failed to persuade Congress. The Clinton Administration has since proposed amendments to the MMPA that would end the tuna embargo for countries participating in the IATTC program. *See Administration Calls for End to Tuna Embargoes for IATTC Countries*, 12 Int'l Trade Rep. (BNA) 1101 (June 28, 1995). Although Mexico's incidental dolphin kills fell by 96% between 1986 and 1994, the ban on tuna imports from Mexico remains in place. *See id.* at 1102; *see also* Chris Kraul, *Angling for Relief: U.S. Ban on Mexican Tuna Batters Ensenada*, L.A. TIMES, May 30, 1995, at D1, D7 ("The number of dolphins killed by tuna boats operated by Mexico and other countries in the Eastern Pacific declined from 133,000 in 1986 to 4,000 last year . . .").

66. Notice to Importers, 56 Fed. Reg. 26,995 (1991). The NMFS sought certification from Costa Rica, France, Italy, Japan, and Panama regarding yellowfin tuna imported from Mexico.

67. *1994 Decision, supra* note 2, paras. 1.1, 2.14, at 1, 7.

rial jurisdiction of the party invoking Article XX. That is, the 1994 panel rejected the arguments advanced by the EC and the Netherlands based on the “extrajurisdictional” rationale of the 1991 panel decision.⁶⁸ The panel instead looked to the plain language of Article XX and concluded that it allowed countries to protect resources outside their own territorial jurisdictions.⁶⁹

The 1994 panel still found against the United States, basing its holding on a different objection to the MMPA:

[M]easures taken under the *primary* nation embargo prohibited imports from a country of any tuna, whether or not the particular tuna was harvested in a way that harmed or could harm dolphins, as long as the country’s tuna harvesting practices and policies were not comparable to those of the United States. . . . [T]he prohibition on imports of tuna into the United States taken under the primary nation embargo could not possibly, by itself, further the United States conservation objectives. The primary nation embargo could achieve its desired effect only if it were followed by changes in policies and practices in the exporting countries.⁷⁰

The panel similarly observed that:

[M]easures taken under the *intermediary* nation embargo prohibited imports from a country of any tuna, whether or not the particular tuna was harvested in a manner that harmed or could harm dolphins, and whether or not the country had tuna harvesting practices and policies that harmed or could harm dolphins, as long as it was from a country that imported tuna from countries maintaining tuna harvesting practices and policies not comparable to those of the United States.⁷¹

The panel inferred that both import bans “were taken so as to force other countries to change their policies with respect to persons and things within their own jurisdiction, since the embargoes required such changes in order to have any effect on the conservation of dolphins.”⁷² The panel

68. *See id.* paras. 5.14, .30, at 53, 58.

69. The 1994 panel observed that “the text of Article XX(g) does not spell out any limitation on the location of the exhaustible natural resources to be conserved.” *Id.* para. 5.15, at 54. The panel found “no valid reason supporting the conclusion that the provisions of Article XX(g) apply only to . . . resources located within the territory of the contracting party invoking the provision.” *Id.* para. 5.20, at 55. Similarly, the panel observed that “the text of Article XX(b) does not spell out any limitation on the location of the living things to be protected.” *id.* para. 5.31, at 59, and concluded that “the life and health of dolphins in the eastern tropical Pacific Ocean . . . fell within the range of policies covered by Article XX(b).” *Id.* para. 5.33, at 59.

70. *Id.* para. 5.24, at 56-57.

71. *Id.* para. 5.23, at 56.

72. *Id.* para. 5.24, at 57.

held against the United States, concluding that

measures taken so as to force other countries to change their policies, and that were effective only if such changes occurred, could not be primarily aimed either at the conservation of an exhaustible natural resource, or at rendering effective restrictions on domestic production or consumption, in the meaning of Article XX(g).⁷³

By similar reasoning, the panel concluded that these measures “could not be considered ‘necessary’ for the protection of animal life or health in the sense of Article XX(b).”⁷⁴

The panel reached these conclusions after conceding that “the text of Article XX is not explicit on this question.”⁷⁵ But it is particularly hard to see how the language cited can possibly bear the meaning that the panel attributed to Article XX(b). With respect to Article XX(b), the panel seems to have read “necessary” to mean “sufficient”—indeed, to mean “sufficient in the absence of any change in policy by foreign governments.” With respect to Article XX(g), the panel construed “effective” to mean “effective in the absence of any change in policy by foreign governments.” Much like the 1991 panel, then, the 1994 panel departed from the plain and unqualified language of Article XX and based its interpretation of that text instead on “the basic objectives and principles” of the GATT.⁷⁶ I will turn to the GATT panels’ *policy* arguments in Part III.

The analysis that follows criticizes both GATT panels’ interpretations of Article XX, largely from an economic policy perspective. First, I explain why the general approach of both GATT panels would be likely to *reduce* global economic welfare. Second, I argue that contrary to the claims of both GATT panels, “the basic objectives and principles” of GATT do not require the cramped readings of Article XX that they proposed. Instead, a broader reading of Article XX would promote environmental protection and global economic efficiency without undermining the regime of liberalized trade established by the GATT.

II. AN ECONOMIC CRITIQUE OF THE GATT PANELS’ LIMITS ON ARTICLE XX

Each GATT panel’s reading of the exceptions in Article XX of the GATT allows each government to choose the level of environmental protection within its territorial jurisdiction, free from the threat of trade

73. *Id.* para. 5.27, at 57.

74. *Id.* para. 5.39, at 61; *see id.* paras. 5.36–.37, at 60.

75. *Id.* para. 5.38, at 61 (with respect to Article XX(b)); *see id.* para. 5.25, at 57 (the text “does not provide a clear answer” with respect to Article XX(g)).

76. *Id.* paras. 5.26, .38, at 57, 61.

sanctions.⁷⁷ Economic theory, as well as notions of national sovereignty, suggest that countries should set environmental standards that maximize national welfare in light of local conditions, provided that there are no externalities across national boundaries. As long as there are no such spillovers and governments choose the efficient level of environmental protection (by equating social marginal benefits and costs and thereby maximizing national social welfare), competition in international trade and investment will be efficient.⁷⁸ We do not obtain these optimality results, however, in the presence of international environmental externalities.

A. THE ECONOMIC PROBLEM: INTERNATIONAL ENVIRONMENTAL EXTERNALITIES

The effects of activities on one side of a border need not be limited by that border. Activities entirely within one country can have effects within another country. Pollution travels across boundaries. CFC emissions deplete the earth's ozone layer, exposing the entire world to greater levels of ultraviolet radiation. Carbon dioxide emissions and destruction of the tropical rain forest both contribute to global warming. In the presence of such transboundary externalities, no nation has the optimal incentives to regulate activities within its borders that generate environmental harms elsewhere. Unless each nation internalizes the negative externalities generated by pollution, for example, each government will have too little incentive to limit pollution.

Furthermore, as with transboundary externalities, activities by one nation in the global commons can also affect the interests of other nations. Countries exploiting the global commons can impose negative externalities on each other, leading to the "tragedy of the commons."⁷⁹ These harmful spillover effects, however, need not always be mutual; they can harm the interests of countries that are not participating in the exploitation in question. The fishing practices at issue in the tuna cases, for example, were not purely "self-regarding": they killed dolphins in the global commons, to the detriment of all who value dolphins. In this context, even if all governments unilaterally maximize national welfare, international regulations are still needed to protect the global environment from inefficient exploitation. These problems suggest that the GATT should allow individual countries

77. See *id.*; 1991 Decision, *supra* note 2, paras. 5.27, .32, at 199-201.

78. See Wallace E. Oates & Robert M. Schwab, *Economic Competition Among Jurisdictions: Efficiency Enhancing or Distortion Inducing?*, 35 J. PUB. ECON. 333 (1988). The same considerations apply to competition among states with different environmental regulations in a federal system. See Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992).

79. Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968); see Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. PAPERS & PROC. 347 (1967).

to take steps to protect the global commons, and the United States argued before both GATT panels that such steps should include trade measures.

The 1991 GATT panel held, however, that “even if Article XX(b) were interpreted to permit extrajurisdictional protection of life and health,” the U.S. ban on Mexican tuna imports would violate the GATT because it is not “necessary” to protect dolphins.⁸⁰ GATT panels have strictly interpreted the term “necessary”: the United States had the heavy burden of showing that there was no alternative measure less inconsistent with the GATT that it could reasonably have used instead.⁸¹ Mexico argued that bilateral or multilateral negotiations would be a better approach than unilateral trade restrictions. The panel agreed that a multilateral agreement would be a less restrictive alternative, concluding that “[t]he United States had not demonstrated . . . that it had exhausted all options reasonably available to it to pursue its dolphin protection objectives through measures consistent with the General Agreement, in particular through the negotiation of international cooperative arrangements.”⁸²

Both panel decisions, however, leave open some nagging questions about whether countries can, under the GATT, use trade measures that are authorized in multilateral agreements.⁸³ To the extent that GATT signatories agree in a multilateral agreement to be subject to trade measures as a

80. 1991 Decision, *supra* note 2, para. 5.28, at 199.

81. A GATT dispute-settlement panel has held that “a contracting party cannot justify a measure inconsistent with another GATT provision as ‘necessary’ in terms of Article XX(d) if an alternative measure which it could reasonably be expected to employ and which is not inconsistent with other GATT provisions is available to it.” *Report of the Panel, United States—Section 337 of the Tariff Act of 1930*, GATT Doc. L/6439, para. 5.26 (adopted Nov. 7, 1989), in GATT, BASIC INSTRUMENTS AND SELECTED DOCUMENTS 345, 392 (36th Supp. 1990). Another such panel applied the same interpretation to “necessary” in Article XX(b). See *Report of the Panel, Thailand—Restrictions on Importation of and Internal Taxes on Cigarettes*, GATT Doc. DS10/R, para. 74 (adopted Nov. 7, 1990), in GATT, BASIC INSTRUMENTS AND SELECTED DOCUMENTS 200, 223 (37th Supp. 1991). For a cogent critique of this strict interpretation of “necessary” in Article XX, see Charnovitz, *supra* note 60, at 48-50. For a critique and a proposal for a more reasonable alternative, see ESTY, *supra* note 6, at 48, 222 (suggesting that “necessary” be interpreted to mean “not clearly disproportionate in relation to the putative environmental benefits and in light of equally effective policy alternatives that are reasonably available”).

82. 1991 Decision, *supra* note 2, para. 5.28, at 199. The EC and the Netherlands urged the 1994 panel to interpret the word “necessary” in Article XX(b) in precisely the same fashion as the 1991 panel. See 1994 Decision, *supra* note 2, para. 3.75, at 31; see also *Dolphins and the Trade Laws*, WASH. POST, May 27, 1994, at A24 (editorial suggesting that “[t]he world’s environment will be best protected by . . . cooperation, not by trade fights”).

83. See USTR *Official Examines Conflicts Between Trade, Environment Pacts*, 11 Int’l Trade Rep. (BNA) 913 (June 8, 1994) (reporting on an unresolved controversy over whether international environmental agreements take precedence over the GATT). This uncertainty has had a chilling effect on international efforts to protect the global environment. See Steve Charnovitz, *GATT and the Environment: Examining the Issues*, 4 INT’L ENVTL. AFF. 203, 216 (1992) (reporting that “the International Convention for the Conservation of Atlantic Tunas recently backed away from a new trade-based enforcement mechanism because of potential GATT complications”).

mechanism to enforce the agreement, the GATT will not bar the use of those measures. If a country joins this type of multilateral agreement after it joined the GATT, it is a settled principle of international law that the more recent agreement will prevail over the earlier one, in this case, the GATT.⁸⁴ A more difficult question arises if a country joins the GATT, or a trade agreement negotiated pursuant to the GATT, *after* having agreed to trade measures in another accord. The holding of the 1994 GATT panel seems to rule out the use of trade sanctions in this context, regardless of the location of the natural resource in question. The reasoning of the 1991 GATT panel is ambiguous with respect to this situation: its broad rationale prohibiting all trade measures to protect environmental interests outside a country's own jurisdiction seems to bar trade measures even in this case; yet its narrower rationale favoring multilateral agreements over unilateral trade measures appears to endorse measures that are authorized by multilateral agreements.

Furthermore, GATT signatories that have also joined a multilateral environmental agreement that authorizes trade measures may seek to use these measures against other GATT signatories that have not signed the environmental agreement. The 1994 panel decision apparently prohibits the use of any trade sanctions in this instance as well, because the environmental agreement would not prevail over the GATT with respect to a GATT member that is not a party to the environmental agreement.⁸⁵ The broader rationale for the 1991 decision also seems to forbid the use of trade measures to protect "extrajurisdictional" environmental interests in this case.⁸⁶ The 1991 panel's narrower rationale, however, appears to leave this question open.

The 1991 GATT panel's reasoning suffers from a more basic defect: an international agreement is not within the control of the United States alone.⁸⁷ Other parties who harm the environment must also have some reason to come to the negotiating table and to reach an agreement. The

84. See Vienna Convention on the Law of Treaties, *opened for signature* May 23, 1969, art. 30, 1155 U.N.T.S. 331, 339-40 (providing for the rights and obligations of parties to successive treaties relating to the same subject matter). More difficult issues arise if the multilateral environmental agreement does not provide explicitly for enforcement through trade measures.

85. See *id.* art. 34, 1155 U.N.T.S. at 341 ("A treaty does not create either obligations or rights for a third State without its consent."). The environmental agreement could bind a country that is not a party only if the rule embodied in the agreement were to become "a customary rule of international law, recognized as such." *Id.* art. 38, 1155 U.N.T.S. at 341; see Robert F. Housman & Durwood J. Zaelke, *Trade, Environment, and Sustainable Development: A Primer*, 15 HASTINGS INT'L & COMP. L. REV. 535, 603-04 (1992).

86. The EC and the Netherlands took this position before the 1994 panel. See 1994 *Decision*, *supra* note 2, para. 3.76, at 32.

87. The United States pointed out to the 1994 panel that "[a]chieving such an arrangement was beyond the control of the United States, and it was impossible ever to prove that negotiations were exhausted." *Id.* para. 3.66, at 29.

types of trade measures condemned by both GATT panels can create the incentives necessary for polluting countries to join a multilateral agreement that imposes environmental regulations on them.

Of course, devices other than trade measures can induce the cooperation of foreign governments. Countries have many sanctions at their disposal, including the use of military force, suspensions of foreign aid, and restrictions on foreign investment, as well as restrictions on trade in goods. Because the GATT addresses only some of these instruments, a prohibition on trade sticks would not render the use of these other sanctions illegal. Nevertheless, many of these other measures are often infeasible. The use of military force, for example, is far too costly to be of any use in conventional disputes over environmental matters. Suspensions of foreign aid may sacrifice other important foreign policy interests or have little effect on the governments of particular countries, including those that receive little foreign aid. Because these other sanctions on behalf of the environment may be costly or ineffective, trade restrictions have proven particularly useful instruments in protecting environmental interests. Over the past century, unilateral trade measures have played an important role in spurring the world community into action to protect environmental interests.⁸⁸

Countries like the United States, however, are often urged to rely on carrots rather than sticks when pursuing their environmental goals. For example, as an interested third party to the dispute before the 1994 panel, Venezuela argued: "Positive incentives could be used more productively to further global environmental protection."⁸⁹ In a 1992 report, the GATT Secretariat made more specific suggestions:

When cooperation is not voluntarily forthcoming, positive incentives are the best way to achieve sustained inter-governmental cooperation. Positive incentives can include offers of financial assistance and transfers of environmentally friendly technology directly related to the problem at hand, as well as more broadly based offers, for example, to increase foreign aid, to lessen debt problems and to make non-discriminatory reductions in trade barriers.⁹⁰

I call this view the "carrots only" solution.

88. See Charnovitz, *supra* note 83, at 207; see also Richard B. Bilder, *The Role of Unilateral State Action in Preventing International Environmental Injury*, 14 VAND. J. TRANSNAT'L L. 51, 82 (1981) ("The example set by unilateral action, the moral and political pressure it creates, and . . . the threat and costs of continued unilateral approaches, may lead other states . . . to cooperate in developing multilateral solutions they might not otherwise be inclined to seek."). The U.S. ban on the importation of endangered species in 1969, for example, and similar measures by other nations, led to international agreement on the CITES in 1973. The idea of unilateral trade measures to protect wildlife, however, has an even longer history. See Charnovitz, *supra* note 60, at 39-41.

89. 1994 Decision, *supra* note 2, para. 4.35, at 47.

90. GATT, *supra* note 8, at 36 (footnote omitted).

B. AN ECONOMIC CRITIQUE OF THE "CARROTS ONLY" SOLUTION

An economic affairs officer in the GATT Secretariat who is critical of environmental trade measures has asserted: "[T]he opposition between trade and environment is a false one. The distinction is rather between unilateral and cooperative approaches to solving environmental problems."⁹¹ As I argue here, it is instead the distinction between unilateral and cooperative approaches that is misleading, because the two approaches are not mutually exclusive. In fact, countries should use both approaches simultaneously: unilateral trade measures provide an important instrument that should work in tandem with multilateral negotiations. After all, international negotiations are in reality a noncooperative bargaining game played in the shadow of the "default" rules that prevail in the absence of an agreement.

The "carrots only" contractual approach to the problem of negative externalities corresponds with the type of solution indicated by a naive reading of the Coase theorem, which suggests that as long as parties can bargain with one another, they will reach an efficient solution regardless of the initial allocation of legal rights.⁹² Changing the legal rights alters the welfare each party expects to enjoy in the absence of an agreement—that is, it moves the "threat point" in the negotiations. This shift in the default payoffs, however, merely reallocates wealth; it does not render the outcome inefficient. In the international environmental context, the "carrots only" solution gives countries the right to harm the global environment and puts the burden on others to offer concessions sufficiently valuable to the offending nations to induce them to stop. This solution amounts to an endorsement of the "victim pays" principle rather than the "polluter pays" principle.⁹³

91. Subramanian, *supra* note 18, at 143.

92. If a polluter has the right to pollute, but the victim puts a value on pollution abatement that exceeds its costs, then the victim can pay the polluter to reduce its emissions. If the victim has the right to stop the pollution, but the cost of abatement exceeds its value to the victim, then the polluter can pay the victim to allow the pollution to continue. See Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

93. Subramanian notes that in some cases many nations may be characterized as polluters: "the search for cooperative solutions through international negotiations involves decisions regarding the appropriate allocation of the costs of pollution abatement between countries based in part on a prior collective determination as to who is the polluter and who the victim and who should be accorded property rights." Subramanian, *supra* note 18, at 146-47. He favors a ban on unilateral trade measures, because "[l]egitimising unilateral sanctions would amount to allowing unilateral determination as to who is the polluter and also as to who should have the property rights." *Id.* at 148.

A prohibition on unilateral sanctions, however, also amounts to a determination of property rights. In particular, such a prohibition implies that polluters in all cases have property rights against those countries that wish to curb pollution, even when one country unilaterally restrains its exploitation of the global commons and calls upon others to follow suit. The "carrots only" solution is hardly neutral in this respect.

The Coase theorem, however, assumes no transaction costs, so that there are no barriers to parties reaching these efficient agreements. In reality, transaction costs will make these agreements difficult to reach: agreements will take real time and effort to negotiate, and the parties may sometimes fail to reach agreement altogether. For example, for many years before the 1991 tuna dispute, the United States had attempted unsuccessfully to negotiate an international agreement with Mexico and other countries to protect dolphins in the ETP.⁹⁴

Market failures are particularly acute in the context of the global environment. The large number of countries with a stake in the global environment will lead to free-rider problems: each country has the incentive to wait for others to offer the carrots necessary to forge an agreement.⁹⁵ The free-rider problem exists even if the true preferences of each party are common knowledge among all the other parties. Under conditions of “symmetric information,” the problem amounts to a multilateral version of the classic bilateral prisoner’s dilemma game, under which the dominant strategy of each party is to refuse to cooperate, even if each player would be better off under the cooperative solution than under the noncooperative equilibrium.⁹⁶

Imperfections in information compound the free-rider problem among countries: in reality, each government participating in the negotiations will

94. See Jeffrey L. Dunoff, *Reconciling International Trade with Preservation of the Global Commons: Can We Prosper and Protect?*, 49 WASH. & LEE L. REV. 1407, 1419 (1992) (“[T]he Panel’s assertion that the United States had not engaged in multilateral efforts to address the tuna/dolphin problem is simply incorrect.”); see also Steve Charnovitz, *Environmentalism Confronts GATT Rules: Recent Developments and New Opportunities*, J. WORLD TRADE, Apr. 1993, at 37, 39 (“[T]he GATT panel was quick to criticize the United States . . . but offered no criticism of Mexico for stonewalling such arrangements for many years.”); French, *supra* note 6, at 14 (“[N]ations had been trying for some time to reach an agreement on dolphin-friendly fishing practices, through the Inter-American Tropical Tuna Commission.”). Before the 1994 panel, the United States stressed that it “had endeavored for more than 20 years to reach multilateral agreement to protect dolphins in the eastern tropical Pacific purse seine fishery.” 1994 *Decision*, *supra* note 2, para. 3.69, at 30.

95. See MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 35 (1965) (“[T]he larger the group, the farther it will fall short of providing an optimal amount of a collective good.”); *id.* at 28 (“[T]he more individuals in the group, the more serious the suboptimality will be.”). Ironically, the GATT panel cited the large number of interested parties in the tuna matter as a reason to *prohibit* the trade measures taken by the United States. The panel preferred “international cooperative arrangements, which would seem to be desirable in view of the fact that dolphins roam the waters of many states and the high seas.” 1991 *Decision*, *supra* note 2, para. 5.28, at 199. Such an agreement may well be desirable, but the very fact that numerous countries would have to participate in such an agreement is a reason *not* to count on such agreements. See CHRISTOPHER D. STONE, *THE GNAT IS OLDER THAN MAN: GLOBAL ENVIRONMENT AND HUMAN AGENDA* 117 (1993) (“[A] treaty is clearly easier to conclude, the fewer the number of nations whose cooperation is required to make it effective.”)

96. That is, the cooperative solution “Pareto-dominates” the “Nash equilibrium.”

be uncertain about the preferences of the other governments. Given these asymmetries in information, each country will have an incentive to understate its interest in protecting the global environment (and to overstate its interest in exploiting it) in order to win a better deal for itself in the negotiations. This "preference revelation" problem makes it difficult to induce each country to bear its fair share of the costs of environmental protection, as would be the case with any global public good.

If the parties reach an agreement at all, it will take time. Sequential bargaining models with asymmetric information suggest that reaching an agreement under these conditions may well entail a significant and costly delay.⁹⁷ Over time, haggling provides the parties with further information about one another's true preferences, and it is the very costliness of the passage of time without an agreement that provides this information. Countries most impatient for an agreement make greater concessions in less time; those with the least to lose from delay hold out longer.

For all these reasons, it is naive to cite the mere possibility of international agreements as a panacea for global environmental problems. Because strategic behavior can cause bargaining to fail, we cannot rely on multilateral agreements alone to protect the global environment.⁹⁸ Even when bargaining eventually succeeds, harm to the environment will occur prior to the conclusion of an agreement.⁹⁹ Given the reality of strategic behavior, the allocation of legal rights (the threat point) is no longer a matter of indifference from the perspective of efficiency.¹⁰⁰ In a regime in

97. See, e.g., Peter C. Cramton, *Bargaining with Incomplete Information: An Infinite-Horizon Model with Two-Sided Uncertainty*, 51 REV. ECON. STUD. 579 (1984); Drew Fudenberg & Jean Tirole, *Sequential Bargaining with Incomplete Information*, 50 REV. ECON. STUD. 221 (1983); Sanford J. Grossman & Motty Perry, *Sequential Bargaining under Asymmetric Information*, 39 J. ECON. THEORY 120 (1986).

98. See WILLIAM J. BAUMOL & WALLACE E. OATES, *THE THEORY OF ENVIRONMENTAL POLICY* 276 (2d ed. 1988) ("Because the record of international cooperation on other critical matters hardly inspires confidence in the prospects for efficacious multilateral measures for the protection of the environment, it may be essential to design instruments whose effectiveness does not require the unanimous consent of those involved."); Bilder, *supra* note 88, at 91 ("It is true that the international community has . . . been slow to act to meet environmental challenges, and that the multilateral measures adopted are not as effective as they might be. . . . When the alternative to unilateral action is doing nothing, the case for unilateral action . . . seems clearly strengthened."); see also STONE, *supra* note 95, at 98-116 (describing impediments to the formation of international environmental agreements).

99. See Bilder, *supra* note 88, at 95 ("While multilateral actions seem generally preferable to unilateral action, effective multilateral arrangement in many cases may not be practically attainable Under these circumstances, a respectable argument can be made for the propriety of unilateral action on at least an interim basis pending achievement of effective multilateral arrangements.").

100. See GUIDO CALABRESI, *THE COST OF ACCIDENTS* 136-40 (1970); A. MITCHELL POLINSKY, *AN INTRODUCTION TO LAW AND ECONOMICS* 15-25 (2d ed. 1989). The issue in the international law context is similar to the allocation of property rights in the domestic law context. In the domestic law context, high transaction costs associated with bargaining over the transfer of property rights can militate in favor of liability rules rather than property

which unilateral sticks are prohibited, countries would be more inclined to engage in environmentally harmful actions. We would expect the level of environmentally harmful activities to rise for two distinct reasons: first, sticks deter overuse of the environment, and second, the use of carrots alone creates perverse incentives.

1. Sticks Deter Overuse of the Environment

Under the reasoning of the GATT panels, countries would be shielded from sanctions, and (at least under the reasoning of the 1991 GATT panel) foreign producers would be shielded from extrajurisdictional trade measures, which otherwise would discourage each from harming the environment.¹⁰¹ These prohibitions on the use of sticks would bring forth more environmental harm even in the absence of any prospect of negotiations toward a multilateral agreement. Insofar as the environment is a public good among multiple countries, we would expect to observe inefficiently high levels of environmentally harmful behavior, because each party fails to internalize the negative externalities associated with its behavior. A prohibition on sticks would remove an effective deterrent to excessive exploitation of the environment. If we cannot use sticks to protect the global commons, for example, then unless and until we obtain a multilateral agreement, we are left with the usual free-rider problems that cause each party to overuse the natural resources held in common. Even if some

rules if courts are likely to have better information on the victim's damages than on the proper allocation of property rights. *Id.* In the international context, however, we have yet to reach such issues with respect to many global environmental interests, because a consensus on the appropriate allocation of legal entitlements is often lacking. Because these interests are subject to ill-defined property rights, international agreements fail to provide the GATT or any other international body with the authority to enforce entitlements to many of these interests, through the award of damages or through any other means. In the absence of a world government, sovereign countries must work out these issues through international bargaining and, pending an agreement on these matters, can only protect these interests through self-help. This article addresses the question of which rules regarding environmental trade measures would provide a better basis for such bargaining from the perspective of economic efficiency.

101. As one commentator observes:

A principal advantage of unilateral state environmental action is the promptness with which state power and sanctions can be effectively brought to bear against conduct or activities threatening environmental injury. Thus, the incentives to catch endangered species will be immediately reduced when a significant importer unilaterally imposes state restrictions against importing these species or their products. In some cases, the alternatives to unilateral action may be no regulation at all, less effective regulation, or long delays until regulation is implemented. There may be various political, economic, military, or technical reasons why multilateral agreement is likely to prove impossible or extremely difficult to achieve. . . . In practice, unilateral action is frequently justified on the ground that the urgency and gravity of the threat to which it is a response simply does not permit the delays and uncertainties involved in attempts to secure multilateral action.

Bilder, *supra* note 88, at 79-80.

countries were to reach an agreement to protect the environment, other countries will have an incentive not to sign the agreement—they would prefer to “free ride” on the restraint exercised by signatories to the agreement.

2. Carrots Create Perverse Incentives

The prospect of being the beneficiary of carrots in a multilateral agreement would create additional *positive* incentives to harm the environment. In the absence of sticks to induce cooperation, a multilateral agreement must offer the polluting countries carrots: concessions by those countries that value the environment and must secure the cooperation of other countries without resort to unilateral sanctions. By moving the threat point in the bargaining game away from environmentally friendly countries and toward those that harm the environment, we reduce still further the incentives to exercise restraint in exploiting the global environment.¹⁰² The use of subsidies or other rewards to encourage pollution abatement has a number of perverse incentives.

a. More Countries Will Pollute. In regulating a polluting industry in the domestic context, a government agency can use a system of subsidies rather than Pigouvian taxes.¹⁰³ Either instrument would encourage individual firms to choose the efficient level of pollution abatement, but the subsidy would make the industry in question more profitable than it would be otherwise. Lured by the prospect of these profits, more firms would enter the industry than would otherwise, and the net result could be more pollution rather than less. The subsidy can create incentives that are identical to those of the Pigouvian tax only if the government pays the subsidy not only to actual polluters, but also to potential entrants into the polluting industry and to those polluters who exit the industry.¹⁰⁴ These potential entrants may be infinite in number, however, and even if they are finite in number, they may be difficult to identify.

Similarly, a multilateral agreement that relies on subsidies rewards countries for harming the environment; only those who pollute receive the subsidy. This prospect makes environmentally harmful activity rational for countries that would otherwise be indifferent or even disinclined to harm

102. Richard H. Snape, *The Environment, International Trade and Competitiveness*, in *THE GREENING OF WORLD TRADE ISSUES*, *supra* note 18, at 73, 85, warns of the “incentives which such compensation may provide for the adoption of production processes which are not the most pollution-efficient from a world perspective.” Snape, however, does not elaborate, nor does he analyze precisely how such compensation creates such incentives.

103. If an environmental agency were to levy a tax per unit of pollution equal to the marginal damages accruing to all victims, then this “Pigouvian tax” would serve to internalize the external costs that the polluter imposes on others. *See* BAUMOL & ●ATES, *supra* note 98, at 21-22.

104. *See id.* at 211-28.

the environment. Countries would be encouraged to “enter” the polluting industry by offering producers lax environmental regulations. Unless the agreement offered carrots to all such potential entrants (to keep them from entering the industry) as well as to all actual industry participants, it would lead more countries to adopt lax environmental regulations. Countries will have reduced incentives to regulate their own producers: rather than regulating spontaneously without getting a carrot, some countries will be induced to delay in order to receive a carrot in exchange for restricting pollution later. Even if this effect did not lead to higher levels of environmental harm after the agreement, we would expect it to lead to higher levels of such harm in the period leading up to an agreement.

In theory, if we could identify all potential entrants, we could avoid this perverse incentive by paying them all carrots, regardless of whether they actually enter the industry by adopting lax regulations. This solution is not only expensive but also difficult to implement without perfect information on the political costs and benefits of environmental regulation in other countries. In the absence of this information, countries will adopt lax regulations in order to ensure that they will qualify for carrots. Thus, the prospect of carrots offered under a multilateral agreement creates a perverse incentive for more countries to harm the environment in anticipation of such an agreement.¹⁰⁵

b. Countries Will Pollute More. Furthermore, the fact that the size of these carrots will be determined by a bargaining process will encourage each polluting country to pollute still more. Those that would already be inclined to harm the environment would be encouraged by the bargaining process to harm it to an even greater extent to qualify for larger carrots. These strategies would yield positive payoffs for the offending countries because they could use the threat of continuing their environmentally harmful activities to extort carrots from other countries.

Why would other countries pay this “ransom” if they know that these activities are not what the “blackmailing” countries would consider optimal in the absence of the prospect of a ransom? If we assume conditions of symmetric information, the true preferences of each party would be common knowledge among all parties. In such a model, it must be in a blackmailing country’s interest to carry out its threat *ex post* if the threat is to be credible *ex ante*. If a blackmailing country can make such a threat credible, then game theory suggests that it may indeed be able to extract concessions from another country by taking actions that harm the interests of the other country, even if that action is also costly to the blackmailing

105. Insofar as a country also suffers some environmental harm from this strategy, these policies would entail some cost. Nevertheless, given an additional benefit from these policies in the form of carrots, some countries that would otherwise exercise restraint in polluting will find it now worthwhile to bear these environmental costs.

country.¹⁰⁶

Consider a model of this strategic game with two parties, symmetric information, and multiple time periods, but a final period known to both parties (a "finite time horizon"). In each period, the blackmailing country threatens to take a costly action in the next time period unless the blackmailed country makes a concession. This game is repeated as part of a larger "supergame." It would not be in the interest of the blackmailing country to carry through with its threat in the final period because there is no future period in which to reap a carrot. Recognizing this fact, the blackmailed country would not pay the carrot in the penultimate period. By the same reasoning, the blackmailing country will have no incentive to carry through with its threat in the penultimate period either.¹⁰⁷ Indeed, by backward induction, the same logic will apply in all previous periods. The dominant strategy in each period will be for the blackmailing country not to carry out its threat and for the blackmailed country to refuse to pay.¹⁰⁸ What then makes such threats credible?

The economic literature has analyzed this type of strategic behavior most often in the field of industrial organization, in the context of competing firms. I digress briefly here to describe these models and their results, because they offer lessons directly applicable to the context of international bargaining to prevent environmental harm. The threats described in the context of international environmental bargaining games correspond to predatory pricing, either threatened by an incumbent monopolist to deter entry by other firms or conducted by an oligopolist seeking to drive its competitors out of the market. Models of predatory pricing must explain why a firm would find it rational to engage in such pricing when these strategies are costly and therefore raise problems of credibility. With symmetric information and a finite time horizon, a competitor contemplating exit from the market, or a potential competitor contemplating entry into the market, would not find the threat of predatory pricing to be credible.¹⁰⁹

106. See Jonathan Eaton & Maxim Engers, *Sanctions*, 100 J. POL. ECON. 899 (1992). Eaton and Engers model the use of sanctions, including trade sanctions, as the action that is costly to both parties but can extract a concession from the "target" of the sanctions. The same model, however, can describe costly actions by one country that harm an environmental interest valued by the other country. The first country can undertake this action to wrest concessions from the target country.

107. Knowing that the blackmailed country will recognize the outcome in the final period, the blackmailing country will understand that it cannot change the beliefs of the blackmailed country regarding the final period by carrying out its threat in the penultimate period.

108. In the language of game theory, these threats are not credible enough to make the payment of carrots rational in a "subgame perfect equilibrium."

109. See Reinhard Selten, *The Chain Store Paradox*, 9 THEORY & DECISION 127 (1978). According to the "chain store" paradox, an incumbent firm selling in multiple markets would never engage in costly predation, regardless of the number of markets in which the incumbent faces potential entry. This result runs counter to intuition insofar as one might expect

In models with asymmetric information, however, threats of predation *are* credible. In these models, even in games with finite time horizons, predatory behavior occurs in equilibrium because predation today builds a reputation for predation that affects predictions by others about the likelihood of predation tomorrow.¹¹⁰ Suppose, for example, that an incumbent monopolist knows its own costs of production (either high or low), but a potential entrant does not know the incumbent's costs. A high-cost incumbent may price as if it were a low-cost incumbent, even though this price is too low to maximize its short-term profit, in order to masquerade as a low-cost firm and thereby confuse the potential entrant. In this "pooling equilibrium," the potential entrant is unable to distinguish between high-cost and low-cost firms. Because this "limit pricing" strategy may lead the potential entrant to fear low-cost competition in the next period and may thus succeed in deterring entry, the strategy maximizes the *long-term* profit of the high-cost incumbent.¹¹¹ In this model, the high-cost predator threatens low prices in the future by charging low prices in the present ("bluffing" predation), in order to extract a future "concession" (a decision not to enter the market) from the potential entrant.¹¹²

"Separating equilibria" are also possible in these models. In these cases, the low-cost incumbent chooses a price so low that a high-cost incumbent does not find it worthwhile to imitate the low-cost incumbent's price, even though this price is too low to maximize the low-cost incumbent's short-term profit. The low-cost incumbent finds this "limit pricing" strategy worthwhile, because it signals the incumbent's low cost and thereby deters entry by the potential entrant, and so maximizes the long-term profit of the low-cost incumbent. To price any higher would not convince the potential

predatory pricing in some markets so as to establish a reputation that will deter entry and thereby increase profits in other markets.

110. An alternative model would retain the assumption of symmetric information and rely instead on infinite time horizons to avoid the logic of backward induction that causes the equilibrium with successful predation to unravel. The Folk Theorem holds that an infinitely repeated game can have a wide variety of subgame perfect equilibria if the players are sufficiently patient—that is, if they do not discount the future too much. See Drew Fudenberg & Eric Maskin, *The Folk Theorem in Repeated Games with Discounting or with Incomplete Information*, 54 *ECONOMETRICA* 533 (1986). In particular, this theorem implies that the threat of predatory behavior can be credible and effective because the players never expect the game to end. Eaton and Engers, *supra* note 106, show how threats of costly actions can be credible and effective in extracting concessions in a model with symmetric information and an infinite time horizon.

111. See Paul Milgrom & John Roberts, *Limit Pricing and Entry Under Incomplete Information: An Equilibrium Analysis*, 50 *ECONOMETRICA* 443 (1982).

112. One can extend the same model to predatory pricing by an established firm that seeks to convey bad news to a competitor about future profitability and thereby to induce the competitor to exit. This predation can be profitable if the firm faces a cost of re-entry. See John Roberts, *A Signaling Model of Predatory Pricing*, 38 *OXFORD ECON. PAPERS* 75 (1986) (supp.); David Scharfstein, *A Policy to Prevent Rational Test-Market Predation*, 2 *RAND J. ECON.* 229 (1984).

entrant, who would therefore enter the market and reduce the incumbent's profits.

An oligopolist can use the same type of predatory pricing strategy as part of a bargaining game. Consider a duopolist that offers to buy out its sole competitor. A high-cost firm proposing a takeover may engage in predation to mimic a low-cost firm in a pooling equilibrium. Alternatively, a low-cost firm may engage in predation to signal its low costs in a separating equilibrium. In either case, predatory behavior by the firm convinces its competitor that future prices in the market will be low and thereby improves the terms of the potential takeover. By pricing low, the duopolist can induce its competitor to sell its business at a low price in a merger.¹¹³ Here, the predator obtains a concession in the form of its competitor's agreement to accept a low offer.

Thus, game theory suggests that threats to harm the global environment could be credible insofar as the blackmailed country may not know whether or not a particular level of environmental protection is truly optimal for the government of the blackmailing country. In reality, one government cannot observe the political and economic costs and benefits that other governments face as they contemplate regulations to restrain exploitation of the global environment by their own nationals.¹¹⁴ Under conditions of asymmetric information, countries may seek to convince others that they derive large benefits from exploitation and suffer large costs from environmental protection by engaging in a great deal of exploitation and in very little regulation. If this "predatory" behavior succeeds in conveying this impression, then other countries will believe that they must offer the predatory countries large carrots in order to induce the predators' restraint as part of a multilateral agreement.

Countries that actually have low costs of regulation may masquerade as countries with high costs of regulation in order to take advantage of these carrots in a pooling equilibrium. Alternatively, high-cost countries may have to exploit the environment more and to regulate less in order to signal their high costs successfully in a separating equilibrium. They will harm the environment more than they would otherwise so as to differentiate themselves from low-cost countries that would otherwise mimic the behavior of high-cost countries. In either a pooling or a separating equilibrium, countries choose to inflict greater harm on the environment in order

113. See Garth Saloner, *Predation, Merger and Incomplete Information*, 18 RAND J. ECON. 165 (1987).

114. These costs and benefits are especially difficult for an outsider to evaluate. In the predatory pricing context, the difficulty of observing a firm's costs was the main source of uncertainty. If these costs could be observed, they would not be difficult to measure. In the formation of public policy, the political costs and benefits that enter the government's calculations are not only difficult to observe, but also inherently difficult to measure.

to qualify for carrots in the future.¹¹⁵

c. Bargaining Will Delay Agreement. The same dynamic continues throughout the bargaining process, leading low-cost countries to turn down offers of carrots they in fact consider more valuable than their environmentally harmful behavior. They do so to mimic high-cost countries, in the hope of obtaining a better offer in the future. In a “bluffing equilibrium,” low-cost countries hold out for larger carrots and thereby delay resolution of the environmental problem.¹¹⁶ Thus, a “carrots only” regime may not only increase the level of pollution, but also extend the period during which inefficiently high levels of pollution persist.

d. Advantages of Sticks. If countries that value the environment are permitted to use sticks rather than carrots, they can avoid these perverse incentives. If a particular level of environmentally harmful behavior triggers trade sanctions, and environmental regulation leads to the removal of those sanctions, for example, then a country will have nothing to gain by pretending to find such levels of environmentally harmful behavior in its interest. To the extent that the severity of these sanctions turns on observed levels of environmental harm, the use of sanctions will discourage lax environmental regulations. First, greater levels of harm will increase the stake of the country employing sanctions in preventing the harmful activity. This effect will increase the costs that this country is willing to bear, including the costs of more draconian sanctions. Second, if the sanctioning country infers, from either the intransigence of the polluting country or its levels of pollution, that this “target” country enjoys large benefits from its own environmentally harmful activity, then it will believe harsher sanctions are needed to achieve its objective. With sticks, a country that signals an inclination to harm the environment can bring greater penalties upon itself; with carrots, the same signal can yield greater rewards.¹¹⁷

115. See APPENDIX, *infra*, for a formal model of this signaling game. After developing this model and writing this article, I learned about an independent effort to develop a formal model of this type of bargaining by Jonathan Eaton and Maxim Engers. See JONATHAN EATON & MAXIM ENGERS, THREATS AND PROMISES, (National Bureau of Economic Research, Working Paper No. 4849, 1994). Although Eaton and Engers use a different model, they also find that a system of rewards can have the perverse effect of encouraging pollution because the polluting country has the incentive to mislead others about its costs and benefits from polluting. In their model, there is only one possible level of pollution greater than zero, and a polluting country “bluffs” by choosing to pollute in spite of an offer of a reward in the first period, so as to receive a better offer in the second period. See *id.* at 8-9, 13-16. In my model, there is a continuum of possible levels of pollution, and a polluting country signals its “type” through the level of pollution that it chooses prior to the offer of a carrot. This framework reveals perverse effects, not only in a “bluffing” equilibrium like that described by Eaton and Engers, in which different types pool, but also in a separating equilibrium.

116. See EATON & ENGERS, *supra* note 115, at 8-9, 13-16.

117. Greater penalties may not follow from this signal if these greater penalties are also

The foregoing analysis suggests that the “carrots only” solution to environmental problems is costly in terms of economic efficiency. Asymmetric information not only implies that bargaining may fail, but also creates the possibility that carrots will induce environmentally costly signaling behavior. Given the defects of the “carrots only” solution, trade restrictions and other sticks become more attractive as alternative or additional instruments that can restrain the exploitation of the global commons while the parties pursue a more cooperative solution. Unless we make rather sanguine assumptions about the efficiency of multilateral bargaining, it seems unwise to adopt general rules against the use of trade measures as broad as the rules suggested by the two GATT panels. In light of the existence of transaction costs in the real world and the perverse incentives created by the “carrots only” approach, trade measures like those used by the United States in the tuna case may well be “necessary to protect human, animal or plant life or health” pending successful conclusion of a multilateral agreement with all relevant countries.

C. STICKS: POSSIBLE DISADVANTAGES

The use of sticks rather than carrots is not without its own risks. There is, in theory, a corresponding risk that, if allowed to use sticks, countries will use them opportunistically, simply to extract more favorable terms from target countries in multilateral agreements. That is, countries may take advantage of trade instruments by employing them as strategic bargaining chips, just as countries may use environmentally harmful policies to extort carrots from those that value the environment. In this sense, a rule allowing the use of trade measures does not eliminate strategic behavior in the bargaining process. Given that strategic behavior is inherent in the bargaining process under conditions of asymmetric information, why might we be worried about the use of sticks? Sticks may raise issues of distributive justice and of economic efficiency.

1. Distributive Justice

Advocates of the “carrots only” approach point out that a ban on unilateral sanctions would redistribute wealth from the nations using sanctions toward the targets of those sanctions. They tout this effect as a

too costly for the country using sticks. If this signal leads the country threatening sanctions to drop its threat, then the use of sticks can also create a perverse incentive to pollute. Thus, as Eaton and Engers show in a formal model, if only “mild” sanctions are available, so that some types of polluting countries cannot be deterred, then threats can create this perverse incentive. *Id.* at 17-18, 20-22. This insight underscores the importance of preserving access to sanctions that are sufficient to deter the target of those sanctions. Historical evidence suggests that trade measures have usually been sufficient to modify policies causing environmental harms. *See infra* notes 224-31 and accompanying text. Thus, these considerations on balance militate in favor of expanding the set of sticks available, not in favor of excluding trade measures from this set. *See supra* text accompanying note 88.

reason to favor such a ban, not only on grounds of distributive justice, but also on environmental grounds: they point to evidence that “environmental quality and income levels are highly correlated.”¹¹⁸ Wealth transfers to developing countries raise their income levels and thereby increase their interest in environmental protection. If we assume that the countries wielding sanctions tend to be affluent countries with large economies and that the targets of sanctions are often smaller and poorer countries, then the use of sanctions will have unfortunate redistributive effects compared to the “carrots only” approach.

Concerns about distributive justice per se, however, do not lend support for directing carrots at those countries that harm the environment. Transfers from those countries that most value the environment to those that harm the environment are extremely clumsy instruments for redistributing wealth. These transfers redistribute wealth on grounds imperfectly correlated with the affluence or poverty of the countries in question. They will include wealth transfers to affluent countries that harm the environment (such as Norway, which has resumed its hunting of minke whales)¹¹⁹ and will exclude transfers to poor countries that refrain from harming the environment. This erratic policy not only offends notions of horizontal equity and fairness, but also creates perverse incentives to harm the environment.

A superior policy response would be to transfer resources from affluent countries to poor countries generally, because such transfers can target those countries with the greatest need without creating any of the perverse incentives described here.¹²⁰ We have many other policies, such as the liberalization of trade in textiles, clothing, and other sectors important for the industrialization of developing countries, that would facilitate economic growth in less developed countries without specifically rewarding those that harm the environment. Given the broad range of policies that can improve the prospects for economic development in poorer countries without the adverse effects associated with the “carrots only” regime, a prohibition on the use of trade sticks to protect the environment is a relatively unattractive and unimportant instrument for redistributing global wealth.

118. Subramanian, *supra* note 18, at 148.

119. *See supra* note 26 and accompanying text.

120. In the domestic context, redistribution through progressive income taxes is less costly than redistribution through inefficient legal rules. *See* Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient Than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994); Steven Shavell, *A Note on Efficiency vs. Distributional Equity in Legal Rulemaking: Should Distributional Equity Matter Given Optimal Income Taxation?*, 71 AM. ECON. REV. PAPERS & PROC. 414 (1981). Similarly, in the context of international legal rules, alternatives to the “carrots only” regime leave available many superior instruments for improving the global distribution of wealth.

2. Economic Efficiency

Should the strategic use of sticks to shift the threat point in favor of the countries that wield them be a source of concern from an efficiency perspective? The fact that sticks reduce the payoffs of polluting countries does not in and of itself pose a problem: it is precisely this mechanism that discourages excessive harm to the environment. Nevertheless, the heavy-handed use of sticks could raise problems for global economic efficiency by going too far in protecting the environment. Sticks that impose large costs on the targeted countries might induce them to forgo environmentally harmful activities even when the economic benefits that they derive from these activities outweigh the costs. Over time, bargaining may allow these countries to resume these activities without provoking sanctions: if their activities are indeed efficient, then they should be able to offer other countries concessions sufficiently valuable to pay for the right to pollute. As already discussed, however, bargaining may fail to bring about efficient outcomes. Is the stick cure therefore likely to be worse than the carrot disease? There are two reasons to think that the use of sticks is still likely to effect an improvement over the "carrots only" regime.

First, the transparently opportunistic use of sticks to extort concessions is unlikely, given the adverse impact these tactics would have on a sanctioning country's foreign relations. The doctrine of proportionality in international law requires that any sanctions a country employs should be proportionate to the interests to be protected.¹²¹ This well-established principle implies that economic sanctions causing effects disproportionate to the environmental interests at stake would violate international law.¹²² The use of sanctions is constrained not only by international law generally, but also by the realities of the international political landscape. No country will resort to sanctions without some hesitation, because they can erode precious political capital in the realm of international relations. Even if all governments agreed that trade sticks are consistent with the GATT, they would be unlikely to use sanctions often. The threat of a hostile reaction, and perhaps even retaliatory sanctions imposed by the target country, makes such an undertaking a risky and serious matter.¹²³ Because trade sanctions and other threats are available to all parties, each party is likely to exercise restraint in employing them.

For these reasons, we rarely observe the blatant use of either sanctions or environmentally harmful activities simply to extort concessions from

121. See Jost Delbruck, *Proportionality*, in 7 ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 396, 399 (Rudolf Bernhardt ed., 1984).

122. Dunoff, *supra* note 94, at 1447.

123. See Bilder, *supra* note 88, at 84 ("Tensions may be inevitable if other states decide that the unilateral action significantly harms their interests, and particularly where they perceive it as impinging on their rights. . . . If the states affected should respond by taking retaliatory measures, political and other tensions would surely escalate.").

others. A rule allowing the use of trade sanctions offers the prospect that the potential for opportunistic behavior on each side will serve to inhibit abuse on the other side. Allowing countries to respond to the environmental threats posed by polluting countries with threats of their own preserves some symmetry that would be lacking under the "carrots only" approach.¹²⁴ Given the potential for mutual threats, if any abuse of sanctions occurs at all, it is unlikely to take the form of naked blackmail. Any abuse of sanctions is more likely to be rather subtle, so as to appear proportionate to the legitimate interests of the country wielding the sanction.

Second, the use of sticks assures that the bargaining process is not biased against environmental interests. The "carrots only" approach leads inevitably to inefficiently high levels of environmental harm because it rewards rather than penalizes harmful behavior.¹²⁵ Whereas the "carrots only" approach guarantees perverse incentives for harmful behavior, the use of trade sticks creates a mere theoretical possibility of excessive deterrence. The realities of international politics that inhibit the abuse of trade sanctions also greatly reduce the risk that countries will deter too much environmental harm.

Although we cannot guarantee optimal environmental protection under a regime that allows trade sticks, the risk of too little pollution hardly seems to be an important danger as an empirical matter. Recall that even in the absence of perverse incentives to harm the environment, the status quo already features excessive incentives to harm the environment. Given

124. Bhagwati, however, observes that while "the strong nations use trade power to force their preferred values on the weaker nations," the "equally autonomous values of the weaker nations . . . cannot be forced upon the stronger nations in the same way." Bhagwati, *supra* note 18, at 171. He complains that this asymmetry implies that "economically strong nations are also morally superior and their governments must not be constrained by multilateral rules from coercing others into conversion." *Id.* at 174. This complaint, however, rests upon an implicit assumption that the alternative would be "morally" neutral. One could just as easily complain that a "carrots only" regime would imply that economically weak nations are "morally superior" and must be free to harm the environment, including the global commons, as they see fit, without any fear of sanctions. *See supra* note 93.

Furthermore, Bhagwati's complaint seemingly extends to all exercises of power by powerful countries, suggesting a general duty not to exercise power. It is also true, for example, that rich countries can offer carrots that poor countries cannot. Any restraint on the exercise of power, whether by carrot or stick, will redistribute power away from the powerful. To the extent that Bhagwati's complaint pertains to problems of distributive justice, as discussed above, other policies are better suited to address them. Like the redistribution of wealth, the redistribution of power can occur through a variety of policies, some ill-advised, others desirable. Some uses of power, even uses of sticks, are beneficial. *See infra* note 126.

A more useful approach would distinguish between salutary and harmful exercises of power. For example, the analysis in this article looks to the question of which legal regime would be more likely to promote global welfare, with our measure of social welfare designed to respect the legitimate preferences of all parties. It does not provide a basis for determining which party is "morally superior." This analysis suggests that it is best to let each party pursue the satisfaction of its own values, not only through exploitation of the environment but also through sanctions in response to pollution by others.

125. *See supra* Part IIB for a critique of the "carrots only" approach.

that countries already labor under severe free-rider problems in tackling global environmental problems, the notion that we should worry about excessive environmental protection is rather fanciful. If anything, because we are starting with the standard problems associated with the provision of a public good, countries need stronger incentives to take action, both to protect the environment and to induce other countries to do the same. If the use of trade sticks in this cause brings some reward to countries that take action and some penalty for those countries that harm the environment, these effects are far more likely to improve matters than to overcompensate.¹²⁶

III. TRADE MEASURES: SOLUTION OR PANDORA'S BOX?

The preceding analysis suggests that we should allow the use of sticks as well as carrots. This analysis applies generally to all sticks, whether they take the form of trade measures or other policy instruments. The free-rider problems and asymmetries in information that inhibit international cooperation on global environmental problems, however, militate in favor of a broad set of available sticks, including trade sticks in particular. If we offer governments a larger set of instruments from which to choose, we increase the likelihood that they can overcome barriers to multilateral agreements.

A rule allowing the use of trade measures, however, is not without its own particular costs and risks. If trade measures entail their own economic costs, then a rule allowing their use may undermine global economic efficiency. Although trade measures can help protect the global environment, they can also distort trade. If trade measures often serve the interests of protectionism rather than genuine environmental interests, then the costs flowing from the abuse of trade measures could swamp the benefits of environmental protection.

A. DISGUISED PROTECTIONISM

Commentators have suggested that an exception to the GATT that allowed unilateral trade measures to protect the environment could be "captured" by domestic producers seeking protection from competition in international trade. Domestic producers might raise trivial environmental concerns to disguise measures that are protectionist. There are two ways in

126. From this perspective, we are fortunate that some countries are large enough to overcome free-rider problems among a large number of their constituents. Large countries absorb a large enough portion of the total world benefit from the protection of the global environment that they have the incentive to take action. Large countries are also generally influential enough to wield sticks effectively. Smaller and less powerful countries that are not the target of these sanctions "free ride" on the unilateral actions taken by large countries insofar as they derive the environmental benefits that flow from these actions without bearing the costs.

which countries may abuse environmental trade measures for protectionist reasons.

First, domestic producers in the country imposing the trade measures might support the measures as a means to achieve environmental objectives, because while they are in place, the trade measures themselves protect domestic producers from foreign competition.¹²⁷ In this sense, domestic producers benefit from continuing intransigence on the part of the foreign government, which keeps the trade measures in place. From an economic perspective, such trade measures might be costly because while they are in place, they can distort trade.

Second, protectionists might support environmental policies that raise the production costs of foreign competitors, so that when trade measures persuade the foreign government to adopt such policies, they can compete more effectively against imports from that country. In this case, these producer interest groups are in a win-win situation: if the trade measures succeed in changing policies abroad, domestic producers succeed in raising their competitors' costs; if the foreign governments do not change their policies, the trade measures continue to shield domestic producers from these competitors. Countervailing duties on the "ecodumping" theory, for example, would offer these benefits to domestic producers. One critic of trade measures warns that "domestic industries and labour groups . . . are likely to hitch their wagon to the ecological star to secure or legitimise protectionist outcomes."¹²⁸

If GATT Article XX is to permit trade measures, it must also place some limits on their use. Without any limits, the use of trade measures could undermine our regime of liberalized trade, which would entail economic costs just as surely as environmental harms entail economic costs. The GATT should limit the use of trade restrictions so that they do not lead to an outcome worse than that produced by the "carrots only" approach. What limits should we place on the environmental policies that countries may pursue through trade measures?

1. Geographic Location

We can distinguish between environmental policies based on the geographic location of the activity to be regulated: is it within the territory of another country, or in the global commons?¹²⁹ The preceding critique of

127. See GATT, *supra* note 8, at 21 (warning of protectionists "biasing the choice between positive and negative incentives in favour of trade sanctions"); Bilder, *supra* note 88, at 92 ("[M]easures restricting imports ostensibly for environmental reasons may actually be imposed to protect domestic industries against foreign competition.").

128. Subramanian, *supra* note 18, at 148.

129. See *Developments in the Law—International Environmental Law*, 104 HARV. L. REV. 1484, 1534-36 (1991) (distinguishing resources "within the territorial boundaries of one state or group of states" from those "in which no state has property rights" and those "not contained in any one state").

the GATT solution applies most clearly in the case of natural resources held in common where multiple countries derive value from using the resources. The economic logic of this critique, however, sweeps more broadly to include transborder environmental problems. For example, activities within one country's national borders can have physical effects in other countries.¹³⁰ Thus, the 1994 panel was wise to reject any territorial limits on the environmental interests falling within the Article XX exceptions, whether based on the territory of the country using the trade measure or based on the territory of any other country.

2. Use Value and Nonuse Value

We also can distinguish between environmental policies based on the type of interest we have in the activity regulated: spillovers can be psychological rather than physical.¹³¹ People can value natural resources not only for their "use value" (either the actual current use value or the "option value" of potential future use), but also for their existence per se. The desire to protect marine mammals, for example, derives from "existence value" or "nonuse value" as well as use value. Environmentalists do not wish to conserve marine mammals simply so that they can be exploited in an efficient manner. Their desire to protect dolphins and whales goes beyond the use value that people derive from whaling or from the pleasure of viewing them in person or in photographs. People attach value to natural resources that they never intend to enjoy personally.

These nonuse values may derive from a variety of altruistic motives.¹³² They may represent the altruistic satisfaction one derives from the use of the resource by other people. For example, this nonuse value may be "bequest value," which flows from the use of the resource by future generations. Our desire to protect pristine environments or endangered species, for example, may derive in large part from bequest values. Altruistic nonuse value may also reflect "intrinsic value," which derives from the benefits a resource itself enjoys while it is undisturbed by humanity. Our desire to protect individual marine mammals from cruelty or death, for example, may reflect intrinsic value.¹³³

130. See *supra* note 78 and accompanying text for a discussion of these spillover effects.

131. See GATT, *supra* note 8, at 33 n.53; Richard Blackhurst & Arvind Subramanian, *Promoting Multilateral Cooperation on the Environment*, in *THE GREENING OF WORLD TRADE ISSUES*, *supra* note 18, at 247; Karl-Goran Maler, *International Environmental Problems*, 6 *OXFORD REV. ECON. POL'Y* 80, 100-01 (1990).

132. See Alan Randall & John R. Stoll, *Existence Value in a Total Valuation Framework*, in *MANAGING AIR QUALITY AND SCENIC RESOURCES AT NATIONAL PARKS AND WILDERNESS AREAS* 265, 268 (Robert D. Rowe & Lauraine G. Chestnut eds., 1983) [hereinafter *MANAGING AIR QUALITY*].

133. In the 1994 case, Venezuela argued that "there was no evidence indicating that dolphin populations in the Eastern Tropical Pacific were in danger of extinction," and that

Nonuse value, however, need not depend on any altruistic preferences. We can also derive satisfaction simply from knowing that pristine environments and endangered species in other countries are preserved, independent of any use that might be made of them. These nonuse values give rise to "preservation externalities."¹³⁴ Finally, we might distinguish nonuse values that derive purely from some effect on our own psychological welfare, like those that derive from our "sympathy" for other sentient beings, and those that depend on our political theories, ethical beliefs, or "commitments."¹³⁵

Nonuse value tends to pose serious practical problems for those trying to measure its magnitude because it is a public good that people can often enjoy without changing their behavior.¹³⁶ This feature implies the preference revelation problems usually associated with public goods. Use value

therefore the MMPA was "neither necessary to protect dolphin life or health nor primarily aimed at conservation." *1994 Decision, supra* note 2, para. 4.36, at 47. Similarly, the EC argued that "it could not be said that the survival of the population was currently at risk," and that therefore the MMPA was not "necessary" for the protection of dolphins. *Id.* para. 3.75, at 31; see Dunoff, *supra* note 94, at 1451 (noting that, on the record before the 1991 panel, "substantial evidence existed that the number of dolphins in the ETP had remained constant in recent years"). These arguments assume that because these dolphins are not endangered as a population, the MMPA is not "necessary." This assumption reflects an unduly narrow view of the reasons that a country can invoke to protect animal life or health under Article XX(b). One can have altruistic concerns for the welfare of individual dolphins, even if the total dolphin population is not depleted.

The rate of depletion of the dolphin population seems more relevant to the analysis under Article XX(g), but Venezuela's argument takes a particularly narrow view of the circumstances that might require conservation measures. Governments should be allowed to take action before the risk of depletion begins to threaten a species with extinction. When invoking Article XX(g) before the 1994 panel, the United States maintained that tuna fishing in the ETP "threatened the sustainability of several species of dolphins." *1994 Decision, supra* note 2, para. 3.50, at 26. In 1993, the National Marine Fisheries Service (NMFS) listed two species of dolphin in the ETP as "depleted." See Taking and Importing of Marine Mammals; Listing of the Northeastern Offshore Spotted Dolphin as Depleted, 58 Fed. Reg. 58,285 (1993) (finding by the NMFS); Taking and Importing of Marine Mammals; Listing of Eastern Spinner Dolphin as Depleted, 58 Fed. Reg. 45,066 (1993) (same).

134. See Richard B. Stewart, *International Trade and Environment: Lessons from the Federal Experience*, 49 WASH. & LEE L. REV. 1329, 1340-41 (1992).

135. A.K. Sen distinguishes between these two concepts: "sympathy" arises when one's own psychological welfare depends on the welfare of others, whereas "commitments" derive from moral beliefs. Amartya K. Sen, *Rational Fools: A Critique of the Behavioral Foundations of Economic Theory*, 6 PHIL. & PUB. AFF. 317, 326-29 (1977). Bernard Williams uses the term "commitments" in a similar sense. See Bernard Williams, *A Critique of Utilitarianism*, in J.J.C. SMART & BERNARD WILLIAMS, *UTILITARIANISM: FOR & AGAINST* 112-13 (1973). John Harsanyi makes a similar distinction between "personal preferences," which may be "completely selfish" but will usually assign some weight to the interests of others, and "moral preferences." John C. Harsanyi, *Morality and the Theory of Rational Behaviour*, in *UTILITARIANISM AND BEYOND* 39, 47 (Amartya K. Sen & Bernard Williams eds., 1982).

136. See Peter A. Diamond & Jerry A. Hausman, *On Contingent Valuation Measurement of Nonuse Values*, in *CONTINGENT VALUATION: A CRITICAL ASSESSMENT* 3-4 (Jerry A. Hausman ed., 1993); Kenneth McConnell, *Existence and Bequest Value*, in *MANAGING AIR QUALITY*, *supra* note 132, at 254, 262.

can usually be measured more easily, because to enjoy use value, people must often take action, such as traveling to view an environmental site. Economists can estimate the use value associated with a site using the technique of "revealed preference," whereby they infer preferences from observed behavior. Nonuse value, however, is not traded in markets, nor is its enjoyment usually affected significantly by individual actions. Therefore, we cannot reliably infer the full nonuse value that an individual attaches to a given asset from any observable behavior by that individual.¹³⁷ Because the measurement of nonuse values poses practical difficulties, we should be suspicious of self-serving claims of large nonuse values. If it is too difficult to establish a reliable estimate of nonuse values, it may be tempting to exclude them from actual calculations of economic costs and benefits.

Indeed, some economists suggest that purely as a matter of economic theory, the calculation of economic costs and benefits should not include nonuse values. For example, Paul Milgrom, although conceding that these values "have a role in the political part of public-policy considerations," has asserted that they "are not . . . properly included in benefit-cost analyses, because including them obscures those analyses and prevents them from fulfilling their proper economic function."¹³⁸ To support this view, he notes that cost-benefit analysis cannot include values based on interpersonal altruism if the purpose of the exercise is to identify potential Pareto improvements—projects that in theory could be implemented and financed to increase someone's welfare without decreasing the welfare of anyone else.¹³⁹ He concludes that nonuse values "like altruistic values . . .

137. Measurement techniques for nonuse values rely on contingent valuation (CV) surveys, which ask people directly what they are willing to pay for a given environmental benefit. Some economists, however, have questioned the reliability of these surveys. See generally CONTINGENT VALUATION: A CRITICAL ASSESSMENT, *supra* note 136. But see W. Michael Hanemann, *Valuing the Environment Through Contingent Valuation*, 8 J. ECON. PERSP. 19 (1994).

138. Paul Milgrom, *Is Sympathy an Economic Value? Philosophy, Economics, and the Contingent Valuation Method*, in CONTINGENT VALUATION: A CRITICAL ASSESSMENT, *supra* note 136, at 417, 422; see Diamond & Hausman, *supra* note 136, at 9 (arguing that "benefit-cost analyses . . . should not take into account ethical values; instead, they should be based only on self-interested (economic) preferences").

139. See Milgrom, *supra* note 138, at 419-21. Traditional cost-benefit analysis has difficulties in identifying potential Pareto improvements in the presence of altruistic preferences because individuals will have preferences over the distribution of the costs of a project. Milgrom describes a numerical example in which each individual is asked for his or her willingness to pay for a particular project. See *id.* at 420-21. Each individual responds, including in his or her valuation the benefits flowing to the objects of his or her altruistic preferences, on the assumption that no one else will have to bear any costs. The analyst aggregates these valuations to calculate what seems to be the total benefit of the project. Going forward with the project whenever "the sum of each citizen's willingness to pay for the project exceeds the cost of the project," *id.* at 419, can mislead a policymaker into going forward with a project that does not actually yield benefits in excess of costs. If the apparent benefits barely exceed the cost, for example, there will be no way to finance the project so as

should, according to standard economic theory, be excluded from benefit-cost studies.”¹⁴⁰

Milgrom’s claims, however, merely reflect a particularly narrow notion of the “proper economic function” of cost-benefit analysis: in his view, the analysis must exclude any values not purely egoistic and must seek potential Pareto improvements.¹⁴¹ It is Milgrom who implicitly relies on ideas from outside the discipline of economics in the premises underlying his argument. He excludes interests actually and sincerely valued by people from his definition of “benefits” without justifying his belief that altruistic values do not count as economic value. Milgrom cannot derive his conclusions regarding altruistic preferences from economic theory, but instead must defend his assumptions explicitly on some other basis.

Economic theory alone provides no basis for excluding nonuse value from the social welfare function that we should seek to maximize through the formulation of public policy. Economics normally accepts an individual’s preferences as worthy of satisfaction, without an inquiry into the motives underlying particular preferences.¹⁴² There is no apparent reason why economists should treat a preference that endangered species be preserved with any less respect than a preference for imported wine. A

to effect a Pareto improvement. If costs are allocated among all individuals, for example, then the benefits of the project can be less than anticipated, because each individual specified benefits on the assumption that others would not be burdened with any cost.

In theory, cost-benefit analysis could respond to this problem by changing the procedure. See Hanemann, *supra* note 137, at 33 n.23. For example, an analyst could describe a project along with its cost and the way in which the costs will be distributed among all individuals. Then the analyst could ask what one would be willing to pay (over and above the share of cost already allocated to the individual) to have the project go forward or what one would be willing to pay to prevent the project from going forward, given its distributional effects. If the value of going forward exceeds the value of not going forward, then the benefits of the project (understood as including a particular distribution of its costs) do not exceed its costs. This exercise, however, would not identify potential Pareto improvements. Those who value going forward (the “winners”) might not be able to compensate those who do not (the “losers”) and still come out ahead. The losers might have altruistic preferences for the winners, so that attempts to shift the benefit from the winners to the losers would also erode the total benefit.

140. Milgrom, *supra* note 138, at 418.

141. It is hard to understand why economists should be interested in potential Pareto improvements per se, for example, when projects are not actually financed so as to make everyone better off: those who gain do not in reality compensate those who lose. Presumably, economists favor potential Pareto improvements insofar as they yield economic benefits in excess of economic costs. In situations where the concept of a potential Pareto improvement fails to correspond with policy changes bringing benefits in excess of costs, as in the example presented by Milgrom, *see supra* note 139, then it is the concept of potential Pareto improvement that we should reject as our objective, not our measure of benefits.

142. As one economist notes, Milgrom’s view “hardly comports with the standard view in economics that decisions about what people value should be left up to them.” Hanemann, *supra* note 137, at 33 (“When estimating demand functions for fish prior to Vatican II, no economist ever proposed removing Catholics because they were eating fish out of a sense of duty.”).

preference that animals be protected from cruel treatment would seem just as entitled to satisfaction as a preference for foreign automobiles. Nonuse value, no less than use value, is a genuine component of economic welfare, regardless of whether this nonuse value is shared by others, and even if others view these preferences as absurd. From this perspective, if ethical considerations make some preferences illegitimate, those who wish to exclude these preferences from a cost-benefit calculation must bear the burden of justifying this exclusion in terms of moral philosophy.¹⁴³

Even if we were to exclude all nonuse values from our calculations of economic value, the distinction between use and nonuse values would not justify the interpretations of Article XX adopted by the GATT panels. The 1991 GATT panel ruled against any "extrajurisdictional" application of Article XX, whether in defense of use values or of nonuse values. The 1994 GATT panel ruled against the use of trade sticks to change foreign government policies, regardless of the nature of the environmental interest at stake. The economic critique of these GATT panel decisions, presented in Part II, does not depend on the inclusion of nonuse value in the definition of economic welfare.

Furthermore, even Milgrom concedes that governments may legitimately seek to protect nonuse values in the formulation of public policy, even if these values cannot be accurately quantified using cost-benefit analysis. From this perspective, the GATT panels, in striking down the U.S. ban on Mexican tuna imports, impinged upon a legitimate interest, whether that ban served an interest in nonuse value or in use value. Thus, even if we concede the practical impossibility of rigorous measurement of nonuse values, we must, as a theoretical matter, still include them as part of economic value for the purpose of policy analysis.¹⁴⁴

B. PANDORA'S BOX

If nonuse values constitute a legitimate economic interest in natural resources, then we can find international public goods within each country, not simply in the global commons, even in the absence of physical spill-overs. A resource need not be held in common for people in other countries to value its protection. The same reasoning that supports trade measures to protect the global commons also militates in favor of trade measures to protect these resources within another country's borders. In principle, there may be few limits to the types of interests any country

143. There are persuasive *moral* objections to *some* nonuse values, *see infra* Part IV_A2biii, but Milgrom claims to be able to exclude altruistic preferences *solely* on the basis of *economic* theory.

144. After all, any public good, whether it generates use value or nonuse value, will present the same problem to the extent that we cannot exclude people from enjoying its value. The measurement of the value of national defense, for example, might pose similar difficulties, but no economist would infer that national defense is not a genuine public good.

might pursue regarding resources within another country.

It is precisely this “slippery slope” that worries supporters of liberalized trade. What is to prevent any government from banning all imports that are made under less stringent environmental regulations than those that apply in its own country? Could Congress, as has been proposed, mandate countervailing duties in such cases on the ground that these imports amount to ecodumping?¹⁴⁵ If so, then the proliferation of these trade measures could unravel the system of liberalized trade painstakingly negotiated over many decades under the GATT.

Thus, the GATT Secretariat warns that arguments based on psychological spillovers “risk becoming, in practice, open-ended,” whereas “the number of potentially harmful physical spillovers is inherently more limited and hence they are far less likely to open up a Pandora’s box of demands.”¹⁴⁶ According to the GATT Secretariat, “it is difficult to think of a way to effectively contain the cross-border assertion of priorities.”¹⁴⁷ Jagdish Bhagwati agrees that the use of environmental trade measures “creates the potential for chaotic spread of trade restrictions based on self-righteousness, compounded by a likely encouragement of the process by protectionists.”¹⁴⁸

Similarly, the 1991 GATT panel warned: “if the broad interpretation of Article XX(b) suggested by the United States were accepted, each contracting party could unilaterally determine the life or health protection policies from which other contracting parties could not deviate without jeopardizing their rights under the General Agreement.”¹⁴⁹ The 1994 GATT panel cited the same concern as the sole basis for its holding:

If . . . Article XX were interpreted to permit contracting parties to take trade measures so as to force other contracting parties to change their policies . . . , the balance of rights and obligations among contracting parties, in particular the right of access to markets, would be seriously impaired. Under such an interpretation the General Agreement could no longer serve as a multilateral framework for trade among contracting parties.¹⁵⁰

Unless we articulate some limiting principle, Article XX could undermine the system of liberalized trade envisioned by the GATT. The 1991 GATT panel concluded that if the contracting parties “were to permit import restrictions in response to differences in environmental policies

145. See *supra* notes 36-39 and accompanying text.

146. GATT, *supra* note 8, at 33 n.53.

147. *Id.* at 33.

148. Bhagwati, *supra* note 18, at 174.

149. 1991 *Decision*, *supra* note 2, para. 5.27, at 199.

150. 1994 *Decision*, *supra* note 2, para. 5.26, at 57.

under the General Agreement, they would need to impose limits on the range of policy differences justifying such responses and to develop criteria so as to prevent abuse," which are best specified "by amending or supplementing the provisions of the General Agreement."¹⁵¹

The 1991 GATT panel rather disingenuously purported to leave the development of these limits to the GATT amendment process, even while it created geographic limits on the scope of the Article XX exceptions that cannot be found anywhere within the plain language of Article XX.¹⁵² Similarly, the 1994 GATT panel settled on a limiting principle, unsupported by any language in the GATT, without considering any alternative responses to the Pandora's box that it fears.¹⁵³ The mere fact that *some* limits are in order does not justify the *particular* limits invented arbitrarily by the GATT panels. The GATT Secretariat and the GATT panels overstate the difficulty of finding and formulating more reasonable limits on the use of trade measures to protect the environment. In particular, both GATT panels were so eager to create new limits from whole cloth that they neglected the limits already explicit in the preamble to Article XX. When we consider those limits, as I suggest below, we find that the use of trade measures does not automatically imply the "parade of horrors" invoked by the GATT Secretariat and the GATT panels. Subject to limits designed to guard against protectionist abuses, trade measures can effect improvements in global economic welfare by encouraging more responsible environmental policies.

IV. ARTICLE XX LIMITS ON THE USE OF TRADE MEASURES

We can find the appropriate limits to the Article XX exceptions in the text of Article XX itself, which contains clauses designed to prevent the type of abuse that the GATT panels feared. The preamble to Article XX states that measures are not to be "applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade."¹⁵⁴ This proviso is all we need to place suitable limits on the use of trade measures: there is no need to amend the GATT or

151. *1991 Decision*, *supra* note 2, para. 6.3, at 204.

152. *See supra* Part IC. GATT Article XXX provides for amendments, but requires acceptance by two-thirds of the contracting parties in most cases and unanimous approval in some cases. Furthermore, amendments bind only those countries that accept them. GATT, *supra* note 1, art. XXX, para. 1, 61 Stat. pt. 5, at A74, 55 U.N.T.S. at 282. In practice, it has proven increasingly difficult to amend the GATT: "It is generally considered today almost impossible . . . because of the stringent vote and procedural requirements, coupled with the wide divergence of interests among the greatly enlarged membership." JOHN H. JACKSON & WILLIAM J. DAVEY, *INTERNATIONAL ECONOMIC RELATIONS* 310-11 (2d ed. 1986). Since 1955, the contracting parties have amended the GATT only once.

153. *See supra* Part ID.

154. GATT, *supra* note 1, art. XX, 61 Stat. pt. 5, at A60-61, 55 U.N.T.S. at 262.

read any implicit limitations into Article XX.¹⁵⁵ That is, these principles enable us to close the Pandora's box feared by the GATT Secretariat in a responsible fashion that still respects legitimate interests in environmental protection. In light of this proviso, the use of trade measures to protect the environment does not pose as great a threat to liberalized trade as GATT alarmists claim.

The phrase "disguised restriction on trade," after all, refers to the danger of hidden protectionism. If trade measures to protect the environment become instruments favored by protectionist interests, then these measures not only become costly (because of the distortions they impose on trade), but also become more likely to be overused, possibly inducing other governments to provide levels of environmental protection that are excessively costly. To avoid these inefficiencies, we need to place limits on the use of trade measures in order to discourage their abuse. Trade measures that are particularly likely to be protectionist should be identified and held to be violations of the GATT. Given this objective, what conditions should we place on the use of environmental trade measures?

First, at a minimum, the country using the trade measure generally should impose on its own producers the same environmental standard that it wishes to impose on competing foreign producers. Unless there is some relevant difference in conditions between countries or some other consideration that justifies different treatment as necessary to achieve the environmental objective in question, a trade measure that applied a stricter standard to imports than that applied to domestic products would embody an "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" in violation of Article XX.¹⁵⁶ In theory, the

155. Steve Charnovitz, *The Environment vs. Trade Rules: Defogging the Debate*, 23 ENVTL. L. 475, 513-15 (1993), endorses this option, but does not elaborate on what substantive content we should give this "disguised restriction" proviso. I suggest below an interpretation of this proviso designed to reassure supporters of liberalized trade that Article XX would remain resistant to capture by protectionism.

156. *Report of the Panel, Thailand—Restrictions on Importation of and Internal Taxes on Cigarettes*, *supra* note 81, provides an example of a restriction that would be an "arbitrary or unjustified discrimination." In that case, Thailand claimed that its ban on imported cigarettes came within Article XX(b) as a measure to protect human life and health. Thailand, however, permitted the sale of domestic cigarettes while it prohibited the importation of foreign cigarettes.

Whether "the same conditions prevail" between the two countries may be a matter of controversy in some cases. In 1992, for example, Austria not only required that tropical timber be labeled as such, but also imposed a 70% tax on tropical timber. Austria dropped both ideas after the Association of Southeast Asian Nations (ASEAN) complained that the law violated the GATT and threatened to retaliate against Austria. See *Parliament Rescinds Tropical Wood Tax, Maintains Product Eco-Label Requirement*, 15 Int'l Envtl. Rep. (BNA) 830 (Dec. 16, 1992); *Tropical Wood Labeling Law Rescinded Following Threats to Ban All Imports*, 16 Int'l Envtl. Rep. (BNA) 220 (Mar. 24, 1993). Among other issues raised by this dispute is the question whether the differences between the tropical rain forest and other forests (perhaps those used for lumber by domestic producers who compete with imports from ASEAN nations) justified the discriminatory tax.

measures at issue in the tuna dispute, for example, were supposed to apply environmental standards to foreign tuna comparable to those applied to domestic tuna. This type of environmental standard is less likely to be tempting to the domestic industry as a source of protection because it imposes a burden on *all* producers, without discriminating (at least on its face) between foreign and domestic producers. This condition would be similar to the obligation of national treatment under GATT Article III, which requires contracting parties to treat imports as well as they treat “like domestic products.”¹⁵⁷ As John Jackson has described it, however, the duty under Article XX would be a “softer” obligation than that imposed by Article III: it would permit departures from the strict language of Article III “to the extent necessary to pursue the goals listed in Article XX, but not to the extent of . . . discrimination or protection of domestic production, if either is not necessary to pursue those listed goals.”¹⁵⁸

Even if a strict “national treatment” obligation were extended to regulations falling within an Article XX exception, however, this obligation by itself would impose only a weak constraint. For example, the bills proposing countervailing duties to offset ecodumping would satisfy this requirement because they simply require foreign governments to adopt the same environmental regulations adopted in the United States.¹⁵⁹ We would need more stringent limits to guard against the proliferation of protectionist measures feared by the GATT Secretariat.

The second condition—that the measure must not be a “disguised restriction on trade”—provides the other restriction needed to prevent protectionist abuse. To be condemned as a “disguised restriction,” a trade measure should meet two requirements. First, the interest claimed as the purpose for the measure—in the case of environmental trade measures, the environmental interest asserted by the government invoking Article XX—must be a “disguise.” That is, it must fail as a genuine justification for the measure.¹⁶⁰ Second, the measure must be a “restriction on trade”

157. Protocol Modifying Part II and Article XXVI of the General Agreement on Tariffs and Trade, Sept. 14, 1948, art. III, para. 2, 62 Stat. 3679, 3680, 62 U.N.T.S. 80, 82 (“The products of . . . any contracting party imported into . . . any other contracting party shall not be subject . . . to internal taxes . . . in excess of those applied . . . to like domestic products.”); *see id.* para. 4, 62 Stat. at 3681, 62 U.N.T.S. at 82 (“The products of . . . any contracting party imported into . . . any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws . . .”).

158. JOHN H. JACKSON, *THE WORLD TRADING SYSTEM* 207 (1989). Given the “extrajurisdictional” nature of some environmental interests, it is fitting that the obligations in Article XX be “softer” than the absolute prohibition on discrimination in Article III. To protect extrajurisdictional interests effectively often requires some discrimination between products based on country of origin. *See infra* Part IV A1c-e, note 220 and accompanying text.

159. *See supra* notes 36-39 and accompanying text.

160. One GATT panel report, however, has given the “disguised restriction” proviso a peculiar interpretation that would render it rather toothless. It suggests that a blatantly and

in reality. That is, it must in fact offer significant protection from foreign competition for domestic producers.

Before I elaborate further on how these two conditions should constrain the use of trade measures to protect the environment, it is useful to distinguish “direct” trade interventions from pure trade “sanctions.”¹⁶¹ Direct trade interventions can attack the perceived environmental problem without requiring any response from the foreign government; trade sanctions can only alleviate the environmental problem by changing foreign government policies. Direct trade measures might, for example, prohibit the importation of a product that creates environmental problems through its production process. A ban on tuna that is not dolphin-safe is an example of a direct trade intervention. Trade sanctions apply instead to products totally unrelated to those that actually create the environmental problem. A ban on fish from Norway in response to its resumption of commercial whaling would be an example of a trade sanction.

Both direct trade measures and pure trade sanctions can serve as sticks, insofar as both may impose political costs on a foreign government. Direct trade measures may induce foreign governments to change their policies, and the measures may be partly motivated by the desire to produce such a response, but no such response is necessary for direct trade measures to improve environmental protection. Thus, the defense of sticks in Part II applies to both sanctions and direct trade measures.

A. DIRECT TRADE MEASURES

The 1994 GATT panel’s claim that the MMPA could not be a direct trade measure, and therefore could serve only as a trade stick,¹⁶² was critical to its holding. Yet the logic supporting this claim is obscure. The panel seemed disturbed by the fact that the U.S. ban on tuna imports was not limited to individual shipments of tuna that were caught using dolphin-unsafe methods, but extended to *any* tuna from any *country* that failed to meet U.S. requirements. That is, the primary embargo did not merely enforce a facially neutral “process standard,” excluding only items produced by an environmentally harmful process; the embargo extended beyond the individual items “defiled” by foreign manufacturing processes.¹⁶³ It does not follow from this fact, however, that this import ban

transparently protectionist measure would not be “disguised.” See *Report of the Panel, United States—Prohibition of Imports of Tuna and Tuna Products from Canada*, GATT Doc. L/5198, para. 4.8 (adopted Feb. 22, 1982), in GATT. BASIC INSTRUMENTS AND SELECTED DOCUMENTS 91, 108 (29th Supp. 1983) (holding that a trade restriction was not “disguised” because it was publicly announced as a trade measure). Steve Charnovitz points out that serious reliance on the “disguised restriction” proviso would require rejection of this interpretation. Charnovitz, *supra* note 60, at 47-48.

161. See Subramanian, *supra* note 18, at 137-41.

162. See 1994 Decision, *supra* note 2, paras. 5.27, .39, at 57, 61.

163. Charnovitz defines a “process standard” as a regulation, applied to domestic prod-

“could not possibly, by itself, further the United States conservation objectives” and could have “any effect on the conservation of dolphins” only if it could “force other countries to change their policies.”¹⁶⁴ The 1994 GATT panel report offers no analysis whatsoever that would explain its reasoning. I will next analyze the MMPA import bans as examples of direct trade measures, and in so doing will expose some of the defects in the 1994 panel’s reasoning. My analysis of the economic effects of direct trade measures will suggest that the hostility toward them exhibited by both GATT panels was misplaced.

1. The Case for Direct Trade Measures

Consider the problem of protecting dolphins from fishing fleets. How might the United States address this problem? Consider the range of possible responses, which I address in order from the least to the most intrusive.

a. Labelling. One response to the problem might be to require labels that tell consumers whether or not the tuna they buy has been caught using dolphin-safe procedures.¹⁶⁵ This requirement would enable consumers who care about dolphin protection to avoid purchasing tuna that is not dolphin-safe. Labelling, although a step in the right direction, cannot bring about optimal consumption decisions. As long as dolphin-safe fishing methods are costly, and the costs are reflected in higher prices, each consumer will choose to consume too much tuna that is not dolphin-safe. We would not expect efficient outcomes unless each individual consumer, when making these purchasing decisions, considered not only the value that he or she attached to dolphin protection, but also the value that everyone else in the world attached to dolphin protection.

ucts as well as imports, based on production methods. Charnovitz, *supra* note 19, at 3-5. He also draws a distinction between trade measures imposed against imports of particular “defiled items” and those imposed more generally against particular foreign *countries*, either because their governments fail to adopt environmentally sound policies or because their industries fail to adopt environmentally sound production practices. *Id.* at 38-42.

164. *1994 Decision*, *supra* note 2, para. 5.24, at 57.

165. *See* GATT, *supra* note 8, at 34 (suggesting “the promotion of environmental labelling so that consumers can easily concentrate their purchases on products produced in what they consider to be environmentally safe ways”); Subramanian, *supra* note 18, at 150 n.28 (“A less contentious approach to these problems might be the use of labelling requirements which would allow consumers the freedom to exercise their preference against eco-unfriendly products or processes if they so wished.”). Jagdish Bhagwati suggests that as an alternative to trade measures, “voluntary private boycotts can be a potent instrument” if labelling requirements permit consumers to distinguish “dolphin safe” tuna from “dolphin unsafe” tuna. Bhagwati, *supra* note 18, at 173. The Dolphin Protection Consumer Information Act (DPCIA), 16 U.S.C. § 1385 (1994), regulates the use of the term “dolphin safe” by any producer, distributor, or seller on the labels on any tuna product sold in the United States. The DPCIA, however, does not require the use of such labels. Mexico challenged the DPCIA as well as the MMPA as a violation of the GATT, but the GATT panel rejected the challenge to the DPCIA. *See 1991 Decision*, *supra* note 2, para. 5.44, at 204.

Without internalizing this positive externality from buying dolphin-safe tuna, individuals would choose to purchase quantities of tuna that are suboptimal from the perspective of not only global economic welfare but also national economic welfare. Because each individual makes only a small contribution to dolphin protection, and each derives only a tiny fraction of the total benefit from any given amount of dolphin protection, this problem is likely to be severe. Because dolphin protection is a public good, each consumer will have an incentive to “free ride” on the restraint exercised by other consumers. Each would prefer to allow *others* to bear the cost of dolphin protection in terms of higher dolphin-safe tuna prices, while purchasing dolphin-unsafe tuna at lower prices themselves. Some individual consumers might feel constrained by a sense of moral obligation, but we cannot rely on this possibility to take us very far toward the optimum. Reliance on voluntary restraint alone is no more likely to bring about optimal protection of dolphins than reliance on purely voluntary contributions to the public treasury is likely to finance the optimal quantity of public goods. Just as taxation is necessary to provide the optimal level of expenditures on public goods, some sort of government intervention beyond mandatory labels is necessary to provide the optimal level of dolphin protection.

b. Process Standards. The United States can regulate its own fishing fleet to ensure that it uses practices that provide optimal protection for dolphins, but if these practices raise costs for U.S. producers, then the government must also support these regulations with direct trade measures against imported tuna that is not dolphin-safe. Higher costs will, in turn, raise domestic tuna prices and expand the market for imported tuna. Sales of foreign tuna that is dolphin-unsafe and less expensive would displace sales of domestic dolphin-safe tuna. Furthermore, U.S. fishing operations may move to Mexico to avoid U.S. environmental regulations. In the extreme, if foreign tuna displaces domestic tuna entirely, then we succeed only in destroying our domestic industry, without protecting dolphins. Thus, when foreign fleets expanded their dolphin-unsafe tuna-fishing operations in the ETP in response to U.S. regulations on U.S. fishing fleets, “[t]his situation led Congress to focus on what influence the United States might have to reduce the dolphin mortality rate in the foreign fishing fleets.”¹⁶⁶

By not only improving the practices of our domestic tuna industry but also shielding it against those foreign competitors that do not use practices that are similarly dolphin-safe, we ensure that our efforts to change the

166. Taking and Importing Marine Mammals Incidental to Commercial Fishing Operations. 55 Fed. Reg. 11,921, 11,921 (1990).

practices of our own producers will not be in vain. Furthermore, the United States requires foreign suppliers of tuna to use dolphin-safe practices, and these suppliers must either comply or be displaced in the U.S. market by competitors (domestic or foreign) that do comply. Thus, Congress intended the MMPA "to reduce the foreign take of marine mammals" as well as the U.S. take of marine mammals.¹⁶⁷ We thereby protect dolphins through our direct influence over foreign fishing fleets seeking access to the U.S. market. Through these effects on both domestic and foreign fishing fleets, an import ban ensures that U.S. consumers do not contribute to the killing of dolphins by consuming dolphin-unsafe tuna.

c. Primary Nation Embargo. But why should the United States ban all yellowfin tuna imports from offending countries rather than limiting its ban to dolphin-unsafe tuna? Suppose that the Mexican tuna-fishing fleet in the ETP includes producers that use dolphin-safe methods and others that use dolphin-unsafe methods, so that a ban on all Mexican yellowfin tuna from the ETP would apply to some dolphin-safe tuna. Consider the less restrictive alternative with which the 1994 panel compared the U.S. ban on tuna imports: suppose the United States had enacted only a ban on the sale or importation of any tuna that was itself caught in a dolphin-unsafe manner.¹⁶⁸ Assume further that the United States has the means to distinguish dolphin-unsafe tuna from dolphin-safe tuna and thus to enforce a "defiled item" import ban.¹⁶⁹

Under a ban on dolphin-unsafe tuna, Mexico could export only dolphin-safe tuna to the United States, but this narrow ban may fail to protect dolphins adequately. To see why a broader ban may be warranted, consider the following scenario: suppose that prior to the import ban, Mexico already produced more than enough dolphin-safe tuna to cover its exports

167. H.R. REP. NO. 970, *supra* note 46, at 30, reprinted in 1988 U.S.C.C.A.N. at 6171.

168. The United States enacted such a process standard in the International Dolphin Conservation Act of 1992, Pub. L. No. 102-523, sec. 2(a), § 307, 106 Stat. 3425, 3431-32 (codified at 16 U.S.C. § 1417 (1988 & Supp. IV 1992)), which amended the MMPA to include a prohibition on the sale, shipment, or importation into the United States of any tuna or tuna product that is not "dolphin safe." The determination of whether tuna is "dolphin safe" is made on a ship-by-ship basis, according to the statutory definition and the fishing practices observed on each vessel. This ban took effect only recently, on June 1, 1994. The 1994 panel seemed to imply that this less restrictive alternative would be legal under the GATT, but some ambiguities in the panel's reasoning could raise some doubts even with respect to these measures. See *infra* note 181.

169. To the extent that dolphin-safe tuna and dolphin-unsafe tuna cannot be distinguished, then the justification for a broader ban is clear: only a ban on all Mexican tuna can ensure that no dolphin-unsafe tuna enters the U.S. market and displaces dolphin-safe tuna. On these facts, a ban on all Mexican tuna would not be "a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade," because relevant differences in conditions in Mexico and in the United States would justify the "discrimination" between tuna from those two countries.

to the United States. In that case, Mexico could simply allocate its dolphin-safe tuna to the United States and continue to produce the same quantity of dolphin-unsafe tuna as it did prior to the change in U.S. policy. Our ban on only the defiled item itself would have failed to reduce Mexican production of dolphin-unsafe tuna, and thus failed to protect dolphins from a foreign tuna-fishing fleet supplying the U.S. market.

Furthermore, if tuna production by the U.S. fishing fleet shrinks as it labors under the costs imposed by dolphin-safe methods, Mexico might expand both its tuna exports to the United States and its production of dolphin-unsafe tuna for sale in other markets, as Mexico shifts dolphin-safe tuna away from these other markets. The increased demand for tuna imports to the U.S. market could thereby stimulate even more dolphin-unsafe tuna fishing by Mexico, with dolphin-safe Mexican tuna serving as the medium of transmission for the increase in demand. If the United States eliminates dolphin-unsafe tuna production by its fishing fleets, only to stimulate an offsetting expansion in dolphin-unsafe tuna production by Mexican fleets, then tuna imports undercut our efforts to protect dolphins through reform of our domestic producers' practices. Indeed, if this expansion offsets domestic restrictions, our ban on dolphin-unsafe tuna would produce no net reduction in the total world production of dolphin-unsafe tuna, and thus prove totally ineffective in improving dolphin protection.

A diversion of world supplies of tuna can undermine U.S. efforts to protect dolphins by translating U.S. demand for dolphin-safe tuna into demand for dolphin-unsafe tuna. This diversion, however, would not be costless. The world pattern of trade in tuna directs tuna to markets that yield the greatest profit, taking into account transportation costs and other barriers. A departure from this pattern presumably would entail some sacrifice in profits for tuna producers. To the extent that the costs of changing to dolphin-safe technology exceed the costs of diverting tuna supplies, however, foreign tuna producers will choose to divert their supplies rather than improve their practices. Nevertheless, insofar as transportation costs and other barriers reduce the profitability of diverting dolphin-unsafe tuna to other markets and prevent some diversion of tuna supplies in this fashion, a ban on dolphin-unsafe tuna in the United States can be more effective in reducing the total world production of dolphin-unsafe tuna.

The United States succeeds in protecting dolphins insofar as its policies reduce the profitability of dolphin-unsafe fishing, so that those who engage in this practice are induced either to convert to dolphin-safe methods or to leave the industry. Thus, a process standard is most effective when dolphin-unsafe tuna lacks alternative markets. Insofar as the United States was "a major market for most of the yellowfin tuna caught by ETP harvesting

nations,”¹⁷⁰ so that there were fewer alternative markets ready to absorb dolphin-unsafe tuna from these nations, U.S. policy proved more influential.¹⁷¹ To the extent that Mexico does not already produce enough dolphin-safe tuna to cover its exports to the United States, a process standard can be more effective: the less dolphin-safe tuna that Mexico can shift from other markets to supply to the United States, the less likely Mexico is to maintain or expand dolphin-unsafe tuna fishing in response to the vacuum left behind by this diversion of supplies.¹⁷²

Nevertheless, the United States may be unsatisfied by this partial success. The MMPA declares that “[i]t is the policy of the United States” to “eliminate the marine mammal mortality resulting from the intentional encirclement of dolphins . . . in tuna purse seine fisheries” and to “ensure that the market of the United States does not act as an incentive to the harvest of tuna caught in association with dolphins.”¹⁷³ To the extent that Mexico responds to a process standard by diverting dolphin-safe tuna from other markets to the United States, that standard would fail to meet the objectives of the MMPA: demand for tuna in the United States would be causing greater consumption of dolphin-unsafe tuna in the rest of the world than would otherwise occur. That is, the world would be killing more dolphins than it would if the U.S. demand for tuna were zero.

Suppose that the United States instead imposes an import ban on all Mexican tuna, not just dolphin-unsafe tuna. Dolphin-safe Mexican tuna normally consumed elsewhere in the world will continue to be consumed there and not in the United States. Given the United States’ exclusion of this supply of dolphin-safe Mexican tuna, producers of dolphin-unsafe Mexican tuna will have a harder time finding profitable markets and therefore will be less likely to maintain or expand their production. Thus, the breadth of the U.S. tuna ban, far from implying that it “could not

170. Taking and Importing Marine Mammals Incidental to Commercial Fishing Operations, 55 Fed. Reg. 11,921, 11,921 (1990).

171. Thus, if Mexico exported its *entire* tuna output to the United States, then there would be no other markets for dolphin-safe Mexican tuna to vacate. Dolphin-unsafe Mexican tuna would find no vacuum to fill in Mexico’s traditional markets. Producers of this tuna would have to reform their practices, exit the industry, or find new markets.

172. A process standard would be most effective in protecting dolphins if Mexico produced *no* dolphin-safe tuna prior to the ban. Then all exports of dolphin-safe tuna from Mexico to the United States would represent expanded production of dolphin-safe tuna; none would vacate other markets. In this case, tuna exported from Mexico to the United States would not imply expanded consumption of dolphin-unsafe tuna in other markets.

In theory, the MMPA could have relied on a process standard alone in these particular circumstances and applied a broader import ban in other circumstances. If the 1994 GATT panel had this alternative in mind, it failed to evaluate how effective this policy would be. Such a policy would reward countries with dolphin-unsafe practices and thus create perverse incentives: it would encourage tuna-fishing nations to avoid or eliminate dolphin-safe fishing practices, so as to avoid the broader ban, in anticipation of the policy.

173. 16 U.S.C. § 1411(b) (1994).

possibly, by itself, further the United States conservation objectives,”¹⁷⁴ as asserted by the 1994 GATT panel, in fact ensures that the U.S. tuna ban is *more* effective than a mere ban on dolphin-unsafe tuna.

d. Intermediary Nation Embargo. The foregoing analysis explains how the United States can protect dolphins through a ban on all Mexican yellowfin tuna from the ETP. Even given this ban, however, even if prior to the ban Mexico produced no dolphin-safe tuna or sold all its tuna to the United States, it may divert its supplies to intermediary countries in response to a ban, thereby undermining the U.S. effort to protect dolphins. The same reasoning that justifies a ban on imports from the primary nation can also justify a similar ban on imports from intermediary nations.

A process standard for U.S. producers would tend to raise tuna prices in the U.S. market, which would attract tuna imports from countries other than Mexico. If the United States were to ban only dolphin-unsafe tuna, then an intermediary nation like Japan could not re-export dolphin-unsafe tuna from Mexico to the United States. It could, however, divert dolphin-safe tuna (either from Mexico or from its own producers) to the U.S. market, where it would fetch a higher price, and consume more dolphin-unsafe tuna from Mexico.

The United States could expand its ban to include any Mexican tuna, whether dolphin-safe or dolphin-unsafe, that Japan may re-export to the United States. Even this ban on “tuna laundering,” however, could still fail to protect dolphins: Japan could divert more dolphin-safe tuna from its own producers to the United States and consume more dolphin-unsafe tuna from Mexico.¹⁷⁵ A primary embargo on Mexican tuna would contribute to the rise in tuna prices in the United States, which in turn would attract Japanese tuna to the U.S. market. These exports to the U.S. market would tend to drive up the price of tuna in Japan, and this incipient price rise would in turn attract dolphin-unsafe tuna from Mexico, where tuna prices would tend to drop as a result of the loss of the U.S. market.¹⁷⁶

174. *1994 Decision*, *supra* note 2, para. 5.24, at 57.

175. As an interested third party before the 1994 panel, Australia complained: “The intermediary nation embargo was not limited to re-exports, nor to trade which would equate to the quantities of yellowfin tuna imported from a country subject to the primary nation embargo.” *Id.* para. 4.4, at 38. The first alternative suggested by Australia would be less effective for the reasons explained above. The second alternative would be impractical: Australia does not explain how one could implement such a partial embargo. The United States would have to calculate how much tuna it would import from each intermediary nation in a counterfactual world without the embargo, then subtract the quantity of tuna each intermediary nation imports from primary nations, in order to arrive at the import quota applicable to each intermediary nation.

176. It was precisely this phenomenon that prompted the European Parliament to urge the EC Commission to draft laws banning the importation of tuna caught in purse seine nets or driftnets. See *European Parliament Calls for EC Ban on Imports of Tuna Caught in Purse-Seines*, 8 Int'l Trade Rep. (BNA) 1739 (Nov. 27, 1991). The Parliament voted “out of

To the extent that Mexico can profitably divert dolphin-unsafe tuna to the Japanese market, it can limit or even defeat the U.S. effort to reduce dolphin mortality worldwide. Mexican production of dolphin-unsafe tuna may remain the same, or may even expand at the expense of U.S. fleets, which are now subject to the new process standard and may face higher costs than before. That is, dolphin-unsafe tuna from Mexico could displace dolphin-safe tuna production by U.S. suppliers, not directly in the U.S. market, but indirectly through the medium of the Japanese market. In this way, Mexican producers of dolphin-unsafe tuna can “circumvent” the U.S. import ban and undermine the effectiveness of U.S. policy.¹⁷⁷

A more effective measure would include a ban on all tuna from any country that imports tuna from Mexico. An embargo this broad reduces the likelihood that Mexican producers would find profitable markets for their dolphin-unsafe tuna in intermediary nations.¹⁷⁸ Under an intermediary nation embargo, dolphin-unsafe tuna will not be diverted from the United States to other markets unless U.S. tuna prices rise enough to divert tuna supplies through an even longer chain of intervening national markets. First, U.S. tuna prices must be high enough to attract tuna imports from a country that is not subject to any embargo. That nation in turn must experience enough of a price rise to attract more Japanese tuna; Japanese tuna prices also must rise enough to attract more Mexican tuna exports to the Japanese market. A broader import ban forces this diversion to occur through more costly routes. As the import ban is extended more broadly, costs of diverting tuna supplies to circumvent the ban will in-

concern that the European Community has become a dumping ground for eastern Pacific yellowfin tuna, which are often caught by netting operations that kill large numbers of dolphins.” *Id.* The Parliament’s agriculture committee “expressed specific concerns about the Italian tuna-processing industry, which has shifted from its traditional reliance on Indian Ocean tuna to yellowfin tuna” and has done so “in response to the fall in world market prices for yellowfin tuna caused by reduced purchases from major U.S. tuna canners.” *Id.* Given the Parliament’s expression of alarm, the EC’s challenge to the MMPA before the 1994 panel is particularly ironic.

177. The authors of the legislation that provides for an embargo on intermediary nations included this provision “in order to prevent embargoed nations from circumventing U.S. restrictions, thus weakening the effectiveness of U.S. law.” H.R. REP. NO. 970, *supra* note 46, at 30, *reprinted in* 1988 U.S.C.C.A.N. at 6171.

178. By the time the United States banned tuna imports from Mexico, the largest U.S. tuna canners had already agreed to sell only dolphin-safe tuna, and Mexico sent only three percent of its tuna exports to the United States. Mexico sold most of its tuna to Europe and Japan. Thus, observers predicted that the primary embargo “will have little economic effect on Mexico,” but expected that a secondary embargo by the United States, “the largest consumer market for tuna,” against intermediary nations “could significantly curtail the volume and prices of Mexican tuna exports.” David C. Scott, *Mexico Chafes as US Revisits Ban on Tuna Imports Involving Dolphin Kills*, CHRISTIAN SCI. MONITOR, Feb. 27, 1991, at 6. Thus, when the EC and the Netherlands claimed before the 1994 panel that “the intermediary nation embargo would make no difference for the conservation of dolphins.” 1994 *Decision*, *supra* note 2, para. 3.59, at 28, they ignored the extent to which U.S. demand for their tuna contributes to their demand for Mexican tuna.

crease, diversion will prove to be less profitable, and the demand for dolphin-unsafe tuna from Mexico will fall. As the United States expands its import ban, however, it also tends to inhibit tuna imports and raise tuna prices at home, thereby increasing the total economic cost of the U.S. import ban, both to the United States and to the world as a whole. Thus, the United States may rationally decide to extend its import ban to intermediary nations, but no further.

The foregoing analysis indicates how a broader ban makes U.S. policy more, not less, effective in protecting dolphins. Moreover, this ban achieves its effect on tuna-fishing producers directly, without any change in the policies of foreign governments. One cannot legitimately make a bold categorical assertion, as the 1994 GATT panel did, that the U.S. import ban “could not possibly, by itself, further the United States conservation objectives.”¹⁷⁹ It is hardly *impossible* for the U.S. import ban to further environmental objectives as a general matter. Indeed, the available evidence in this specific case suggests that the ban has been quite successful in reducing profits for the Mexican tuna-fishing fleet, thereby reducing the level of its dolphin-unsafe operations.¹⁸⁰ Perhaps the panel means to claim that a simple process standard by itself would have been equally effective in this case, but to support this claim would require detailed economic analyses of the conditions of supply and demand in the world tuna market and the costs of implementing dolphin-safe technology. Nevertheless, the 1994 panel did not even attempt any such analysis to support its factual

179. 1994 *Decision*, *supra* note 2, para. 5.24, at 57. It is theoretically possible that even this broader ban will be ineffective in protecting dolphins. Suppose that the supply of dolphin-safe tuna from U.S. producers is already sufficient to supply the total demand for tuna in the United States. Then even a ban on *all* tuna imports could have no effect on dolphin safety, if world tuna supplies can be costlessly diverted to different markets. Domestic dolphin-safe tuna previously exported will instead go to the United States to replace Mexican tuna imports; dolphin-unsafe tuna from Mexico will replace U.S. dolphin-safe tuna previously supplied to markets outside the United States. (To the extent that transportation costs or existing trade barriers inhibit these shifts, the production of dolphin-unsafe tuna by Mexican fishing fleets could still fall.) In this hypothetical, however, *no* import ban will have an effect, whether it applies to dolphin-unsafe tuna only or is broader. Thus, the 1994 panel alluded to an alternative import ban that would perform no better than the MMPA in these circumstances.

In this particular hypothetical, it might be true that the U.S. import ban “could not, by itself, further the United States conservation objectives,” as asserted by the 1994 tuna panel, but it seems clear that the tuna panel did not have this scenario in mind. If this hypothetical is the basis for the panel’s assertion, the panel certainly managed to obscure its reasoning. Furthermore, the panel cited no evidence to suggest that the real world conformed to this hypothetical.

180. The Mexican government reports that the tuna embargo has in fact hurt its tuna industry, estimating that due to the embargo, Mexico has lost between \$30 million and \$40 million each year in exports. *See U.S. Embargo Against Mexican Tuna May Be Resolved in 1995*, *Official Says*, 12 Int’l Trade Rep. (BNA) 464, 464 (Mar. 8, 1995). Some press reports indicate that the embargo has reduced Mexico’s tuna fleet by 50%. *See Administration Calls for End to Tuna Embargoes for IATTC Countries*, *supra* note 65, at 1102; *see also* Kraul, *supra* note 65 (describing the devastating effect of the embargo on the Mexican tuna industry).

claim.¹⁸¹ Instead, the panel appeared to rule against all trade measures broader than a process standard, adopting a per se rule that would prohibit many trade measures that are useful in promoting global environmental protection, and in some cases, that may even be necessary to achieve any increase in environmental protection.

e. Economic Efficiency. If justified by the value of dolphin protection, process standards and other direct trade measures are particularly innocuous because they contribute directly to efficiency. They correct for market failure and distort trade only as much as necessary to produce the public good in question: dolphin protection. Through these measures, we are merely trying to optimize our own production and consumption decisions: if the benefits to us (in terms of the public good of dolphins saved) exceed the costs we incur (flowing from higher tuna prices), then there has been an improvement in economic efficiency, even if no one else in the world attaches any nonuse value to the dolphins saved.¹⁸² This solution may not be the first-best policy response in an ideal world, but it is the best dolphin-protection policy the United States can implement in the real world unilaterally—pending any multilateral agreement—in the absence of any change in foreign government policies, given that we have no prescriptive jurisdiction over foreign nationals. In this second-best world,

181. It is possible that the 1994 panel had a narrower notion of what it means for a measure to achieve its objectives directly. The panel sometimes describes the U.S. ban on tuna imports as a measure that could “achieve its intended effect only if it were followed by changes in policies or practices” in foreign countries. *1994 Decision, supra* note 2, para. 5.23, at 56 (emphasis added); *see id.* paras. 5.24, 5.36-.37, at 57, 60. These more ambiguous phrases might be interpreted to condemn any environmental trade measure that works by changing the practices of foreign *nationals* as well as those that work by changing the policies of foreign *governments*. *See* Charnovitz, *supra* note 47, at 10,581.

Such a radical reading of the 1994 panel decision would leave the United States with only its prescriptive jurisdiction over its own nationals and its own territory as an instrument with which to protect the environment outside its borders. *See id.* at 10,579-80. Indeed, it would limit the ability of any country to protect the environment *within* its borders from the effects of foreign activities outside its borders. This interpretation would often leave countries virtually impotent in their efforts to protect the global environment, especially in the global commons, where domestic producers can change nationality to avoid domestic regulations but still enjoy the same access to the natural resource in question.

Furthermore, even given this radical reading, the foregoing analysis provides a defense of the MMPA. The broad import bans imposed by the United States could “achieve its intended effect” without any qualitative change in foreign practices. It could do so simply by reducing the sales enjoyed by dolphin-unsafe tuna producers and thereby reducing their output. Even if this quantitative effect were deemed a change in foreign practices, there would remain the effect of preventing an *expansion* in dolphin-unsafe tuna fishing. Without a broad import ban, the rise in costs for U.S. tuna producers and the attendant rise in U.S. tuna prices could generate more demand for dolphin-unsafe tuna fishing for sale in markets outside the United States. Thus, the U.S. import ban works in part by *preventing* an *adverse* “change” in foreign practices, not simply by encouraging *beneficial* changes.

182. *See* Charnovitz, *supra* note 83, at 219 (“[T]he world would be a more salutary place for . . . dolphins—at a cost consuming nations are willing to bear.”).

with no world government, the U.S. policy is no broader than necessary to achieve its direct effect on dolphin protection. Foreign consumers remain free to consume as much dolphin-unsafe tuna as they did before the United States imposed any import ban.¹⁸³ Through its trade measures, the United States may induce other nations to adopt its standards for dolphin protection, but this effect is not necessary for these trade measures to improve both global and U.S. national economic welfare.

From the perspective of global economic efficiency, there is no reason to object to process standards and other direct trade measures, as long as they actually promote genuine environmental interests and are in fact justified by the value attached to these interests. On those facts, neither the U.S. ban on imports from the primary nation nor the U.S. ban on imports from intermediary nations would be “a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade,”¹⁸⁴ because differences in relevant conditions would justify the “discrimination” against tuna from these exporting countries. If our measures have the effect of inducing other countries to change their policies in the pursuit of their own economic interests, our measures do so without any reduction in global or national economic welfare. Why then should direct trade measures, whether directed at only defiled products or a broader class of imports, be deemed illegal under the GATT?

f. Compensation. Jagdish Bhagwati has pointed out that under GATT rules, GATT-illegality need not imply that countries could never use these measures. In the same spirit as the “carrots only” solution, Bhagwati suggests that an importing country “buy” the right not to import a defiled product:

For, you could certainly compensate the country whose trading rights (i.e., access to your market) are being denied or suspended by *either* offering other concessions or . . . having the other country withdraw some “equivalent” concessions of her own to you or, better still . . . , through cash compensation for the gains from trade lost by the other country.¹⁸⁵

There are three problems with this suggestion.

183. In this sense, it is misleading for Bhagwati to cite the MMPA as an example of “the zeal to impose one’s ethical preferences on other communities and nations” or “to force others into accepting one’s own idiosyncratic choice of ethical concerns.” Bhagwati, *supra* note 18, at 170.

184. GATT, *supra* note 1, art. XX, 61 Stat. pt. 5, at A60-61, 55 U.N.T.S. at 262.

185. Bhagwati, *supra* note 18, at 174-75; see *Dolphins and the Trade Laws*, *supra* note 82, at A24 (editorial suggesting that, to compensate tuna-exporting countries for the MMPA, the United States “can give them trade concessions equal to the value of the tuna sales they are losing”).

First, if the compensation takes the form of the withdrawal of trade concessions by the exporting country, then Bhagwati's proposal erodes the regime of liberalized trade that we have tried to nurture through the GATT. Given the political disadvantages of both cash compensation and further trade concessions, the suggested compensation would most likely take the form of the withdrawal of trade concessions—the most costly possibility from the perspective of global economic efficiency. This method of compensation is the default option because it requires no action on the part of the importing country. The government of the importing country will continue its ban as long as it values this ban more than the concessions withdrawn by the exporting country. Ironically, Bhagwati's suggestion would lead to less free trade, not more free trade, especially if the withdrawal of trade concessions provokes retaliation and triggers a trade war.

Second, if the value of the compensation to the polluting country exceeds the cost of the environmental trade measure, then the net effect is to reward the polluting country for its behavior. In this case, Bhagwati's proposal makes the exporting country more likely to harm the environment than it would be otherwise. That is, compensation could create the same perverse incentives produced by the GATT Secretariat's "carrots only" approach.¹⁸⁶

Finally, the requirement that an importing country "pay" compensation to an exporting country would discourage the use of these environmental trade measures. Given the general tendency toward excessive exploitation of the global environment, this policy would only exacerbate existing market failures. Not only is it "objectionable in principle if a defendant country working to safeguard the environment has to compensate countries that are not,"¹⁸⁷ but it is also likely to reduce global economic welfare. If direct trade measures contribute to economic efficiency, then why would we want to discourage the use of these measures?

2. Possible Objections

Critics of these trade measures point to the danger that these restrictions might serve the interests of protectionists and might not be justified by any genuine environmental interests. If the value attached to the asserted environmental interests does not justify the trade measure, then the measure introduces a trade distortion rather than simply correcting a market failure. Domestic producers may seek trade measures simply to erect a barrier to imports. It is important to distinguish between two

186. Compensation could offer perverse incentives not only to nations subject to a primary embargo because of their own producer practices, but also to nations subject to an embargo as an intermediary nation. The prospect of compensation could encourage intermediary nations to import from primary nations, which would stimulate demand for the "defiled" product.

187. Charnovitz, *supra* note 47, at 10,583.

different situations in which trade measures might actually be disguised restrictions on trade: the first class of cases arises from a discriminatory effect on foreign producers; the second class of cases arises from environmental problems that are, in important respects, purely domestic.

a. Discriminatory Effect on Foreign Producers. To be a disguised restriction on trade, a trade measure must serve to protect domestic producers. This effect is obvious when a trade measure discriminates on its face against foreign producers.¹⁸⁸ The MMPA, for example, may be facially neutral in terms of its environmental standards and the rules it applies to *countries*, but it discriminates against individual foreign *producers* who may use practices comparable to those of U.S. producers but may nevertheless be barred from exporting to the United States because their country of nationality imports or produces dolphin-unsafe tuna.

Even standards that are facially neutral with respect to individual producers may serve to protect domestic producers. A standard can have a disparate impact on the costs of foreign producers, thereby effecting de facto discrimination against imports. If foreign producers must comply with the relevant standard in order to enter the market, the importing country may choose a standard that is costlier for foreign producers to meet.¹⁸⁹

Whether a regulation discriminates on its face or only in effect, this discrimination may be necessary to bring about an important benefit.¹⁹⁰ If a discriminatory regulation does not yield any benefit of actual value, however, then it results only in deadweight loss. These discriminatory regulations protect domestic producers from foreign competition without justification. These economic costs can reduce both national and global economic welfare.

The danger of protectionist abuse, however, does not justify a rule of per se illegality under the GATT. All product regulations pose the same danger of protectionist abuse, yet everyone agrees that the GATT permits each nation to regulate many characteristics of products sold within its borders. It is undisputed that the GATT allows each government to enact regulations to protect the health and safety of consumers, for example, or to protect the environment within its borders. Because these regulations are subject to the “national treatment” obligation in Article III, they must apply to domestic as well as imported goods.¹⁹¹ They can nevertheless impose greater costs on foreign producers than on domestic producers.

188. See GATT, *supra* note 8, at 21 (warning of protectionists “promoting policies that discriminate against imports as part of the solution to environmental problems”).

189. See *id.* (warning of protectionists “deliberately promoting product standards that place a proportionately greater cost burden on foreign producers”).

190. See *supra* Part IVAlc.

191. See *supra* note 157.

Governments can choose facially neutral standards that in fact favor domestic producers and place imports at a competitive disadvantage. Although the governments designing these regulations can be captured by protectionist interests, we cannot prohibit all national product regulations without sacrificing the important benefits that they generally yield. Instead, to guard against disguised protectionism, GATT Article III includes a proviso that subjects even facially neutral regulations to scrutiny for discriminatory effects on imported goods: "The contracting parties recognize that internal taxes and . . . regulations . . . should not be applied to imported or domestic products so as to afford protection to domestic production."¹⁹²

Parties to the GATT may challenge facially neutral regulations or taxes enacted by other GATT members on Article III grounds if these regulations have a disparate impact on foreign producers. For example, the European Community (EC) has complained that the U.S. laws imposing "gas guzzler" taxes and Corporate Average Fuel Economy standards on automobiles disproportionately and adversely affect imports from the EC and therefore violate the GATT.¹⁹³ Similarly, the United States has claimed that a tax imposed by Ontario on nonrefillable beer cans is a disguised trade barrier designed to place U.S. beer at a disadvantage in competition with Canadian beer.¹⁹⁴ The United States has also complained that the EC ban on the sale of beef grown with the assistance of artificial hormone infusions is designed to inhibit U.S. exports of beef to the EC.¹⁹⁵ A comprehensive analysis of the appropriate standard to apply to these cases is beyond the scope of this article.¹⁹⁶ I only suggest here that the case-by-case approach applied in these cases should also suffice to guard against protectionism in the context of trade measures to protect the environment.

Why should measures directed at environmental interests outside a country's borders be per se illegal while those directed at interests inside its borders are subject to a "rule of reason" analysis? Both measures can serve valuable economic interests. Both measures are also subject to protectionist abuse: they can serve trivial environmental interests and raise

192. Protocol Modifying Part II and Article XXVI of the General Agreement on Tariffs and Trade, *supra* note 157, art. III, para. 1, 62 Stat. at 3680, 62 U.N.T.S. at 82.

193. See 15 U.S.C. §§ 2001-2003 (1988 & Supp. V 1993); "Gas Guzzler" Ruling Stalled Thanks to U.S., *Sources Say*, 11 Int'l Trade Rep. (BNA) 1022 (June 29, 1994).

194. See Keith Bradsher, *U.S. and Canada Make Deal on Beer Amid Trade Talks*, N.Y. TIMES, Aug. 6, 1993, at D1; French, *supra* note 6, at 12.

195. See Council Directive No. 85/649, art. 6, 1985 O.J. (L 382) 282, 230; Council Directive No. 81/602, art. 2, 1981 O.J. (L 222) 32, 33; Bhagwati, *supra* note 18, at 180-81; John H. Jackson, *Dolphins and Hormones: GATT and the Legal Environment for International Trade After the Uruguay Round*, 14 U. ARK. LITTLE ROCK L.J. 429, 435-36 (1992); John H. Jackson, *World Trade Rules and Environmental Policies: Congruence or Conflict?*, 49 WASH. & LEE L. REV. 1227, 1237-38 (1992); *EC Offers Plan Aimed at Defusing Bilateral Dispute Over Hormone Ban*, *De Clercq Says*, 5 Int'l Trade Rep. (BNA) 1522 (Nov. 23, 1988).

196. For a discussion of suggested approaches to these cases, see ESTY, *supra* note 6, at 114-30, and Bhagwati, *supra* note 18, at 176-83.

barriers to imports. If both types of measures can offer similarly important benefits and also pose the same type of risks, then what justifies the distinction drawn between them by the 1991 GATT panel?

The MMPA, for example, applied environmental standards to foreign fishing fleets in order to serve precisely the same interest that justified the application of comparable standards to domestic producers: the protection of dolphins. To protect this interest effectively, the standards applied to imports as well as domestic tuna, and the corresponding import ban extended to intermediary nations as well as primary nations and to dolphin-safe tuna as well as dolphin-unsafe tuna. Similarly, if hormones were to pose a danger to European consumers of beef, then it would not do to regulate only European beef. Health and safety regulations apply to imported products in order to protect precisely the same interest that justifies the application of the same standard to domestic products: the protection of the consumer.

The tuna example, however, pertains to activities and resources in the global commons. What about the exploitation of resources located entirely within the territory of foreign countries? In the absence of any physical spillovers, should we impose the same standards on foreign producers that we impose on domestic producers? Consider the EU ban on the imports of fur from countries that permit the use of leg-hold traps. If the interest to be served by the regulation is the prevention of cruelty to animals caught in these traps, then it is insufficient simply to prohibit the use of such traps within the EU. To protect the economic value associated with the prevention of such cruelty, the EU must prohibit imports that would otherwise simply displace domestic furs produced by more humane methods.

So what should be deemed illegal under the GATT from the perspective of global economic welfare? The critical issue is whether the global economic benefits of the measure outweigh its global economic costs. The measure itself will be costly only if it distorts trade from a more efficient pattern, not if it merely corrects for a market failure. If it addresses a genuine environmental problem and the economic value associated with environmental protection justifies the regulation, then it does not distort trade on balance.¹⁹⁷ If a measure thus serves a genuine environmental objective, it should not be deemed a disguised restriction on trade, and it should be legal under GATT Article XX. The same logic applies whether the resource is protected for its use value or its nonuse value, whether the trade measure applies to defiled products or is broader, and whether the resource is on our territory, in the global commons, or on foreign territory.

Therefore, direct trade measures should generally be subject to a “rule of reason” analysis that looks for a discriminatory effect on foreign producers. The more pronounced the protection afforded domestic industry, the

197. See Stewart, *supra* note 134, at 1334-35.

more suspect the measure. If a protectionist effect exists, then there must be a rational relationship between the measure and an environmental objective that justifies the measure. The more attenuated the connection between a discriminatory measure and its objective, such that it is less likely to contribute significantly to the objective, the less justified the discriminatory measure becomes. The touchstone, however, should be whether the discrimination is so irrational as to be arbitrary or unjustified, or whether the justification asserted is so feeble as to suggest a disguised restriction on trade. Both GATT panels neglected to engage in any such “rule of reason” analysis of the relevant facts in the case of the MMPA, resorting instead to facile solutions with no textual basis in Article XX.

b. Domestic Environmental Problems. Although the discriminatory effects of trade measures cannot be distinguished in principle from those caused by purely domestic product regulations, some environmental trade measures would raise concerns unique to “extrajurisdictional” trade measures. Even process standards that have no disparate impact on the cost of imports can raise these concerns. Environmental trade measures may be suspect not because they have an asymmetric impact on domestic and foreign producers, but because our environmental standards yield asymmetric benefits for our nationals when applied at home and abroad. That is, they protect local public goods rather than predominantly global public goods; they address what are largely domestic environmental problems (DEPs) rather than transborder environmental problems (TEPs).¹⁹⁸

Consider the proposed legislation in the United States that would impose countervailing duties to offset “ecodumping.”¹⁹⁹ Does the same reasoning offered to defend the U.S. restrictions on tuna imports or the EU restrictions on fur imports, even if only nonuse value is at stake, also apply to trade measures that extend all of our own environmental standards to the manufacture of imported goods? These countervailing duties would lead consumers to avoid goods produced by processes that harm the environment in other countries and can also induce foreign governments to adopt our standards so as to avoid these duties. Would these efforts to harmonize all national environmental regulations of production processes,

198. Subramanian distinguishes “between environmental problems whose effects are localized within the country where they arise—domestic environmental problems (DEPs), and others whose effects cross national boundaries—transborder environmental problems (TEPs).” Subramanian, *supra* note 18, at 136. He uses this distinction to “enable the protectionist use of environmental arguments to be distinguished from their more legitimate use.” *Id.*

199. Subramanian includes cruelty to animals and endangered species as TEPs, but classifies “ecodumping” duties as addressing DEPs. *See id.* at 138. He offers no test for distinguishing DEPs from TEPs, however, other than to state that DEPs give rise to issues “related to competitiveness,” whereas TEPs raise issues “related to the environment *per se.*” *Id.* at 136. The analysis in this paper is an attempt to make this distinction operational as a legal rule.

even in the absence of any physical spillovers from production abroad, be just as likely to enhance efficiency as the tuna and fur restrictions? If duties to offset “ecodumping” are legal under the GATT, then the Pandora’s box feared by the GATT Secretariat is wide open.²⁰⁰ What distinguishes “ecodumping” duties from the MMPA and other environmental trade measures?

Although we might defend these trade restrictions as efforts to protect the nonuse value we attach to “human, animal or plant life, or health,” or to “natural resources” abroad, just as we protect the value of the same life, health, or resources at home, there are some reasons to be particularly skeptical of this claim in the vast majority of cases. For example, most environmental standards giving rise to “ecodumping” claims, unlike the MMPA, would be directed at resources not shared in the global commons but instead separable into distinct stocks, one present in each country. This raises the possibility that the natural resource is a local public good, not a global public good.

For example, consider environmental policies designed to protect domestic ground water from contamination. Suppose foreign manufacturers do not operate under equally stringent regulations, and we impose countervailing duties on imports of their products, claiming that the measure protects the nonuse value we attach to the condition of ground water in other countries. Because we are no longer talking about the same stock, as in the case of dolphins threatened by tuna fishing practices, the motivations for the same standard may be different: domestic use value will be an important reason supporting the protection of ground water at home, whereas the use value we derive from protecting ground water abroad is limited to preserving the health of our nationals who live or travel overseas. Any other interest we may have in foreign ground water is simply nonuse value. The same reasons do not support the extension of our regulations over our own producers to foreign producers.

In protecting resources in the global commons, the application of environ-

200. Subramanian criticizes the notion that differences in pollution standards should give rise to claims of unfair competition: “Apart from being protectionist *per se*, it is also vulnerable to the slippery slope argument: with equal consistency arguments could be advanced for remedial action against . . . differing standards on workers’ rights, education and health.” *Id.* at 141. Similarly, as an interested third party before the 1994 panel, Venezuela asked what limits one might place on measures “to protect human, animal or plant life or health” under Article XX(b) if the MMPA could be justified as such a measure:

[W]hy might not another country impose restrictions on products manufactured in countries where workers received relatively low wages . . .? Why might not a country ban imports of agricultural products from countries that failed to administer food allocation programmes for the poor? The United States position failed to suggest how the contracting parties could prevent the broad use of trade restrictions for a wide range of purposes . . .

1994 *Decision*, *supra* note 2, para. 4.34, at 46-47.

mental standards to our own producers offers some evidence that our claim of nonuse value is genuine. When the resource in question is located entirely within a foreign country, others may be suspicious of our claims of a significant interest in that resource based largely on nonuse value. Even if we impose similar standards on our own producers through domestic regulations, as long as these regulations are plausibly explained on the basis of domestic use value, they do not offer evidence that our claims of nonuse value are genuine.

The existence of a separate stock of the resource in a foreign country, however, is not by itself sufficient to render a facially neutral standard particularly suspect. The EU restriction on fur imports, for example, applies the same rule to separate stocks of animals in other countries, but can only be justified as a measure to protect nonuse value. There is no plausible justification based on use value for a ban on leg-hold traps. Because the standard derives purely from nonuse value, the justification for the standard calls for its application to imported fur as well as domestic fur. Thus, the application of the same standard to domestic producers offers evidence of genuine nonuse value.

When use value supports our domestic regulations, but no significant use value supports the application of these national standards abroad, the asymmetry in the nature of our interests raises the possibility that our application of these standards to imports in reality simply protects our domestic regulated producers from less costly foreign competition. As the GATT Secretariat observed: "Firms which find their market shares and profits under competitive pressure are prone to label as unfair any source of cost advantage enjoyed by their foreign rivals."²⁰¹ One might claim that these trade measures protect nonuse values and thereby promote economic efficiency. In these cases, however, because governments are subject to capture by the special interests of domestic producers, we have special reasons to doubt any such claim. Given a plausible explanation of the domestic regulation based on use value and the possibility of a protectionist reason for the extension of the standard to imports, we should be suspicious of any defense of such trade measures based on nonuse value. The fact that such trade measures place domestic producers in a win-win situation should make these policies especially suspect if the interests that support the regulation at home do not carry over to support the application of the same standard abroad.

201. GATT, *supra* note 8, at 28; *see id.* at 39 ("[A]doption of an environmental policy can cause direct pressure for additional protection, as the domestic industry may now claim that there is no longer a 'level playing field.'"); Bhagwati, *supra* note 18, at 168 ("The notion of unfairness is . . . attractive to those who seek relief from international competition."); Bernard Hoekman & Michael Leidy, *Environmental Policy Formation in a Trading Economy: A Public Choice Perspective*, in *THE GREENING OF WORLD TRADE ISSUES*, *supra* note 18, at 221, 233.

For example, suppose we were to defend these measures as necessary to protect nonuse values, including those derived from an altruistic concern for the use value derived by the citizens of foreign countries from their own natural resources. There are several objections a foreign government could raise in response.

i. Economic efficiency. First, the measure would be based on a misunderstanding of what regulations would best serve the interests of those foreign citizens. If we seek to maximize their welfare, then our policies are based on a mistake of fact. Harmonization would almost certainly be economically inefficient. The use value attached to the resource abroad by foreign nationals may be less than the use value we attach to the resource here at home. Other countries, especially those less wealthy than the United States, may be less willing to expend scarce resources on environmental protection, which they may regard as a luxury they cannot afford.²⁰² The same environmental standard may not only produce less benefit in another country, but also cost more to implement. In either case, a lower environmental standard would be optimal for the foreign country.

ii. "Eco-imperialism" and national sovereignty. The United States might nevertheless assert that its citizens' altruistic preferences should prevail over the preferences expressed by foreign nationals through the policies of their governments, on the theory that we know better than they what policy is actually in their interests. A foreign government could justifiably respond that this argument smacks of paternalism. The satisfaction of our altruistic preferences entails applying these preferences to others who do not share them. Other nations thus may reject our interference as "eco-imperialism" and an intrusion upon their national sovereignty.²⁰³ Even if trade measures designed to change the environmental policies of another government are not disguised protectionism, they may still be thought to infringe on the national sovereignty of the foreign government.

A clarification is in order regarding the sense in which an environmental trade measure (ETM) might be thought to intrude on national sovereignty. As Steve Charnovitz has observed: "Although ETMs are sometimes described as violating the sovereignty of the country on the receiving end, this is an overstatement. ETMs simply set conditions for trade. Thus, their

202. As the GATT Secretariat points out: "There are objective considerations which suggest that countries near the top of the development ladder are likely to have different priorities from countries further down the ladder, and that as a result they are likely to have and enforce stricter environmental standards." GATT, *supra* note 8, at 29; see Bhagwati, *supra* note 18, at 166-67; Richard B. Dagen & Michael S. Knoll, *Duties to Offset Competitive Advantages*, 10 MD. J. INT'L L. & TRADE 273, 286 (1986) ("Many countries that are poorer than the United States might not be willing to pay the high costs that the United States is willing to pay to protect its workers and environment.").

203. See ESTY, *supra* note 6, at 185; Bhagwati, *supra* note 18, at 171; Gijs M. DeVries, *How to Banish Eco-Imperialism*, J. COM., Apr. 30, 1992, at 8A.

maximum effect is to prevent trade. ETMs cannot force another country to take any action.”²⁰⁴ Thus, these measures are not, strictly speaking, an attempt to exercise extraterritorial prescriptive jurisdiction over foreign nationals. Indeed, they are an exercise of the traditional sovereign power any nation enjoys over its trade with other nations. From this perspective, it is the GATT, as interpreted by the 1991 and 1994 panels, that impinges upon national sovereignty, not environmental trade measures.

On the other hand, as Jeffrey Dunoff notes:

Of course, by participating in the international trade regime, nations cede some degree of sovereignty. For example, nations largely surrender the ability to erect protectionist trade barriers. However, in exchange, the trade regime significantly furthers the interest in sovereignty. . . . [T]he trade regime severely limits the ability of one state to interfere in the internal or domestic affairs of another state by prohibiting states from conditioning market access upon another nation’s domestic practices.²⁰⁵

To cite this countervailing sovereignty interest, however, merely begs the question: how much sovereignty over trade did the GATT signatories yield when they joined? What counts as an “internal” or “domestic” affair? Did the United States give up its rights not only to “erect protectionist trade barriers”²⁰⁶ but also to impose certain environmental trade measures? If so, which ones? There are sovereignty interests on both sides of this debate, and we need a more specific sovereignty principle if we are to resolve these issues.

I mean to suggest here that a measure may be particularly offensive to sovereignty interests insofar as it challenges the judgment made by a national government regarding the policies that best serve its own people. If we recognize a national government as the legitimate representative of its citizens, then we should generally respect the choices it makes on their behalf. We may seek to undermine or to change those policies on behalf of our own citizens or on behalf of third parties, as is the traditional prerogative of national governments, but to invoke the interests of a foreign government’s own citizens challenges that government’s authority to speak for its own people.²⁰⁷

204. Charnovitz, *supra* note 24, at 38.

205. Dunoff, *supra* note 94, at 1424.

206. *Id.*

207. Through certain policy choices a foreign government may well undermine its own claim to speak for its citizens on certain matters. A government that engages in human rights violations, for example, loses legitimacy as the representative of the interests of its people in this respect. Thus, although trade sanctions imposed on a government to protest political repression may not reflect respect for the repressive government, they are nevertheless consistent with respect for the preferences of foreign nationals.

iii. Ethical objections: illegitimate preferences. If we presume that the policy choices made by a foreign government reflect the preferences of its constituents, then our altruistic preferences over these matters, even if genuine and sincerely held by our citizens, might be vulnerable to criticism on ethical grounds. Whereas use value derives from the satisfaction of what Ronald Dworkin calls “personal preferences,” nonuse value derives from the satisfaction of “external preferences.”²⁰⁸ Dworkin contends that utilitarian arguments should exclude external preferences because their inclusion would undermine “the right of citizens to be treated as equals.”²⁰⁹ His examples include racist and homophobic preferences.²¹⁰ A complete analysis of these issues is beyond the scope of this article. I do not wish to enter that debate here, except to note that much of the nonuse value associated with natural resources, like bequest value and intrinsic value, do not seem to be vulnerable to the type of objection Dworkin makes, because they exhibit equal concern and respect for all persons.²¹¹

Other philosophers point out that measures of social welfare should not give weight to preferences that reflect moral or ethical views. If we were to count ethical preferences and to respect them all as equally valid, then optimal policies would depend on the popularity and intensity of all moral beliefs, including those that might prove unsound or illogical upon reflection.²¹² In the international environmental context, Bhagwati denounces

208. RONALD DWORIN, *TAKING RIGHTS SERIOUSLY* 234-38 (1977).

209. *Id.* at 236.

210. Milgrom also cites racist preferences as giving rise to disturbing examples of nonuse values. See Milgrom, *supra* note 138, at 421.

211. Similarly, although Harsanyi would exclude “antisocial preferences, such as sadism, envy, resentment, and malice,” from the calculation of “social utility,” he would presumably include bequest value and intrinsic value based on sympathy for other sentient beings, which would be consistent with “the fundamental basis of all our moral commitments,” namely, “general goodwill and human sympathy.” Harsanyi, *supra* note 135, at 56.

212. Bernard Williams argues that a utilitarian should not count ethical preferences, for they may be irrational from a utilitarian point of view. See Williams, *supra* note 135, at 104-06. Thus, ethical preferences would be problematic as justifications for environmental trade measures, or indeed, for any other action. Suppose that the desire of some to preserve dolphins, for example, rests on moral beliefs alone, and these beliefs are controversial. If many others believe strongly that it would be morally wrong to use trade measures to induce Mexico to protect dolphins, then we would have to count this “public bad” as a cost of using these measures. In theory, this “public bad” could outweigh the “public good” of dolphin protection.

Thomas Scanlon points out that we can exclude certain preferences from our evaluation of claims of social justice while still avoiding paternalism:

The reasons . . . for excluding “moral” or “antisocial” preferences . . . do not assert that the fulfillment of these preferences is not good for the individuals in question. All that is asserted is that these preferences “have no claim on us”—that is, on society—for their fulfillment. Denying that they have such a claim need not involve “telling people what is good for them”—it represents a moral judgment, not a judgment of value that is in conflict with theirs.

the use of “trade sanctions to force others into accepting one’s own idiosyncratic choice of ethical concerns.”²¹³ We use trade measures, however, not to force others to accept any *ethical beliefs*, but rather to induce them to refrain from *activities* that harm resources from which we derive nonuse value. Furthermore, much of the nonuse value associated with environmental interests may be based on sympathy rather than moral commitments. One may prefer that dolphins or other animals be protected from harm, for example, without necessarily believing that harming them is immoral. One may believe that the killing of animals is morally acceptable and yet simultaneously be distressed by their deaths. Thus, after we exclude all moral preferences from consideration, we still must weigh other nonuse values, including those that depend on altruistic preferences, as components of global social welfare.

Altruistic preferences that do not respect the preferences of the objects of our altruism, however, seem morally questionable. If our policies reflected the same concern and respect for the personal preferences of foreign nationals as for those of U.S. citizens, it is not likely that we would demand harmonization of standards. Because these altruistic preferences fail to extend equal concern and respect for the personal preferences of others, one might justifiably disregard them as not worthy of satisfaction. Although a source of economic value, the satisfaction of these preferences may not be a legitimate objective for public policy. If so, then we may exclude this value as an argument in our social welfare function.

iv. Disguised protectionism. Suppose, however, that the satisfaction of these altruistic preferences does count as part of social welfare, or that we defend our trade measure on the basis of some other type of nonuse value—perhaps bequest value or intrinsic value. Our justification for using the measure would still be vulnerable on two related grounds. First, one might doubt that enough genuine nonuse value is at stake to justify the measure. If in fact we attach little nonuse value to resources in other countries, then there is little justification for environmental trade measures. If local use value is the most important reason to protect these resources, then each country will capture most of the benefits of environmental regulation and accordingly will be less likely to overuse the resource. In this case, the extension of these standards to imported goods remains particularly suspect. If such a trade measure simply caters to domestic producers that prefer not to face lower-cost competition from abroad, then the extension of the same standard across borders would serve protectionist interests, not promote efficient levels of environmental

Thomas M. Scanlon, *The Moral Basis of Interpersonal Comparisons*, in INTERPERSONAL COMPARISONS OF WELL-BEING 17, 28 (Jon Elster & John E. Roemer eds., 1991).

213. Bhagwati, *supra* note 18, at 170.

regulation.²¹⁴

Second, even if the nonuse values were genuine and substantial in some cases, the effects of the policy dovetail too closely with obvious protectionist interests. These nonuse-value motivations are, in practice, simply too difficult to distinguish from protectionism, even if they are distinguishable in principle. The GATT may prohibit policies that are observationally indistinguishable from protectionist trade barriers in order to guard against disguised protectionism. Without a prophylactic rule, one would expect protectionists to invoke this potential loophole so often that very few (if any) of these trade measures would be cases that were truly justified by genuine and substantial nonuse values. Recurring legislative proposals in the United States to levy countervailing duties in response to “ecodumping” suggest that the GATT Secretariat’s concerns about protectionist abuses are not unfounded.

v. Global public goods. Note that the same objection to trade measures to protect the environment does not apply to resources in the global commons, where all countries have a stake in a common stock of the resource. In this case, there is no difference in the nature of our interests in the regulation of foreign producers and the regulation of domestic producers, because both sets of producers threaten the same stock of the resource. If we seek to protect these resources, for whatever reasons, then we must restrain exploitation by other countries as well as exploitation by our own domestic producers. Given the identity of our environmental interests in regulating our domestic tuna-fishing fleet and in excluding tuna exported from certain foreign countries, for example, there is no special reason to doubt that our interest in protecting dolphins from foreign fishing operations is genuine: our interest in our trade measures coincides with our interest in regulating our domestic producers.

The justification for unilateral trade measures to protect the global commons does not depend on any paternalistic concern for the interests of foreign nationals. These measures by the United States cannot be considered intrusions on national sovereignty any more than unilateral exploitation of the global commons by Mexico could be so considered.²¹⁵ We seek merely to express our preferences regarding a resource held in common with all humanity, and to protect the resource to a degree commensurate with the value we attach to it.

214. See Subramanian, *supra* note 18, at 151 (arguing that “in relation to domestic environmental problems . . . the use of trade measures is flawed because it is largely protectionist in intent” and “aimed at negating the very source of comparative advantage which could legitimately be conferred by differences in environmental endowments, pollution assimilation capacities or social preferences regarding environmental outcomes”).

215. See Charnovitz, *supra* note 47, at 10,579 (arguing that “a country affected by an MMPA primary embargo is on weak ground in arguing that its killing of dolphins on the high seas is a matter for its own government’s jurisdiction,” because “the dolphins in the ocean do not belong to any country”).

Note that measures to protect endangered species that are unique to foreign habitats also lack the indicia of protectionism presented by “ecodumping” duties. There is no particular reason to suspect that our interest in protecting endangered species, such as the tiger and the rhinoceros, serves protectionist interests and not the protection of nonuse value. Because there is no stock of these species in the United States for domestic producers to exploit, no trade measure designed to protect them from exploitation abroad would *automatically* serve the private interests of competing domestic producers.²¹⁶

3. A Proposed Rule

For the foregoing reasons, I suggest that we presume that a trade measure that restricts imports from another country, because that country provides environmental protection that falls below a particular standard, is an illegal disguised restriction on trade if: (1) the environmental protection in question applies to a stock of a natural resource within the foreign country, in the absence of physical spillovers; (2) the foreign producers to be regulated compete with a domestic industry subject to similar regulations to protect a stock of the same resource in the importing country; and (3) use value is an important consideration that supports the regulation of the domestic stock, but not of the foreign stock. We should infer from these circumstances that these regulations address purely domestic environmental concerns, not any genuine nonuse value based on some transboundary environmental concern. We should presume that the trade measure simply reflects the desire to protect domestic producers from foreign competition. This presumption would prohibit, for example, any attempt to impose countervailing duties on goods produced in a foreign country solely because producers in that country enjoy more lax environmental standards than their competitors in the importing country. In these cases,

216. Conceivably, a ban on imported goods derived from endangered species could still serve the interests of some domestic industry. For example, some domestic producers might sell substitutes for ivory or whale blubber. This ban would represent a polar case of a facially neutral regulation that raises the cost of some foreign producers more than it raises the cost of competing domestic producers. In this case, the environmental regulation has no effect on the costs of domestic producers but excludes some foreign competitors entirely. Should such cases, like “ecodumping” duties, be deemed suspect under the GATT despite their facial neutrality?

Two considerations suggest that trade measures to protect endangered species should be permitted. First, domestic producers are unlikely to perceive a great threat from the products of endangered species, given that these species are scarce by definition and therefore unlikely to be cheap or to threaten a large market share. This fact makes it improbable that protectionists will seek such trade measures simply in order to exclude foreign competition. Second, the very scarcity of endangered species makes them an inherently plausible source of nonuse value. A unique stock of such a resource is likely to be a truly global public good, not merely a local public good.

we may still seek to impose our preferences on others, but we must rely on carrots rather than on trade sticks.

This presumption, however, could lead to an anomaly. For example, why should a country be any less able to use trade measures against the exploitation of an endangered species abroad simply because it happens to have a domestic stock of the same endangered species? The presumption of disguised protectionism seems overbroad in this case, insofar as endangered species present an inherently plausible case of a global public good.²¹⁷ For this reason, the presumption should not be irrebuttable.

I propose, however, that a country seeking to apply trade measures in this situation should be able to overcome this presumption *only* by invoking a multilateral agreement (like the CITES²¹⁸) that reveals a broad international consensus among countries *without* similar stocks of the same resource within their borders. This consensus condemning the environmentally harmful activity in question would rebut the presumption that genuine and substantial nonuse values do not support the extension of this environmental standard across borders. This rebuttal should be persuasive, because countries without any apparent protectionist interest would provide the required evidence of nonuse value. Because this consensus is important only as evidence of genuine and substantial nonuse values, it should not matter whether the target of the trade measure has signed the multilateral agreement, nor should it matter when the target country signed the agreement if it has done so. As long as this consensus actually exists, it dispels the suspicion that protectionism alone explains the trade measure. Therefore, GATT Article XX should permit the use of trade measures to protect this nonuse value.

Finally, we should presume that all trade measures to protect the environment that do not fall within the suspect class described above instead come within the Article XX exceptions, absent some more elaborate showing of protectionism. Detecting other cases of disguised protectionism may not be easy, but this problem is not any different in principle than that which arises whenever any internal regulation that is neutral on its face is challenged as protectionist. In the absence of the indicia that trigger the presumption of illegality described above, all measures should be subject to the same case-by-case scrutiny for unjustified discrimination against imports.

B. TRADE SANCTIONS

Trade sanctions, like direct trade measures, can bring foreign producers in line with a particular environmental standard, but they usually do so by causing foreign governments to change their policies. Many of the same

217. See *supra* note 216.

218. See *supra* notes 28-29 and accompanying text for a discussion of the CITES.

considerations that arise with direct trade measures also arise with trade sanctions: the environmental standard may have a discriminatory effect on foreign producers' costs or may address a purely domestic environmental problem. Trade sanctions, however, also pose some additional difficulties.

First, as the GATT Secretariat noted, a country can apply trade sanctions to a broader range of products: the scope for trade provisions applicable to related products "is relatively limited, whereas there is essentially no limit to the use of trade measures on unrelated goods and services."²¹⁹ Second, this broader reach also implies that the application of trade sanctions invariably entails economic inefficiency. Suppose we impose trade sanctions on products unrelated to the environmental problem: for example, barriers to Norwegian fish because Norway engages in whaling. It is one thing to ban the importation of whale products that are prohibited uniformly within our borders (so that we have no domestic whale product market to protect); it is another matter to apply trade sanctions that have the incidental effect of protecting our fishing industry. A ban on Norwegian fish does little in and of itself to save whales or otherwise improve the environment. Its direct effect is protectionist, and for familiar reasons, these trade barriers simply reduce economic efficiency.

Trade sanctions discriminate between like products produced by similar production processes. This feature distinguishes trade sanctions from facially neutral process standards, but not from broader direct trade measures. Unlike all direct trade measures, however, trade sanctions invariably distort trade when they are applied because they produce no direct benefit. Trade sanctions are purely punitive: they protect the environment only through the coercive effect upon the target country. They distort trade even if they serve genuine environmental interests and produce valuable benefits only when and if the foreign government changes its policies.

So, was the 1994 GATT panel justified in distinguishing trade sanctions from direct trade measures, even if it mischaracterized the MMPA as including trade sanctions? Or if we were to agree that the MMPA includes trade sanctions, would that be a reason to find that it violates the GATT? Or should the effect a trade measure like the MMPA has on a foreign government's policies count as part of the justification for the trade measure? Does the fact that trade sanctions not only discriminate explicitly against foreign producers, but also invariably distort trade imply that they should be illegal *per se*? For example, should we deem any trade sanction to be "a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on

219. GATT, *supra* note 8, at 36 (footnote omitted).

international trade?,"²²⁰

From the perspective of global economic welfare, the relevant question with respect to trade sanctions is whether the economic benefits of sanctions outweigh the costs imposed through a distortion of trade. Because the protection of the environment addresses a familiar market failure, trade sanctions in this context could serve to improve economic efficiency rather than undermine it. For the reasons discussed in Part II, even purely coercive trade sanctions can play a valuable role in protecting the environment. Unless we can apply these trade sanctions to unrelated products, we may have no effective instruments other than carrots with which to protect the whale population in the global commons, for example, because we do not consume any whale products.

Indeed, if trade sanctions fall on products unrelated to the foreign environmental policy in question, protectionists will be less likely to find it in their interests to propose them. The industry that stands to gain from the change in the foreign government's environmental policy is less likely to be the same industry that will be protected from competition through the direct effect of the trade sanctions. If the same domestic firms dominated both industries, then they would be in a win-win situation with trade measures in place, and they would have strong incentives to lobby for such trade measures. Insofar as we tend to find different firms in different industries, however, we would expect these trade sanctions to be less vulnerable to capture by protectionists.²²¹

Furthermore, trade sanctions have the advantage that they can be targeted on the foreign industry that yields the maximum political pressure on the foreign government. We can also choose trade sanctions that impose minimum political cost at home, thereby making the threat of trade sanctions all the more credible. This freedom to choose the optimal sanction increases the likelihood of a favorable response by the foreign government and thereby reduces the risk of a prolonged dispute. Indeed, the most effective sanction need not be applied at all; the mere threat of a sanction may have the desired effect if it is credible. A quick end to the dispute, in turn, implies that sanctions need not be in place for very long (if at all), and that the total economic costs of trade distortions due to the sanctions would be correspondingly small.

220. GATT, *supra* note 1, art. XX, 61 Stat. pt. 5, at A60-61, 55 U.N.T.S. at 262.

221. Indeed, some trade sanctions pose virtually no risk that the concession sought from the target country will serve the interests of domestic producers. Trade sanctions imposed for human rights violations, for example, will have at most an attenuated effect on the competitiveness of the target country's export industries. When sanctions bring political changes rather than stricter regulations of foreign producers, they are particularly unlikely to serve protectionist interests.

1. Disguised Protectionism

Nevertheless, the GATT Secretariat perceived a serious risk of protectionist abuse with trade sanctions: "Protectionists would welcome such unilateralism. They could exploit it to create embargoes, special import duties and quotas against rivals by enacting national legislation that unilaterally defines environmental agendas that other countries are likely to find unacceptable."²²² Protectionists might also advocate trade sanctions that they believe will be ineffective, in order to enhance the probability that the foreign government will not change its policies. Even if there were evidence to support these fears, however, it would not justify a flat ban on all trade sanctions.

a. The Rule of Reason. First, the existing proviso in Article XX condemns any "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" or any "disguised restriction on international trade."²²³ This proviso applies to the type of abuse described by the GATT Secretariat. Although this standard might allow some subtle abuse to occur, it would deter any obviously protectionist abuse—such as trade sanctions that offer substantial protection from foreign competition for some significant domestic industry, but call upon the target country to adopt environmental standards that are so lacking in scientific support as to have no rational basis. These sanctions may be utterly unjustified if they are not rational means to any environmental end, or if they serve only manifestly trivial environmental interests.

b. Effectiveness of Trade Sanctions. Second, our experience with trade sanctions does not support the fear that they will be subject to widespread abuse. The possibility of protectionist abuse poses an empirical question, and the available evidence suggests little risk of the abuse feared by the GATT Secretariat. Trade sanctions in defense of environmental interests have proven to be fairly effective. They have rarely been used when the target country is unlikely to respond with commitments to stricter environmental standards. History provides little evidence of protectionists obtaining sanctions that have been chosen because they would be likely to remain in place. Indeed, the mere threat of trade sanctions often brings about the desired change in policy. This record suggests that a policy allowing trade sanctions is unlikely to be costly in practice.

Consider, for example, the history of certifications under the Pelly Amendment. In a recent survey of eighteen Pelly episodes from 1974 through 1993, Steve Charnovitz found that fifty percent were successful in causing significant change in the policy of the target country in the direc-

222. GATT, *supra* note 8, at 33.

223. GATT, *supra* note 1, art. XX, 61 Stat. pt. 5, at A60-61, 55 U.N.T.S. at 262.

tion sought by the U.S. government, eleven percent were partly successful, and only thirty-nine percent were unsuccessful.²²⁴ This rate of success is quite impressive, especially given that the United States never actually imposed Pelly penalties during this period.²²⁵ The mere threat of trade retaliation was sufficient to produce the desired policy reforms in each successful case.²²⁶ In 1974, for example, this threat induced Japan and the Soviet Union to agree to the International Whaling Commission's (IWC) quota for minke whales.²²⁷ In 1978, it induced Chile, Peru, and South Korea to join the IWC.²²⁸ In 1986, it induced Norway to suspend commercial whaling.²²⁹ In 1989, this threat induced Taiwan to enter into a driftnet agreement with the United States, and in 1991, it induced Japan to end its trade in sea turtles and prompted South Korea to enforce its driftnet agreement with the United States.²³⁰ Furthermore, the threat of *certification* (that is, the mere threat of a threat) has also been effective in other cases.²³¹

Indeed, even our experience with trade sanctions imposed or threatened for commercial, rather than environmental, objectives suggests that sanctions are more likely to serve constructive purposes than to promote the special interests of protectionist groups. Section 301 of the Trade Expansion Act of 1974 authorizes the United States Trade Representative (USTR) to take all "appropriate and feasible action" to eliminate a foreign government "act, policy, or practice" that (a) violates, or is "inconsistent with, the international legal rights of the United States,"²³² or (b) is "unreasonable or discriminatory and burdens or restricts United States commerce."²³³ Section 301(b) grants particularly broad authority. It can include virtually any foreign government practice unilaterally deemed "unreasonable" by the United States, whether or not the practice violates any international legal obligation and whether it relates to U.S. imports or to U.S. exports or to any other matter of commercial significance. The USTR has broad authority to retaliate if negotiations fail to end the allegedly

224. Charnovitz, *supra* note 24, at 16.

225. The United States deployed trade sanctions under the Pelly Amendment for the first time on April 11, 1994, against Taiwan. See Thomas L. Friedman, *U.S. Puts Sanctions on Taiwan*, N.Y. TIMES, Apr. 12, 1994, at D1.

226. See Charnovitz, *supra* note 24, at 11-13.

227. See *id.* at 11.

228. See *id.*

229. See *id.* at 12.

230. See *id.* at 12-13.

231. See *id.* at 15. For example, after the enactment of the Pelly Amendment itself in 1971 raised the threat of certification, Denmark, Norway, and West Germany agreed to phase out their high-seas salmon fishing. Gene S. Martin, Jr. & James W. Brennan, *Enforcing the International Convention for the Regulation of Whaling: The Pelly and Puckwood-Magnuson Amendments*, 17 DENV. J. INT'L L. & POL'Y 293, 294-95, 298 (1989).

232. 19 U.S.C. § 2411(a)(1), (d)(4)(A) (1988).

233. *Id.* § 2411(b)(1).

unfair trade practice. A provision like section 301(b), designed to serve U.S. commercial interests and to grant broad discretion to the USTR, might seem to be a particularly attractive target for protectionists seeking a pretext for trade sanctions.

In a survey of section 301 investigations, however, Alan Sykes concluded that "the USTR seems to have resisted capture by import-competing interest groups, and Section 301 has not become a pretense for imposing new protectionist measures for the benefit of the President's constituency."²³⁴ The "overwhelming majority" of section 301 cases have involved practices impeding U.S. exports; section 301 "has been invoked infrequently with the objective of protecting U.S. firms from import competition."²³⁵ He found that threats pursuant to section 301 have been "quite successful at securing concessions by foreign governments."²³⁶ He also observed that the "actual imposition of sanctions has been infrequent" and "for the most part sanctions have eventually been lifted."²³⁷ As he summarized his analysis: "[T]he overall impression is that the statute works fairly well. Foreign governments accede to U.S. demands, at least in part, in the clear majority of cases when the United States presses its position to a conclusion. Retaliation is infrequent . . ."²³⁸ This restrained use of trade sanctions should not be entirely surprising, given the potential for international political fallout from a more aggressive approach.²³⁹

234. Alan O. Sykes, *Constructive Unilateral Threats in International Commercial Relations: The Limited Case for Section 301*, 23 LAW & POL'Y INT'L BUS. 263, 317 (1992) (stating that "the worst fears of critics regarding capture, opportunism, and unilateralism have simply not materialized to date"). Sykes finds instead that "a plausible case can be made that the statute has been a practical success." *Id.* at 268.

235. *Id.* at 265. Sykes finds only 11 out of 94 cases "had as their sole objective the reduction of import competition in the U.S. market." *Id.* at 308. The other 83 cases had "clear market-opening objectives or related goals." *Id.* Contrast this experience with our experience with antidumping or countervailing duties, which, like direct trade measures, can put domestic producers in a win-win situation: if the foreign government continues to subsidize or the foreign firm continues to dump, then the duties remain in place; if the allegedly unfair foreign trade practice ceases, then imports become more expensive. Either way, the domestic industry gains. These trade remedies have been used frequently by domestic producers seeking protection from imports. Sykes observes that "Section 301 is sharply distinguishable from" these other statutes, which "are intrinsically protectionist and are ordinarily detrimental to the national economic interest." *Id.* at 265.

236. *Id.* at 268. Sykes finds that 31 of the 48 cases brought under section 301(a) were successful, and only one of the remaining 17 was a clear failure. *Id.* at 310-11. He also finds that 27 of the 35 cases brought under section 301(b) were successful. *Id.* at 314. These, like the section 301(a) cases, were "fairly successful at inducing foreign governments to eliminate or modify their practices." *Id.* Of the remaining eight cases, only one was a complete "failure" in terms of modifying the foreign practice. *Id.* at 315.

237. *Id.* at 268. The United States had to resort to retaliation in only seven out of 48 section 301(a) cases, and it subsequently lifted sanctions entirely in two of these cases. *Id.* at 311. The United States applied sanctions in only two out of 35 section 301(b) cases, and has lifted sanctions in one of these two cases. *Id.* at 314-15.

238. *Id.* at 316.

239. See *supra* note 123 and accompanying text.

2. "Public Choice" Theory

Finally, even if protectionist interest groups do lend political support to these trade sanctions, to the extent that they serve genuine and substantial environmental interests, this support may be a welcome development. In these cases, perhaps environmentalists can capture protectionism rather than being captured by protectionists. With appropriate constraints on the Article XX exception, we might harness protectionist political forces and put them to work on behalf of the cause of environmental protection. The preceding analysis has been consistent with the assumption that each government chooses the level of environmental protection that is efficient from the perspective of national welfare. This assumption puts the case against the use of trade sanctions in the best possible light: the case for the use of trade sanctions becomes even stronger if we relax this assumption and suppose instead that the domestic political process may fail to represent environmental interests properly.

After all, the same positive theory of political economy that predicts protectionism as the outcome of special-interest politics would also suggest that the political process will tend to protect the environment too little.²⁴⁰ This "public choice" theory views public policy in a representative democracy as the outcome of the interplay among special interests in the political process, elected officials, and candidates for political office. Because politicians seek to enhance their chances of electoral success, they will promote those policies that most effectively yield votes and campaign contributions from the interest groups that "buy" these policies with their political support. Well-organized groups are the most successful at lobbying for the policies they desire. Public policies thus will tend to serve their interests and to neglect the diffuse interests of poorly organized groups.

The standard "public choice" explanation for the popularity of protectionism (in spite of its economic costs) relies on the fact that the benefits of free trade are often distributed widely among a large and diffuse group of citizens (mainly consumers), while the costs are concentrated on particular industries.²⁴¹ Individual firms in import-competing sectors have much to gain from protection, and each may find that it has a sufficient incentive to lobby on its own for protectionist policies. Free-rider problems among producers are reduced still further when the industry has a small number of large firms that can more easily organize to lobby collectively through a trade association. Each individual consumer, on the other hand, has only a small stake in preventing protectionist policies and will probably find that the costs of any significant lobbying exceed any conceivable gain. Although the total benefits of free trade may exceed the total costs, those sectors

240. See ESTY, *supra* note 6, at 73-74.

241. See, e.g., Alan G. Sykes, *Protectionism as a "Safeguard": A Positive Analysis of the GATT "Escape Clause" with Normative Speculations*, 58 U. CHI. L. REV. 255, 275-76 (1991).

that bear the costs of free trade have strong incentives to lobby for protection, while the beneficiaries of free trade each have little incentive to lobby against it. As a result, elected officials are more responsive to producer interests than they are to consumer interests.

Critics of unilateral trade sanctions usually take this cynical view of domestic politics when they seek to stir fears of protectionism, yet they do not always extend the same "public choice" insights as readily to the formulation of environmental policy.²⁴² The same logic, however, would suggest that governments will tend to provide too little environmental protection: its benefits are spread widely (and moreover, they will go in large part to future generations), and the costs are often concentrated on particular industries that profit from environmentally harmful activities.²⁴³ Insofar as the beneficiaries of environmental regulation are underrepresented in the political process, we would expect excessively lax environmental regulation.²⁴⁴ Although environmentalists may wield some political power and succeed in obtaining some environmental regulation, "public choice" theory indicates that the influence they wield will not be commensurate with the value of the interests they seek to protect, and that the regulation they obtain will be less stringent than it should be.

We would expect this problem even with environmental harms falling completely within our borders. With respect to the protection of resources with transboundary spillovers (physical or psychological), the problem is far worse. It is all the more important in this context that we bolster political support for environmental protection. The presence of protection-

242. See, e.g., Arye L. Hillman & Heinrich W. Ursprung, *The Influence of Environmental Concerns on the Political Determination of Trade Policy*, in *THE GREENING OF WORLD TRADE ISSUES*, *supra* note 18, at 195. Hillman and Ursprung present a model of the formulation of trade policy and predict that domestic producers will enlist environmentalists in support of protectionist policies and politicians. In this model, environmentalists favor protection because protection reduces either consumption or production that harms the environment. Their prediction that protectionists will "capture" environmentalists, however, derives from a model in which environmentalists do not have the option of seeking strictly environmental policies. In a world in which policies other than trade policies are available, environmentalists are unlikely to find protectionism to be the best avenue to which to devote scarce political resources (at least as long as GATT institutions do not insist on attacking legitimate environmental policies as barriers to trade).

243. Hoekman and Leidy study the political economy of pollution abatement policies, but they fail to apply the insight so often applied in the trade context. Because they assume that environmental interests are adequately represented in the political process, they conclude that "the level of abatement may be higher or lower than the 'optimal' level, depending on the relative strength of the groups involved." Hoekman & Leidy, *supra* note 201, at 227; see *id.* at 229, 232. Yet the usual "public choice" model suggests that the political process is systematically biased in favor of producer groups over environmental groups.

244. Some beneficiaries, like future generations or wildlife, have no direct say in the political process. To the extent one believes the welfare of these beneficiaries belongs in the social welfare function, one would expect the political process to produce far less environmental protection than is optimal. See, e.g., PETER SINGER, *PRACTICAL ETHICS* 48-71, 93-105 (1979) (arguing that utilitarian calculus should include the welfare of animals).

ist interests in support of environmental measures makes the threat of trade sanctions more credible and therefore more effective in deterring excessive exploitation of the environment by foreign producers.

3. A Proposed Rule

For the foregoing reasons, GATT Article XX should also allow the use of trade sanctions to protect the global environment. The 1994 GATT panel erred in adopting a *per se* rule against trade sanctions. We should permit a country to use trade sanctions to promote any environmental interest that we would allow that country to promote through direct trade measures. The analysis discussed above in Part IVA3 for direct trade measures should also be used to define “disguised restriction on international trade” and “arbitrary or unjustifiable discrimination between countries” in the context of trade sanctions. In seeking a rational relationship between the sanctions and the environmental objective, however, we should not rely on an analysis of the likelihood that the particular target country in question will respond with concessions, lest we encourage the target country to become intransigent in anticipation of such an analysis.²⁴⁵

V. CONCLUSION

This article presents the case for a “greener” interpretation of GATT Article XX from an economic perspective. Environmental protection, no less than free trade, promotes global economic efficiency. To give absolute priority to free trade over the environment simply ignores an important component of global economic welfare.

The exceptions in Article XX should include not only measures to protect environmental interests within the borders of the country using the measures, but also trade measures to protect environmental interests throughout the world. To adopt the narrow interpretations advanced by the GATT panels would force countries that value these interests to “buy” greater environmental protection from other countries through the carrots they offer in multilateral agreements. Game theory reveals how this regime would create perverse incentives for greater degradation of the global environment and undermine incentives for greater environmental protection. A regime permitting the use of trade measures to protect the environment would avoid these perverse incentives.

The unlimited use of trade measures to vindicate environmental interests worldwide, however, could be subject to abuse and could thereby undermine the regime of liberalized trade created by the GATT. Fortu-

245. Charnovitz warns that “encouraging nations to resist environmental trade measures . . . will prove counterproductive.” Charnovitz, *supra* note 47, at 10,580. Charnovitz notes that “Mexico appeared more interested in lodging a legal challenge in GATT in 1991, than in cooperating with other countries to erect a new dolphin protection regime.” *Id.*

nately, Article XX contains a proviso that would bar a country from invoking an Article XX exception for a measure that amounts to “a disguised restriction on international trade” or “a means of arbitrary or unjustifiable discrimination between countries.” This proviso, properly interpreted and vigorously enforced, should provide sufficient protection against abuse of Article XX.

In particular, this article has proposed an interpretation of the proviso that provides a more balanced accommodation of our environmental interests and our interest in liberalized trade than that supplied by the GATT panels’ cramped readings of Article XX. First, the proposed rule would generally require the country using the trade measure to apply the “national treatment” principle: that is, to impose on its own producers environmental standards that are at least as stringent as those it wishes to impose on competing foreign producers. Unless that country can identify some relevant difference in conditions between the two countries or some other consideration that justifies different treatment as necessary to achieve the environmental objective in question, a trade measure departing from the “national treatment” principle would embody an “arbitrary or unjustifiable discrimination between countries where the same conditions prevail” in violation of the Article XX preamble.

Second, the proposed rule presumes that a trade measure that restricts imports from another country, because that country provides environmental protection below a particular standard, is a disguised restriction on trade in violation of the Article XX preamble if the measure addresses what are primarily domestic environmental problems. Specifically, I suggest that this presumption of illegality should apply if: (1) the environmental protection in question applies to a stock of a natural resource within the foreign country, in the absence of physical spillovers; (2) the foreign producers to be regulated compete with a domestic industry subject to similar regulations to protect a stock of the same resource in the importing country; and (3) use value is an important consideration that supports the regulation of the domestic stock, but the same cannot be said of the foreign stock. This type of trade measure poses an especially great risk of protectionist abuse; that is, it is particularly likely to be applied in the absence of a genuine environmental interest substantial enough to justify the measure, and therefore is particularly suspect. The presumption would prohibit, for example, any general attempt to impose countervailing duties on goods produced in a foreign country simply because the exporting country imposes less stringent environmental standards on its producers than the importing country imposes on competing producers at home. A country could rebut this presumption, however, if it can point to a multilateral agreement that reveals a broad international consensus (among countries *without* similar stocks of the resource in question within their borders) on the standard that it seeks to impose on the target country. All trade

measures to protect the environment that fall outside this presumption, such as those designed to protect the global commons or species found only abroad, pose little risk to the GATT regime of liberalized trade and therefore should fall within the Article XX exceptions, unless there is more specific evidence of protectionism.

The much narrower readings of Article XX adopted by the GATT panels may well prove to be short-sighted, even from the perspective of those with a monomaniacal preoccupation with the promotion of free trade above all else. The creation of barriers to environmental protection in the name of free trade has eroded respect for GATT institutions in particular and political support for free trade in general. The political support for free trade is fragile enough already: to force an unnecessary collision with environmental protection is simply unwise, not only in terms of sound economic policy, but also in terms of public relations. The GATT panels and the GATT Secretariat only play into the hands of protectionism when they adopt positions likely to cement environmentalists into the political coalition opposing free trade.

The GATT panels were understandably concerned about the potential for protectionist abuse of Article XX. Their crude but sweeping rules against trade restrictions, however, make no attempt to distinguish between legitimate environmental concerns and protectionism, and in the process do the cause of free trade a great disservice: the political backlash against free trade may also fail to make the same distinction. An alternative interpretation of GATT Article XX that strikes a more sensitive balance between our interest in free trade and our interest in preserving the global environment would do a better job of serving each interest.

APPENDIX

This appendix offers a formal model to illustrate the signaling game described in Part IIB2b. Suppose there are two countries: the victim (V) and the polluter (P). Let p represent the level of pollution selected by P. The government of V enjoys welfare level $W(p)$, which is a function of p that declines monotonically: $W'(p) < 0$.

The government of P enjoys net political benefits $B(p)$ from tolerating a quantity of pollution equal to p . Suppose that $B(0) = 0$, but the marginal benefit of polluting is positive at $p = 0$: $B'(0) > 0$. Thus, P would choose a positive level of pollution if it were simply to maximize its own objective function in the absence of any inducements (sticks or carrots) from V. The marginal benefit from pollution, however, declines monotonically in p : $B''(p) < 0$. Indeed, the marginal benefit becomes negative beyond some level p^0 , where $B'(p^0) = 0$. Thus, P would find p^0 to be its privately optimal level of pollution in the absence of inducements from V.

There are two possible types of polluting countries: the polluter may derive either high (H) or low (L) benefits from pollution. Type H derives net benefit $B_H(p)$, and type L derives net benefit $B_L(p)$. For any given p , let H derive marginal benefits larger than those derived by L:

$$B_H'(p) > B_L'(p). \quad (1)$$

Inequality (1) is the standard "sorting" or "single crossing" condition assumed in signaling games,²⁴⁶ which in this model allows p to serve as a signal of type. Let $B_H'(p_H^0) = 0$ define p_H^0 , and let $B_L'(p_L^0) = 0$ define p_L^0 . In the absence of inducements, H would find p_H^0 to be privately optimal, and L would find p_L^0 to be privately optimal. Condition (1) implies that $p_L^0 < p_H^0$.

The signaling game begins at the start of period 1. "Nature" chooses P's type at random: P is type H with probability x and type L with probability $1 - x$. P chooses a level of pollution for period 1. At the end of period 1, V offers P a carrot that would confer a political benefit on the government of P. Let C represent both the value of this carrot to the government of P and the political cost of this carrot to the government of V, which we take to be equal to one another. V makes this offer on a "take it or leave it" basis.

At the start of period 2, P can either accept or reject this offer. If P accepts this offer, then it must choose $p = 0$ for period 2, as demanded by V in its offer. If P instead rejects this offer, then P can choose any level of pollution it wants in period 2. The game ends at the end of period 2. Thus, if P rejected the offer, then in period 2, type H would choose p_H^0 , and type L would choose p_L^0 . Assume that in period 1, both types of P discount

246. See, e.g., A. MICHAEL SPENCE, MARKET SIGNALING 15 (1974); Michael Spence, *Job Market Signaling*, 87 Q.J. ECON. 355, 358-59 (1973).

their payoffs in period 2 by the same discount factor δ .

In this game of incomplete information, P knows its type from the start, but V cannot observe P's type. If V could observe P's type, then, in order to minimize the political costs that V would have to bear, V would offer the smallest carrot that would induce P to accept the offer. Let C_H represent the value of this carrot for type H: $C_H = B_H(p_H^0)$. Let C_L represent the value of this carrot for type L: $C_L = B_L(p_L^0)$. Condition (1) implies that $C_L < C_H$.

We will use "perfect Bayesian equilibrium" as our equilibrium concept.²⁴⁷ An equilibrium is a set of strategies for each player (V, H, and L) and a set of beliefs for V about P's type, such that no player can gain by deviating from its strategy and the beliefs are not inconsistent with Bayes' Rule. For example, consider the possibility of a separating equilibrium, in which each type chooses a different p in period 1. There are two necessary conditions: L would not want to choose H's p , and H would not want to choose L's p . We complete the description of an equilibrium by specifying V's beliefs about P's type when V observes a p other than those corresponding to the equilibrium in question (for p "off the equilibrium path"). If we choose these beliefs to ensure that neither H nor L wish to deviate from our proposed equilibrium, then our necessary conditions will also be sufficient for the existence of an equilibrium.

In a separating equilibrium, V can distinguish H from L. Therefore, it would offer C_H to H and C_L to L. Because L would receive the worst offer (C_L) in any such equilibrium, an obvious choice for its equilibrium p in period 1 is p_L^0 . Any other p for L would be dominated by p_L^0 , given that L would receive C_L in period 2 in any separating equilibrium.

What about H? One might be tempted to apply the same reasoning to H and conclude that p_H^0 would be a good candidate for an equilibrium p for H. Given that H receives the better offer (C_H), however, there is the possibility that L will want to mimic H.²⁴⁸ If L is better off choosing the p selected by H, then that p cannot sustain a separating equilibrium. Let p_H^* denote the equilibrium p for H. A necessary condition for a separating equilibrium is that L's losses from imitating H in period 1 are equal to or greater than L's gains in period 2 from doing so:

$$B_L(p_L^0) - B_L(p_H^*) \geq \delta(C_H - C_L). \quad (2)$$

If condition (2) does not hold for $p_H^* = p_H^0$, then it will hold for some $p_H^* > p_H^0$, because $B_L'(p) < 0$ for any $p > p_L^0$. Thus, in this separating

247. For a particularly accessible definition of this concept, see ERIC RASMUSEN, *GAMES AND INFORMATION: AN INTRODUCTION TO GAME THEORY* 110 (1989).

248. We do not have to worry about H wanting to mimic L by choosing p_L^0 : not only would this p be a suboptimal choice for H in terms of its payoff in period 1, this mimicry would only yield a lower offer (C_L) in period 2 than H could otherwise obtain.

equilibrium, H must choose a higher level of pollution than it would otherwise find optimal. Because this case is of particular interest, assume that condition (2) fails for $p_H^* = p_H^0$.

Assume also that H would choose the p_H^* consistent with (2) that is the least costly for itself. Let p_H^{**} denote the least-cost separating p_H^* , defined by the equality:

$$B_L(p_L^0) - B_L(p_H^{**}) = \delta(C_H - C_L). \quad (3)$$

To complete our description of a perfect Bayesian equilibrium, we must specify V's beliefs off the equilibrium path. (Beliefs off the equilibrium path are arbitrary insofar as Bayes' Rule does not constrain V's posterior beliefs in the event of an unexpected p .) Suppose that if $p < p_H^{**}$, then V believes P is type L, but if $p \geq p_H^{**}$, then V believes P is type H.

To sustain this separating equilibrium, it must be true that H would not find it in its interest to choose instead any $p < p_H^{**}$, including $p = p_H^0$, because such a p would lead V to make the smaller offer C_L . That is, the maximum gain for H in period 1 from switching, which H would obtain by a switch to p_H^0 , must be at most equal to the cost of this switch in period 2, when V will respond with a smaller offer:

$$B_H(p_H^0) - B_H(p_H^{**}) \leq \delta(C_H - C_L). \quad (4)$$

To prove condition (4), note that condition (1) implies:

$$B_H(p_H^0) - B_H(p_H^{**}) < B_L(p_L^0) - B_L(p_H^{**}). \quad (5)$$

Inequality (5) and equality (3) together imply that inequality (4) must hold.

Because we have chosen p_H^{**} to ensure that L does not want to mimic H, and indeed L cannot gain by choosing any p other than p_L^0 , and we have just shown that H cannot gain by choosing any p other than p_H^{**} , we have shown that our separating equilibrium is a perfect Bayesian equilibrium. This equilibrium illustrates the possibility that H will choose some higher level of pollution, p_H^{**} rather than p_H^0 , in order to distinguish itself from L and thereby ensure that it receives the larger offer (C_H).

Consider now the possibility of a pooling equilibrium, in which both L and H choose the same p^* , and V will be unable to distinguish the two. V could respond with an offer of C_H , which it knows will be accepted, or it could respond with an offer of C_L , which is less costly but entails the risk of rejection with probability x . Assume that V would prefer to offer C_H to ensure that $p = 0$ in period 2 rather than offer C_L and risk rejection by H:

$$xW(p_H^0) + (1 - x)[W(0) - C_L] < W(0) - C_H. \quad (6)$$

Thus, V offers C_H in a pooling equilibrium.²⁴⁹

To sustain a pooling equilibrium, it must be true that neither L nor H can gain by switching to another p . A good candidate for the equilibrium p^* would be p_H^0 : H can do no better by switching to any other p . For $p^* = p_H^0$ to be a pooling equilibrium, it must also be true that L would prefer no other p , including p_L^0 . Note that L cannot gain by choosing a larger p , which cannot increase L 's payoff in period 2 and simply reduces its payoff in period 1. Suppose that if L deviates from this pooling equilibrium with a smaller p instead, it reveals its type: that is, if V observes any $p < p_H^0$, then V believes P is type L and offers C_L ; otherwise, V offers C_H .

A pooling equilibrium requires that L 's maximum gain in period 1 by switching to a smaller p , which L would obtain by a switch to p_L^0 , be no greater than L 's loss by revealing its type and receiving a smaller offer in period 2:

$$B_L(p_L^0) - B_L(p_H^0) \leq \delta(C_H - C_L). \quad (7)$$

As long as condition (7) holds, our pooling equilibrium is a perfect Bayesian equilibrium. This pooling equilibrium illustrates the possibility that L will choose a higher level of pollution, p_H^0 rather than p_L^0 , in order to mimic H and receive a larger offer (C_H rather than C_L).

249. If condition (6) did not hold, then a pooling equilibrium would not exist. V would offer C_L in our hypothetical pooling equilibrium, but given the prospect of this offer, the two types would prefer to separate: the best p for L would be p_L^0 , and H would prefer p_H^0 over p_L^0 .