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John Holland

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**THE UNITED STATES AND ITS CLIMATE CHANGE
POLICY: ADVOCATING AN ALIGNMENT OF
NATIONAL INTEREST AND
ETHICAL OBLIGATIONS**

JOHN HOLLAND*

I. INTRODUCTION

The global climate change debate is shrouded in uncertainty. Much of the science remains uncertain and will not be known for years;¹ the ethics of global warming is still “very much in its infancy;”² and it is unsettled whether immediately addressing global warming is in the national interest of the United States. Many questions thus remain unanswered. As the world’s biggest per capita polluter and most powerful country, does the United States have a unique ethical obligation? Considering the scientific uncertainty, is it ethical to expend the world’s finite resources on curbing global warming instead of on aiding those who currently lack food, clean water, and adequate medical services? To complicate matters, global warming, as demonstrated by the maneuvering and deal-making at the Kyoto Conference, is very much an issue of international politics.³ Arthur Schlesinger once argued that “the relationship between morality and international politics [is] perennially unsettled.”⁴ Winston Churchill concurred, saying, “The Sermon on the Mount is the last word in Christian ethics . . . Still, it is not on those terms that Ministers assume their responsibilities of guiding states.”⁵ Such statements imply that there is often a disconnect between what is ethical and what is practical (i.e., what is in the national interest).

* J.D. Candidate, University of Notre Dame Law School, 2009; B.A., University of Michigan, 2003.

1. Stephen M. Gardiner, *Ethics and Global Climate Change*, 114 ETHICS 555, 555 (2004).

2. *Id.* at 556.

3. Jay Michaelson, *Geoengineering: A Climate Change Manhattan Project*, 17 STAN. ENVTL. L.J. 73, 87 (1998).

4. Arthur M. Schlesinger, Jr., *National Interests and Moral Absolutes*, in ETHICS AND WORLD POLITICS 21, 21 (Ernest W. Lefever ed., Johns Hopkins Univ. Press 1972).

5. *Id.* at 24.

The primary thesis of this Note is that, in the context of global climate change, there is actually an alignment between what is ethical and what is in the national interest of the United States. A secondary thesis is that American religious groups can play an important role in realizing this alignment. Religious and spiritual beliefs are an obvious source of ethical principles. By drawing from these beliefs, religious groups can help define what is ethical in the context of the global warming debate. American religious groups have also helped create a political consensus that the United States should assume a leadership role on global climate change; thus, as a practical matter, these groups will be essential to establishing the political foundation for addressing global warming.

Part II briefly summarizes the global warming science, discussing both what we know and what remains uncertain. There is now a clear scientific consensus that the world's temperature is increasing and that human activity is contributing to it.⁶ However, the timing and potential magnitude remain uncertain, as do the potential costs and benefits.⁷

Part III discusses the spiritual doctrines and reasoning that motivate the environmental ethic of America's two largest religious groups—Catholics and evangelicals. Within both groups, a movement is growing to address global warming and climate change.⁸ Also, religious and traditionally non-religious environmental groups are starting to find common ground on global warming (even if they disagree about other important issues). Considering the powerful role of religion in American politics and the growing willingness of religious organizations to unite with untraditional allies, religious groups can play a major role in creating the political foundation for the United States to lead on global climate change.

Part IV argues that addressing global warming is in the national interest of the United States. First, scientific uncertainty does not justify inaction. The conservative judge Richard Posner, a champion of law and economics, argues that the U.S. should address global warming *precisely* because of such uncertainty.⁹ Second, by destabilizing poor countries in other parts of the world, global warming and climate change pose a national security risk to the U.S.¹⁰ Senators John McCain and John Warner—the two highest ranking Republicans on the Senate Armed Services Committee—have both explicitly stated that global warming should be considered a national security issue.¹¹ Third, game theorists have documented that an ethical approach to global warming is crucial to

6. See *infra* Part II.

7. *Id.*

8. See *infra* Part III.

9. RICHARD POSNER, CATASTROPHE: RISK AND RESPONSE 11 (2004).

10. See *infra* Part IV.B.

11. *Id.*

overcoming the “tragedy of the commons” problem that characterizes the international effort to reduce greenhouse gas emissions. Thus, this Note argues that there is an alignment between what is ethical and what is in the national interest of the United States; leading on global warming is both ethical and practical. In the era of globalization—where global problems often become American problems because of the interconnectedness of nations—it is important to craft a foreign policy that “reconcil[es] the humanitarian aims of idealists with the powerful logic of realists.”¹²

II. A BRIEF OVERVIEW OF GLOBAL WARMING SCIENCE

There is an “overwhelming scientific consensus” that at least some global warming is occurring and that human activity is an important cause.¹³ In 2007, the Intergovernmental Panel on Climate Change (IPCC) found that “[w]arming of the climate system is unequivocal.”¹⁴

Some skeptics in the U.S. believe the science does not adequately prove that human activity is causing global warming. Such opponents use this claimed uncertainty to justify inaction. However, as the climate science shows an increasingly clear link between global warming and human activity, the number of skeptics continues to decrease. For instance, early in his presidency, George W. Bush declared he would not regulate the carbon dioxide emissions of power plants because of “the incomplete state of scientific knowledge of the causes of, and solutions to, global climate change.”¹⁵ Later, the President changed his tune. In October 2007, he stated:

Our understanding of climate change has come a long way. A report issued earlier this year by the U.N. Intergovernmental Panel on Climate Change concluded both that global temperatures are rising and that this is caused largely by human activities. When we burn fossil fuels, we release greenhouse gases into the atmosphere, and the concentration of greenhouse gases has increased substantially.¹⁶

12. Robert Wright, *An American Foreign Policy That Both Realists and Idealists Should Fall in Love With*, N.Y. TIMES, July 16, 2006, at D12.

13. David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 10 (2003).

14. INTERGOVTL. PANEL ON CLIMATE CHANGE, FOURTH ASSESSMENT REPORT, CLIMATE CHANGE 2007: SYNTHESIS REPORT 2 (2007), http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf. But see Timothy Ball, *Global Warming: The Cold, Hard Facts?*, CAN. FREE PRESS, Feb. 5, 2007, available at <http://www.canadafreepress.com/2007/global-warming020507.htm> (arguing, as the IPCC Fourth Report was released, that “[g]lobal warming, as we think we know it, doesn’t exist”).

15. Douglas Jehl with Andrew C. Revkin, *Bush, in Reversal, Won’t Seek Cut in Emissions of Carbon Dioxide*, N.Y. TIMES, Mar. 14, 2001, at A1.

16. George W. Bush, Remarks During a Meeting on Energy Security and Climate Change (Sept. 28, 2007), in 43 WKLY. COMP. PRES. DOC. 1261–62 (2007).

Thus, there is a growing consensus that human activity is causing an increase in world temperature.

However, plenty of scientific uncertainty remains. For instance, it is unclear how big of an impact global warming might have (that is, how much world temperatures will continue to rise in the future).¹⁷ Scientists are also uncertain about the extent to which rising temperatures have been caused by human activity, as opposed to other possible factors.¹⁸ Furthermore, the possibility of abrupt climate change—a scenario acknowledged not only by “alarmist greens” but also by the U.S. Department of Defense¹⁹ and conservatives such as Senator Warner and Richard Posner²⁰—is also uncertain. Economist William Nordhaus offers the following list of possible “catastrophic consequences” of global warming:

major surges of the West Antarctic ice sheets, leading to a sea-level rise of 20 feet or more; unexpected shifts in ocean currents, such as displacement of the warm current [the Gulf Stream] that warms the North Atlantic coastal communities; a runaway greenhouse effect in which warming melts tundras and releases large amounts of additional GHGs [greenhouse gases] like methane; large-scale desertification of the current grain belts of the world; very rapid shifts in temperature and sea levels; or the evolution and migration of lethal pests in new climatic conditions.²¹

This process, once it begins, could take as short as a decade.²² Many elements of the global warming debate thus remain unknown. However, this Note argues that the U.S. should act on global warming even in the face of the remaining scientific uncertainty. This conclusion is supported by ethical and moral reasons as well as by economic and national security reasons.

III. RELIGIOUS, SPIRITUAL, ETHICAL, AND MORAL PERSPECTIVES

Global warming raises many ethical questions. One environmental ethicist wrote,

Most ethical systems and our intuitive ethical sensitivity are focused on one’s responsibilities to people who are close by and who can be directly affected by one’s actions. The technical power that humans now have to adversely affect people separated

17. Gardiner, *supra* note 1, at 566.

18. *Id.*

19. See PETER SCHWARTZ & DOUG RANDALL, AN ABRUPT CLIMATE CHANGE SCENARIO AND ITS IMPLICATIONS FOR UNITED STATES NATIONAL SECURITY (Oct. 2003), available at <http://www.gbn.com/GBNDocumentDisplayServlet.srv?aid=26231&url=%2FUploadDocumentDisplayServlet.srv%3Fid%3D28566>.

20. POSNER, *supra* note 9, at 46.

21. *Id.* (annotations in original).

22. *Id.*

by time and space is a great new challenge to ethical reasoning. Yet because human-induced climate change will most hurt the poorest on the planet, seriously reduce the quality of life for future generations, and threaten plants and animals around the world, climate change and other emerging global environmental problems must be understood to raise very serious ethical issues.²³

These ethical issues weigh heavy on the United States. The U.S. is the world's most powerful country and by far its biggest per capita emitter of greenhouse gases.²⁴ The United States' capacity to deal with the potential effects of global warming is also far greater than most countries' (both because the U.S. has more resources for adapting and because global warming will probably not affect the U.S. as much as most other countries).²⁵ For these reasons, this Note argues that the United States has an ethical obligation to take a leading role in addressing global warming.

American religious groups can play an important role in addressing these ethical obligations. First, religion is an obvious source of ethical principles. Concepts of ethics and morality "are derived from the world's great religious traditions."²⁶ Furthermore, nearly all religions contain an environmental ethic.²⁷ Religious groups are obviously not monolithic in terms of the policy preferences of their members. However, religious groups are increasingly expressing interest in the environment—an issue which implicates concerns about God's creation and the effect of global warming on the dignity of humans throughout the world (especially those in poor countries). Second, as a practical matter, religious groups are relatively powerful within the American political system. The influence of evangelicals within the Republican Party is famous, and Catholics are often considered the most important swing vote in the American electorate.²⁸ Also, religious groups and traditionally non-religious organizations are increasingly demonstrating their willingness to unite to address environmental issues.²⁹ Thus, religious groups can play a crucial role in establishing a political consensus to support the United States in taking a global leadership role on climate change. While an environmental ethic

23. DONALD A. BROWN, AMERICAN HEAT: ETHICAL PROBLEMS WITH THE UNITED STATES' RESPONSE TO GLOBAL WARMING 4–5 (2002).

24. *Id.* at 7, 154.

25. Cass R. Sunstein, *Of Montreal and Kyoto: A Tale of Two Protocols*, 31 HARV. ENVTL. L. REV. 1, 53 (2007).

26. BROWN, *supra* note 23, at viii.

27. *Id.* at 62–63.

28. *See infra* Part III.C.

29. *See infra* Part III.D.

runs through nearly all of the world's religions,³⁰ this Note focuses on Catholics and evangelicals.

A. *The Catholic Perspective*

In recent years, Catholic leaders have increasingly emphasized the importance of environmental issues. Global warming implicates many of the traditional concerns of the Catholic Church: the creation, redemption, stewardship of the earth, use of the world's resources for the universal common good, solidarity, concern for the poor and future generations, and respect for human life and dignity.³¹

The U.S. Catholic Bishops have stated that "the environmental crisis is a moral challenge."³² In his encyclical *Centesimus Annus*, Pope John Paul II declared that governments have an obligation to provide for "the defen[s]e and preservation of common goods such as the natural and human environments."³³ In 2001, the U.S. Conference of Catholic Bishops issued a statement asking the United States to take a prominent role in the global warming debate. The Bishops stated that the responsibility to lead "weighs more heavily upon those with the power to act because the threats are often greatest for those who lack similar power, namely, vulnerable poor populations, as well as future generations."³⁴

Most of the Church's recent teachings heavily emphasize the universal common good and the interdependence of the world in the age of globalization. In 1990, Pope John Paul II stated, "The fact that many challenges facing the world today are interdependent confirms the need for carefully coordinated solutions based on a morally coherent world view."³⁵ The Pope further emphasized:

The ecological crisis reveals the URGENT MORAL NEED FOR A NEW SOLIDARITY, especially in relations between the developing nations and those that are highly industrialized. States must increasingly share responsibility, in complimentary ways, for the

30. BROWN, *supra* note 23, at 62–63. See also Daryl Fisher-Ogden, *World Religions and the Clean Air Act*, 23 NOTRE DAME J.L. ETHICS & PUB. POL'Y __ (2009).

31. See generally U.S. CONF. OF CATH. BISHOPS, GLOBAL CLIMATE CHANGE: A PLEA FOR DIALOGUE, PRUDENCE, AND THE COMMON GOOD (U.S. Cath. Conf. 2001) [hereinafter PLEA FOR DIALOGUE].

32. U.S. CONF. OF CATH. BISHOPS, RENEWING THE EARTH: AN INVITATION TO REFLECTION AND ACTION ON ENVIRONMENT IN LIGHT OF CATHOLIC SOCIAL TEACHING Part I (1991), available at <http://www.usccb.org/sdwp/ejp/bishopsstatement.shtml> [hereinafter RENEWING THE EARTH].

33. POPE JOHN PAUL II, CENTESIMUS ANNUS para. 40 (1991).

34. PLEA FOR DIALOGUE, *supra* note 31, at 6.

35. POPE JOHN PAUL II, THE ECOLOGICAL CRISIS: A COMMON RESPONSIBILITY (MESSAGE FOR 1990 WORLD DAY OF PEACE) para. 2 (Dec. 8, 1989), available at <http://www.ewtn.com/library/PAPALDOC/JP900101.HTM>.

promotion of a natural and social environment that is both peaceful and healthy.³⁶

The Pope and the U.S. Catholic Bishops have also addressed the effect of environmental degradation on the poor,³⁷ the importance of protecting future life,³⁸ and the need to respect God's creation.³⁹

B. *The Evangelical Perspective*

In recent history, there has been much argument in the press about the role of evangelicals in American politics and the ongoing "culture war" between liberals and conservatives.⁴⁰ The political influence of evangelical Christians on the Republican Party has been, according to some, the engine driving this controversy.⁴¹ However, the political views of evangelicals are far from monolithic. As journalist and Georgetown professor E.J. Dionne has stated, "[T]he new evangelical electorate cares about issues besides abortion and gay marriage. Poverty, the environment, the scourge of AIDS in Africa—these, too, are moral issues about which millions of Evangelicals care passionately."⁴² Indeed, a clear majority of evangelicals actually supports immediate measures to address global warming.⁴³ Furthermore, the president of the National Association of Evangelicals (NAE), an umbrella organization that encompasses thirty million evangelicals,⁴⁴ has become one of America's leading religious advocates for immediate action on global warming.⁴⁵ In December of 2007, *Time* magazine listed "Green Evangelicals" as one of the top ten religious stories of the year.⁴⁶

The theological underpinnings of evangelical support for action on global warming are similar to those that motivate Catholics—the protection of God's creation, assisting people in the poorest countries, and

36. *Id.* para. 10 (emphasis in original).

37. *Id.* para. 11.

38. *Id.* paras. 6, 15.

39. *Id.* paras. 3–5.

40. See generally DAN GILGOFF, *THE JESUS MACHINE: HOW JAMES DOBSON, FOCUS ON THE FAMILY, AND EVANGELICAL AMERICA ARE WINNING THE CULTURE WAR* (2007).

41. *Id.*

42. E.J. Dionne Jr., *After the Religious Right*, COMMONWEAL, Feb. 15, 2008, at 12, 12, available at http://www.commonwealmagazine.org/article.php3?id_article=2134.

43. *A Cross of Green*, ECONOMIST, Dec. 1, 2007, at 38 (reporting on an October 2007 poll saying that two-thirds of American evangelicals support immediate action on global warming).

44. See, e.g., Carol McGraw & Bill Reed, *Time is Healing New Life*, COLO. SPRINGS GAZETTE, Nov. 4, 2007, available at http://www.gazette.com/articles/church_29325__article.html/new_life.html.

45. Pamela Miller, *God is Great, God is Green*, MINNEAPOLIS STAR TRIB., Feb. 3, 2007, at 12E.

46. David Van Biema, *The Ten Biggest Religion Stories*, TIME, Dec. 24, 2007, at 67.

overarching concerns about the sanctity of life. Reverend Richard Cizik, the former vice president of the NAE, recently described global warming as “an offense against God.”⁴⁷ At the core of this evangelical movement is “creation care”—the idea that people have the religious duty to protect God’s creation and to act as stewards of the earth. Leith Anderson, the president of NAE, has said that “social issues . . . relate to the sanctity of human life—before and after birth. So I would see issues like poverty, or the effects of climate change, as sanctity-of-life issues.”⁴⁸ Once a skeptic, Pat Robertson now supports action against global warming. In March 2008, Robertson agreed to appear in a TV ad in support of Al Gore’s Alliance for Climate Protection.⁴⁹ Robertson told his television audience that “[i]t’s just common sense that we ought to be good stewards of the environment and do everything within our power to protect this fragile planet that we all live on.”⁵⁰ Thus, there is a strong movement among evangelicals to break from the past and promote environmental policies. Indeed, in February 2008, a national meeting of the country’s foremost evangelical leaders declared climate change “the civil-rights movement of the 21st century.”⁵¹

One particular area where religious groups can help inform the ethical debate is on the effect of climate change on the lives of actual humans.⁵² Almost all environmental ethicists cite the effect on the poor—by far the least responsible and least prepared for climate change—as one of the most serious ethical issues raised by global warming. As we have seen, Catholics and evangelicals (not to mention people of other religious beliefs) place a heavy emphasis on how climate change

47. Mark I. Pinsky, *Environmental Leaders Host “Creation Care” Summit in Orlando-Area Church*, ORLANDO SENTINEL, Feb. 22, 2008, at B1.

48. Patrick Condon, Associated Press, Religion Today, Nov. 8, 2007, available at http://www.tulsaworld.com/news/article.aspx?subjectid=18&articleid=071110_1_A11_spans32238&archive=yes. Cf. David P. Gushee, *Can a Sanctity-of-Human-Life Ethic Ground Christian Ecological Responsibility?*, 23 NOTRE DAME J.L. ETHICS & PUB. POL’Y — (2009) (arguing that environmental protection is implicit in a “full-orbed sanctity-of-life ethic”).

49. Juliet Eilperin, *Gore Launches Ambitious Advocacy Campaign on Climate*, WASH. POST, Mar. 31, 2008, at A4.

50. *Id.*

51. *Evangelicals Getting Greener: Religious Leaders Press for Action on Climate Change*, HOUS. CHRON., Feb. 23, 2008, at Religion 2.

52. In documenting the effects of global warming on people in Bangladesh, the journalist Robert Kaplan discusses how increased monsoons, floods, soil erosion, and salinization of the country’s limited water supply are placing 150,000,000 Bangladeshis at the risk of “one of the greatest humanitarian catastrophes in history.” Kaplan argues that the effect on actual humans is one of the most powerful reasons for addressing climate change. He writes that “Bangladesh demonstrates how developing-world misery has acquired—in the form of climate change—a powerful new argument, tied to the more fundamental outcry for justice and dignity.” Robert D. Kaplan, *Waterworld*, ATLANTIC, Jan./Feb. 2008, at 60, 63, available at <http://www.theatlantic.com/doc/200801/kaplan-bangladesh>.

will threaten the quality of the lives of poor people in developing countries (in the short term) and of future generations (in the long term). These beliefs can help counter the often raised myth that climate change advocates are only concerned about ice caps and polar bears.⁵³ (For instance, one Congressman has criticized environmentalists for “disrupt[ing] human lives for the sake of an owl.”⁵⁴ Another has chastised environmentalists for “favoring beetles and their habitat over the protection of human life.”⁵⁵) The Catholic and evangelical perspectives, however, see global warming and climate change as “sanctity-of-life issues” that affect the lives of actual people.⁵⁶

This Note argues that, on the issue of America’s stance on climate change, there is an alignment between what is ethical and what is practical (i.e., what is in the national interest). The religious beliefs of Catholics and evangelicals—which emphasize stewardship of the earth and the protection of the poor and future generations—can help realize this alignment by informing what is ethical with regards to climate change. But these religious groups can also help realize this alignment by providing the necessary political support.

C. *Political Influence of Catholics and Evangelicals in the United States*

The beliefs of Catholics and evangelicals are also important for the simple reason that both groups are powerful voting blocs in the United States. In other words, while their beliefs can inform the ethical debate, their votes can provide the political support for actual action on climate change.

The 47 million Catholic voters in the United States have been called “by far the largest and most important bloc of swing voters” in the American electorate.⁵⁷ Catholics have voted for the winner of the popular vote in the last ten consecutive presidential elections.⁵⁸ Noting this, one journalist wrote that Catholic voters “have long been a kind of holy

53. See, e.g., *infra* note 79.

54. Sen. Mitch McConnell, *Just What is a Special Interest?*, WASH. POST, Feb. 21, 1996, reprinted in 142 CONG. REC. S6804, 1996 WL 346741 (1996).

55. 143 CONG. REC. H2281-01, 1997 WL 227667 (1997) (statement of Rep. Dan Young).

56. BROWN, *supra* note 23, at 8 (noting that global warming poses “an extraordinarily serious threat to human health”).

57. Howard Fineman, *How Congress and the Conclave of Cardinals Will Shape the Next Great Debate*, NEWSWEEK WEB EXCLUSIVES, Apr. 6, 2005, available at 2005 WLNR 9490618.

58. See John Russonello & Kate Stewart, *Understanding Catholic Voters*, CONSCIENCE, Autumn 2005, at 23, 23. In the 2008 presidential election, Barack Obama won 54% of the Catholic vote. Margaret Ramirez & Manya A. Brachear, *Obama Picks Up Religious Votes*, CHI. TRIB., Nov. 6, 2008, at A19.

grail for presidential candidates.”⁵⁹ As another writer said, however “goes the Catholic vote, so goes the country.”⁶⁰

Evangelicals are also important in American politics, but in a different way. While the Catholic vote is often up for grabs and may swing any given election, the evangelical vote is a stable pillar of the Republican Party. In 2004, seventy-eight percent of evangelical voters supported President Bush.⁶¹ Naturally, evangelicals are very influential within the Republican Party. Writer Jim Wallis has suggested that the growing evangelical support for environmental issues marks a “tipping point” in the climate change debate.⁶² As mentioned earlier, the president of the National Association of Evangelicals, Leith Anderson, has become one of America’s leading religious advocates for addressing global warming. This is potentially crucial since an estimated twenty-five percent of American voters belong to a religious denomination that falls under the NAE umbrella.⁶³ In March 2005, an article in the *New York Times* mentioned the NAE’s concern about global warming.⁶⁴ Later that same day, the White House called NAE headquarters to discuss which environmental issues most concerned the NAE leadership.⁶⁵ As Richard Cizik said, “[W]hen evangelicals speak, Republicans tend to listen.”⁶⁶

D. *The Possibility for Consensus Between Religious Groups and Environmentalists*

On the issue of climate change, the political power of America’s religious groups is magnified by the groups’ growing willingness to unite with scientists and environmentalists. Global warming is increasingly proving its ability to make for strange bedfellows: Greenpeace and Dupont,⁶⁷ conservative evangelicals and the Sierra Club,⁶⁸ and even

59. Amy Sullivan, *How America Decides*, TIME, Jul. 14, 2008, at 32.

60. Russonello & Stewart, *supra* note 58, at 23.

61. Stevenson Swanson, *Moderate Evangelicals Preach Their Own Politics*, CHI. TRIB., Feb. 14, 2005, at A1.

62. Jim Wallis, *An Evangelical Climate Change*, SOJOURNERS, May 2006, at 5, 6.

63. Paul Nussbaum, *The Purpose-Driven Pastor*, PHILA. INQUIRER, Jan. 8, 2006, at A1.

64. Wallis, *supra* note 62, at 5.

65. *Id.*

66. *Morning Edition: Evangelical Leaders Urge Action on Climate Change* (NPR radio broadcast Feb. 8, 2006), available at www.npr.org/templates/story/story.php?storyId=5194527.

67. John Carey with Michael Arndt, *Hugging the Tree-Huggers: Why So Many Companies are Suddenly Linking Up with Eco Groups. Hint: Smart Business*, BUS. WK., Mar. 12, 2007, at 66 (describing that the Greenpeace International Chief can now “be found wearing a pinstripe suit, standing with CEOs, and heaping praise on companies he sees as doing the right thing”).

68. Juliet Eilperin, *Warming Draws Evangelicals Into Environmentalist Fold*, WASH. POST, Aug. 8, 2007, at A1.

Newt Gingrich and Nancy Pelosi.⁶⁹ Perhaps, then, it should not be surprising that religious and environmentalist organizations—who might disagree with each other on a wide variety of other issues—are uniting around the need to address global warming. Such coalitions are important since they may further solidify the foundation of political support for the American government to address climate change.

Harvard professor Edward O. Wilson has stated that “[s]cience and religion are the two most powerful social forces in the world today.”⁷⁰ Yet, throughout history, science and religion have often clashed.⁷¹ Previously, religious groups and environmentalists disagreed about global warming. As one journalist wrote:

Many evangelicals have dismissed environmentalists as liberals unconcerned about the economic impact of their policies to fight global warming. Long-standing distrust between the two camps over issues such as abortion and same-sex marriage has discouraged evangelicals from joining liberals on the environment.⁷²

However, global warming is increasingly uniting a coalition of scientists and religious groups. And scientists, who have struggled to promote political action in the relatively religious United States, are welcoming support from religious leaders.⁷³ One university scientist, citing the “indispensable” role of religious groups in American politics, has stated that “the churches in this country are a major force, and if all these denominations can get together and agree on this issue, they’ll move mountains.”⁷⁴ On a recent trip to Greenland with religious leaders of different faiths from all over the world, the Executive Director of the Sierra Club stated, “Environmentalism is really the intersection of science and ethical principles. I was part of the generation that made the choice—the horrendous strategic blunder—of situating ourselves outside the institutions of faith. Now we have a chance to repent for and reform

69. Joe Garofoli, *Gore Looking to Turn Idle Fans Into Activists*, SAN FRAN. CHRON., Apr. 1, 2008, at A11 (reporting that Gingrich and Pelosi have agreed to make a commercial together in support of Al Gore’s Alliance for Climate Protection).

70. E.O. WILSON, *THE CREATION: AN APPEAL TO SAVE LIFE ON EARTH* 5 (2006).

71. For example, the teaching of creationism in American public schools has caused much controversy during the past thirty years. Kevin Trowel, Note, *Divided by Design: Kitzmiller v. Dover Area School District, Intelligent Design, and Civic Education*, 95 GEORGETOWN L.J. 855 (2007). In an earlier era, the teaching of evolution itself proved similarly controversial. See *D-DAYS AT DAYTON: REFLECTIONS ON THE SCOPES TRIAL* (Jerry R. Tompkins ed., 1965).

72. Jeff Barnard, Associated Press, *Christian Group Encourages Recycling*, Sept. 8, 2006, available at http://www.usatoday.com/tech/science/2006-09-08-green-evangelicals_x.htm.

73. Eric Berger, *Faith, Science Find Common Ground on Planet Earth*, HOUS. CHRON., Oct. 16, 2006, at A1.

74. *Id.*

from that error.”⁷⁵ When eighty-six prominent evangelical leaders signed a “Call to Action” to address global warming,⁷⁶ *National Geographic* declared it “the best news of the year.”⁷⁷

IV. THE ALIGNMENT OF MORALITY AND THE NATIONAL INTEREST

There is an alignment between the national interest and the ethical and moral concerns raised by environmentalists and religious leaders. This Part argues that an ethical approach demands that the U.S. assume a leadership role on climate change, including, if necessary, taking some unilateral action (i.e., independent domestic legislation) in the absence of an adequate international agreement.

Some American commentators seem to treat global warming as a zero-sum game between the United States and the rest of the world. This type of reasoning is generally embodied in a series of interrelated arguments. First, cutting greenhouse gas emissions without binding agreements from countries like China and India will only hurt the American economy and cede economic power and global influence to other nations without any significant reduction in greenhouse gas emissions.⁷⁸ Second, environmentalists are more concerned about saving plants and polar bears than with improving the lives of actual humans.⁷⁹ Third, the U.S. should wait to address the issue until climate scientists can more accurately predict the timing and extent of global warming and its impact on the environment.⁸⁰ Fourth, because global warming presents a “tragedy of the commons” scenario, any independent U.S. action would allow other countries to enjoy the benefits of reduced American emissions without sharing the costs.

75. Colin Woodard, *In Greenland, An Interfaith Rally for Climate Change*, CHRISTIAN SCI. MONITOR, Aug. 12, 2007, at 6.

76. Editorial, *Religious Communities Speak Up: Faith-Based Climate Care*, PHILA. INQUIRER, Oct. 17, 2006, at A12.

77. Bill McKibben, *A Deeper Shade of Green*, NAT'L GEOGRAPHIC, Aug. 2006, at 32, available at <http://ngm.nationalgeographic.com/ngm/0608/voices.html>.

78. For example, in 2000, Condoleezza Rice stated that any American policy to reduce GHG emissions “that does not include China and exempts ‘developing’ countries from tough standards while penalizing American industry cannot possibly be in America’s national interest.” Condoleezza Rice, *Promoting the National Interest*, FOREIGN AFF., Jan./Feb. 2000, at 45, 45.

79. See, e.g., Michael S. Berliner, The Ayn Rand Institute, *Against Environmentalism*, http://www.aynrand.org/site/PageServer?pagename=objectivism_environmentalism (The fundamental goal of environmentalists is not clean air and clean water; rather it is the demolition of technological/industrial civilization. Their goal is not the advancement of human health, human happiness, and human life; rather it is a subhuman world where “nature” is worshipped like the totem of some primitive religion. . . . [B]y word and deed, [environmentalists] demonstrate their contempt for human life.

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80. See *infra* note 83 and accompanying text.

But by fulfilling its ethical duty to lead on global warming, the U.S. actually furthers its own national interest. This is true for a number of reasons. First, assuming a leadership role in promoting some immediate measures against global warming, even if that means making some unilateral emissions cuts, is a practical response to scientific uncertainty according to a purely economic risk management analysis. Second, the U.S. has a national security interest in addressing climate change, especially in the age of globalization where the collapse of societies on the other side of the world can affect the United States. Third, according to game theorists, an ethical approach is an important aspect of a practical resolution to the “tragedy of the commons” problem that characterizes the world’s attempts to reduce greenhouse gas emissions.

A. *An Ethical (and Rational) Response to Uncertainty*

The most common argument against addressing global warming is that of scientific uncertainty.⁸¹ These opponents argue that action should wait because the potential extent and timing of climate change are uncertain. For instance, the Environmental Protection Agency (EPA) made such an argument in *Massachusetts v. EPA*, a 2007 Supreme Court decision which held that the EPA has the power to regulate greenhouse gas emissions under the Clean Air Act.⁸² At oral arguments, the EPA opened by saying that “now is not the time to exercise such authority [to regulate carbon dioxide emissions], in light of the substantial scientific uncertainty surrounding global climate change and the ongoing studies designed to address those uncertainties.”⁸³ However, as one scholar noted, “Scientists aren’t any time soon going to give politicians some magic[al] answer.”⁸⁴

For a number of ethical and practical reasons, scientific uncertainty does not justify inaction. One environmental ethicist argues that climate change “must be understood to raise the most momentous ethical dilemma” because global warming policy options may determine which people, plants, and animals will live and die.⁸⁵ As mentioned previously, this ethical dilemma weighs heavy on the United States as the biggest per capita emitter and the country with the most resources to adapt to any future problems caused by global warming. If a country waits for the resolution of all scientific uncertainty, that nation is implicitly asking future generations, especially in the poorest regions of the world, to “bear

81. Gardiner, *supra* note 1, at 564.

82. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

83. Transcript of Oral Argument at 25, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120).

84. Gardiner, *supra* note 1, at 564 (quoting Robert J. Lampert, RAND Corporation).

85. Donald Brown, *The Importance of Expressly Examining Global Warming Policy Issues Through an Ethical Prism*, 12 PENN ST. ENVTL. L. REV. 147, 147 (2004).

the burden of risk in light of the fact that harm may be experienced before scientific uncertainties are resolved.”⁸⁶ As mentioned earlier, religious beliefs are an obvious source of ethical principles. The imposition of such a risk on the poor and future generations is inconsistent with the religious obligations to be stewards of the earth, to attempt to protect the lives of future generations, and to consider the needs of the world’s poorest people.

Furthermore, from a purely economic perspective—that is, a perspective of balancing the cost of addressing global warming against the possible risk—it is rational to start addressing global warming in the face of uncertainty. The Stern Report, which Tony Blair called “the most important document” he saw during his premiership,⁸⁷ concluded that climate change policy must have “the economics of risk and uncertainty at its core.”⁸⁸ The Stern Report advocated that global warming policy should be dictated by the “precautionary principle,” a concept that counsels caution in the face of potentially irreversible worldwide harm.⁸⁹ Judge Richard Posner, hardly an alarmist, writes that “a wait-and-see policy would be perilous.”⁹⁰ As *The Economist* summarized Stern’s conclusions:

Governments should act not on the basis of the likeliest outcome from climate change but on the risk of something really catastrophic (such as the melting of Greenland’s ice sheet, which would raise sea levels by six to seven metres). Just as people spend a small slice of their incomes on buying insurance on the off-chance that their house might burn down, and nations use a slice of taxpayers’ money to pay for standing armies just in case a rival power might try to invade them, so the world should invest a small proportion of its resources in trying to avert the risk of boiling the planet. The costs are not huge. The dangers are.⁹¹

86. *Id.* at 148.

87. Tim Wagner & Mindy Lubber, *Area’s Economy is Especially Vulnerable to Global Warming*, CHI. SUN-TIMES, Dec. 4, 2006, at 45, 45.

88. NICHOLAS STERN, U.K. GOV’T, THE STERN REVIEW REPORT ON THE ECONOMICS OF CLIMATE CHANGE 1, 23 (2006), available at http://www.hm-treasury.gov.uk/stern_review_report.htm [hereinafter THE STERN REPORT].

89. Jonathan Remy Nash, *Standing and the Precautionary Principle*, 108 COLUM. L. REV. 494, 498–504 (2008).

90. POSNER, *supra* note 9, at 253.

91. *Economics of Climate Change: Stern Warning*, ECONOMIST, Nov. 4, 2006, at 14. It’s worth pointing out that the Stern Report estimates that effectively addressing global warming would cost developed countries about 1% of GDP. THE STERN REPORT, *supra* note 88, at 168. Bjorn Lomborg, one of the most famous global warming skeptics, argues that it would cost about 2% of GDP. The Nobel-prize-winning economist Thomas Schelling writes that “if one plots the curve of US per capita GNP over the coming century with and without the two percent permanent loss, the difference is about the thickness of a line drawn with a number two pencil, and the doubled per capita

It is important to understand that economists such as Posner and Nicholas Stern are not alarmists. They are not predicting impending doom. They acknowledge that the possibility of abrupt climate change may be slim; it is the *risk* of such an occurrence that motivates these economists to advocate insurance measures.

Preventative measures can also have more direct economic benefits. For instance, the U.S. Clean Air Act of 1970 has “yielded estimated net health savings (benefits in excess of costs) of about \$1 trillion per year, due to saved lives and reduced health costs.”⁹² Also, the long-term direct economic impact of failing to address global warming may be far worse than any short-term negative impact that results from transitioning away from a carbon-reliant economy.⁹³ Therefore, the ethical approach of taking some immediate action to address global warming, even in the face of uncertainty, is consistent with a rational economic risk management analysis.

B. *Global Warming as a National Security Issue*

In October 2007, Senator John Warner declared on the Senate floor, “In my 28 years in the Senate, I have focused above all on issues of national security, and I see the problem of global climate change as fitting within that focus.”⁹⁴ Thus, this Part argues that assuming a global leadership role on climate change will ultimately promote America’s national security interest. American history contains plenty of examples of when ethical obligations and national interest aligned. For instance, when asked to explain the reasoning behind the Marshall Plan, President Truman said, “I am doing it because it is right, I am doing it because it is necessary to be done if we are going to survive ourselves.”⁹⁵ Similarly, in his inaugural address, President Kennedy said:

To those people in the huts and villages of half the globe struggling to break the bonds of mass misery, we pledge our best efforts to help them help themselves, for whatever period is required—not because the Communists may be doing it, not because we seek their votes, but because it is right.⁹⁶

income that would have been achieved by 2060 is reached by 2062.” Gardiner, *supra* note 1, at 570–71.

92. JARED DIAMOND, *COLLAPSE: HOW SOCIETIES CHOOSE TO FAIL OR SUCCEED* 504 (2005).

93. Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39, 79 (2007).

94. 153 CONG. REC. S10775-03, 2007 WL 2215014 (2007) (statement of Sen. Warner).

95. ANATOL LIEVEN & JOHN HULSMAN, *ETHICAL REALISM: A VISION FOR AMERICA’S ROLE IN THE WORLD* 13 (2006).

96. John F. Kennedy, Inaugural Address (Jan. 20, 1961).

However, Kennedy also knew that programs such as the Peace Corps were crucial to winning over developing countries whose allegiances were up for grabs during the Cold War.⁹⁷

Because of the growing interconnectedness of the world, global problems are increasingly becoming America's problems.⁹⁸ One commentator wrote that "the West cannot escape chaos beyond its borders. And in almost every instance, global warming exacerbates the tensions and conflicts that fuel such disorder."⁹⁹ Professor Jared Diamond, winner of the Pulitzer Prize, has gone so far as to say that "[m]any people fear that ecocide has now come to overshadow nuclear war and emerging diseases as a threat to global civilization."¹⁰⁰ One of Diamond's main concerns is that droughts, floods, lack of clean water, and unsustainable development destabilize the poorest countries (mainly in Africa) and undermine the capacity of resource-starved governments to control their populations and secure their borders. The collapse of governments and societies in places such as Rwanda, Somalia, and Afghanistan greatly increases the risk that destabilized countries will become havens for terrorists and international criminals.¹⁰¹

For instance, the Horn of Africa now has only five percent of its original habitat remaining.¹⁰² The U.N. has expressed alarm over this fact, and some think that Al Qaeda hopes to open up "a new jihadist front" in the Horn.¹⁰³ Africa, with its reliance on rain-fed farming and its already minimal clean water supply, is especially vulnerable to the effects of global warming. *The Economist* has described the possible effect of further rising temperatures in Africa:

The effect on food staples in [some African countries] could be catastrophic. Harvests . . . may fall even as populations rise. Even a modest warming of 2°C will mean more evaporation and less water in lakes, watering holes and stream beds. A predicted rise in the volatility of rainfall may have worse effects. There will be

97. ROBERT DALLEK, *AN UNFINISHED LIFE: JOHN F. KENNEDY, 1917–1963*, at 338–40 (2003) (arguing that John F. Kennedy "knew that American self-interest and idealism were not mutually exclusive; indeed, one was as much a part of the national tradition as the other"). This also explains why Barry Goldwater, a conservative, small-government advocate, supported the creation of the Peace Corps. See SCOTT STOSSEL, *SARGE: THE LIFE AND TIMES OF SARGENT SHRIVER* 237 (2004).

98. DIAMOND, *supra* note 92, at 516.

99. Philip Stephens, *Bitter Crop From Failure to Tend to Global Warming*, *FIN. TIMES*, Nov. 2, 2006, available at http://us.ft.com/ftgateway/superpage.ft?news_id=ft0110220061402323222&page=2.

100. DIAMOND, *supra* note 92, at 7.

101. *Id.* at 516.

102. *The Horn of Africa: The Path to Ruin*, *ECONOMIST*, Aug. 12, 2006, at 18, 19 ("The Horn is among the most degraded ecosystems in the world.").

103. *Id.*

more droughts and more floods (like the inundation east Africa is now facing), one exacerbating the other.¹⁰⁴

If religious beliefs are to guide the ethical obligation of the United States with respect to the impact of global warming in poor regions such as Africa, there would be an alignment of ethical duties and national security interests.

Considering the recognized national security interest in helping poor countries adapt to the immediate effects of global warming, the United States could increase the amount of development assistance it allocates.¹⁰⁵ As one economist said, "In every aspect of Africa's complex plight an ounce of prevention will be worth a ton of treatment."¹⁰⁶ For instance, economists estimate that the annual cost of supplying clean water and sanitation to sub-Saharan Africa would be \$2 billion, while the estimated annual benefit would be \$16 billion.¹⁰⁷ American strategic planners recognize the importance of economic development assistance in the aftermath of wars (for example, the billions given to Afghanistan in hopes of stabilizing that country), but when it comes to development assistance to prevent conflict there is a relatively miniscule amount to be found.¹⁰⁸ Such action would seem to accord with the United States' ethical and moral obligation to address global warming, to promote the common good, and to help ensure some level of dignity for the poorest people in the world, while also having the practical effect of enhancing its national security interests. This combination of ethical duty and practical strategy was summed up by Senator John McCain, who stated that the U.S. "has both an obligation and a compelling national interest" in assuming a leadership role on global warming.¹⁰⁹

It is evident that American political leaders are increasingly seeing climate change as a national security issue. In April 2007, the Senate Report on the Energy Diplomacy and Security Act of 2007 recognized the same concerns mentioned above, stating, "[T]he most recent IPCC [Intergovernmental Panel on Climate Change] report on the effects of global warming predicts population movements, disease, drought, fam-

104. *How to Make Them Feel the Heat*, ECONOMIST, Nov. 25, 2006, at 60.

105. Barack Obama has suggested that he intends to do so. In a December 2008 interview he stated, "I think dealing with development and poverty around the world is going to be a critical component of our foreign policy. It's good for our security and not just charity." *The Interview: Person of the Year Barack Obama*, TIME, Dec. 29, 2008, at 68.

106. *By Invitation: Doing the Sums on Africa—Developing Africa's Economy*, ECONOMIST, May 22, 2004, at 19, 19.

107. *Economics Focus: The Stuff of Life*, ECONOMIST, May 15, 2004, at 75.

108. *By Invitation: Doing the Sums on Africa—Developing Africa's Economy*, *supra* note 106, at 19.

109. John McCain, Speech on Energy Policy at the Center for Strategic and International Studies (Apr. 23, 2007), http://www.csis.org/media/csis/events/070423_mccain.pdf.

ine, and other events, which can threaten United States national security.”¹¹⁰ In May 2007, Admiral Joseph Prueher, the former Commander-in-Chief of the U.S. Pacific Command, testified to the Senate that “climate change will become a significant national security issue.”¹¹¹ Prueher continued:

The national security diagram consists of political, military, cultural, and economic elements. . . . And climate change has an impact on each of them. This will be particularly true in the world’s most volatile regions, where environmental and natural resource challenges have added greatly to the existing political, economic, and cultural tensions. The instabilities that result now create fertile ground for extremism—and these instabilities are likely to be exacerbated by global climate change.¹¹²

In conclusion, Prueher stated it would be both “immoral and irresponsible” for the United States *not* to assume a leadership role.¹¹³ General Charles Wald, the former Deputy Commander of the United States European Command, also testified and recommended that “[t]he national security consequences of climate change should be fully integrated into national security and national defense strategies.”¹¹⁴ Wald explicitly stated that there was an alignment between ethical obligations and national security.¹¹⁵ He also testified on the crisis in Darfur, calling it

a perfect case study of how existing marginal situations can be exacerbated beyond the tipping point by climate-related factors. It’s also why we refer to climate change as a threat multiplier. The Darfur region was already fragile and replete with threats, but those threats were multiplied by the stresses induced by climate change.¹¹⁶

In response to such testimony, Congress, by a wide margin of support, approved a provision requiring the CIA and the Pentagon to conduct the first ever national intelligence estimate on global warming and climate change.¹¹⁷

110. S. REP. NO. 110-54, at 2 (2007).

111. *Climate Change: National Security Threats: Hearing Before the S. Comm. on Foreign Relations*, 110th Cong. 12 (May 9, 2007) (prepared statement of Adm. Joseph W. Prueher, USN (Ret.)).

112. *Id.* at 13.

113. *Id.* at 26.

114. *Id.* at 21 (prepared statement of Gen. Charles Wald, USAF (Ret.)).

115. *Id.* (“[P]art of our security depends very much on remaining true to our values as a Nation.”).

116. *Id.* at 19.

117. Mark Mazzetti, *Spy Chief Backs Study of Impact of Warming*, N.Y. TIMES, May 12, 2007, at A11.

C. Resolving the "Tragedy of the Commons" Problem

Many scholars agree that global warming presents a classic "tragedy of the commons" scenario.¹¹⁸ In such a scenario, the preservation of the commons is collectively desirable but economically irrational when undertaken by rational, short term-oriented individual actors.¹¹⁹ The classic example involves cattle herders (the rational actors) in an open pasture (the commons).¹²⁰ Each cattle herder benefits from each head of cattle he raises, but only suffers a fraction of the cost of overgrazing (which threatens the herder's long-term interest in feeding his cattle). Thus, each herder's rational response is to raise more and more cattle. Ultimately, the commons are despoiled and the herder can no longer feed his cattle. Hence, the tragedy—the herder, a rational actor, has rushed to his own ruin by pursuing his own self-interest.¹²¹

This scenario suggests that individual countries, by themselves, have little incentive for commons preservation (i.e., preservation of those natural resources which are truly global—namely, the world's water, air, and atmosphere). Under this theory, only a binding agreement among the world's commons users (i.e., its greenhouse gas emitters) will sufficiently motivate the world's nations to take effective action to preserve the commons.¹²²

A frequently heard objection to addressing global warming is that the U.S. should not act until developing countries such as China and India agree to binding obligations to reduce their own emissions.¹²³ Thus, some political leaders argue that unilateral action by individual governments is irrational.¹²⁴ However, this Part argues that this is not necessarily true. Individual leadership by the United States, in the form of domestic legislation (even if initially limited), comports with both the nation's ethical obligations and its national interest in promoting worldwide emissions cuts. Game theorists and legal scholars argue that, in the absence of an existing acceptable international agreement, unilateral action by the United States could hasten the development of an international agreement while also inducing other countries to make their own unilateral emissions cuts.

118. Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY* L.Q. 183, 190 (2005).

119. *Id.*

120. Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243, 1244 (1968).

121. *Id.*

122. Engel & Saleska, *supra* note 118, at 187.

123. For instance, President Bush has said, "I'm not going to let the United States carry the burden for cleaning up the world's air, like the Kyoto Treaty would have done. China and India were exempted from that treaty. I think we need to be more even-handed." Gardiner, *supra* note 1, at 578.

124. Engel & Saleska, *supra* note 118, at 190.

As previously mentioned, the U.S. has a unique ethical obligation to lead on global warming. As the U.S. Catholic Bishops have recognized, because of "the power it possesses, the United States bears a special responsibility in its stewardship of God's creation to shape responses that serve the entire human family."¹²⁵ The U.S. is by far the world's biggest per capita emitter.¹²⁶ It contains four percent of the world's population and emits twenty-five percent of the world's greenhouse gas.¹²⁷ The U.S. also exerts more power than any other nation. In testimony and proposed legislation, U.S. politicians are increasingly emphasizing the ethical and moral obligation to lead on environmental issues and to change the current policy, which simply consists of voluntary measures and promoting scientific research.¹²⁸ For instance, in proposing his global warming bill, Senator Joe Lieberman said, "[B]ecause we are the largest emitter of [greenhouse] gases[,] we must lead here; it is our responsibility, ultimately, our moral responsibility."¹²⁹

Independent action by the U.S. could help resolve the tragedy of the commons problem in a number of ways. First, unilateral domestic legislation could hasten an acceptable international agreement. In theory, because climate change is a global problem, a global solution would produce the optimal results.¹³⁰ Thus, the United States would ideally eventually join an acceptable international agreement which efficiently allocates the burdens of reducing emissions. However, in practice, efforts to forge an international agreement have been slow and contentious; over the course of two decades, attempts to create an international solution have been remarkably unsuccessful.¹³¹ Some legal scholars argue that national regulation, especially by the world's most powerful country, can induce a "domino effect" that triggers regulation at larger (and more "optimal") geographic levels.¹³² In the context of environmental policy, unilateral action establishes precedents upon which other countries (and drafters of future proposed international agreements) can draw.¹³³ Such action also demonstrates that particular types of regulation are practical.¹³⁴ Unilateral action can also create political and moral pressure to instigate a regulation at the international level.¹³⁵

125. PLEA FOR DIALOGUE, *supra* note 31, at 2.

126. Gardiner, *supra* note 1, at 594.

127. *Id.*

128. Kaswan, *supra* note 93, at 42.

129. 153 CONG. REC. S6390, 2007 WL 1469528 (2007) (statement of Sen. Lieberman).

130. Engel & Saleska, *supra* note 118, at 190.

131. Michaelson, *supra* note 3, at 75-76.

132. Engel & Saleska, *supra* note 118, at 223-24.

133. Richard B. Bilder, *The Role of Unilateral State Action in Preventing International Environmental Injury*, 14 VAND. J. TRANSNAT'L L. 51, 80 (1981).

134. *Id.*

135. *Id.*

For instance, in the 1970s, the United States took unilateral domestic action to protect its fishery resources in order to spur the adoption of a more effective international agreement.¹³⁶ In leading up to those measures, one House Representative argued, "Legislation is necessary now to save our fishing industry and our resources, and it is also required to provide the impetus without which there is serious doubt that the efforts to obtain an international Law of the Sea Agreement through the auspices of the United Nations will ever reach fruition."¹³⁷ Indeed, some of the proposed climate change bills currently in Congress contain evidence suggesting their authors are attempting to promote international agreements later on down the line. As one legal scholar says, the "expected CO₂ reductions in some of the U.S. legislative proposals . . . are in agreement with the emission cuts called for by the E.U. in the new international discussions, which indicate that international protection may be part of the overall goal in some of these proposals."¹³⁸ The proposed Lieberman-Warner Climate Security Act states that one of its purposes is "to encourage effective international action to [reduce greenhouse gas emissions] through agreements negotiated between the United States and foreign countries."¹³⁹ Thus, unilateral legislation from the United States may initiate a chain of events resulting in an international agreement that optimally addresses global warming and impedes nations from free-riding off the emissions cuts of others.¹⁴⁰

Second, independent action by the U.S. could induce other countries to make their own unilateral cuts, even in the absence of a binding international agreement. One legal scholar stated that unilateral action can "have a wide-ranging and even global beneficial environmental impact, far exceeding any immediate effect within the acting state's territory This may especially be true if the acting state occupies a position of particular leverage because of its size, wealth, or economic or geographical position."¹⁴¹ Because the United States is a leading importer of many products, its environmental standards essentially get applied to other countries who want to export products into the United

136. *Id.*

137. *Id.* at 80 n.75 (quoting Congresswoman Leonor Kretzer Sullivan).

138. Victor B. Flatt, *Taking the Legislative Temperature: Which Federal Climate Change Legislative Proposal is "Best"?*, 102 Nw. U. L. REV. COLLOQUY 123, 132 (2007).

139. America's Climate Security Act, S. 2191, 110th Cong., § 6002(3)(A) (2007).

140. Early federal air pollution legislation was initiated by a similar phenomenon, whereby unilateral action at lower levels of government (American cities and states) spurred regulation at a higher level of government (Congress). Fearing a race to the bottom and the complexity of adapting to a hodgepodge of different state regulations, many state and city leaders pressured Congress to pass federal legislation. J.R. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1500 (2007).

141. Bilder, *supra* note 133, at 80.

States.¹⁴² For instance, United States domestic pollution standards covering automobiles will, because the U.S. is such a big consumer of foreign cars, have a significant impact on the pollution standards of the exporting countries (who otherwise will not have a U.S. market for their cars).¹⁴³

Third, independent action by the U.S. may induce other countries to make unilateral cuts through what game theorists call the Cooperation Theory. In a famous study, the game theorist Robert Axelrod documented how cooperative relationships evolve in the absence of centralized authority (regardless of whether the participants are friends or enemies).¹⁴⁴ As Axelrod emphasized, studying the conditions for the emergence of cooperation is especially relevant in international politics, where self-interested nations constantly interact in the absence of centralized authority.¹⁴⁵ To prove his point, Axelrod used the concept of the prisoner's dilemma—which is essentially a two-player version of the tragedy of the commons.¹⁴⁶

In the prisoner's dilemma there are two prisoners in separate cells. Each must choose between cooperating (staying quiet) or defecting (giving evidence about the other prisoner). Each decides without knowing what the other will do. If both stay quiet, the prisoners each receive one year in prison. If one defects and the other cooperates, then the cooperating prisoner gets ten years and the defector goes free. If both prisoners defect, they each get five years. The point of the dilemma is that whatever your opponent chooses, defecting gives you the optimal result if you are acting rationally. For instance, if your opponent cooperates, you are better off defecting and being set free. If your opponent defects, you are also better off defecting since five years in prison is better than ten. Individual rationality leads to a worse outcome for both—five years in prison, rather than one had they mutually cooperated.¹⁴⁷ One analyst wrote:

Understanding this simple game sheds light on many real-life situations. Two countries deciding whether or not to go to war are playing [the] Prisoner's Dilemma. . . . So are villages deciding how much water to extract from a limited supply. . . . In short, it is one of the key games governing human interactions. And sure

142. *Id.* at 80–81.

143. *Id.*

144. ROBERT AXELROD, *THE EVOLUTION OF COOPERATION* (1984).

145. *Id.* at 190.

146. *Id.* at 7.

147. *Id.* at 9.

enough, in many cases we experience “defect-defect” type behavior.¹⁴⁸

It would seem that negotiations over climate change represent a classic prisoner’s dilemma situation. If other countries defect (do not cut emissions), then the rational response would be to do nothing as well. Similarly, if other countries cooperate (take action to reduce emissions), then the rational response would be to do nothing and to free-ride on the benefits produced by others. Not surprisingly, some legal writers have endorsed this view.¹⁴⁹

However, Axelrod found that this reasoning was flawed—the rational strategy in a prisoner’s dilemma situation changes when the players know they will have to deal with each other in the future.¹⁵⁰ That is, the rational strategy in a “repeated prisoner’s dilemma” is much different than in a one-time game. As Axelrod said, “The future can therefore cast a shadow back upon the present and thereby affect the current strategic situation.”¹⁵¹ In other words, when you play the prisoner’s dilemma not once, but over and over and under the right conditions, the players are likely to develop mutually cooperative, rather than mutually destructive, behavior. Axelrod called this the Cooperation Theory. In order for the theory to work, the players must know they will interact in the future.¹⁵² This requirement is easily met in the context of international relations; considering globalization and the ever-increasing interconnectedness of the world, countries understand that they will constantly interact in the future in such things as trade agreements and various international forums. In this type of context, where the players are sure to interact frequently in the future, Axelrod found that the most rational strategy for an individual actor is to use the following basic guidelines. First, start by cooperating and do not be the first to defect. Second, retaliate in the face of defection by another player. Third, be forgiving if your opponent mends their ways and then restore cooperation as fast as possible.¹⁵³ While this framework sounds simple, Axelrod proved that these guidelines constituted the most effective game theory strategy in a “repeated prisoner’s dilemma.”¹⁵⁴

How does the United States’ current global warming strategy comport with the guidelines of the Cooperation Theory? One analyst notes

148. Michael Liebreich, *How to Save the Planet: Be Nice, Retaliatory, Forgiving, and Clear 2*, New Energy Finance White Paper (Sept. 11, 2007), http://www.newenergyfinance.com/docs/Press/NEF_WP_Carbon-Game-Theory_05.pdf.

149. Adam L. Aronson, Note, *From “Cooperator’s Loss” to Cooperative Gain: Negotiating Greenhouse Gas Abatement*, 102 YALE L.J. 2143, 2149–51 (1993).

150. AXELROD, *supra* note 144, at 12.

151. *Id.*

152. *Id.* at 174.

153. *Id.* at 20.

154. *Id.* at 15.

that, in the context of international relations, the United States has generally fulfilled the second and third guidelines.¹⁵⁵ The U.S. is quick to retaliate against “defectors,” but it is also generally quick to forgive and to restore cooperation to the extent possible. For instance, it reached out to the former Soviet Union, its sworn enemy for decades, after the Cold War ended.¹⁵⁶ Also, the U.S. offered to include the Soviets in the Marshall Plan after World War II.¹⁵⁷

However, in the specific context of global warming, the U.S. has tended to fulfill only the third guideline, while failing to follow Axelrod’s first and second guidelines. The U.S. has been willing to reward (or “forgive”) countries that reduce greenhouse emissions. For instance, through the Asia-Pacific Partnership, the United States has agreed to transfer clean energy technology to developing countries who agree to reduce emissions.¹⁵⁸ The U.S. has, however, so far failed in the global warming context with respect to the Cooperation Theory’s first guideline (“cooperate and don’t be first to defect”) and second guideline (“retaliate in response to defection”). The U.S.’s current policy is premised on voluntary emissions reductions and promoting scientific research.¹⁵⁹ It has not established a legally binding policy of reducing its own emissions or penalizing others. However, legislative proposals in Congress would put an end to this policy and would bring the United States much closer in line with the Cooperation Theory.

By the end of this year, the United States will “almost certainly” enact legislation aimed at reducing its emission of greenhouse gases.¹⁶⁰ Thus, the U.S. appears primed to take unilateral action to cut its own emissions, thus satisfying the Cooperation Theory’s first, and most important, guideline, “cooperating” in the absence of centralized authority. This is especially important in terms of Axelrod’s theory because the U.S. is “by far the most important actor” with regards to addressing climate change.¹⁶¹ Also, provisions in several proposed bills would bring the U.S. more fully into accord with the Cooperation Theory’s second guideline, “retaliating” against those who fail to cooperate. For instance, the Lieberman-Warner Climate Security Act would strongly restrict the importation of goods from countries who have not unilaterally acted to reduce their own greenhouse gas emissions.¹⁶² The proposed bill pro-

155. Liebreich, *supra* note 148, at 4.

156. *Id.*

157. LIEVEN & HULSMAN, *supra* note 95, at 13.

158. Sarah A. Peay, *Joining the Asia-Pacific Partnership: The Environmentally Sound Decision*, 18 COLO. J. INT’L ENVTL. L. & POL’Y 477, 501 (2007).

159. Kaswan, *supra* note 93, at 42.

160. Flatt, *supra* note 138, at 123.

161. BROWN, *supra* note 23, at 7.

162. America’s Climate Security Act, S. 2191, 110th Cong., § 6006(b)–(c) (2007).

vides that if a foreign country has not taken “comparable action” to limit emissions, none of the country’s goods will be permitted to enter the customs territory of the United States.¹⁶³ In supporting this provision, one Senator said that any global warming bill

must take into account the actions of countries that are not making progress toward a clean, sustainable energy future and must help level the playing field. Countries that want to export goods into the United States must take steps consistent with our global warming policy or be accountable for their emissions.¹⁶⁴

Other proposed bills contain similar provisions that penalize other countries that do not cut emissions.¹⁶⁵ Thus, the proposed legislation suggests the U.S. is beginning to comport with the elements of Axelrod’s theory of cooperation. If such legislation is passed, the U.S. would be “cooperating” by taking unilateral action in the absence of centralized authority while also balancing the forgiving and retaliation elements—if you cut emissions, your exported goods can enter the United States and you may receive a transfer of free clean energy technology; if you do not act, you cannot send your exported goods to the vast number of American consumers. Of course, it remains to be seen if such legislation will pass, and whether Axelrod’s theory will work in the context of global warming.

V. CONCLUSION

The threat of global climate change poses new ethical questions and alters traditional views of national interest. As the world’s most powerful country and biggest per capita emitter of greenhouse gases, the United States has a unique ethical obligation to lead on global warming. Nearly two decades ago, the U.S. Catholic Bishops asked, “How can the United States, as a nation, act responsibly about this ever more global problem?”¹⁶⁶ Yet, the U.S.’s official policy on climate change has hardly changed since then. However, public opinion has, and it appears that Congress may soon push the U.S. into a global leadership position on global warming. This Note argues that such leadership is both ethical and practical. By leading on global warming, the United States can realize an alignment of its national interest and the fulfillment of its ethical obligations.

163. *Id.* § (c)(4)(B)(i).

164. 153 CONG. REC. S13081, 2007 WL 3036331 (2007) (statement of Sen. Boxer).

165. *See, e.g.*, Low Carbon Economy Act, S. 1766, 110th Cong. (2007).

166. RENEWING THE EARTH, *supra* note 32, Part I.D.

