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# CLIMATE CHANGE—THE NEW “SUPERWHALE” IN THE ROOM: INTERNATIONAL WHALING AND CLIMATE CHANGE POLITICS—TOO MUCH IN COMMON?

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## ABSTRACT

*This Article explores parallels between the development of the international whaling and climate change regimes. It argues that the experiences of the International Whaling Commission (“IWC”) provide an instructive parable to the evolution and development of international environmental law regimes, where successful policies depend heavily on the interplay between science and policy—namely, global climate change. The Article aims to demonstrate the similarities between the historic path of whaling politics and the present path of international climate change politics, with particular reference to the political interpretation of science. This Article argues that international climate change policymaking is following too closely in the footsteps of the IWC and that, in order to avoid a similar collapse of the commons, the politics of climate change must change course.*

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## I. INTRODUCTION

The whale is a symbol of beauty and dignity. It is also an iconic image of the modern environmental movement and, for many, the poster child of international environmental cooperation. To many people worldwide, the whale represents the beauty of the natural world, the cruelty of unfettered human destruction of the environment, and the proof that humans can work together to halt environmental degradation. This powerful image of the whale as a “superwhale” first emerged in the late 1970s, as environmental groups fought to end decades of immoderate commercial whaling that drove countless whale stocks to the brink of extinction.<sup>1</sup> During this era, the superwhale emerged as an “environmental symbol for saving the world”<sup>2</sup> and a radical rejection of previous conceptions of whaling as an almost generic—albeit more challenging—form of fishing.

The image of the superwhale has endured and largely triumphed over the image of the whale as a commodity in the global economy. This dramatic shift in human perception of whales, however, did not come easily, quickly, or at a small cost, either economically, politically, or culturally. Further, the image of the superwhale is by no means universal. Competing conceptions of whales continue to dominate debates within the halls of the International Whaling Commission (“IWC”), the Convention on International Trade in Endangered Species of Flora and Fauna, and the United Nations Convention on the Law of the Sea, as well as the council halls of aboriginal peoples, the foreign affairs offices of sovereign states, and the agendas of nongovernmental organizations (“NGOs”) worldwide. Thus, the whaling debate is still very much alive and, in many ways, as divisive as ever.

Although pro- and antiwhaling forces continue to clash, the history of the IWC’s regulation and, eventually, preservation of whales is a paradigm for the susceptibility of science to the whims of the political environment that those engaged in the current climate change debate ignore at their peril.

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1. See MICHAEL HEAZLE, *SCIENTIFIC UNCERTAINTY AND THE POLITICS OF WHALING* 171 (2005).

2. *Id.* (quoting Interview by Michael Heazle with Ben White, Int’l Coordinator of the Animal Welfare Inst., in London, Eng. (July, 2001)).

## A. CLIMATE CHANGE

The politics of climate change are a morass. With each passing day, scientists reveal the rapid pace at which glaciers are melting,<sup>3</sup> the sea is rising,<sup>4</sup> sea ice is shrinking,<sup>5</sup> and the weather is changing.<sup>6</sup> There appears to be growing scientific consensus that the climate is changing,<sup>7</sup> but little agreement about the pace, impact, and appropriate political response to climate change.<sup>8</sup>

As a result of the high profile and high stakes debate, climate change is quickly becoming the new superwhale in the room. That is, climate change is the political issue that embodies twenty-first-century environmentalism, fills politicians with dread, drives shudders into the heart of traditional fossil fuel industries, and divides public opinion. Yet, just as whales once teetered on the brink of extinction, the global climate now wavers on the tipping point<sup>9</sup> of potentially catastrophic, irreversible warming. As international and domestic responses to climate change begin to take shape, climate change policymakers would be wise to look to the experiences of the IWC as a lesson in preemption.

## B. OUTLINE OF PAPER

The experiences of the IWC provide an instructive parable to the evolution and development of international environmental law regimes where successful policies depend heavily on the interplay between science

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3. See, e.g., David Adam, *Water for Millions at Risk as Glaciers Melt Away*, GUARDIAN (London), Oct. 11, 2006, at 13, available at <http://www.guardian.co.uk/science/story/0,,1892517,00.html>; James Owen, *Alps Could Be Ice Free by 2100, Study Warns*, NATIONALGEOGRAPHIC.COM, July 11, 2006, at <http://news.nationalgeographic.com/news/2006/07/060711-glaciers-alps.html>.

4. See, e.g., *Sea Level Rise 'Is Accelerating'*, BBCNEWS, Jan. 27, 2006, at <http://news.bbc.co.uk/1/hi/sci/tech/4651876.stm>.

5. See, e.g., Phil McKenna, *Winter Arctic Sea Ice in Drastic Decline*, NEWSIDENTIST.COM, Sept. 14, 2006, at <http://www.newscientist.com/article/dn10072?DCMP=NLC-nletter&nsref=dn10072>.

6. See, e.g., Steve Connor, *Global Warming Causing New Evolutionary Patterns*, NEW ZEALAND HERALD, June 9, 2006, available at <http://nzherald.co.nz/search/story.cfm?storyid=000C4EE4-9254-1488-A12083027AF1010E>.

7. See, e.g., Naomi Oreskes, *Beyond the Ivory Tower: The Scientific Consensus on Climate Change*, 306 SCIENCE 1686 (2004); Mark Henderson, *Scientists Tell G8 to Act on Climate Change*, TIMESONLINE, June 7, 2005, at <http://www.timesonline.co.uk/tol/news/uk/article530946.ece>.

8. For a discussion of the varying national perceptions of and approaches to global climate change, see generally DANA R. FISHER, NATIONAL GOVERNANCE AND THE GLOBAL CLIMATE CHANGE REGIME (2004).

9. See, e.g., Catherine MacLeod, *Environment Is Close to Catastrophic Tipping Point, Warns Blair*, HERALD (Glasgow, Scot.), Oct. 20, 2006, at 1; Ian Sample, *Warming Hits 'Tipping Point'*, GUARDIAN (London), Aug. 11, 2005, available at <http://environment.guardian.co.uk/climatechange/story/0,,1829165,00.html>.

and policy. This Article aims to demonstrate the similarities between the historic path of whaling politics and the present path of international climate change politics, with particular reference to the use of science. To this end, in Part II, this Article briefly examines the history of international whaling policies and then, in Part III, juxtaposes the experience of the IWC against ongoing international and domestic efforts to develop coherent climate change policies. In particular, Part II chronicles the history of the development of the whaling and climate change regimes, and then Part III focuses on examining parallels between the two areas with a view toward discerning ways for climate change policymakers to avoid repeating the errors of the past. In Part IV, the Article concludes by analyzing the lessons to be learned from examining past international policymaking and proposes that international climate change policymaking is following too closely in the footsteps of the IWC and that, in order to avoid a similar collapse of the commons, the politics of climate change must change course.

## II. THE POLITICS OF WHALING AND CLIMATE CHANGE: TOO MUCH IN “COMMON”?

### A. BRIEF HISTORY OF THE IWC

The whaling industry came into existence, thrived, struggled, and collapsed long before global climate change became an international topic of concern. The Basques began whaling in the thirteenth century.<sup>10</sup> From that time until the late part of the twentieth century, whales were a commodity of choice.<sup>11</sup> While the Basque whaling empire only lasted until the sixteenth century, it was replaced by a competitive Dutch and British market in the nineteenth century.<sup>12</sup> By the early to mid-twentieth century, the Norwegians, Icelanders, British, Dutch, Soviets, and Japanese had entered the fray to build a highly competitive and aggressive whaling industry.<sup>13</sup> During the early twentieth century, spurred by growing numbers of whalers, increasing takes of whales, and early indications that whale stocks were declining, the League of Nations sponsored the first comprehensive research designed to support the creation of a new

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10. See, e.g., Howard S. Schiffman, *The Protection of Whales in International Law: A Perspective for the Next Century*, 22 BROOK. J. INT'L L. 303, 307 (1996).

11. See *id.* at 308.

12. *Id.*

13. See *id.* at 308–09.

framework for managing global whale stocks.<sup>14</sup> While the efforts by the League of Nations were largely unsuccessful in developing a new framework, the interest in evaluating and managing whale stocks highlighted a new era in whaling—one where whales were still viewed as an economic commodity, but as an economic commodity demanding a management regime.<sup>15</sup>

In the 1930s, European whaling nations initiated bilateral and multilateral efforts to develop international whaling regulations.<sup>16</sup> These efforts were largely ineffective but laid the groundwork for “‘establish[ing] the principle of international regulation of a common property resource in the high seas.’”<sup>17</sup> In this way, the ocean and whale stocks began to be perceived as a global common and as a common good that demanded global cooperation and management.

Finally, in 1946, in the wake of World War II, the whaling countries—prompted by the United States relying on its postwar authority—convened an international conference with the aim of drafting a comprehensive whaling treaty.<sup>18</sup> The culmination of the meeting was the drafting of the International Convention for the Regulation of Whaling (“ICRW”).<sup>19</sup> The ICRW embodies the framework for international regulation of whaling. Even more importantly, however, the ICRW created the IWC,<sup>20</sup> the international whaling body that is authorized to enact legally binding regulations and that has shaped the entire course of modern whaling policy.<sup>21</sup>

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14. See, e.g., Harry N. Scheiber, *Historical Memory, Cultural Claims, and Environmental Ethics: The Jurisprudence of Whaling Regulation*, in *LAW OF THE SEA: THE COMMON HERITAGE AND EMERGING CHALLENGES* 127, 128 (Harry N. Scheiber ed., 2000).

15. See *id.*

16. *Id.*

17. *Id.* at 129 (alteration in original) (quoting Ray Gambell, *International Management of Whales and Whaling: An Historical Review of the Regulation of Commercial and Aboriginal Subsistence Whaling*, 46 *ARCTIC* 97, 98 (1993)).

18. Steinar Andresen, *The International Whaling Regime: Order at the Turn of the Century?*, in *ORDER FOR THE OCEANS AT THE TURN OF THE CENTURY* 215, 218 (Davor Vidas & Willy Østreng eds., 1999). See also Patricia W. Birnie, *The Conservation and Management of Marine Mammals and Anadromous and Catadromous Species*, in *DEVELOPMENTS IN INTERNATIONAL FISHERIES LAW* 357, 363 n.16 (Ellen Hey ed., 1999); Schiffman, *supra* note 10, at 311.

19. International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716, 161 U.N.T.S. 72 [hereinafter ICRW], amended by Protocol to the International Convention for the Regulation of Whaling, Nov. 19, 1956, 10 U.S.T. 952, 338 U.N.T.S. 366. See, e.g., Birnie, *supra* note 18, at 363 n.16.

20. For a discussion of the role and primacy of the IWC, see ALEXANDER GILLESPIE, *WHALING DIPLOMACY: DEFINING ISSUES IN INTERNATIONAL ENVIRONMENTAL LAW* 322–26 (2005).

21. ICRW, *supra* note 19, art. V. See, e.g., Birnie, *supra* note 18, at 364.

The IWC was born as a regulatory body with the primary role of ensuring the proper “utili[z]ation of whales for economic benefits.”<sup>22</sup> That is, the IWC was the international institution responsible for managing and protecting the interests of the whaling industry, rather than protecting the interests of the whale itself. It is within the context of the IWC that this Article analyzes how the interplay of science and politics shaped the course of international whaling policy, and how this history reflects upon current trends in global climate change policy. In particular, this section will examine how scientists and decision makers within the IWC interpreted and used scientific evidence and, more importantly, scientific uncertainty to support preferred policy choices.

The IWC’s transition from an economic, utilization-based organization to a largely preservation-oriented institution transpired gradually and in direct response not only to changing scientific knowledge, but also, and more importantly, to shifting political and economic environments.<sup>23</sup>

In the early years of the IWC, economics rather than scientific management or environmental preservation visibly shaped political decision making. This industry/economic focus is exemplified by the IWC’s long reliance on the Blue Whale Unit (“BWU”) quota system. The BWU was based on the oil yield capacity of the blue whale and was originally adopted in 1932—prior to the creation of the IWC—as a way to avoid overproduction of whale oil and ensure high market prices.<sup>24</sup> The BWU “set no limits upon any individual nation and did not restrict the number or capacity of ships or amount of gear that each signatory nation might put on the water.”<sup>25</sup> The IWC’s reliance on the BWU constituted a continuation of policies that “were based more on economic concerns than on any genuine awareness of the pressing conservation issues that would have such a profound effect upon whaling”<sup>26</sup> in the years to come. The BWU regime created incentives for whalers to whale as quickly and as efficiently as possible; this era was mockingly christened “the whaling olympic[s].”<sup>27</sup> By 1953, the U.K. government cautioned that unless the

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22. Andresen, *supra* note 18, at 218.

23. See, e.g., HEAZLE, *supra* note 1.

24. *Id.* at 40.

25. Scheiber, *supra* note 14, at 134.

26. HEAZLE, *supra* note 1, at 37–38.

27. *Id.* at 40. See also Scheiber, *supra* note 14, at 134 (describing the BWU system as one “creat[ing] compelling incentives for more and more intensive hunting efforts on the part of all”).

IWC limited take, “in two or three seasons the whale would be extinct.”<sup>28</sup> Essentially, in the early years, the creation of the IWC sanctioned the legitimacy of whaling and accelerated the decimation of remaining whale stocks, which were beginning to vanish at an increasingly rapid pace.<sup>29</sup>

During the late 1940s and 1950s, data began to emerge about the declining health of whale stocks. Evidence suggested that both catch levels and average whale sizes were declining.<sup>30</sup> At the time, however, the IWC scientific community “was small and somewhat isolated,” and scientific advice was relegated to an inferior position “due to the IWC’s strong proindustry bias and a weak cetacean science that could not counter industry dominance.”<sup>31</sup> Throughout this period, scientific uncertainty about the health of whale stocks was used to the advantage of the whaling industry. Citing lack of scientific certainty about declining numbers, the industry insisted that it would be unnecessary and ill-advised to reduce quotas.<sup>32</sup> Because the whaling industry continued to be economically viable, the political environment at the time supported the continuation of whaling and the subjugation of scientific evidence of declining stocks.<sup>33</sup>

The 1940s and 1950s represented the heyday in international whaling and the primacy of industry interests over conservation interests.<sup>34</sup> There was considerable scientific uncertainty concerning whale numbers, ages, and reproduction rates.<sup>35</sup> The field of cetacean science was developing rapidly, but was characterized by great divisions in thought.<sup>36</sup> During this period, existing uncertainties were unfailingly used to validate continuing high levels of commercial whaling.<sup>37</sup> The 1960s, however, heralded the beginning of a long-term institutional shift.

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28. GILLESPIE, *supra* note 20, at 4. Similarly, British biologist Sidney Holt said, “[I]t is widely known that the International Whaling Commission . . . presided during the first 20 years of its existence over the depletion of nearly all the world’s whale populations . . . . And the whaling industry, instead of enjoying an orderly development, experienced a disorderly, though long drawn-out collapse.” Marc Leepson, *Whaling: End of an Era*, in *EARTH’S THREATENED RESOURCES* 141, 144 (Hoyt Gimlin ed., 1986) (quoting Sidney Holt, *Let’s All Go Whaling*, 15 *ECOLOGIST* 114 (1985)).

29. See Schiffman, *supra* note 10, at 315.

30. See HEAZLE, *supra* note 1, at 43–44, 49.

31. *Id.* at 49.

32. *Id.* at 51 (“The advice of the [IWC Scientific Committee], for this reason, was undermined by the specter of uncertainty (which is always present regardless of the available data and methods), and the extent to which governments made an issue of it depended entirely on how compatible the committee’s advice was with IWC governments’ existing priorities and goals.”).

33. See *id.* at 36–65.

34. See *id.*

35. *Id.* at 53, 55–56.

36. See *id.* at 48–52.

37. See *id.* at 51–52.

Following the excessive whaling of the 1940s and 1950s, scientific evidence of declining stocks, coupled with rapidly declining industrial catch levels, prompted new approaches to setting whaling quotas. Whereas in previous generations, whaling nations easily justified high levels of catches based on economic utility and scientific uncertainty, in the 1960s, the whaling industry was becoming less profitable and scientific evidence was pointing more and more strongly toward the perilous condition of many whale stocks.<sup>38</sup> The most noticeable change was that, as whale stocks declined, the costs of whaling increased and the profits decreased, fewer and fewer states participated in the whaling industry. By the mid-1960s, the once powerful and diverse whaling industry had dwindled to three major players: the Soviet Union, Japan, and Norway.<sup>39</sup> The United Kingdom and the Netherlands had sold off their whaling fleets and thrown in the towel, citing the fact that there was little money to be made and even fewer whales left to hunt.<sup>40</sup>

As the economic justifications for whaling faded and evidence of the collapsed state of whale stocks grew, the political environment surrounding whaling began to change. Fewer states had a vested interest in whaling and fewer members of civil society supported whaling, making it much more politically tenable for domestic and international policymakers to change their minds about the legitimacy of the whaling industry.<sup>41</sup>

At the same time that this political shift was occurring, a parallel shift was taking place in how scientists and policymakers viewed and interpreted scientific uncertainty. As whaling became less of a core economic activity and less useful or necessary to state interests, scientific uncertainty shifted from being used to the advantage of prowhaling forces to being used to the advantage of advocates for restricting commercial whaling.<sup>42</sup> Similarly, the reputation and role of the scientific advisors to the IWC improved. Suddenly, scientific advice had a place of honor, and where there was scientific uncertainty concerning the status of whales, the benefit of the doubt shifted from favoring the industry to favoring the whale.<sup>43</sup>

Simultaneously, outside the IWC, a revolution was taking place. The environmental movement was beginning and much of the impetus for early international environmental cooperation was prompted by concerns about

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38. *See, e.g., id.* at 67.

39. *Id.* at 124.

40. *Id.* at 67.

41. *See id.* at 154–59.

42. *See id.* at 67–68.

43. *See id.* at 124–32.

regulation of the commons, for example, the ocean and its contents. Whales were increasingly viewed as a “world resource and not the property of any one individual nation, or group of nations.”<sup>44</sup> There was growing acceptance that whales constituted part of the global commons and, as such, were entitled to international protection.<sup>45</sup> As a result, in the minds of many politicians, “the previously recognized utility . . . in hunting whales for commercial gain had been supplanted by a newly recognized utility in protecting them in order to appear more environmentally responsible.”<sup>46</sup>

By the 1970s, a combination of economic, political, and scientific factors merged to induce the IWC to modify its policies.<sup>47</sup> First, with a majority of whale stocks teetering on the verge of extinction, whaling ceased to be an economically viable industry.<sup>48</sup> Second, as the environmental movement and environmental awareness grew, the image of the superwhale grew, prompting antiwhaling protests worldwide and encouraging nonwhaling nations to join the IWC to vote for better regulation or even outright preservation of remaining whale stocks.<sup>49</sup> Third, while the IWC had been the primary—arguably, even the exclusive—international institution regulating whaling policy since its formation in 1946, following the UN Stockholm Conference on the Human Environment in 1972,<sup>50</sup> new domestic and international organizations entered the political arena of whaling.<sup>51</sup> Fourth, and possibly most importantly, as the whales declined, the environmental movement grew, and the wider international community became involved in the whaling debate, the overall political environment shifted to allow new respect for and interpretations of cetacean science. For example, at the Stockholm

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44. GILLESPIE, *supra* note 20, at 5 (internal citations omitted).

45. *See, e.g.*, Conference on the Human Environment, Stockholm, Swed., June 5–16, 1972, *Declaration of the United Nations Conference on the Human Environment*, princ. 21, U.N. Doc. A/CONF.48/14 (June 16, 1972).

46. HEAZLE, *supra* note 1, at 155.

47. *See* PETER J. STOETT, *ATOMS, WHALES, AND RIVERS: GLOBAL ENVIRONMENTAL SECURITY AND INTERNATIONAL ORGANIZATION* 116–27 (1995).

48. *See* Andresen, *supra* note 18, at 218.

49. *See* Schiffman, *supra* note 10, at 317. *See also* STOETT, *supra* note 47, at 119–27 (describing growing public awareness of the whaling issue and the increasingly important role of nongovernmental organizations in the United States and abroad).

50. The Stockholm Conference and the dawning of the environmental movement played a critical part in the transformation of the IWC from a utilization to a preservation organization. *See, e.g.*, Schiffman, *supra* note 10, at 312.

51. *Id.* at 315–19. Examples of U.S. law included the Marine Mammal Protection Act of 1972, Pub. L. No. 92-522, 86 Stat. 1027 (codified as amended at 16 U.S.C. §§ 1371–1407 (2000)), and the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (codified at 16 U.S.C. §§ 1531–1544 (2000)). *Id.* at 315.

Conference in 1972, the participating states, with a vote of 53-0, called for a ten-year moratorium on whaling and the improved use of science within the IWC.<sup>52</sup> This vote was a resounding indication of the shifting political environment.<sup>53</sup>

In 1972, responding to these changes and to intensifying international political pressure, the IWC abandoned the BWU quota system.<sup>54</sup> And, in 1974, the IWC instigated a new era in regulation by adopting “New Management Procedures”<sup>55</sup> that were ostensibly more heavily grounded in science. The New Management Procedures were used to set individual quotas for whale stocks and to dramatically reduce whaling quotas overall.<sup>56</sup> The New Management Procedures, however, required very precise biological data and population estimates—information that was not consistently available.<sup>57</sup> In addition, the New Management Procedures failed to “[go] far enough in trying to account for the burgeoning array of unknowns that faced the [IWC Scientific Committee] in its task of managing dozens of stocks all over the world.”<sup>58</sup> In this interim period, while whale stocks floundered, the environmental movement grew, and IWC philosophies shifted, uncertainty was increasingly but not consistently interpreted on behalf of protecting whale populations; that is, the whaling industry still had a toehold on using uncertainty to the benefit of keeping the industry afloat.<sup>59</sup>

As a result of growing criticisms of the New Management Procedures, whale advocates inside and outside the IWC pressed for the IWC to take an even more precautionary approach to regulating whale stocks. Antiwhaling advocates insisted there were still too many uncertainties associated with setting individual whale quotas and that a blanket moratorium on commercial whaling was required.<sup>60</sup> International pressure, led by the

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52. See, e.g., Andresen, *supra* note 18, at 219.

53. See, e.g., *id.* See also Scheiber, *supra* note 14, at 138 (noting how “changes in moral consciousness regarding the environment” changed the nature of international whaling politics).

54. Scheiber, *supra* note 14, at 135.

55. *Id.* at 135–36. The system replacing the BWU, known as “New Management Procedure[s],” attempted to regulate catches according to assessments of each identifiable population stock individually, including considering “factors based on the total weight of whales and [ecosystem] interactions . . .” Birnie, *supra* note 18, at 368.

56. See Scheiber, *supra* note 14, at 135–36.

57. HEAZLE, *supra* note 1, at 147.

58. *Id.*

59. See *id.* at 147–48. See also Cinnamon Carlarne, *Saving the Whales in the New Millennium: International Institutions, Recent Developments and the Future of International Whaling Policies*, 24 VA. ENVTL. L.J. 1, 2–4 (2005).

60. HEAZLE, *supra* note 1, at 151–54.

United States,<sup>61</sup> began to mount. The United States, like the whaling industry had once done, used scientific uncertainty to argue vehemently for its antiwhaling position. Scientific uncertainty was once again a pawn in the hands of the politicians; this time, however, it was being used for the benefit of the natural environment, rather than the human economy. Just as it had played a major role during the 1950s, in the 1970s, scientific uncertainty played a critical role in shaping the institutional objectives of the IWC.<sup>62</sup> The end result was that, by 1982, antiwhaling states within the IWC had secured the three-fourths vote required to adopt a moratorium on all commercial whaling.<sup>63</sup>

The IWC moratorium is an absolute ban on commercial whaling. It is, however, riddled with loopholes and exceptions. States can opt out of the moratorium by formally entering reservations;<sup>64</sup> they can continue whaling for scientific purposes;<sup>65</sup> or they can choose to resign as members of the IWC.<sup>66</sup> The moratorium, which became effective in 1986, is still in force today.

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61. See, e.g., *id.* at 153.

62. See, e.g., David D. Caron, *The International Whaling Commission and the North Atlantic Marine Mammal Commission: The Institutional Risks of Coercion in Consensual Structures*, 89 AM. J. INT'L L. 154, 156 (1995) (recognizing the IWC's change in its institutional mission in the 1970s from conserving whales as a fishing stock to protecting all species of whale).

63. See IWC, THIRTY-THIRD REPORT OF THE INTERNATIONAL WHALING COMMISSION 20–21 (1983). See also Scheiber, *supra* note 14, at 138 (describing how nonwhaling states joined the IWC, which enabled the promoratorium states to have the three-fourths majority necessary to adopt the moratorium).

64. ICRW, *supra* note 19, art. XI.

65. Individual governments can obtain “special permits” that allow them to take whales for scientific purposes. Article VIII of the ICRW states:

[A]ny Contracting Government may grant to any of its nationals a special permit authorizing that national to kill, take and treat whales for purposes of scientific research subject to such restrictions as to number and subject to such other conditions as the Contracting Government thinks fit, and the killing, taking, and treating of whales in accordance with the provisions of this Article shall be exempt from the operation of this Convention.

*Id.* art. VIII.

66. See *id.* art. XI. Immediately after the IWC adopted the moratorium, Japan, Norway, and the former Soviet Union formally filed objections. See IWC, THIRTY-FOURTH REPORT OF THE INTERNATIONAL WHALING COMMISSION 29 (1984); HEAZLE, *supra* note 1, at 152–53. Despite the fact that they are not legally bound by the moratorium, until Norway resumed commercial whaling in 1993, each of these states professed to comply with the moratorium. See *id.* at 153; Caron, *supra* note 62, at 161–63. As recently as the 2004 IWC Meeting in Sorrento, Norway exercised its right to set national catch limits for coastal whaling operations of Minke whales. Press Release, Int'l Whaling Comm'n, Final Press Release of the 56th Annual Meeting (July 26, 2004), at [http://www.iwcoffice.org/\\_documents/meetings/2004Pressrelease.pdf](http://www.iwcoffice.org/_documents/meetings/2004Pressrelease.pdf). Although Iceland did not object at the time, it withdrew from the IWC in 1992, protesting the continuing imposition of the moratorium. Caron, *supra* note 62, at 160.

Ever since its implementation in 1986, the IWC has struggled to defend the scientific and moral legitimacy of the moratorium.<sup>67</sup> In particular, as cetacean science improves and more data becomes available concerning the improving health of specific whale stocks, it becomes increasingly difficult—although not unfeasible—for antiwhaling advocates to defend the moratorium on scientific uncertainty grounds alone.<sup>68</sup>

At the same time that cetacean science and whale data improves, the IWC is facing new scientific challenges that pose new problems of scientific uncertainty. In particular, scientists are increasingly concerned about nonhunting threats to whale populations,<sup>69</sup> such as driftnet fishing, diminution of food supply by the increased harvesting of krill from the Southern Ocean of Antarctica, “excesses of industrial societies which—beyond habitual overfishing—pollute aquatic environments not only in chemical, but aesthetic and, even, acoustic, terms,”<sup>70</sup> and—of particular importance to this paper and to cetacean science—the impacts of climate change.<sup>71</sup> Accordingly, the debate over the scientific, moral, and political legitimacy of the IWC moratorium on commercial whaling necessarily involves questions not only of direct human exploitation of whales, but also

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67. Some of the arguments for the moratorium include: (1) currently, there is “not enough scientific evidence to set [safe] quotas”; (2) the effects of hunting whales are still largely unknown; (3) the whales and not the whalers should receive the benefit of the doubt (precautionary principle); (4) it is morally and ethically wrong to kill whales; and (5) whales are an “international resource and the use of such a resource for the marginal benefit of the relatively few is wrong.” Arguments against the moratorium include: (1) the current scientific standards are unachievably high; (2) there is no scientific basis for the moratorium and we need to separate the science of whaling from the ethics of whaling; (3) endangered species are already protected under the IWC’s new management practices; (4) the moratorium is too drastic and will cause whalers to leave the IWC; (5) the moratorium constitutes a tyranny of the majority and if there is no real scientific threat, then commercial whaling should not be prohibited; and (6) data collection—and hence knowledge about whales—will suffer without whaling. AMANDA WOLF, QUOTAS IN INTERNATIONAL ENVIRONMENTAL AGREEMENTS 92 (1997).

68. See, e.g., Caron, *supra* note 62, at 159–63; Martha Howton, *International Regulation of Commercial Whaling: The Consequences of Norway’s Decision to Hunt the Minke Whale*, 18 HASTINGS INT’L & COMP. L. REV. 175, 175 (1994) (“In the summer of 1993, Norway announced to a shocked world that it would resume the commercial whaling of Minke whales . . . . Norway justified its decision to hunt Minke whales for commercial uses by citing a report of the IWC Scientific Committee which stated that stocks of Minke whales had recovered enough to allow limited hunting.”); Scheiber, *supra* note 14, at 139. The Commission has accepted and endorsed a Revised Management Procedure (“RMP”) to reinstate some level of commercial whaling. However, the Commission states that research and work on numerous issues still needs to be completed before the Commission can consider setting catch limits other than zero. Press Release, Int’l Whaling Comm’n, *supra* note 66.

69. See *Scientists Fret Over Missing Gray Whales: Creatures Failed to Turn Up at Their Traditional North Pacific Feeding Grounds*, MSNBC NEWS, Oct. 23, 2006, at <http://www.msnbc.msn.com/id/15392686/from/ET/>.

70. STOETT, *supra* note 47, at 131.

71. Kristen Fletcher, *The 49th Annual Meeting of the International Whaling Commission: Prelude to the Next Fifty Years*, 1 J. INT’L WILDLIFE L. & POL’Y 134, 140 (1998).

of how human activities indirectly impact the short- and long-term survivability of whale stocks.

As of today, the moratorium is still in place.<sup>72</sup> At each annual meeting of the IWC, however, a growing number of states fight to overturn the moratorium, leaving its future up in the air.<sup>73</sup>

The IWC has a tumultuous history and an indefinite future. Nevertheless, the IWC demonstrates the capacity of the international community to work together to manage the global commons. Further, as one of the oldest international institutions founded to manage a common resource, the experiences of the IWC provide invaluable lessons—both positive and negative—to ongoing efforts to manage the global commons. In particular, examining the changing institutional policies and perspectives of the IWC with specific focus on the interplay between science and policy reveals the absence of scientifically discernible truths and the inevitability of scientific uncertainty being used to advance particular political objectives. As the experiences of the IWC demonstrate, what is critical is not so much the quest for scientific “truth” as is the pursuit of policies that reflect an honest exchange between policymakers and scientists over the best available science and the political motives that influence how that science will be interpreted and utilized.

As a history lesson, the story of the IWC is merely interesting. As a lesson in how to avoid repeating the mistakes of history, however, it is enormously valuable—especially for the development of international environmental regimes such as the United Nations Framework Convention on Climate Change (“UNFCCC”), the Kyoto Protocol, and successor climate change agreements.

#### B. BRIEF HISTORY OF THE INTERNATIONAL CLIMATE CHANGE REGIME

In relative terms, international climate change politics are a recent phenomenon. Concern over the global atmosphere only emerged in earnest in the mid-1970s, when Sherwood Rowland and Mario Molina revealed scientific evidence that chlorofluorocarbons (“CFCs”) were capable of

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72. The IWC is currently developing a RMP for regulating whaling in the event that the moratorium is lifted. The RMP focuses heavily on “more conservative management of uncertainty.” HEAZLE, *supra* note 1, at 161.

73. See, e.g., IWC, CHAIR’S SUMMARY REPORT FOR THE 58TH ANNUAL MEETING Annex 1 (2006), available at [http://www.iwcoffice.org/\\_documents/meetings/ChairSummaryReportIWC58.pdf](http://www.iwcoffice.org/_documents/meetings/ChairSummaryReportIWC58.pdf).

depleting the Earth's ozone layer.<sup>74</sup> This research began a decade of intense research that culminated in the enactment of the 1985 Vienna Convention for the Protection of the Ozone Layer<sup>75</sup> and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.<sup>76</sup> Thus, by the mid-1980s the global community had identified a serious threat to the global commons and created a comprehensive international regime to address the problem. By all accounts, the international regime for curbing ozone depletion is heralded as a success, and the Montreal Protocol is "now recognized as a landmark accord in the most effective international environmental regime to date."<sup>77</sup>

As the ozone regime was being developed and implemented, scientists were becoming increasingly concerned about the impact of anthropogenic releases of greenhouse gases on the Earth's atmosphere. By the late 1970s, scientists had identified "connection[s] between carbon dioxide emissions and likely global temperature increases,"<sup>78</sup> spurring a new era in global climate research. It was not until the late 1980s, however, with the establishment of the Intergovernmental Panel on Climate Change ("IPCC") in 1988, that international cooperation on global climate change began in earnest.<sup>79</sup>

In 1992, international concerns over global climate change culminated in the drafting of the UNFCCC<sup>80</sup> at the United Nations Conferences on Environment and Development in Rio de Janeiro. The primary goal of the UNFCCC is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."<sup>81</sup> The UNFCCC, like the Vienna

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74. RICHARD ELLIOT BENEDICK, *OZONE DIPLOMACY: NEW DIRECTIONS IN SAFEGUARDING THE PLANET* 10–11 (1998).

75. Vienna Convention for the Protection of the Ozone Layer, Mar. 22, 1985, T.I.A.S. No. 11,097, 1513 U.N.T.S. 293.

76. Montreal Protocol on Substances That Deplete the Ozone Layer, Sept. 16, 1987, S. TREATY DOC. No. 100-10, 1522 U.N.T.S. 3.

77. Laura Thoms, *A Comparative Analysis of International Regimes on Ozone and Climate Change with Implications for Regime Design*, 41 COLUM. J. TRANSNAT'L L. 795, 797 (2003).

78. *Id.* at 812.

79. See generally INTERGOVERNMENTAL PANEL OF CLIMATE CHANGE, NATIONAL GREENHOUSE GAS INVENTORIES PROGRAMME, at <http://www.ipcc-nggip.iges.or.jp> (last visited May 11, 2007); Shardul Agrawala, *Context and Early Origins of the Intergovernmental Panel on Climate Change*, 39 CLIMATE CHANGE 605 (1998).

80. United Nations Framework Convention on Climate Change, May 9, 1992, S. TREATY DOC. No. 102-38, 1771 U.N.T.S. 107 (entered into force Mar. 21, 1994) (181 Parties as of Dec. 10, 1999), available at <http://www.unfccc.de/resource/docs/convkp/conveng.pdf> [hereinafter UNFCCC].

81. *Id.* art. 2.

Convention on Ozone Depletion and the ICRW, is a framework convention that sets out the broad, overarching goals of the international community.

In 1997, the UNFCCC was supplemented by a protocol establishing more detailed and authoritative guidelines for limiting greenhouse gas emissions. The Kyoto Protocol<sup>82</sup> to the UNFCCC embodies the legal commitments of the international climate change regime. Together, the UNFCCC and the Kyoto Protocol create the backbone of international climate change politics. The objective of the regime is to address the causes and consequences of global climate change.<sup>83</sup> To this end, the Kyoto Protocol augments the UNFCCC by establishing legally binding obligations that require developed countries to incrementally reduce human-induced greenhouse gas emissions to an average of five percent below 1990 emission levels.<sup>84</sup>

The Kyoto Protocol and the Montreal Protocol are similar in that they both address environmental problems that “involve scientific uncertainty, extended time frames, and a temporal disconnect between causal activities and apparent results”;<sup>85</sup> that “threaten catastrophic harm of a global nature”;<sup>86</sup> and that “involve ‘tragedy of the commons’ problems.”<sup>87</sup> The commitments that the Kyoto Protocol establishes, however, represent the first time that developed nations have jointly agreed to reduce emissions from such a wide range of gases and across such a cross section of the economy.<sup>88</sup> In this way, the Kyoto Protocol differs from the Montreal Protocol in that it not only involves a much more scientifically complex and wide-ranging problem, but also requires a more politically, technologically, and economically comprehensive set of solutions. That is, while the problem of ozone depletion largely could be addressed by phasing out CFCs and replacing them with a technologically available alternative, there is no readily available replacement for the greenhouse

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82. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 32 available at <http://unfccc.int/resource/docs/convkp/kpeng.html> [hereinafter Kyoto Protocol].

83. See, e.g., DUNCAN BRACK WITH MICHAEL GRUBB & CRAIG WINDRAM, INTERNATIONAL TRADE AND CLIMATE CHANGE POLICIES xix (2000).

84. See, e.g., Kyoto Protocol, *supra* note 82, art. 3.

85. Thoms, *supra* note 77, at 798.

86. *Id.*

87. *Id.* at 799 (quoting James K. Sebenius, *Designing Negotiations Toward a New Regime: The Case of Global Warming* 15 INT'L SECURITY 110, 119 (1991)).

88. See, e.g., Annie Petsonk, *The Kyoto Protocol and the WTO: Integrating Greenhouse Gas Emissions Allowance Trading into the Global Marketplace*, 10 DUKE ENVTL. L. & POL'Y F. 185, 187 (1999).

gases—especially carbon dioxide—that constitute a primary base of modern human society.<sup>89</sup>

Further, while the Montreal Protocol initially provoked outcry among certain sectors of the global community, it did not generate rifts in international politics. Climate change politics, on the other hand, have already created a continental rift. Climate change pervades international politics. Ongoing negotiations have divided the United States and Europe and future negotiations threaten to create tensions between rapidly developing countries, such as India and China, and the rest of the world.

The political divisiveness of climate change should not be underestimated. Although the Kyoto Protocol came into force in February 2005, the United States—the largest global producer of carbon dioxide<sup>90</sup>—is not a party to the agreement.<sup>91</sup> In fact, over the last decade, the United States has consistently challenged the legitimacy of the UNFCCC and the Kyoto Protocol, as well as the fundamental reality of global climate change,<sup>92</sup> alleging that the Kyoto Protocol is based on the “unproven science” of global warming.<sup>93</sup> Further, China and India are not currently bound by any international greenhouse gas reduction obligations and both countries have declared that they are not willing to accept binding restrictions on greenhouse gas emissions in the near future.<sup>94</sup> Making this clear, the Indian Prime Minister, L.K. Advani, stated that India would “under no circumstances accept restrictions on its greenhouse gas emissions,” and that “[t]he existing equilibrium of commitments and differentiation between developed and developing nations has to be

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89. See, e.g., Thoms, *supra* note 77, at 823–25.

90. See, e.g., *Climate Change: The Big Emitters*, BBCNEWS, July 4, 2005, at <http://news.bbc.co.uk/1/hi/sci/tech/3143798.stm> (discussing significant global greenhouse gas emitters).

91. See, e.g., BARRY G. RABE, STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY 146–48 (2004).

92. See, e.g., Patrick Parenteau, *Anything Industry Wants: Environmental Policy Under Bush II*, 14 DUKE ENVTL. L. & POL'Y F. 363, 365–66 (2004).

93. *Id.* See also WHITE HOUSE, GLOBAL CLIMATE CHANGE POLICY BOOK (2002), at [http://www.whitehouse.gov/news/releases/2002/02/climate\\_change.html](http://www.whitehouse.gov/news/releases/2002/02/climate_change.html) [hereinafter GLOBAL CLIMATE CHANGE POLICY BOOK]; Greg Kahn, *Between Empire and Community: The United States and Multilateralism 2001–2003: A Mid-term Assessment: Environment: The Fate of the Kyoto Protocol Under the Bush Administration*, 21 BERKELEY J. INT'L L. 548 (2003). U.S. states and localities, however, are following the lead of the European Union and the United Kingdom and are pushing for more progressive, obligatory climate change policies. This will be discussed in more detail *infra* Part III.D.

94. See, e.g., IDA BJØRKUM, FRIDTJOF NANSEN INST., CHINA IN THE INTERNATIONAL POLITICS OF CLIMATE CHANGE: A FOREIGN POLICY ANALYSIS 34–35, 48–51 (2005), available at <http://www.fni.no/doc&pdf/FNI-R1205.pdf> (discussing both China and India's opposition to legally binding obligations to reduce greenhouse gas emissions).

maintained.”<sup>95</sup> Likewise, Chinese officials have repeatedly “made it clear that, while they would like to see [Kyoto] adopted, they will accept no restrictions on Chinese emissions now or in 50 years’ time.”<sup>96</sup>

Thus, the largest current emitter of greenhouse gases—the United States—and the two fastest growing emitters of greenhouse gases—China and India—refuse to commit to any present or future international greenhouse gas reduction obligations.

The Kyoto Protocol requires the global community to create a sustainable and equitable international framework that relies heavily on the interplay between science and policy, with far-reaching consequences for social and economic systems worldwide.<sup>97</sup> Like the IWC, the parties to the Kyoto Protocol must balance scientific and economic considerations to develop policies that ensure the long-term survivability of a common resource—here, the Earth’s atmosphere—without jeopardizing the short- or long-term welfare of global citizenry. The IWC and the Kyoto Protocol face similar challenges. Unlike the IWC, however, the success of the Kyoto Protocol and future international efforts to address global climate change determine the fate not of a single species, but of the Earth’s atmospheric system, with consequences for each and every species of flora and fauna.

### III. PARALLELS BETWEEN THE IWC AND CLIMATE CHANGE— SHARING THE COMMONS

So what, if anything, can the examination of whaling politics teach us about the future of climate change politics? Judging from existing parallels between the two regimes, there are many lessons to be divined. Throughout the late nineteenth, twentieth, and twenty-first centuries, scientific uncertainty and the “neglect and possible misuse of the concept of precaution” have led to numerous cases where scientists and policymakers have undervalued or ignored early warnings of pending environmental

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95. James M. Taylor, *Chinese CO2 Emissions Surge*, HEARTLAND INSTITUTE (Chicago), Jan. 1, 2004, at <http://www.heartland.org/Article.cfm?artId=14020>.

96. *Id.*

97. At the 2001 meeting of Kyoto’s Conference of the Parties, the Parties drafted the Marrakesh Accords, which outline the present context of the climate change regime. The Accords emphasize that “economic and social development and poverty eradication are the first and overriding priorities of the developing country parties,” and that efforts to combat climate change must take place against this economic backdrop. UNFCCC Conference of the Parties, Marrakesh, Morocco, Oct. 29–Nov. 10, 2001, *The Marrakesh Ministerial Declaration and the Marrakesh Accords*, 33, FCCC/CP/2001/13/Add, available at [http://unfccc.int/cop7/documents/accords\\_draft.pdf](http://unfccc.int/cop7/documents/accords_draft.pdf).

disasters.<sup>98</sup> From early indications of declining fisheries worldwide, human health risks associated with asbestos and PCPs, and dangers posed to the natural environment by CFCs and sulfur dioxide,<sup>99</sup> there are too many cases where early evidence of environmental dangers has been ignored to the detriment of humans and the natural world alike.

Similarities between the history of the IWC and the present path of climate change politics, coupled with mounting scientific evidence of the risks of global climate change, reveal a case where policymakers ignore early institutional and scientific warnings at the peril of a sustainable future.<sup>100</sup> In the section that follows, focusing on political interpretation of scientific uncertainty, economics, and political power, this Article discusses the similarities between international whaling and climate change politics, which suggest that the two areas have too much in common to bode well for future efforts to address global climate change.

#### A. POLITICAL MANIPULATION OF SCIENTIFIC UNCERTAINTY

Scientific uncertainty defines contemporary environmental lawmaking. It is not unique to the politics of whaling and climate change. The political manipulation of scientific uncertainty, however, is something the two areas share in common.

Between the 1940s and the late 1960s, scientific uncertainty over whale characteristics, population numbers, and hunt levels was pervasive. The political environment of the time favored the well-being of the whaling industry over growing concerns about the whales.<sup>101</sup> That is, precaution was on the side of economic well-being. Consequently, scientific uncertainty was used to the benefit of sustaining high whaling quotas. For over twenty years, early warnings of declining whale populations were stifled on the basis of uncertainty.<sup>102</sup> Only extreme conditions would eventually shift the balance of power away from economic interests.

Similar patterns have emerged within the climate change debate. Beginning in the 1980s, scientists pointed to the links between carbon dioxide and atmospheric changes.<sup>103</sup> By the mid-1990s, scientific evidence

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98. THE PRECAUTIONARY PRINCIPLE IN THE 20TH CENTURY: LATE LESSONS FROM EARLY WARNINGS 1 (Poul Harremoës et al. eds., 2002).

99. See, e.g., *id.* at 1–2.

100. See *id.*

101. See, e.g., HEAZLE, *supra* note 1, at 36–132.

102. *Id.* at 53–65.

103. See Dale Jamieson, *Global Responsibilities: Ethics, Public Health, and Global Environmental Change*, 5 *IND. J. GLOBAL LEGAL STUD.* 99, 103 (1997).

of anthropogenic forcing of global warming prompted international response.<sup>104</sup> Despite growing scientific evidence and consensus on climate change, scientific uncertainty continues to be used as a justification for avoiding domestic and international actions.

The best example of the political handling of uncertainty is the United States and, more specifically, the Bush administration's use of uncertainty. Well into his second presidential term, whenever President Bush discussed climate change, he repeatedly referred to "uncertainty"<sup>105</sup> and a "lack of scientific consensus" in relation to the reality of human-induced global warming, despite the fact that most climate scientists contested his use of these terms.<sup>106</sup> By using this language, President Bush has succeeded in embedding "the ideas of uncertainty and confusion into much of the public debate over climate change, making it easier for the administration to promote its current policies and communicate to domestic constituents and international observers that it was taking a cautious approach to climate change policy-making."<sup>107</sup> Consequently, much of the American public continues to regard climate change as a tenuous scientific theory, enabling widespread public support for the United States' decision not to participate in the Kyoto Protocol<sup>108</sup> or to adopt binding domestic emission reduction obligations.<sup>109</sup>

Recently, however, cracks have begun to emerge in the administration's formerly strict line. For example, a recent Pentagon-

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104. *See id.*

105. For a prime example of how the Bush administration emphasizes its position that "scientific uncertainties remain," see GLOBAL CLIMATE CHANGE POLICY BOOK, *supra* note 93, at para. 1.

106. Cinnamon Carlarne, *Climate Change Policies an Ocean Apart: EU & US Climate Change Policies Compared*, 14 PENN ST. ENVTL. L. REV. 435, 479 (2006) (citing Luntz Research Companies, Straight Talk: The Environment: A Cleaner, Safer, Healthier America 131, at [http://www.ewg.org/briefings/luntzmemo/pdf/LuntzResearch\\_environment.pdf](http://www.ewg.org/briefings/luntzmemo/pdf/LuntzResearch_environment.pdf) (last visited May 11, 2007)).

107. *Id.* *See also* Parenteau, *supra* note 92, at 366–73, 403–04 (discussing the Bush administration's environmental policies).

108. *See* Carlarne, *supra* note 106, at 479. *See also* David Demeritt, *The Construction of Global Warming and the Politics of Science*, 91 ANNALS ASS'N AM. GEOGRAPHERS 307 (2001).

109. The U.S. change strategy does not include any mandatory reductions in greenhouse gas emissions.

Under President George W. Bush's proposed climate change action plan, greenhouse gas "intensity" is projected to decrease by 18% [in the next ten years]. This "intensity" metric, however, is merely a ratio of greenhouse gas emissions to economic output. Thus, as long as U.S. economic output increases over the next decade, this metric simply means that greenhouse gas intensity will . . . decrease, even if the United States does not actually reduce its overall emissions.

Carlarne, *supra* note 106, at 440. *See also* GLOBAL CLIMATE CHANGE POLICY BOOK, *supra* note 93.

commissioned report<sup>110</sup> surfaced despite efforts within the current political administration to suppress the public release of the document.<sup>111</sup> This report suggests that “abrupt climate change could bring the planet to the edge of anarchy as countries develop a nuclear threat to defend and secure dwindling food, water and energy supplies.”<sup>112</sup> Further, a 2001 National Academy of Sciences (“NAS”) report confirmed the existence of human-induced global climate change, finding that “[g]reenhouse gases are accumulating in Earth’s atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise.”<sup>113</sup> The NAS report “confirms once again the broad scientific consensus that has emerged over the last decade—that human-caused climate change is underway and, if ignored, could have severe impacts on natural and managed ecosystems and human systems, such as health and water resources.”<sup>114</sup> Commissioned by the president and including several previous climate change skeptics on the panel, the report supports the general conclusions of the IPCC.<sup>115</sup> The surfacing of the Pentagon-commissioned report and the release of the NAS report suggest that divisions within the federal government exist, and that U.S. attempts to rely on the scientific uncertainties associated with climate change to avoid domestic and international commitments will face growing resistance.

The European Union’s handling of scientific uncertainty differs dramatically from the approach taken in the United States. In the European Union, the debate over uncertainty revolves around the actual impacts of global climate change—that is, how quickly the climate is changing, the predicted temperature and sea level changes, and so forth—rather than the basic question of whether climate change is occurring.<sup>116</sup> In this vein, E.U.

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110. PETER SCHWARTZ & DOUG RANDALL, AN ABRUPT CLIMATE CHANGE SCENARIO AND ITS IMPLICATIONS FOR UNITED STATES NATIONAL SECURITY (2003), at <http://www.gbn.com/GBNDocumentDisplayServlet.srv?aid=26231&url=/UploadDocumentDisplayServlet.srv?id=28566>.

111. See, e.g., Mark Townsend & Paul Harris, *Now the Pentagon Tells Bush: Climate Change Will Destroy Us*, OBSERVER (London), Feb. 22, 2004, available at <http://observer.guardian.co.uk/international/story/0,6903,1153513,00.html>.

112. *Id.*

113. COMM. ON THE SCI. OF CLIMATE CHANGE, NAT’L RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS 1 (2001), available at <http://books.nap.edu/openbook.php?isbn=0309075742>.

114. UNION OF CONCERNED SCIENTISTS, NAS REPORT: CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS (2005), at <http://www.ucsusa.org/ssi/archive/nas-report-climate-change-science.html>.

115. *Id.*

116. See, e.g., Nuno S. Lacasta, Suraje Dessai & Eva Powroslo, *Consensus Among Many Voices: Articulating the European Union’s Position on Climate Change*, 32 GOLDEN GATE U. L. REV. 351, 351–54 (2002); *EU Plans ‘Industrial Revolution’*, BBCNEWS, Jan. 10, 2007, at <http://news.bbc.co.uk/>

policymakers avoid focusing on scientific uncertainty as an excuse for inaction at the most basic level, and instead, declare that “[c]limate change should be beyond party politics,”<sup>117</sup> and that “the E.U. both regards climate change as one of the major priorities facing us and is very united on that issue.”<sup>118</sup> This perspective was confirmed by the Royal Society, which asserted that:

Much is made of the uncertainties involved in the science of climate change. Many aspects are uncertain and global investment is required in the science so as to better inform decisions. However, it is of vital importance that the public and policymakers understand that many aspects of the science are clear. There is strong evidence that significant global warming is occurring and that most of the warming experienced over the last 50 years is attributable to human activities. This warming has already led to changes in the Earth’s climate, and continued growth in atmospheric CO<sub>2</sub> concentration will accelerate that change. In short, from the point of view of the science alone, urgent action is justified to substantially reduce net global greenhouse gas emissions.<sup>119</sup>

Political interpretations of uncertainty over the existence of human-induced global climate change shape U.S. and E.U. approaches to climate change. As in the IWC in the midcentury, in the United States, scientific uncertainty is used to support a “business as usual” scenario; much to the peril of the global climate, economic interests outweigh environmental interests when interpreting scientific uncertainty.

## B. UNCERTAINTY SHIFTS GEARS

In the case of the IWC, uncertainties over the reliability of cetacean science eventually gave way as scientific evidence mounted as to declining whale numbers. As scientific consensus grew, the IWC slowly began bringing its policies into line with the advice of the Scientific Committee. This did not, however, end the debate. In the period between the 1960s and

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1/hi /sci/tech/6247199.stm. See generally Richard J. Bord, Ann Fisher & Robert E. O’Connor, *Public Perceptions of Global Warming: United States and International Perspectives*, 11 CLIMATE RES. 75 (1998); John Vogler & Charlotte Bretherton, *The European Union as a Protagonist to the United States on Climate Change*, 7 INT’L STUD. PERSP. 1 (2006).

117. Rt Hon Charles Kennedy MP, Leader of the Liberal Democrats, *The Politics of Climate Change*, (Dec. 19, 2005), at <http://www.libdems.org.uk/parliament/the-politics-of-climate-change.html>.

118. Lord Whitty of Camberwell, Minister for Farming, Food, and Sustainable Energy, U.K., Remarks at the Brookings Institution Briefing on Climate Change Policy: The View from Europe (Apr. 18, 2005) (transcript available at <http://www.brookings.edu/comm/events/20050418.htm>).

119. ROYAL SOC’Y, ROYAL SOCIETY RESPONSE TO STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE 1 (2005), available at <http://www.royalsoc.ac.uk/displaypagedoc.asp?id=18768> (internal citation omitted).

the 1970s, Japan, the Soviet Union, and Norway—the remaining three commercial whalers<sup>120</sup>—changed the nature of the uncertainty debate. The remaining commercial whalers began focusing not on uncertainty as to the *reality/existence* of the depletion of whale stocks, but on uncertainty as to the *extent* of depletion—that is, which whale stocks were depleted to certain levels and which could still sustain limited hunts.<sup>121</sup> Further, the prowhaling advocates supplemented this new uncertainty argument by claiming that—even given the depleted status of whale stocks—the impact of a complete ban on commercial whaling would be impermissibly economically detrimental.<sup>122</sup>

Similar shifts are currently underway in the climate change debate, particularly within the context of the United States. Responding to growing scientific consensus over the existence of human-induced climate change, the U.S. political administration has begun subtly shifting the nature of its uncertainty arguments in its climate change policies. For example, in the recently released Climate Change Technology Program's *Strategic Plan*<sup>123</sup>—a joint venture between the Departments of Energy and Commerce as well as the Office of Science and Technology Policy—the subtext of the entire Plan is scientific uncertainty. Throughout, the document consistently emphasizes scientific uncertainties relating to: (1) what constitutes “dangerous” levels of atmospheric greenhouse gases (that is, what levels of greenhouse gas reductions are necessary); (2) what factors contribute most to human-induced forcing; and (3) what technologies would best mitigate climate change.<sup>124</sup> Thus, while the government has not fully conceded the infallibility of human-induced climate change, in view of growing scientific consensus on climate change, it is shifting the brunt of its uncertainty arguments from the *reality/existence* of human-induced climate change to uncertainty as to the *particulars* of climate change. This is not unfounded, unusual, or even surprising, as scientific uncertainties are an inherent part of the climate change debate. The U.S. policies raise concerns among scientists and policymakers not because they try to account for scientific uncertainties, but because of a fear that the U.S. government will continue to rely on scientific uncertainty as an excuse for delaying action.<sup>125</sup> And, unlike the

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120. See HEAZLE, *supra* note 1, at 124–32.

121. See *id.* at 120–24.

122. See *id.*

123. U.S. CLIMATE CHANGE TECH. PROGRAM, STRATEGIC PLAN, DOE/PI-0005 (2006), available at <http://www.climatechange.gov/stratplan/final/index.htm>.

124. See *id.* at 20–22, 33, 130–31, 135–36, 208.

125. See Parenteau, *supra* note 92, at 403–05.

IWC in the 1970s, the United States is still far from bringing its national climate change policies in line with international scientific recommendations, such as the IPCC.

The pattern of U.S. climate change politics is uncomfortably reminiscent of the pattern adopted by the Japanese and the Soviets in the whaling debates of the 1970s. As will be discussed in the section that follows, the United States and several other developed and developing countries have also picked up on the secondary argument made by the prowhaling states during the 1970s. That is, they offer economic arguments against participating in the Kyoto Protocol, or any other agreement that requires committing to quantified greenhouse gas reductions within a specific time frame.

### C. SCIENTIFIC UNCERTAINTY AND ECONOMICS AT THE BRINK

There is little doubt that the IWC's management—arguably, mismanagement—of scientific uncertainty pushed whales to the brink of extinction.<sup>126</sup> With global climate change, mismanagement of scientific uncertainty poses incalculable harm.

In the case of the IWC, scientific uncertainty was used to support commercial whaling until whale stocks collapsed to the extent that commercial whaling ceased to be economically viable. That is, only when the seas were whaled-out did the political climate support shifting perceptions of scientific uncertainty. By that time, only three countries were engaged in commercial whaling and the environmental movement was growing, which created a safe environment for politicians to shift gears and give the benefit of scientific uncertainty to the whale itself.<sup>127</sup>

In the context of climate change, the current mood resembles the whaling atmosphere during the late 1960s and early 1970s. There is ample evidence that climate change is occurring, that increasing numbers of countries are pushing for progressive limits on greenhouse gas emissions, and that the dire consequences of pushing the climate to the brink are becoming evident.<sup>128</sup> At the same time, economic concerns still dominate the debate; a small but vocal group of countries continue to point to scientific uncertainties as justification for business as usual, and the political climate is in a state of flux. This is a critical time for climate

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126. See generally HEAZLE, *supra* note 1.

127. *Id.* at 154–59.

128. See, e.g., Eileen Claussen, *Climate Change: Present and Future*, 27 *ECOLOGY L.Q.* 1373, 1373–74 (2001).

change politics. Will the political climate shift in such a manner as to force states to support progressive climate change policies or risk political isolation, or will vocal minorities continue to sway international policymaking? Will the climate remain stable or will it collapse to the point that global climate change becomes irrefutable and business as usual is no longer economically viable?

Economics undoubtedly play a key part in political decision making, not the least of which is how science is interpreted. Historically, economic drawbacks have been used as a reason for delaying mandatory reductions in greenhouse gas emissions. For example, President Bush repeatedly emphasizes that he opposes “the Kyoto Protocol because it exempts 80 percent of the world, including major population centers such as China and India, from compliance, and would cause serious harm to the U.S. economy.”<sup>129</sup> For their part, China and India oppose binding greenhouse gas reduction obligations based on their inherent right to economic development.<sup>130</sup>

The perception of the debate as a face-off between the climate and the economy is, however, beginning to change. For example, at the 2005 UN climate change conference in Montreal, former President Bill Clinton stated that the Bush administration is “flat wrong” in asserting that reducing greenhouse gas emissions to combat global climate change would harm the U.S. economy.<sup>131</sup> Further, on October 30, 2006, Nicholas Stern, head of the U.K. Government Economic Service and adviser to the U.K. government on the economics of climate change and development, released the *Stern Review on the Economics of Climate Change*.<sup>132</sup> In this report, Stern states that “[c]limate change presents a unique challenge for economics: it is the greatest and widest-ranging market failure ever seen,” and that “[t]he benefits of strong, early action on climate change outweigh the costs.”<sup>133</sup> In this widely heralded report, Stern confirms the strong links

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129. Letter from George W. Bush, President of the United States, to Chuck Hagel, Jesse Helms, Larry Craig & Pat Roberts, U.S. Senators (Mar. 13, 2001), available at <http://www.whitehouse.gov/news/releases/2001/03/20010314.html> [hereinafter Letter from President George W. Bush to U.S. Senators].

130. See, e.g., *supra* Part II.B.

131. Charles J. Hanley, *Clinton says Bush is 'Flat Wrong' on Kyoto*, ABCNEWS, Dec. 9, 2005, at <http://abcnews4.com/news/stories/1205/284566.html>.

132. NICHOLAS STERN, STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE, available at [http://www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/stern\\_review\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_index.cfm) (last visited May 11, 2007).

133. NICHOLAS STERN, STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE: EXECUTIVE SUMMARY i, available at [http://www.hm-treasury.gov.uk/media/8AC/F7/Executive\\_Summary.pdf](http://www.hm-treasury.gov.uk/media/8AC/F7/Executive_Summary.pdf) (last visited May 11, 2007).

between global climate change and the well-being of the economy, emphasizing that:

The evidence shows that ignoring climate change will eventually damage economic growth. Our actions over the coming few decades could create risks of major disruption to economic and social activity, later in this century and in the next, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century. And it will be difficult or impossible to reverse these changes. Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries. The earlier effective action is taken, the less costly it will be.<sup>134</sup>

As the former chief economist and senior vice president of the World Bank, Stern is respected as an authoritative and objective voice on the economics of climate change. Thus, the Stern Report has been heralded as “soar[ing] above . . . petty party politics and deliver[ing] one of the most significant intellectual knockout blows of our times.”<sup>135</sup>

As a consequence of the Stern Report, President Clinton’s comments, and similar statements on the links between global climate change and the economy, the tide is slowly turning on the climate change economics debate. There remains, however, stiff resistance from developed and developing countries to undertaking what they perceive to be economically costly efforts to address climate change.<sup>136</sup> A shift in U.S. mentality, for example, is only likely to happen on a wide-scale when it becomes economically infeasible to hold out—for example, loss of new business opportunities and insecure regulatory climates for businesses. Just as commercial whaling was considered economically viable almost until whale stocks disappeared, so is business as usual still considered, by many, to be economically viable despite mounting evidence to the contrary.

This is the point at which policymakers find themselves. Of course, whereas whales have proved capable of recovering from the brink of extinction—albeit slowly and unevenly—there are no such assurances concerning the ability of the atmosphere to recover if pushed past the proverbial tipping point. Whales may have low reproduction rates and long

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134. *Id.* at ii.

135. Matthew d’Ancona, *Stern Will Transform British Politics. That’s the Easy Bit*, TELEGRAPH.CO.UK, Oct. 29, 2006, at <http://www.telegraph.co.uk/opinion/main.jhtml?xml=/opinion/2006/10/29/do2901.xml&sSheet=/opinion/2006/10/29/ixopinion.html>.

136. See, e.g., BJØRKUM, *supra* note 94; Letter from President George W. Bush to U.S. Senators, *supra* note 129.

breeding cycles, but the life span of greenhouse gases<sup>137</sup> in the atmosphere is even longer and the risks are of an exponentially greater magnitude.

#### D. A CHANGING POLITICAL ENVIRONMENT

By the late 1970s to early 1980s, the core notion of whales as an economic commodity had lost luster. Overexploitation, environmentalism, and industry decline merged to redefine the social perception of whales. That is, the “previously recognized utility . . . in hunting whales for commercial gain had been supplanted by a newly recognized utility in protecting them in order to appear more environmentally responsible.”<sup>138</sup> It was at this point in the IWC—when science, economics, and policy merged—that the political environment did an about-face. Environmental concerns dominated domestic and international political agendas; scientific consensus on the overexploitation of whales guided technical and political decision making; graphic accounts of whaling inundated local newspapers and magazines—the superwhale had emerged and now ruled the roost. The “values and priorities”<sup>139</sup> of the public had changed, forcing similar changes in the values and priorities systematized by the IWC.

The adoption of the moratorium on commercial whaling in 1982 culminated the IWC’s “normative transition . . . from a ‘whaler’s club’ to an official agent of conservation.”<sup>140</sup> Through this long transition, “the whale slowly [began] to symboli[z]e not humanity’s inability to respect the beauty of nature, but our ability to cooperate in order to preserve it.”<sup>141</sup> In this way, the whale became an icon of beauty and hope; it became a symbol of international cooperation between states with divergent interests and perspectives.

As scientific consensus emerges, economic injury arguments decline, and intergenerational and intragenerational equity motives strengthen, the international climate change debate slowly edges toward its own normative transition. The arguments are, of course, perceptibly different than in the case of whaling. Whereas with commercial whaling, it was simple to alleviate the primary problem—that is, stop whaling—with climate change,

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137. See, e.g., William C.G. Burns, *From the Harpoon to the Heat: Climate Change and the International Whaling Commission in the 21st Century*, 13 GEO. INT’L ENVTL. L. REV. 335, 357 (2001); David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 32, 41 (2003).

138. HEAZLE, *supra* note 1, at 155.

139. *Id.*

140. STOETT, *supra* note 47, at 106.

141. *Id.*

the stakes are not only much higher, but also the solutions are much more technologically complex, multifaceted, and diffused. Nevertheless, the climate change debate stands at the edge of its own metaphoric 1982. Economic concerns and notions of uncertainty linger, but environmental, health and safety, and equity considerations are nudging the global community toward a systemic values and priority change.<sup>142</sup>

In this context, the critical distinctions between the whaling and the climate change debate are the magnitude of risk involved and the level of international cooperation required. There is, however, another essential difference. With climate change, as with whaling, it is possible to identify the main offenders. That is, the IWC allocated quotas and accounted for whale kills—albeit imperfectly.<sup>143</sup> Similarly, climate change scientists can track historic and current levels of greenhouse gas emissions. The pattern that emerges reveals that the wealthier, developed countries—for example, the United States and many of the countries in the European Union—bear primary historic responsibility for greenhouse gas emissions.<sup>144</sup> Thus, climate change politics are complicated by very real questions of justice and equity. Unlike whaling, where the whaling countries bore the primary burden of the moratorium, the entire global community will feel the impacts of global warming and thus, must share the burden of addressing global climate change. Climate change politics must think not just of protecting the superwhale—here the global environment—but also of protecting developing countries and vulnerable populations from bearing disproportionate social and economic burdens. Consequently, climate change policies must embody principles of historic responsibility and incorporate principles of equity and common, but differentiated, responsibility.<sup>145</sup>

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142. See, e.g., WORLD HEALTH ORGANIZATION, CLIMATE CHANGE AND HUMAN HEALTH: RISKS AND RESPONSES (2003) (discussing the increasing concern for the human health risks associated with climate change); Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY L.Q.* 183 (2005) (discussing the proliferation of efforts by members of civil society to address climate change); Stephen M. Gardiner, *A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption*, 15 *ENVTL. VALUES* 397 (2006) (discussing an example of the increasingly dominant ethical debate around climate change); Oreskes, *supra* note 7 (discussing the growing scientific consensus on the existence of global climate change).

143. See, e.g., HEAZLE, *supra* note 1, at 36–132.

144. See, e.g., *Climate Change: The Big Emitters*, *supra* note 90.

145. See Kyoto Protocol, *supra* note 82, art. 10; UNFCCC, *supra* note 80, art. 3. See also CLIMATE ACTION NETWORK INT'L, A VIABLE GLOBAL FRAMEWORK FOR PREVENTING DANGEROUS CLIMATE CHANGE 2 (2003), available at [http://www.climnet.org/pubs/CAN-PP\\_Framework.pdf](http://www.climnet.org/pubs/CAN-PP_Framework.pdf).

With climate change politics, therefore, the moral shift that is and must continue taking place is not merely from an environment-as-commodity to a conservation-oriented perspective; it is more nuanced and raises questions of intragenerational and intergenerational equity that were not as central to the whaling debate.

It may not yet be reasonable to seek a moratorium on greenhouse gas emissions.<sup>146</sup> International climate change policies have not yet reached their own 1982. That time, however, may not be as far away as many people fear. Climate change politics are still divisive and fragmented by economic, equity, and uncertainty concerns.<sup>147</sup> Cultural differences determine whether politicians can afford to support aggressive efforts to address climate change.<sup>148</sup> Nevertheless, international climate change politics is experiencing, if not a normative, a substantive transition from a fringe environmental issue to a core economics, security, and equity issue that is rising to the top of political agendas worldwide.<sup>149</sup>

In the 1970s, the whale became a symbol of beauty and human cooperation and there was a “growing international mood against whaling.”<sup>150</sup> In the new millennium, climate change is becoming a symbol of fear and social discord. The mood is ambiguous—changing temperament depending on the cultural context. The critical test—and one that must come soon—is whether international climate change politics can gain the momentum to create global consensus, cooperation, and action.

#### E. THE NATURE OF POWER POLITICS

In the previous section, this Article discussed the normative shift that took place in the IWC in the late 1970s. The normative shift played an essential part in shifting perceptions of scientific uncertainty to favor the whale. This is not to suggest that there was ever immediate or full consensus on the issue. In fact, in the end, the adoption of the moratorium

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146. Although some people, including former U.S. Vice President Al Gore, have advocated a ban on greenhouse gas emissions. *See, e.g., Scientists Set Forth Evidence that Global Warming Has Begun; Surge in Greenhouse Gases Is Human Induced and Not Within Normal Fluctuations*, PRNEWswire, Sept. 21, 2006, at <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/09-21-2006/0004437603&EDATE>.

147. *See generally* Carlarne, *supra* note 106.

148. *See id.* at 473–81.

149. *See, e.g.,* STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE: EXECUTIVE SUMMARY, *supra* note 133, at i.

150. HEAZLE, *supra* note 1, at 154.

can largely be attributed to “power politics.”<sup>151</sup> That is, scientific consensus and the environmental movement alone did not shift the foundations of the IWC. In the end, the political influence wielded by the United States played a key role in the adoption of the moratorium. In the United States, the environmental movement and the “save the whales” campaign<sup>152</sup> created an atmosphere where politicians could safely campaign for an end to commercial whaling. The United States led a powerful campaign to stop whaling, including threatening to sanction sovereign states that continued whaling.<sup>153</sup> Thus, the role of politics—both in interpreting scientific uncertainty and in influencing the direction of a debate—cannot be underestimated.

The role of political influence is immediately apparent in international climate change politics. This Article has already discussed how political emphasis on scientific uncertainty shapes perceptions of global climate change at the domestic level within the United States.<sup>154</sup> At the international level, the United States has also relied on political influence to shape international negotiations.

During the negotiations of the Kyoto Protocol, the United States played a dominant role in influencing the final shape of the agreement. Yet, the United States has steadily opposed ratification of the Kyoto Protocol and has publicly repudiated the Protocol despite the fact that it was granted precisely what it demanded during the Protocol negotiations.<sup>155</sup> Further, the United States continually questions the legitimacy of international climate change efforts and its continuing “insistence on operating outside the auspices of the UNFCCC and the Kyoto Protocol potentially undermines the legitimacy and efficacy of a powerful international framework for climate change.”<sup>156</sup>

In contrast to the United States, the European Union was a powerful political force behind the negotiation and implementation of the UNFCCC

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151. *Id.* at 153 (quoting Steinar Andresen, *Science and Politics in the International Management of Whales*, 13 MARINE POL’Y 99, 112 (1989)).

152. *See, e.g.*, Greenpeace, Save the Whales, at <http://www.greenpeace.org/international/campaigns/save-our-seas-2/save-the-whales> (last visited May 11, 2007).

153. For examples of the United States threatening to impose sanctions for whaling abuses, see Carlarne, *supra* note 59, at 38–39. *See also* President Clinton Directs U.S. Actions in Response to Japanese Whaling (Sept. 13, 2000), at [http://clinton4.nara.gov/textonly/WH/new/html/Wed\\_Oct\\_4\\_1\\_15616\\_2000.html](http://clinton4.nara.gov/textonly/WH/new/html/Wed_Oct_4_1_15616_2000.html); Whale & Dolphin Conservation Society, Action Alert for US Citizens (Oct. 23, 2000), at <http://www.wdcs.org/dan/publishing.nsf/allweb/A68D922FE6004C3E80256D0300519F45>.

154. *See supra* Part III.A.

155. *See, e.g.*, Parenteau, *supra* note 92, at 365–66.

156. Carlarne, *supra* note 104, at 445.

and the Kyoto Protocol.<sup>157</sup> The European Union began formulating climate change policies as early as 1991, when it developed its first community-wide strategy for limiting carbon dioxide emissions and improving energy efficiency.<sup>158</sup> Since that time, the European Union and many of its constituent states have continued to be staunch political supporters of a strong climate change regime; it has adopted an aggressive and proactive approach to meeting its Kyoto obligations, focusing on mandatory laws and regulations,<sup>159</sup> and it pushes other developed and developing countries to follow suit. For example, following the October 30, 2006, release of the *Stern Report*,<sup>160</sup> the United Kingdom—one of the member states of the European Union—is sending Stern abroad on a tour of the United States, Australia, India, and China to disseminate the findings of the report and encourage these states to sign on to an aggressive post-Kyoto climate change agreement.<sup>161</sup>

The developed countries are not alone in exerting political power to sway climate change negotiations. Developing countries, joining together in the Group of 77, collectively seek to influence international climate change politics. For example, in 2002, Marisol Black, Director for International Economic Affairs, Ministry of External Relations on behalf of the Group of 77 and China stated:

The Group of 77 and China expresses [sic] its firm opposition to the discussion of new commitments for developing countries in the COP and reiterates its call to move ahead on adaptation measures, through the increase in financial and technical assistance for developing countries, particularly vulnerable to adverse effects of climate change.<sup>162</sup>

While the Group of 77 and China frequently differ over the details of international climate change politics, they regularly use their collective political power to try and control the direction of the debate.

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157. See, e.g., CLIMATE CHANGE AND EUROPEAN LEADERSHIP: A SUSTAINABLE ROLE FOR EUROPE? xv (Joyeeta Gupta & Michael Grubb eds., 2002); Lacasta et al., *supra* note 116, at 352.

158. EUROPA, EMISSION TRADING SCHEME (2005), at <http://ec.europa.eu/environment/climat/emission.htm>.

159. See COMM'N OF THE EUROPEAN COMM., SECOND ECCP PROGRESS REPORT: CAN WE MEET OUR KYOTO TARGETS?, EXECUTIVE SUMMARY (2003), available at [http://ec.europa.eu/environment/climat/pdf/second\\_eccp\\_report\\_xsum.pdf](http://ec.europa.eu/environment/climat/pdf/second_eccp_report_xsum.pdf).

160. STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE, *supra* note 132.

161. See Greg Simmons, *Senate Panel Tallies Cost of Climate Change*, FOXNEWS.COM, Feb. 14, 2007, at <http://www.foxnews.com/story/0,2933,251825,00.html>.

162. Statement by Minister Counselor Marisol Black, Dir. for Int'l Econ. Affairs, Ministry of External Relations on Behalf of the Group of 77 and China, on Agenda Item 87c: Environment and Sustainable Development: Protection of Global Climate for Future Generations of Mankind (Nov. 14, 2002), available at <http://www.g77.org/Speeches/111402.htm>.

Regardless of the new scientific evidence that emerges, the weather-related disasters that ensue, and the suffering that may follow, power politics will continue to play a key role in determining the future of international climate change politics. In the IWC, power politics were eventually wielded to the benefit of the whale; it is less clear that power politics will be successfully wielded for the good of the planet.

#### F. BEYOND SCIENCE, ECONOMICS, AND POLITICS

Scientific uncertainty, economics, and power politics aside, both whaling and climate change politics inevitably involve philosophical deliberations.

Prior to the 1970s, efforts to curb commercial whaling focused on scientific reasoning, for example, overexploitation. Now, however, discussions of scientific uncertainty are overshadowed by arguments to continue the moratorium indefinitely based on moral and ethical grounds. These moral and ethical claims include assertions that: (1) whales possess inviolable rights, (2) they display social behavior and communication capabilities that make it immoral to hunt them, and (3) they are of immeasurable ecological significance. Science controlled the whaling debate of the mid-twentieth century.<sup>163</sup> From the later part of the twentieth century until today, however, philosophical considerations have dominated the whaling debate.<sup>164</sup> As scientists have learned more about whales' unique forms of communication and learning and their ability to mourn and suffer, and as ecological awareness and notions of stewardship spread around the world, the antiwhaling debate has shifted away from a solely scientific perspective.<sup>165</sup>

The philosophical debate around whaling now polarizes the international community. Many antiwhaling activists contend that whales have an inviolable right to life, a right that has evolved from and is protected by customary international law.<sup>166</sup> For example, some parties to the IWC, including Australia, insist that the "harpooning of [whales] is offensive to many people who regard killing these special and intelligent animals as inconsistent with the ideals of mankind, and without any valid

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163. See generally HEAZLE, *supra* note 1.

164. See, e.g., Carlarne, *supra* note 59, at 41–45.

165. For an in-depth discussion of the moral debate concerning whales, see Anthony D'Amato and Sudhir K. Chopra, *Whales: Their Emerging Right to Life*, 85 AM. J. INT'L L. 21 (1991). In addition to philosophical considerations, whales have symbolic and mythological significance to many distinct cultures.

166. See *id.* at 22; Scheiber, *supra* note 14, at 140.

economic purpose in mitigation,”<sup>167</sup> while others, such as Japan and Iceland, argue that no animals “in the ecosystem are holier than others.”<sup>168</sup>

Similarly, in the early years of the debate, climate change was regarded largely as a scientific problem. The debate focused on scientific uncertainty and proposed responses focused on technological fixes. This approach is changing; scientific and technical experts are no longer seen as the sole sources of authority.

While climate change is still approached from a largely anthropogenic perspective, the parameters of the discussion have widened. Climate change politics are now permeated with debates over intergenerational and intragenerational equity,<sup>169</sup> as discussed in Part III.D.

One of the key equity considerations in the climate change debate concerns levels of human vulnerability. The IPCC defines vulnerability as

[t]he degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.<sup>170</sup>

This definition, however, only goes part of the way to encapsulating the many ways that climate change impacts natural and human communities alike.<sup>171</sup> Recognizing this limitation, the concept of vulnerability has been expanded to account for environmental, social, economic, legal and political factors.<sup>172</sup> In the context of climate change, levels of vulnerability reveal how geography, human physical, cultural and economic infrastructure, and environmental change interact to shape how particular populations will be affected by the changing climate. Climate

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167. D’Amato & Chopra, *supra* note 165, at 22.

168. Colin Woodard, *The Great Whale Debate: The Public’s Love Affair with Keiko Belies the Global Controversy on Harvesting*, S.F. CHRON., Aug. 7, 2000, at A12.

169. See, e.g., Philippe Cullet, *Equity and Flexibility Mechanisms in the Climate Change Regime: Conceptual and Practical Issues*, 8 RECIEL 168 (1999); Gardiner, *supra* note 142, at 402.

170. IPCC, CLIMATE CHANGE 2001: IMPACTS, ADAPTATION, AND VULNERABILITY 6 (2001), available at [http://www.grida.no/climate/ipcc\\_tar/wg2/pdf/wg2TARspm.pdf](http://www.grida.no/climate/ipcc_tar/wg2/pdf/wg2TARspm.pdf) [hereinafter 2001 IPCC REPORT].

171. See Nick Brooks, *Vulnerability, Risk and Adaptation: A Conceptual Framework* (Tyndall Ctr. for Climate Change Research, Working Paper No. 38, 2003), available at [http://www.tyndall.ac.uk/publications/working\\_papers/wp38.pdf](http://www.tyndall.ac.uk/publications/working_papers/wp38.pdf).

172. See, e.g., PIERS BLAIKIE ET AL., AT RISK: NATURAL HAZARDS, PEOPLE’S VULNERABILITY, AND DISASTERS (1994); CLIMATE, CHANGE AND RISK (Thomas E. Downing et al. eds., 1999); Jesse C. Ribot, Adil Najam & Gabrielle Watson, *Climate Variation, Vulnerability and Sustainable Development in Semi-arid Regions*, in CLIMATE VARIABILITY, CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE SEMI-ARID TROPICS 13, 13–54 (Jesse C. Ribot et al. eds., 1996).

change vulnerability models attempt to determine what groups of people will be most severely affected by global climate change. While climatic variability alone does not produce vulnerability, changing climatic conditions introduce greater uncertainties and risks into areas already beset by uncertainty and risk. Inevitably, the worst affected—or the most vulnerable—are those people who already suffer from high levels of poverty and exposure and low standards of living.<sup>173</sup> Concerns over disparate levels of vulnerability are raised more and more frequently in climate change negotiations.<sup>174</sup>

Human vulnerability is not the only moral concern. International climate change agreements, for example, the UNFCCC and the Kyoto Protocol, focus primarily on the human dimensions of climate change. As in the case of whales, however, growing numbers of scientists, activists, and policymakers express concern over the impact of climate change on nonhuman species. Climate change science and politics, thus, increasingly focus on the impact of climate change on plants, animals, and the overall functioning of global ecosystems.<sup>175</sup>

In addition to growing equity and ecosystem health deliberations, climate change is increasingly becoming linked with religion and with concepts of planetary stewardship.<sup>176</sup> That is, many religious communities “share a deep conviction that global climate change presents an unprecedented threat to the integrity of life on Earth and a challenge to universal values that bind us as human beings.”<sup>177</sup> Religious groups, including Evangelical Christians, Catholics, Greek Orthodox, the Church of

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173. See CLIMATE, CHANGE AND RISK, *supra* note 172. See also 2001 IPCC REPORT, *supra* note 170, at 8; Ribot et al., *supra* note 172.

174. See, e.g., 2001 IPCC REPORT, *supra* note 170, at 8; W.N. Adger & P.M. Kelly, *Social Vulnerability to Climate Change and the Architecture of Entitlements*, 4 MITIGATION & ADAPTATION STRATEGIES FOR GLOBAL CHANGE 253 (1999); P.M. Kelly & W.N. Adger, *Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation*, 47 CLIMATIC CHANGE 325 (2000).

175. See, e.g., ENVTL. CHANGE INST., MODELLING NATURAL RESOURCE RESPONSES TO CLIMATE CHANGE (MONARCH), available at <http://www.eci.ox.ac.uk/research/biodiversity/monarch.php> (last visited May 11, 2007).

176. See, e.g., Peter G. Brown, *Toward an Economics of Stewardship: The Case of Climate*, 26 ECOLOGICAL ECON. 11 (1998).

177. NAT'L RELIGIOUS P'SHIP FOR THE ENV'T, EARTH'S CLIMATE EMBRACES US ALL: A PLEA FROM RELIGION AND SCIENCE FOR ACTION ON GLOBAL CLIMATE CHANGE (2004), at [http://www.eesi.org/briefings/2004/Energy%20&%20Climate/6.3.04%20Climate%20Stewardship/climate\\_letter.pdf](http://www.eesi.org/briefings/2004/Energy%20&%20Climate/6.3.04%20Climate%20Stewardship/climate_letter.pdf).

England,<sup>178</sup> Muslims,<sup>179</sup> Sikhs,<sup>180</sup> and Buddhists<sup>181</sup> are concerned about human impacts on the climate and, consequently, have become active participants in the international climate change debate.<sup>182</sup> For example, at the international climate change conference in Montreal in 2005, “hundreds of members of the faith community participated in climate negotiations.”<sup>183</sup> As the National Religious Partnership for the Environment summarized, “when ‘discernable human influence’ is determined to be a cause of destruction, we are dealing with moral and ethical concerns as well as scientific and policy issues.”<sup>184</sup>

While climate change cannot be divorced from the science that underpins it, like whaling politics once did, the international climate change debate increasingly focuses on moral, ethical, and religious considerations.

#### IV. CONCLUSION

##### A. THE LEARNING CURVE

By the mid-1980s, international whaling politics was almost unrecognizable from the commercial whaling debates of the first two-thirds of the twentieth century. The IWC had evolved from an institution focused on regulating economic activity to an institution focused on moderating environmental and ethical debate. Science, once a powerful tool in the hands of the whaling industry, was now a trump card wielded triumphantly by the antiwhaling front. That is, where IWC commissioners once insisted

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178. See Sally Bingham, *Kyoto Protocol Debuts; Should Religion Have a Voice?*, S.F. CHRON., Feb. 16, 2005, at B11, available at <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2005/02/16/EDGI9BBF611.DTL>.

179. See, e.g., OXFORD CTR. FOR ISLAMIC STUDIES, SYNOPSIS OF THE SEMINAR ON THE IMPACTS OF CLIMATE CHANGE ON THE ISLAMIC WORLD (2006), available at <http://www.martininstitute.ox.ac.uk/NR/rdonlyres/321A5E52-32EF-4007-AFB6-549BC2A490AA/0/IslamandClimateChange.pdf>.

180. See, e.g., ALLIANCE OF RELIGION AND CONSERVATION, SIKH GURDWARA PROJECT, at <http://www.arcworld.org/projects.asp?projectID=138> (last visited May 11, 2007).

181. See, e.g., Julia Klein, Op-Ed, *Climate Change as a Human Rights Issue for Subsistence-based Societies*, TIBET JUSTICE CENTER, Jan. 2005, at <http://www.tibetjustice.org/tringyiphony/num9.html#bn>.

182. See, e.g., EARTH MINISTRY, THE CRY OF CREATION: A CALL FOR CLIMATE JUSTICE (2003); Eli Kintisch, *Evangelicals, Scientists Reach Common Ground on Climate Change*, 311 SCI. 1082 (2006), available at <http://www.sciencemag.org/cgi/content/full/311/5764/1082a>.

183. Melissa Stults, *Religious Groups Becoming a Factor in Climate Policy Debate*, CLIMATE.ORG, Feb. 24, 2006, at <http://www.climate.org/topics/localaction/religion-climate-change.shtml>.

184. NAT'L RELIGIOUS P'SHIP FOR THE ENV'T, *supra* note 177 (quoting 2001 IPCC REPORT, *supra* note 170).

on seeing reliable evidence of stock declines before approving even small reductions in whaling quotas, by the end of the twentieth century, the majority of commissioners “demanded positive evidence that stocks were not endangered before catch limits could be set”<sup>185</sup>—a full 180-degree shift.

As the influence of science shifted hands, there was a concomitant transfer in the economic balance of power. Commercial whaling became anathema as the concept of the superwhale dominated the public imagination. This conceptual shift created new economic opportunities as an industry began to grow around whale watching. Whereas whaling for oil and blubber once yielded financial gain, now sailing for views of breaching flukes and spouts generated guilt-free profits. Whales, once exploited as a valuable economic resource are now exploited as “endangered animals,”<sup>186</sup> and as a symbol of the environmental movement.

Climate change politics do not have as long or illustrious a history as whaling. The truth of the matter, however, is that the Earth cannot afford for climate change politics to take the same circuitous path as whaling politics.<sup>187</sup> That is, the global atmosphere cannot sustain a long learning curve.<sup>188</sup> For this reason, it is essential that climate change policymakers look to the lessons offered by past international environmental law regimes, such as the IWC, in order to shorten the learning curve and create effective policies more quickly.

So far, climate change has a mixed record. Climate change politics have not yet undergone the dramatic shift witnessed in whaling politics in the 1980s. The focus of climate change policymaking is still on identifying scientific evidence that climate change is occurring and debates over the certainty of climate change are rife. International climate change politics are, thus, still far from making a similar 180-degree shift to demanding

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185. HEAZLE, *supra* note 1, at 154.

186. *Id.* at 180.

187. See generally COMM. ON ABRUPT CLIMATE CHANGE OF THE NAT'L RESEARCH COUNCIL, ABRUPT CLIMATE CHANGE: INEVITABLE SURPRISES 1–2 (2001) (discussing the potential dangers associated with climate change and the necessity of urgent action to halt and adapt to global climate change); Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369 (2006) (discussing the urgency of the problem and the importance of the United States engaging with the international community and helping structure a comprehensive regime to combat climate change); Symposium, *A New Legal Frontier in the Fight Against Global Warming*, 16 FORDHAM ENVTL. L. REV. 303, 310–11 (2005) (discussing the urgency of addressing climate change).

188. See generally IPCC, CLIMATE CHANGE 2001: SYNTHESIS REPORT (2001), available at [http://www.grida.no/climate/ipcc\\_tar/](http://www.grida.no/climate/ipcc_tar/) (providing an overview of the problems posed by global climate change to the Planet in the short and long term).

positive evidence that climate change is *not occurring* before permitting activities that might exacerbate global climate change.

The tone of the economics debate is evolving more rapidly. With whaling, alternative economic opportunities arose late in the game. This is not true in the case of climate change. Not only are policymakers emphasizing the links between climate change and economic well-being,<sup>189</sup> but also public and private parties alike are actively pursuing new economic opportunities spurred by climate change.<sup>190</sup> From new renewable energy technologies, to eco-labeling, to extensive green products and processes, climate change has opened up an entire realm of economic entrepreneurship.<sup>191</sup> In the early days of international negotiations, efforts to curb climate change were seen as threatening to current standards of living and ways of life. Increasingly, however, climate change itself—rather than efforts to halt climate change—is perceived as a threat to the long-term sustainability of standards of living and a threat to the “good life” in the future. Equally, climate change is continually opening new economic doors.

Climate change policymakers must learn quickly; they have neither the time nor the margin of risk to allow them to learn at the same pace as members of the IWC. This is why it is so essential that climate change politics learn from the lessons of the past. Thus far, climate change politics remain fundamentally mired in debates over uncertainty, costs, and equity. Gleams of hope are beginning to emerge, however, as scientific consensus intersects with economic analysis to suggest that inaction is simply too politically and financially costly.

The challenge ahead is to follow the lead of late twentieth-century whale campaigners and take the power of uncertainty away from those parties using it to delay action, and, instead, interpret uncertainty according

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189. See, e.g., STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE, *supra* note 132.

190. For a discussion of the economic implications of climate change, see J. Kevin Healy & Jeffrey M. Tapick, *Climate Change: It's Not Just a Policy Issue for Corporate Counsel—It's a Legal Problem*, 29 COLUM. J. ENVTL. L. 89 (2004).

191. See, e.g., New England Governors & Eastern Canadian Premiers, Climate Change Action Plan 2001 (Aug. 28, 2001), at <http://www.negc.org/documents/NEG-ECP%20CCAP.PDF>; World Econ. Forum, Statement of G8 Climate Change Roundtable, Convened by the World Economic Forum in Collaboration with Her Majesty's Government, U.K. (June 9, 2005), at [http://www.weforum.org/pdf/g8\\_climatechange.pdf](http://www.weforum.org/pdf/g8_climatechange.pdf); Slawomir Pasierb et al., *An Economic Analysis of Poland's Opportunities to Mitigate Climate Change: The Role of Flexibility Mechanisms* (The Polish Found. for Energy Efficiency, Working Paper No. PNNL-13552, 2001), available at <http://www.pnl.gov/aisu/pubs/PolishET.pdf>.

to the terms of the precautionary principle<sup>192</sup>—that is, to encourage progressive, scientifically, politically, and historically informed decision making.<sup>193</sup>

Science alone could not save the whales. Science alone cannot save the climate. If the global community relies solely on science to reveal discernible truths that policymakers can translate into policy, then disaster is sure to follow. Holding out for scientific certainty is a false hope and a political mechanism for justifying inaction. If, however, climate change policymakers are forced to deal with inevitable scientific uncertainties “by making political decisions that concern acceptable risk . . . , it becomes more difficult for participants to hide political and economic interests behind ostensibly scientific arguments.”<sup>194</sup> Dealing with scientific uncertainty encourages political honesty and transparency, which translates to better policies. This lesson is still being learned in the IWC; international climate change politics cannot afford to be such a slow learner.

#### B. WHALING, CLIMATE CHANGE, AND INTERNATIONAL ENVIRONMENTAL LAW

The transition the IWC has undergone—and is still undergoing—reflects broader transformations in the field of international environmental law. Reviewing the history of international whaling politics through the primary vehicle of the IWC furthers our understanding of the complexity of developing, implementing, and maintaining effective international environmental laws in an ever-changing political and natural environment, especially in the context of global climate change. The trials and tribulations of the IWC along its path to creating an effective regulatory regime reveal the monumental importance of developing a solid framework for addressing global climate change.

The esteemed international lawyer Vaughn Lowe has theorized that “activity in the field of detailed rulemaking in fields such as environmental, trade, and maritime law . . . has great practical, but little theoretical,

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192. The precautionary principle, a commonly applied principle of international environmental law, states that “[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” Conference on Environment and Development, Rio de Janeiro, Braz., June 14, 1992, *Rio Declaration on Environment and Development*, princ. 15, U.N. Doc. A/CONF.151/5/Rev.1.

193. This is not to suggest that scientific uncertainty be used as a political pawn for progressive climate change policies, but rather that it be used more transparently—that is, making it more difficult to hide political motives behind interpretations of uncertainty. It is my contention that this would result in more effective climate change policies.

194. HEAZLE, *supra* note 1, at 184.

interest” to the fundamental framework of international law.<sup>195</sup> It is his belief that international environmental law, for example, is incapable of forming primary norms that “mandate or forbid or permit certain activities.”<sup>196</sup> From this perspective, principles of international environmental law—such as the precautionary principle, sustainable development, and common, but differentiated, responsibilities—do not possess any inherent normative force.<sup>197</sup> While it might be true from a purely theoretical perspective that the fundamental principles of international law are already in place, our understanding of how the natural and social world functions is progressing rapidly. The more we learn about the impact of human activities on the natural environment and, in turn, the consequences of environmental changes for humanity, the more we realize the fundamental importance of identifying and institutionalizing human-environmental relationships in international law. Nowhere is this as important as in the context of global climate change. How international law legislates human interaction with the global atmosphere will shape normative and empirical global response. Regardless of whether international climate change policies achieve the status of primary norms of international law, they will undoubtedly have unprecedented impact on shaping human thought, action, and existence.

International environmental law is rising to the top of the international agenda. Security and economics remain the dominant concerns within international law. Gradually, however, policymakers are recognizing that climate change is an integral part of global security and economic well-being. In the past, international law has demonstrated that it can respond rapidly when the need arises.<sup>198</sup> There is need. Whether international law responds by creating new customary international law or by modifying primary norms of international law is theoretically, but not practically relevant in the short-term. The critical element is that international law in fact responds.

In the realm of whaling politics the global community almost acted too late to save one of the most mysterious and magnificent members of the global commons. With climate change, the danger is that if the

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195. Vaughan Lowe, *The Politics of Law-making: Are the Method and Character of Norm Creation Changing?*, in *THE ROLE OF LAW IN INTERNATIONAL POLITICS: ESSAYS IN INTERNATIONAL RELATIONS AND INTERNATIONAL LAW* 207, 212 (Michael Byers ed., 2000).

196. *See id.* at 212–13.

197. *Id.*

198. *See* IAN BROWNLIE, *THE RULE OF LAW IN INTERNATIONAL AFFAIRS* 20–21 (1998).

international community fails to respond in a timely manner, it risks acting too late to save the foundations of the global commons.

