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## Deceitful Tongues: Is Climate Change Denial A Crime?

William C. Tucker

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# Deceitful Tongues: Is Climate Change Denial a Crime?

William C. Tucker\*

*The consequences of global warming and associated climate changes are now apparent. No longer can there be any doubt that anthropogenic (human-caused) warming of the Earth is happening, caused mainly by greenhouse gas emissions, primarily carbon dioxide, from burning fossil fuels. Climate change poses a grave threat to humankind. The world is already experiencing the consequences of global warming: more frequent and prolonged droughts, increasingly severe and more frequent storms, rising sea levels worldwide threatening coastal and vulnerable island populations, the melting of mountain glaciers and polar ice sheets, increased intensity of tropical cyclones and hurricanes, and more frequent and widespread fires. Without immediate action to curb greenhouse gas emissions, climate change can only get worse. In the period since the issue of global warming was brought to the attention of the general public in the late 1980s, both the legislative and the executive branches of the United States government have launched a number of initiatives to assess the threat and formulate policies to address it. Nevertheless, two decades later the United States government has failed to take effective measures to address climate change domestically or to assert international leadership on achieving meaningful carbon emission reductions. It is now well-documented that a shift in public opinion and failure of political will on climate change took place at the turn of the millennium, a change which can be largely attributed to a sophisticated, nationwide public relations campaign designed to conceal the dangers of burning fossil fuels from the American public by deceiving it as to the true state of climate science. Yet this deception is arguably punishable as criminal fraud under several United States statutes: first, as defrauding the*

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*public under the generic mail/wire fraud statute; and second, as defrauding the United States government under the “conspiracy to defraud the United States” statute. This Article examines whether it can be regarded as a crime based not just upon the unethical motives of its perpetrators, but on its effects: the catastrophic, global devastation which is the likely outcome of its success.*

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## INTRODUCTION

*Global warming could be one of humankind’s longest lasting legacies. The climatic impacts of releasing fossil fuel CO<sub>2</sub> to the atmosphere will last longer than Stonehenge. Longer than time capsules, longer than nuclear waste, far longer than the age of human civilization so far. Each ton of coal that we burn leaves CO<sub>2</sub> gas in the atmosphere. The CO<sub>2</sub> coming from a quarter of that ton will still be affecting the climate one thousand years from now, at the start of the next millennium.*

—David Archer<sup>1</sup>

Global warming and climate change are undeniable. There has been little doubt among the majority of climate scientists for at least two decades that anthropogenic (human-caused) warming of the Earth is happening, and the main cause is greenhouse gas (GHG) emissions, primarily carbon dioxide (CO<sub>2</sub>), from burning fossil fuels.<sup>2</sup> The impacts of climate change on humanity,

1. DAVID ARCHER, *THE LONG THAW: HOW HUMANS ARE CHANGING THE NEXT 100,000 YEARS OF EARTH’S CLIMATE* 1 (2009).

2. See JAMES HOGGAN & RICHARD LITTLEMORE, *CLIMATE COVER-UP: THE CRUSADE TO DENY GLOBAL WARMING* 20 (2009); Naomi Oreskes, *The Scientific Consensus on Climate Change*, 306 *SCIENCE* 1686 (2004) (noting that consensus existed as early as 1993); Reuven S. Avi-Yonah & David M. Uhlmann, *Combating Global Climate Change: Why a Carbon Tax is a Better Response to Global Warming Than Cap and Trade*, 28 *STAN. ENVTL. L.J.* 3, 15 n.47 (2009) (citing CLIVE L. SPASH, *GREENHOUSE ECONOMICS* 12, 13 (2002) (noting that a “scientific consensus” had developed in 1985)); UNION OF CONCERNED SCIENTISTS, *SMOKE, MIRRORS & HOT AIR*, 29–30 (2007) available at <http://>

which are already being experienced, are severe, including more frequent and prolonged droughts, increasingly violent and more frequent storms, more frequent and widespread fires, increased intensity of tropical cyclones and hurricanes, and rising sea levels worldwide threatening coastal and vulnerable island populations.<sup>3</sup> Yet meaningful governmental action to address this crisis has been wanting.

In June 1988, during a severe heat wave, Dr. James Hansen, currently a Columbia University Professor and Director of the National Aeronautics and Space Administration (NASA) Goddard Institute for Space Studies, announced to a Senate committee that: “It’s time to stop waffling . . . and say that the greenhouse effect is here and is affecting our climate now.”<sup>4</sup> As a result of press coverage of the committee’s proceedings, the climate change issue seemed to move “from science to the policy realm almost overnight,”<sup>5</sup> and by the end of 1988, thirty-two climate-related bills had been introduced in Congress.<sup>6</sup> Yet none of them became law, and more than two decades later the United States has still failed to take meaningful steps to address climate change at home or to provide international leadership on the issue.

What brought about this change in public opinion and loss of political consensus at the turn of the millennium? It is now well-documented that, since the early 1990s, there has been a sustained and coordinated public relations effort by certain energy companies and related industries, modeled on prior deceptive practices of the tobacco industry (“Big Tobacco”), to deceive the public about the true state of climate science in order to allow energy companies to continue to profit from CO<sub>2</sub> emissions without governmental regulation. In two books, *The Heat is On* and *Boiling Point*, the American journalist Ross Gelbspan first exposed an organized effort, largely funded by the coal and oil industries, to fool the public into believing that climate science was in a state of controversy, when in fact—as those behind the effort knew quite well, or certainly should have—no such controversy existed.<sup>7</sup> Other

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[www.ucsusa.org/assets/documents/global\\_warming/exxon\\_report.pdf](http://www.ucsusa.org/assets/documents/global_warming/exxon_report.pdf) [hereinafter *Smoke, Mirrors*] (noting in Appendix A, *The Scientific Consensus on Global Warming*, that scientific consensus exists that recent global warming is due to human activity, as found by the Intergovernmental Panel on Climate Change (IPCC) in 2001).

3. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE WORKING GROUP I, FOURTH ASSESSMENT REPORT, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, SUMMARY FOR POLICYMAKERS 5–9 (S. Solomon et al. eds., 2007), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf> (last visited July 25, 2011).

4. MARK BOWEN, CENSORING SCIENCE: INSIDE THE POLITICAL ATTACK ON DR. JAMES HANSEN AND THE TRUTH OF GLOBAL WARMING 1 (2008).

5. *Id.*

6. *Id.*

7. HOGGAN & LITTLEMORE, *supra* note 2, at 2–3; ROSS GELBSPAN, BOILING POINT: HOW POLITICIANS, BIG OIL AND COAL, JOURNALISTS, AND ACTIVISTS HAVE FUELED THE CLIMATE CRISIS—AND WHAT WE CAN DO TO AVERT DISASTER 39–40 (paperback ed. 2005) [hereinafter GELBSPAN, BOILING POINT]; ROSS GELBSPAN, THE HEAT IS ON (rev. ed. 1998) [hereinafter GELBSPAN, HEAT].

writers have followed in Gelbspan's footsteps.<sup>8</sup> The goal, as revealed in a 1998 industry memorandum, is to so confuse the media, the public, and government officials as to the findings of climate science that the majority of Americans come to think that climate science is so "awash in uncertainty" that governmental action to mitigate carbon emissions would be premature or unwise.<sup>9</sup>

This campaign to confuse the public regarding climate change has been highly successful, as affirmed by recent polling results. A national survey of 2001 adults conducted in 2011 by the Pew Research Center for the People & the Press found a deep divide in the public's understanding of climate change. The survey reported that:

63% say there is solid evidence that the earth's average temperature has been getting warmer over the past few decades . . . [but] nearly four-in-ten (38%) say that global warming is occurring mostly because of human activity, such as the burning of fossil fuels. . . . The survey finds a continuing partisan divide in opinions about global warming: 77% of Democrats and 63% of independents say there is solid evidence that the average temperature on earth has been getting warmer over the past few decades. Just 43% of Republicans agree. There also is a large partisan gap in views about the causes of global warming: 51% of Democrats and 40% of independents say the earth is getting warmer mostly because of human activity. Just 19% of Republicans say rising temperatures are mostly attributable to human activity.<sup>10</sup>

Thus, we currently find ourselves without the political will to effect meaningful reductions in GHG emissions at a time when the urgency of the crisis grows upon us daily, when we cannot afford to, as James Hansen put it as early as 1988, "waffle" any more *without endangering the future of humanity*.<sup>11</sup>

Yet attempting to curb corporate political speech or expression of "opinion" through legal action under United States law is fraught with constitutional peril. Here, both individuals and corporations enjoy substantial

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8. See, e.g., ERIC POOLEY, *THE CLIMATE WAR: TRUE BELIEVERS, POWER BROKERS, AND THE FIGHT TO SAVE THE EARTH* (2010); NAOMI ORESKES & ERIK M. CONWAY, *MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING* (2010); CLIVE HAMILTON, *REQUIEM FOR A SPECIES: WHY WE RESIST THE TRUTH ABOUT CLIMATE CHANGE* (2010); HOGGAN & LITTLEMORE, *supra* note 2; DAVID MICHAELS, *DOUBT IS THEIR PRODUCT: HOW INDUSTRY'S ASSAULT ON SCIENCE THREATENS YOUR HEALTH* (2008); CHRIS MOONEY, *THE REPUBLICAN WAR ON SCIENCE* (2005); STEPHEN H. SCHNEIDER, *SCIENCE AS A CONTACT SPORT* (2009); THOMAS O. MCGARITY & WENDY E. WAGNER, *BENDING SCIENCE: HOW SPECIAL INTERESTS CORRUPT PUBLIC HEALTH RESEARCH* (2010); BOWEN, *supra* note 4; Peter J. Jacques, et al., *The Organisation of Denial: Conservative Think Tanks and Environmental Skepticism*, 17 ENVTL. POL. 349–85 (2008).

9. HOGGAN & LITTLEMORE, *supra* note 2, at 42.

10. The Pew Research Center for the People & the Press, *More Moderate Republicans See Evidence of Warming: Modest Rise in Number Saying There Is "Solid Evidence" of Global Warming*, PEW RESEARCH CTR. (Dec. 1, 2011), <http://www.people-press.org/files/legacy-pdf/12-1-11%20Global%20warming%20release.pdf>. The survey was conducted during the period Nov. 9–14, 2011. *Id.*

11. BOWEN, *supra* note 4, at 1.

First Amendment protection.<sup>12</sup> In a 2009 article, Professors Moellenberg and DeJulius present a strong defense of the free-speech and association rights of corporations in the face of an accusation sounding in fraud by a preeminent climatologist, Dr. James Hansen.<sup>13</sup> Citing Dr. Hansen's remarks before Congress in 2008, they assert that his suggestion that Chief Executive Officers (CEOs) of large oil companies should be placed on trial for "crimes against nature and humanity" for their deceptive practices is "political theatre and not legal scholarship."<sup>14</sup> The "crime" which Hansen alleges, state the authors, is merely "the promotion of a minority, *although honest*, view in an unsettled debate."<sup>15</sup> This, of course, is the heart of the matter: as robust as the First Amendment is under our legal system, the Constitution does not protect *dishonest* or fraudulent speech, and without honesty there can be no meaningful public "debate." Put another way, every debate is "unsettled" which is based on lies.

Our legal system depends upon the ubiquitous injunction to speak truth.<sup>16</sup> This imperative is at least as old as the Magna Carta, which provides that all its liberties and rights "in their fulness and entirety" shall be observed forever "in good faith and without deceit."<sup>17</sup> Furthermore, truth is the common standard which undergirds all our private, commercial and public dealings. All our financial transactions require it: where truth is wanting, massive financial institutions fall like houses of cards; great businesses fail which cannot meet their pledged obligations. Truth is an imperative in the cloistered pursuit of science: indeed, it is the very definition of science—there is no science without it. Scholarship and education decay to propaganda and indoctrination starved of it. The institution of marriage and even the bonds of friendship depend on it. Nor can democracy, which depends for its survival upon the open and free exchange of ideas, long survive when those ideas are calculated to deceive. We simply cannot govern ourselves as a nation or community of nations if the public debate on our future as a society is poisoned by deceit.

The human race now faces a climate crisis of staggering proportions, largely as a result of our failure to take effective steps to address it in time, a failure which may be attributed in substantial part to the deceptive public relations plan described *infra*. Is it possible that our system of laws is impotent in the face of immoral behavior as potentially devastating to humanity as this?

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12. See *e.g.*, *Citizens United v. FEC*, 130 S. Ct. 876, 883 (2010).

13. Charles H. Moellenberg, Jr. & Leon F. DeJulius, Jr., *Second Class Speakers: A Proposal to Free Protected Corporate Speech from Tort Liability*, 70 U. PITT. L. REV. 555 (2009).

14. *Id.* at 555.

15. *Id.* at 556 (emphasis added).

16. See, *e.g.*, FED. R. CIV. P. 11(b), 26(g), 44(a); FED. R. EVID. 603, 901.

17. *The Text of Magna Carta*, FORDHAM UNIVERSITY, <http://www.fordham.edu/halsall/source/magnacarta.html> (last visited Mar. 4, 2011) ("IT IS ACCORDINGLY OUR WISH AND COMMAND that the English Church shall be free, and that men in our kingdom shall have and keep all these liberties, rights, and concessions, well and peaceably in their fulness and entirety for them and their heirs, of us and our heirs, in all things and all places for ever. Both we and the barons have sworn that all this shall be observed in good faith and without deceit.")

It may not be. In 2009, the District of Columbia Circuit affirmed District Court Judge Kessler's holding in a groundbreaking civil suit against the tobacco industry brought by the U.S. Department of Justice and a number of state attorneys general.<sup>18</sup> In that case, the district court held that for nearly half a century Big Tobacco defrauded the general public by misrepresenting the health effects of smoking through the very public relations and advertising practices upon which the deceptive climate change "denial" campaign is modeled.<sup>19</sup> Similarly, the deception practiced upon the public by some within the fossil fuel industry and its allies and dependents is arguably fraudulent under a number of federal statutes, in particular, those prohibiting mail/wire fraud and conspiracies to defraud the U.S. government. This Article will examine whether it can be regarded as such a crime based not just upon the selfish motives of its perpetrators, but on its *consequences*: the catastrophic and global devastation which is the highly likely fruit of its success.

### I. THE CLIMATE CHANGE CRISIS

*Though nothing can be immortal which mortals make, yet if men had the use of reason they pretend to, their commonwealths might be secured, at least from perishing by internal diseases. . . . For men, as they become at last weary of irregular jostling, and hewing one another, and desire with all their hearts, to conform themselves into one firm and lasting edifice . . . cannot without the help of a very able architect, be compiled into any other than a crazy building, such as hardly lasting out their own time, must assuredly fall upon the heads of their posterity.*

—Thomas Hobbes, *Leviathan*<sup>20</sup>

There is no question that the Earth is warming, and that the principal cause is post-industrial GHG emissions, mostly CO<sub>2</sub>, from the burning of fossil fuels.<sup>21</sup> In the late 1980s, it appeared that the American public was beginning

18. *United States v. Philip Morris USA, Inc.*, 449 F. Supp. 2d 1 (D.D.C. 2006); *aff'd in part and vacated in part*, 566 F.3d 1095 (D.C. Cir. 2009).

19. *Id.* at 28 (“[This case] is about an industry, and in particular these [tobacco company] Defendants, that survives, and profits, from selling a highly addictive product which causes diseases that lead to a staggering number of deaths per year, an immeasurable amount of human suffering and economic loss, and a profound burden on our national health care system. Defendants have known many of these facts for at least 50 years or more. Despite that knowledge, they have consistently, repeatedly, and with enormous skill and sophistication, denied these facts to the public, to the Government, and to the public health community.”).

20. THOMAS HOBBS, *LEVIATHAN* 147 (2d ed. George Routledge & Sons 1886) (1651) (discussing the role of reason in politics).

21. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE WORKING GROUP I, *supra* note 3, at 3 (noting that IPCC Working Group I states with “very high confidence [90 percent or more] that the global average net effect of human activities since 1750 has been one of warming”). In addition, “[m]ost of the observed increase in global average temperatures since the mid-twentieth century is very likely [90 percent or more] due to the observed increase in anthropogenic greenhouse gas concentrations.” *Id.* at 10; “The primary source of the increased atmospheric concentration of carbon dioxide since the pre-

to grasp the magnitude of the crisis we face, yet by the turn of the century a change in both public awareness and governmental policy concerning climate change took place. It is no coincidence that, at about the same time, a sustained and sophisticated public relations campaign was undertaken by the fossil fuel industry to deceive the public about climate science. Its purpose was to avoid governmental regulation of carbon emissions by concealing the environmental harm they cause from the public and governmental decision-makers. It has, regrettably, succeeded, as is apparent both in widespread public confusion regarding climate change and in U.S. governmental paralysis in addressing the problem.

#### A. *Climate Change and Its Effects*

GHGs are gases that tend to trap solar energy, heating the Earth. They include, in order of importance for climate change, CO<sub>2</sub>, methane (CH<sub>4</sub>), halocarbons (including chlorofluorocarbons or Freons), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>).<sup>22</sup> “Black carbon” aerosols (soot) from a variety of human sources, although not nearly as long-lasting in the atmosphere as CO<sub>2</sub> and other greenhouse gases, also contribute to warming.<sup>23</sup> Deforestation also plays a significant warming role, since it depletes the carbon “sink” available to reabsorb CO<sub>2</sub>.<sup>24</sup> Natural (that is, non-human caused) climate “forcings”<sup>25</sup> include volcanic eruptions (producing sulfur dioxide aerosols which have a cooling effect), other naturally-occurring reflective aerosols (including clouds) which reflect solar radiation back into space, and variations in solar intensity (orbital “wobbles,” changes in distance of the Earth to the sun, and sunspot activity).<sup>26</sup> Although climate change deniers have grossly exaggerated the

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industrial period results from fossil fuel use, with land-use change providing another significant but smaller contribution.” *Id.* at 2; “Discernible human influences now extend to other aspects of climate, including ocean warming, continental-average temperatures, temperature extremes and wind patterns.” *Id.* at 10.

22. DAVID ARCHER & STEFAN RAHMSTORF, *THE CLIMATE CRISIS: AN INTRODUCTORY GUIDE TO CLIMATE CHANGE* 19, 21–32 (2010).

23. Note that *all* human-caused aerosols, which include black carbon, have a net *cooling* effect. However, reductions in particulate air pollution due to health concerns will decrease that effect over time, and aerosols (including black carbon) only last days in the atmosphere, requiring continual replenishment to maintain any cooling effect. CO<sub>2</sub>, in contrast, lasts *centuries*. James Hansen et al., *Earth’s Energy Imbalance*, U.S. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA), GODDARD INSTITUTE FOR SPACE STUDIES, [http://www.giss.nasa.gov/research/briefs/hansen\\_16/](http://www.giss.nasa.gov/research/briefs/hansen_16/) (last visited Feb. 1, 2012).

24. See Avi-Yonah & Uhlmann, *supra* note 2, at 11.

25. Factors that affect or disturb the energy balance of the earth, including those which—like greenhouse gases—tend to heat the Earth as well as those that cool it, are referred to as “forcings” by climate scientists, and are measured in watts per meter. JAMES HANSEN, *STORMS OF MY GRANDCHILDREN: THE TRUTH ABOUT THE COMING CLIMATE CATASTROPHE AND OUR LAST CHANCE TO SAVE HUMANITY* 4–6 (2009).

26. *Id.* at 6. Naturally-occurring water vapor is also a greenhouse gas, although it is difficult to characterize it as entirely “natural,” since as the Earth’s atmosphere warms it absorbs more water vapor—a “positive” (or warming) feedback further contributing to global warming. See *infra* note 48 and accompanying text.

significance of these natural influences to further their agenda, climate scientists worldwide agree that it is GHG emissions, primarily CO<sub>2</sub>, and not natural forcings that have contributed to the marked warming of the past few decades.<sup>27</sup>

Scientists have known about the GHG phenomenon for almost two centuries.<sup>28</sup> In an essay presented to the *Académie Royale des Sciences* in Paris in 1824, the mathematician Joseph Fourier demonstrated that atmospheric gases are more opaque to outgoing terrestrial energy than they are to incoming solar energy, creating a heat-trapping effect later termed the “greenhouse” effect.<sup>29</sup> In the late nineteenth century, the Swedish chemist Svante Arrhenius established the preeminence of CO<sub>2</sub> as a “greenhouse” gas by showing mathematically that halving or doubling the concentration of CO<sub>2</sub> in the atmosphere would result in changes to the average global surface air temperature of between four and five degrees Celsius (C°).<sup>30</sup> In 1938, a British military engineer and amateur meteorologist, Guy Callander, asserted in a lecture before the Royal Meteorological Society that carbon dioxide levels had risen 6 percent since 1900 due to fossil fuel burning, indicating that warming was “actually occurring at the present time.”<sup>31</sup>

In the 1950s, a student at the Scripps Institution of Oceanography, Charles Keeling, began monitoring carbon dioxide levels in the atmosphere, measurements which still continue to be made today.<sup>32</sup> The “Keeling” data show that the concentrations of CO<sub>2</sub> in the global atmosphere have risen steadily—and at an increasing rate—since 1958, by around two parts per million (ppm) per year.<sup>33</sup> Since the 1950s, extensive scientific research through the use of climate “proxies” on paleoclimate fluctuations in global temperature and atmospheric CO<sub>2</sub> concentrations has been conducted. Based on ice cores from the oldest sheets in Antarctica and Greenland, we now have a fairly complete picture of CO<sub>2</sub> atmospheric concentrations, global temperatures, and sea levels extending back far beyond recorded human history and even the emergence of *homo sapiens* some 200 millennia ago.<sup>34</sup> Over some 425 millennia, scientists have learned that global atmospheric temperatures rose and fell in tandem with atmospheric CO<sub>2</sub> concentrations, which remained within a fairly narrow range of about 200 ppm and 300 ppm during that entire period.

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27. See *supra* note 21, at accompanying text.

28. ARCHER & RAHMSTORF, *supra* note 22, at 1.

29. MIKE HULME, WHY WE DISAGREE ABOUT CLIMATE CHANGE 42–43 (2009). Fourier’s theory was later experimentally proved by an Irish physicist named John Tyndall. *Id.* at 43–45.

30. *Id.* at 46–48; ELIZABETH KOLBERT, FIELD NOTES FROM A CATASTROPHE: MAN, NATURE, AND CLIMATE CHANGE 39–42 (2006); see also ARCHER, *supra* note 1, at 20; Avi-Yonah & Uhlmann, *supra* note 2, at 14 n.40; FRED PEARCE, WITH SPEED AND VIOLENCE: WHY SCIENTISTS FEAR TIPPING POINTS IN CLIMATE CHANGE 4 (2007).

31. PEARCE, *supra* note 30, at 7.

32. HANSEN, *supra* note 25, at 115–17.

33. *Id.* at 116 fig. 14; PEARCE, *supra* note 30, at 8.

34. See ANDREW DESSLER & EDWARD A. PARSON, THE SCIENCE AND POLITICS OF GLOBAL CLIMATE CHANGE: A GUIDE TO THE DEBATE 75 (2d ed. 2010).

The coldest periods or ice ages, when New York's Manhattan was buried under an ice sheet over a mile thick, occurred when CO<sub>2</sub> levels were at a minimum of around 200 ppm. The highest CO<sub>2</sub> concentrations of around 300 ppm occurred during the most extreme periods of warmth, such as the Eemian some 100 to 150 millennia ago, when global temperatures were similar to the *pre-industrial* temperatures of our own time.<sup>35</sup> Today, by contrast, the Keeling measurements show that atmospheric CO<sub>2</sub> concentrations of 315 ppm initially found in 1958 have risen to over 392 ppm, an increase nearly equal to the entire range of CO<sub>2</sub> concentrations going back 425,000 years.<sup>36</sup>

And, as might be expected, despite the thermal inertia of the oceans<sup>37</sup> the Earth is rapidly warming as a result. The surface thermometer record, which only goes back to the mid-nineteenth century, reveals that global surface air temperatures rose by about 0.7 degrees C° over the twentieth century, with warming during the last half of the century nearly double that of the first half.<sup>38</sup> Satellite temperature measurements of the lower troposphere also show a warming trend globally: between 1979 and 2004, global average temperatures warmed between 0.12 and 0.19 degrees C° per decade.<sup>39</sup> Balloon data show a similar trend: between 1958 and 2004, a warming of 0.16 degrees C° per decade occurred.<sup>40</sup> The top layer of the world's oceans is also warming.<sup>41</sup> The Intergovernmental Panel on Climate Change (IPCC) concluded in its 2007 Report that "eleven of the last twelve years (1995-2006) rank among the twelve warmest years in the instrumental record of global surface temperatures (since 1850)."<sup>42</sup>

Besides the temperature record, many other observed phenomena confirm the existence of a pronounced warming trend. Glaciers are retreating around the world, with global warming cited as the obvious cause.<sup>43</sup> Sea levels have risen on average fifteen centimeters over the twentieth century due to thermal expansion and melting sea ice, and the rate of that increase has been accelerating in recent decades.<sup>44</sup> Arctic sea ice area has decreased by 2.7

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35. HANSEN, *supra* note 25, at 37 fig. 3.

36. See National Aeronautics and Space Administration (NASA), Goddard Institute for Space Studies, *Earth's Energy Budget Remained Out of Balance Despite Unusually Low Solar Activity*, NASA (Jan. 30, 2012), <http://www.giss.nasa.gov/research/news/20120130b/>.

37. HANSEN, *supra* note 25, at 72-73. Ocean thermal inertia results from the vast size of the world's oceans. Since the ocean is, on average, about two and one-half miles deep, it takes centuries to fully warm up in response to human-caused GHG forcings. *Id.* at 72.

38. DESSLER & PARSON, *supra* note 34, at 62-65, 82.

39. *Id.* at 71.

40. *Id.* at 71-72.

41. *Id.* at 70.

42. Avi-Yonah & Uhlmann, *supra* note 2, at 9 n.9; IPCC, CLIMATE CHANGE 2007: SYNTHESIS REPORT. CONTRIBUTION OF WORKING GROUPS I, II AND III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 30 (Pachauri, R.K & Reisinger, A., eds., 2007) [hereinafter IPCC 2007 SUMMARY FOR POLICYMAKERS]; see also National Aeronautics and Space Administration (NASA), Goddard Institute for Space Studies, *Global Temperature Trends: 2007 Summation*, NASA, <http://data.giss.nasa.gov/gistemp/2007/> (last visited Mar. 10, 2008).

43. DESSLER & PARSON, *supra* note 34, at 66.

44. *Id.* at 68, 82.

percent per decade over the past three decades, with declines in the summer minimum, when ice cover is at its least extent, of 7.4 percent per decade.<sup>45</sup>

Other observations of global warming include:

decreased Northern Hemisphere snow cover, thawing of Arctic permafrost, strengthening of mid-latitude westerly winds, fewer extreme cold events and more extreme hot events, increased precipitation events, shorter winter ice season on lakes, and thousands of observed biological and ecological changes consistent with warming (e.g., poleward expansion of species ranges, earlier spring flowering and insect emergence, etc.).<sup>46</sup>

There are three reasons why anyone in possession of this information should be concerned. The first is that global CO<sub>2</sub> atmospheric concentrations are increasing at an *accelerating* rate due to an increase in fossil fuel use by a growing population.<sup>47</sup> The second reason is that during the past decade or so a number of unexpected events indicate that “feedback” mechanisms could accelerate the warming process beyond the possibility of human intervention (called the “runaway greenhouse”) once certain “tipping points” are passed, if fossil fuel use continues to grow indefinitely (a scenario described as “business as usual” by climate scientists).<sup>48</sup> The third reason is that *we are running out of time*: there is an urgency to this problem which grows daily because mitigation of GHG emissions must be accomplished over the next two decades sufficient to limit global warming to 2 degrees C° to avoid catastrophic effects.<sup>49</sup> And let’s be clear what climate scientists mean by “catastrophic”: “[I]f we burn all reserves of oil, gas, and coal, there is a substantial chance we will initiate the runaway greenhouse,” says Dr. James Hansen, and if “we also burn the tar sands and tar shale, the Venus syndrome is a dead certainty.”<sup>50</sup> In other words, in addition to the harm done already, and no matter what other mitigation or adaptation measures we take, if we continue to burn all our recoverable reserves of fossil fuels indefinitely into the future under a “business as usual”

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45. *Id.* at 82. Ice cover waxes and wanes in areal extent with the seasons. *See id.* at 68.

46. *Id.* at 81.

47. HANSEN, *supra* note 25, at 119.

48. *Id.* at 142–44. The two main feedbacks accelerating the warming process are (1) the ice albedo effect, loss of reflectivity as sea ice melts leaving open water to absorb nearly all solar radiation falling upon it, which accelerates melting, and (2) the increase of water vapor in the atmosphere from warmer oceans: water vapor acts as a greenhouse gas, further accelerating the warming process. *See Positive Feedback*, REALCLIMATE.ORG, <http://www.realclimate.org/index.php/archives/2006/07/runaway-tipping-points-of-no-return/> (last visited Aug. 8, 2011). Other feedbacks include the thawing of permafrost, releasing methane, a greenhouse gas; the reduced ability of warmer oceans to act as a carbon “sink,” absorbing and sequestering CO<sub>2</sub>; and the “northern amplification effect,” faster heating of the large land surface of the Northern Hemisphere which in turn accelerates warming. *See* Laurie Williams & Allan Zabel, *Urgent Plea for Enactment of Carbon Fees and Ban on New Coal-Fired Power Plants Without Carbon Sequestration*, YUBANET.COM (May 6, 2008), <http://yubanet.com/opinions/Laurie-Williams-and-Allan-Zabel-Urgent-Plea-for-Enactment-of-Carbon-Fees-and-Ban-on-New-Coal-Fired-Power-Plants-without-Carbon-Sequestration.php>.

49. Avi-Yonah & Uhlmann, *supra* note 2, at 12–13 n.32 (citing Rachel Warren, *Impacts of Global Climate Change at Different Annual Mean Global Temperature Increases*, in AVOIDING DANGEROUS CLIMATE CHANGE 93–100 (Hans Joachim Schellnhuber et al. eds., 2006)).

50. HANSEN, *supra* note 25, at 236.

scenario, Hansen predicts the result will be initiation of a “runaway greenhouse effect” which could turn the Earth into a hot, dead, dry planet like Venus, resulting in the extinction of most life on Earth, including the human race.<sup>51</sup> How soon might this happen? “[M]ost of the climate response to fossil fuel emissions will occur *within centuries*,” says Hansen, “much of it within the lifetimes of our children and grandchildren.”<sup>52</sup>

Even without such apocalyptic consequences, the impacts of climate change on humanity are predicted to be severe. They include increasingly violent and more frequent storms resulting in widespread flooding and wind damage; more frequent and prolonged droughts devastating agriculture and livestock; more frequent and larger fires threatening crops, timber, homes, and population centers; the melting of mountain glaciers leading to dry rivers in the late summer and fall depriving billions of people of fresh water for drinking and agriculture; melting polar ice sheets contributing to already rising sea levels threatening coastal and vulnerable island populations; and increased intensity of tropical cyclones and hurricanes that place large, coastal cities at grave risk.<sup>53</sup> Adding to the crisis we face is that CO<sub>2</sub> concentrations in the atmosphere are long-lived: they remain there for centuries or even millennia.<sup>54</sup> Of the CO<sub>2</sub> emitted today, 25 percent will still remain in the atmosphere a thousand years from now.<sup>55</sup> In addition, there is currently a substantial global “energy imbalance”: by 2005, each square meter of Earth’s land and ocean surface was absorbing about one watt more radiant energy than it was re-emitting as thermal energy, leaving 0.6 degree C° of additional warming “in the pipeline,” that is, unavoidable no matter what mitigation measures we adopt.<sup>56</sup> Under “business as usual” (i.e., unabated CO<sub>2</sub> emissions), due to the persistence of CO<sub>2</sub> in the atmosphere over centuries, both CO<sub>2</sub> concentrations and temperatures will continue to rise “well beyond 2100,” with associated climate changes becoming increasingly severe.<sup>57</sup>

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51. *Id.*; see also JAMES HANSEN ET AL., SCIENTIFIC CASE FOR AVOIDING DANGEROUS CLIMATE CHANGE TO PROTECT YOUNG PEOPLE AND NATURE 2 (2012), available at <http://arxiv.org/ftp/arxiv/papers/1110/1110.1365.pdf>.

52. HANSEN, *supra* note 25, at 236 (emphasis added).

53. See *supra* note 3 and accompanying text.

54. Avi-Yonah & Uhlmann, *supra* note 2, at 13–14 n.37 (citing NAT’L ACAD. OF SCI. ET AL., UNDERSTANDING AND RESPONDING TO CLIMATE CHANGE 18, fig. 12 (2005)).

55. ARCHER, *supra* note 1, at 1.

56. BOWEN, *supra* note 4, at 261. This percentage was based on a 2005 study, James Hansen et al., *Earth’s Energy Imbalance: Confirmation and Implications*, 308 SCIENCE 1431–35 (2005). Recent data from 3400 “Argo” floats, instruments that directly monitor the temperature, pressure, and salinity of the upper ocean to a depth of 2000 meters, confirm that Earth’s “energy imbalance” is currently 0.58 watts per square meter. See National Aeronautics and Space Administration, *supra* note 36 and accompanying text.

57. See DESSLER & PARSON, *supra* note 34, at 101.

### B. U.S. Governmental Efforts to Address the Problem

The threat we face from global warming has been magnified by our failure, at the national level, to assess the full impact of the problem, disseminate that information to the public, formulate national strategies to address it, and cooperate with the world community in finding international solutions. There has been no lack of scientific and public attention paid to global warming in recent years,<sup>58</sup> but meaningful action to address it still eludes us, despite a number of national governmental attempts over the past several decades to assess the state of the climate. As early as 1979, the National Academy of Sciences issued a report, authored by Jules Charney, which warned of significant climate changes if CO<sub>2</sub> emissions continued to increase.<sup>59</sup> The 1979 “Charney Report” found that:

[f]or more than a century, we have been aware that changes in the composition of the atmosphere could affect its ability to trap the sun’s energy for our benefit. We now have incontrovertible evidence that the atmosphere is indeed changing and that we ourselves contribute to that change. Atmospheric concentrations of carbon dioxide are steadily increasing, and these changes are linked with man’s use of fossil fuels and exploitation of the land. Since carbon dioxide plays a significant role in the heat budget of the atmosphere, it is reasonable to suppose that continued increases would affect climate.<sup>60</sup>

The Report concluded that “if carbon dioxide continues to increase, the study group finds no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible.”<sup>61</sup> By the early 1980s, concerned climate scientists were attempting to persuade public officials that continued GHG emissions had the potential to dangerously warm the Earth.<sup>62</sup> A 1981 survey found that over one-third of Americans knew of “the greenhouse effect,” and nearly two-thirds thought “increased CO<sub>2</sub> in the atmosphere leading to changes in weather patterns” was “somewhat” or “very serious.”<sup>63</sup>

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58. See, e.g., Complaint at 38 ¶ 160, *Native Village of Kivalina v. ExxonMobil Corp.*, (No. CV-08-1138-SBA), 2008 U.S. Dist. Ct. Pleadings LEXIS 16355 at \*71 (N.D. Cal. Feb. 26, 2008), [hereinafter *Kivalina Complaint*] (“[W]e understand the mechanisms of CO<sub>2</sub> and climate better than we do of what causes lung cancer. . . . In fact, it is fair to say that global warming may be the most carefully and fully studied scientific topic in human history.” (quoting *Questions Surrounding the “Hockey Stick” Temperature Studies—Implications for Climate Change Assessments: Hearing Before the H. Comm. on Energy and Commerce*, 109th Cong. (2006) (statement of Ralph Cicerone, Pres., Nat’l Academy of Sciences))).

59. NATIONAL ACADEMY OF SCIENCES, *CARBON DIOXIDE AND CLIMATE: A SCIENTIFIC ASSESSMENT*, VIII (1979), available at <http://www.nap.edu/catalog/12181.html> (prepared by the Ad Hoc Study Group on Carbon Dioxide and Climate of the National Academy of Sciences, Jules G. Charney, Chairman, pursuant to the National Climate Program Act of 1978, Pub. L. No. 95-367, 92 Stat. 601 (codified as amended at 15 U.S.C. §§ 2901–08) (Westlaw 2008)) [hereinafter *Charney Report*].

60. *Id.* at vii.

61. *Id.* at viii.

62. See, e.g., SCHNEIDER, *supra* note 8, at 84–95 (discussing Gore hearings and political context).

63. SPENCER R. WEART, *THE DISCOVERY OF GLOBAL WARMING* 112–13 (rev. ed. 2008).

By the mid-1980s, the issue had attracted congressional attention,<sup>64</sup> and in 1987, Congress enacted the Global Climate Protection Act, which expanded the National Climate Program Act of 1978 by requiring the U.S. Environmental Protection Agency (EPA) to propose a coordinated national policy on global climate change.<sup>65</sup>

In the summer of 1988, a U.S. heat wave brought to public attention the urgency of the climate change issue.<sup>66</sup> Due to the heat and subsequent drought, the United States lost more than \$40 billion in crops and related industries that summer.<sup>67</sup> An estimated 5,000 to 10,000 people died of causes related to heat stress.<sup>68</sup> That year, the Senate Committee on Energy and Natural Resources held hearings on climate change and the greenhouse effect.<sup>69</sup> The chief witness was Dr. James Hansen, who stated that “[t]he Earth is warmer in 1988 than at any time in the history of instrumental measurements . . . global warming now is large enough that we can ascribe with a high degree of confidence a cause-and-effect relationship to the greenhouse effect . . . [which] is already large enough to begin to affect the probability of extreme events such as summer heat waves . . . and it is changing our climate now.”<sup>70</sup> Hansen famously added in comments to journalists that: “It’s time to stop waffling so much. It’s time to say the earth is getting warmer.”<sup>71</sup> As one writer puts it: “no one seemed to be confused about climate change in 1988.”<sup>72</sup> David Suzuki, Professor Emeritus in genetics at the University of British Columbia, founder of the David Suzuki Foundation and long-time climate activist, sums up the state of public awareness of climate change in 1988 this way:

In 1988, the environment was the number one concern of people around the world. That year, Prime Minister Margaret Thatcher of the United Kingdom declared, “I’m a greenie,” and George H.W. Bush promised, if elected, to be “an environmental president.” In 1988, Brian Mulroney was reelected prime minister in Canada and, to show he cared about the environment, he appointed his brightest star, Lucien Bouchard, as minister of the environment. I interviewed Bouchard three months later and asked what he felt was the most urgent environmental issue for Canadians. His instant response was, “Global warming.” When I asked how serious it was, he replied, “It threatens the survival of our species. We have to act now.”<sup>73</sup>

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64. SPASH, *supra* note 2, at 12.

65. Act of Sep. 19, 1978, Publ. L. No. 95-367, 92 Stat. 601 (codified at 15 U.S.C. §§ 2901–08).

66. See SCHNEIDER, *supra* note 8, at 118–119. Note that some climate scientists were quick to point out that the Earth had only warmed about half a degree Celsius over pre-industrial levels by then, leaving 90 percent of the high temperature anomaly over that summer due to year-to-year “natural” fluctuations in the weather. See *id.*

67. *Id.* at 113–14.

68. *Id.* at 114.

69. BILL MCKIBBEN, *THE END OF NATURE* 23 (1989).

70. SCHNEIDER, *supra* note 8, at 114.

71. MCKIBBEN, *supra* note 69, at 26.

72. HOGGAN & LITTLEMORE, *supra* note 2, at 20.

73. David Suzuki, *Foreword* to TIM FLANNERY, *NOW OR NEVER: WHY WE MUST ACT NOW TO END CLIMATE CHANGE AND CREATE A SUSTAINABLE FUTURE* ix–x (2009).

Yet by the early 1990s, public concern about climate change began to wane. As David Suzuki continues, in 1988 “[s]cientists had spoken, the public was concerned, and politicians had gotten the message,” but not only did we not take on the challenge, corporations “began to spend millions” on a public relations campaign to confuse the public and spread disinformation. And, he concludes, “it worked.”<sup>74</sup>

Despite growing public apathy, by the early 1990s a clear consensus was emerging among climate scientists that human-caused global warming was underway and posed a threat to humankind. Naomi Oreskes, a professor of history and science studies at the University of California, San Diego, published a paper in the journal *Science* in 2005, in which she found that, of 928 refereed scientific journal articles concerning global climate change published between 1993 and 2003 selected at random, *not a single one* opposed that consensus opinion.<sup>75</sup> However, during the 1990s, the United States began to move away from meaningful action to address climate change, at the very time the scientific community was forming itself into the solid consensus found in Professor Oreskes’s study.<sup>76</sup>

Although George W. Bush ran in 2000 on a pro-environmental platform, recommending designating CO<sub>2</sub> as a “pollutant” under the Clean Air Act to enable EPA regulation and favoring “cap-and-trade” legislation for GHG emissions, shortly after taking office he abruptly reneged on both pledges, renouncing the Kyoto Protocol in the process.<sup>77</sup> While significant steps to control GHG emissions were taken by the European Union during the Bush years, including agreement among member nations on a cap-and-trade system to meet the Kyoto reductions, the United States continued to adhere to the position that developing nations must commit to mandatory GHG reductions before the United States would agree to them, accompanied by the belief that economic growth would “provide the resources for investment in clean technologies.”<sup>78</sup>

### C. *The Denial Machine*

What is the explanation for this abrupt change in governmental policy and public awareness at the turn of the century? It is by now well-documented that over the past several decades there has been a sustained and well-funded public relations effort by certain energy interests to deceive the public about the true state of climate science. The goal is to so confuse the media, the public and government officials that a majority of Americans come to believe that climate

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74. *Id.* at x–xi (emphasis added).

75. Oreskes, *supra* note 2 and accompanying text; HOGGAN & LITTLEMORE, *supra* note 2, at 20; *Smoke, Mirrors*, *supra* note 2, at 30.

76. Note that a “scientific consensus” had developed as early as 1985. See Avi-Yonah & Uhlmann, *supra* note 2, at 15 n.47 (citing SPASH, *supra* note 2, at 12).

77. BOWEN, *supra* note 4, at 8–9; GELBSPAN, BOILING POINT, *supra* note 7, at 45.

78. Avi-Yonah & Uhlmann, *supra* note 2, at 19 n.71.

science is so “uncertain” that governmental action to curb GHG emissions would be premature or harmful to the economy.<sup>79</sup> From the beginning, the campaign employed all the well-honed tools of public relations developed earlier by Big Tobacco:<sup>80</sup> the use of “front groups” funded by the fossil fuel industry, including biased “think tanks”; fake “Astroturf” grass-roots organizations and established trade associations willing to assist in the effort;<sup>81</sup> the recruitment and funding of scientists (of any discipline) skilled at public relations and willing to oppose the “conventional” viewpoint on climate change;<sup>82</sup> the use of a media “echo chamber” to repeat and amplify their message;<sup>83</sup> the use of dubious “petitions” to create the false impression of disputes among climate scientists;<sup>84</sup> *ad hominem* attacks, including “SLAPP” suits, against legitimate climate scientists to intimidate them and discredit their research;<sup>85</sup> the use of established public relations methods such as focus-group testing, polling, advertising, mass mailings, “educational” materials distributed to schools, and biased internet sites, to spread their doctrine and gauge progress toward the “goal” of perpetual public doubt;<sup>86</sup> and finally, an unrelenting attack *on science itself*, a tactic developed earlier by Big Tobacco to discredit research showing the harmful effects of smoking.<sup>87</sup> The media’s perceived obligation to provide “balanced” coverage has been exploited to create the impression of a scientific “controversy” requiring reporters to give equal coverage to both the “mainstream” (“conventional” or “consensus”) view and the minority “contrarian” one, no matter how scientifically marginal.<sup>88</sup> This charade is meant to leave the public with the perception that climate scientists are hopelessly split on the question of anthropogenic global warming.

One of the earliest of the campaign’s “front groups” was The Advancement of Sound Science Coalition (“TASSC”), formed initially in 1993 by Big Tobacco “with the goal of discrediting the mainstream science establishing the health hazards of second-hand tobacco smoke.”<sup>89</sup> As may be

79. HOGGAN & LITTLEMORE, *supra* note 2, at 42.

80. *See, e.g.*, United States v. Philip Morris USA, Inc., 449 F. Supp. 2d 1, 856 (D.D.C. 2006) (“Using the sophisticated and well-organized machinery created to serve their agenda, Defendants [tobacco companies] fraudulently denied the adverse health effects of smoking for at least [forty] years in order to sustain the appearance of an open controversy about the link between smoking and disease, and thereby maintain and enhance the cigarette market and their collective revenues.”).

81. *See* HOGGAN & LITTLEMORE, *supra* note 2, ch.7, at 73–87 (“Think Tank Tactics”); Kivalina Complaint, *supra* note 58, ¶ 190.

82. *See* Kivalina Complaint, *supra* note 58, ¶ 191.

83. HOGGAN & LITTLEMORE, *supra* note 2, ch. 12, at 151–67 (“Manipulated Media”).

84. *See* Riley E. Dunlap & Aaron M. McRight, *Climate Change Denial: Sources, Actors, and Strategies*, in ROUTLEDGE HANDBOOK OF CLIMATE CHANGE AND SOCIETY 254–55 (Constance Lever-Tracy ed., 2011); POOLEY, *supra* note 7, at 41–42; HOGGAN & LITTLEMORE, *supra* note 1, ch. 8, at 88–98 (“Denial by the Pound”).

85. HOGGAN & LITTLEMORE, *supra* note 2, ch. 11, at 134–50 (“SLAPP Science”).

86. *Id.* at 40, 44–45, 70–71; *Smoke, Mirrors*, *supra* note 2, at App. C.

87. *See* HOGGAN & LITTLEMORE, *supra* note 2, at 67, ch.9, at 99–117 (“Junk Scientists”).

88. *Id.* ch. 12, at 151–67 (“Manipulated Media”).

89. Kivalina Complaint, *supra* note 58, ¶ 192. Although its primary support came from big tobacco, in a 1994 memorandum TASSC outlined a broader strategy designed both to expand its

apparent from its name, TASSC originally coined the deceptive terms “junk science” (to refer to legitimate mainstream, peer-reviewed science) and “sound science” (to mean industry-funded pseudo-science).<sup>90</sup> The use of the Orwellian terms “junk science” and “sound science” to mean their opposites has since been widely adopted by climate change deniers to confuse and mislead the public.

Another early denialist group, originally created for the purpose of defeating the Kyoto Protocol, was the Global Climate Coalition (GCC). The GCC, a coalition of oil companies, electric utilities, automobile manufacturers and others, was founded in 1989,<sup>91</sup> when it began a “multimillion dollar advertising campaign” to ensure the U.S. would not agree to binding emissions cuts under Kyoto without “meaningful participation of key developing countries” such as China and India.<sup>92</sup> It appears to have disbanded by 2002.<sup>93</sup>

In 1991, certain coal and electric utility interests<sup>94</sup> founded the Information Council on the Environment, with the convenient acronym “ICE.”<sup>95</sup> ICE’s goal was “to reposition global warming as a theory (not fact)” and “supply alternative facts to support the suggestion that global warming will be good.”<sup>96</sup> ICE denigrated global warming “theory” through radio advertising and mass mailings, using “cherry-picked” data to draw deceptive conclusions. As an example, ICE used anomalous temperature trends from limited geographic areas, differing from global trends, to call global warming into question.<sup>97</sup> ICE specifically targeted the gullible and uneducated, focusing on “older, less educated males from larger households who are not typically active information-seekers” and “younger, lower-income women.”<sup>98</sup> At about the same time, these coal and electric utility interests also engaged in “greenwashing,” creating an “educational” entity misleadingly called the Greening Earth Society which, among other things, produced a video distributed nationally to public and university libraries called *The Greening of Planet Earth*.<sup>99</sup> The video’s argument was that, since plants need CO<sub>2</sub>, an increase in atmospheric CO<sub>2</sub> will contribute to a

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operations into Europe and enlarge the range of scientific issues affecting business that it could take on. A short list of such issues suggested “by our European colleagues” in a 1994 memo was headed by “Global warming.” HOGGAN & LITTLEMORE, *supra* note 1, at 38.

90. See Kivalina Complaint, *supra* note 58, ¶ 192.

91. WILLIAM ANTHOLIS & STROBE TALBOTT, FAST FORWARD: ETHICS AND POLITICS IN THE AGE OF GLOBAL WARMING 36 (2010); POOLEY, *supra* note 8, at 40.

92. See ANTHOLIS & TALBOTT, *supra* note 91, at 36–37; POOLEY, *supra* note 8, at 40 (citing the Byrd-Hagel resolution).

93. HOGGAN & LITTLEMORE, *supra* note 2, at 12.

94. *Id.* at 31–34.

95. *Id.* at 32.

96. *Id.*; GELBSPAN, HEAT, *supra* note 7, at 34.

97. GELBSPAN, HEAT, *supra* note 7, at 34.

98. *Id.*; POOLEY, *supra* note 8, at 41.

99. HOGGAN & LITTLEMORE, *supra* note 2, at 33; GELBSPAN, HEAT, *supra* note 7, at 36–38.

more fertile world, with the implication that climate change, if it exists, will be entirely benign.<sup>100</sup>

In 1998 a task force of energy industry representatives including several prominent members of the GCC, calling themselves the “Global Climate Science Communications Team” (GCSCT), drafted a public relations strategy document called the “Global Climate Science Communication Action Plan” (“Action Plan” or “Plan”), which later was obtained by Greenpeace and posted on its website.<sup>101</sup> The Action Plan outlined a multimillion-dollar public relations strategy to foment “uncertainty” on the issue of global warming, modeled on Big Tobacco’s “sound science” disinformation campaign. Despite growing scientific consensus that the climate was increasingly endangered by fossil fuel use, the Plan’s “Project Goal” was to sow doubt about that consensus to manipulate public opinion: “A majority of the American public, including industry leadership, recognizes that significant *uncertainties* exist in climate science, and therefore raises questions among those (e.g. Congress) who chart the future U.S. course on global climate change.”<sup>102</sup> “Victory,” in the words of the Plan, will be achieved when:

—Average Citizens “understand” (recognize) *uncertainties* in climate science; recognition of *uncertainties* becomes part of the “conventional wisdom”

—Media “understands” (recognizes) *uncertainties* in climate science

—Media coverage reflects *balance* on climate science and recognition of the validity of viewpoints *that challenge the current “conventional wisdom”*

—Industry senior leadership understands *uncertainties* in climate science, making them stronger ambassadors to those who shape climate policy

—Those promoting the Kyoto treaty on the basis of *extant* science appear to be out of touch with reality.<sup>103</sup>

The immediate goal was to defeat Kyoto, yet the Plan emphasizes that pursuing the overarching objective—public doubt—was to continue indefinitely: the public relations strategy outlined in the Plan is to be executed until there are “no further initiatives” to address *the threat to humanity* posed by climate change, and climate change becomes a “non-issue.”<sup>104</sup>

“Strategies and tactics” detailed in the Plan are: (1) to develop a “National Media Relations Program . . . to inform the media *about*

100. HOGGAN & LITTLEMORE, *supra* note 2, at 33.

101. *Id.* at 42; GREENPEACE INTERNATIONAL, DENIAL AND DECEPTION App., available at <http://www.greenpeace.org/usa/Global/usa/binaries/2007/5/leaked-api-comms-plan-1998.pdf>; *Smoke, Mirrors*, *supra* note 2, at Appendix C [hereinafter Action Plan].

102. *Smoke, Mirrors*, *supra* note 2, at 40 (Action Plan, at 3) (emphasis added).

103. *Id.* (emphasis added); HOGGAN & LITTLEMORE, *supra* note 2, at 43.

104. *Smoke, Mirrors*, *supra* note 2, at 40 (Action Plan, at 3).

*uncertainties* in climate science”<sup>105</sup> (budget: \$600,000 “plus paid advertising”); (2) to establish a Global Climate Science Data Center as a non-profit educational foundation to provide “constructive criticism of *the opposition’s* position on the science” (budget: \$5 million “spread over two years minimum”); (3) to develop and implement a “National Direct Outreach and Education” program “to inform and educate members of Congress, state officials, industry leadership, and school teachers/students *about uncertainties* in climate science” (budget: \$300,000); and (4) to develop and implement a “Funding/Fund Allocation” strategy to obtain (and distribute) funding.<sup>106</sup> “Potential funding sources” include a number of fossil fuel industry trade organizations and their members; “Potential fund allocators,” a curious term which could be interpreted as meaning “potential fund *launderers*,” include industry front groups and conservative think tanks.<sup>107</sup>

Progress (toward the “Project Goal,” *supra*) is to be measured by tallying how many citizens and public officials have succumbed to doubt, in the following ways: by conducting opinion surveys “on the percentage of Americans and public officials who recognize significant *uncertainties* in climate science”; by tracking “the percent of media articles *that raise questions about* climate science”; and by monitoring such indicators as radio talk show appearances “by scientists *questioning the ‘prevailing wisdom’* on climate science,” the number of school teachers/students “reached *with our information*,” the number of science writers briefed “and *who report upon climate science uncertainties*,” the total audience exposure to media coverage “*of science uncertainties*,” and the effect of the program on members of Congress.<sup>108</sup>

GCSCT members cannot claim they did not know anthropogenic climate change posed a serious threat to humanity when they drafted the Plan, since a report prepared by the Science and Technology Advisory Committee of the GCC and circulated to its members in draft four years

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105. *Id.* at 40–41 (emphasis added). Tactics to be undertaken by the “National Media Relations Program” include the following: *recruit and train* “five independent scientists to participate in media outreach” consisting of “new faces who will add their voices to those recognized scientists who already are vocal”; develop a “global climate science information kit for media including peer-reviewed papers *that undercut the ‘conventional wisdom’ on climate science*” and “simple fact sheets *that present scientific uncertainties* in language that the media and public can understand”; conduct briefings “by *media-trained* scientists” who can “brief reporters” and “appear on radio talk shows across the country”; produce and distribute “a steady stream of climate science information . . . to science writers around the country”; produce and distribute “a steady stream of op-ed columns and letters to the editor authored by scientists”; organize and promote “through grassroots organizations” a series of “workshops/debates” on climate science “in 10 most important states”; and consider “*advertising the scientific uncertainties* in select markets.” *Id.* (emphasis added).

106. *Id.* at 40–43 (emphasis added). Note that total funds required to implement the program *through November, 1998* were estimated at \$2 million. This was written in *April 1998*, implying that some \$3 to \$4 million per year would have to be raised for the indefinite future. *See id.*

107. *Id.* at 43.

108. *Id.* (emphasis added).

earlier, entitled “Predicting Future Climate Change,” stated that “[t]he scientific basis for the Greenhouse Effect and the potential impact of human emissions of greenhouse gases such as CO<sub>2</sub> on climate *is well established and cannot be denied.*”<sup>109</sup> Furthermore, an electric utility trade association made a presentation on the science of global warming at a GCC meeting in February 1996 which predicted a doubling of CO<sub>2</sub> levels over pre-industrial concentrations by 2050, creating “an average rate of warming [that] would probably be greater than any seen in the past 10,000 years.”<sup>110</sup> The presentation further warned, ominously, that some impacts would be “potentially irreversible” and include “significant loss of life.”<sup>111</sup>

Despite its science “advisers” having admitted in 1995 that the “contrarian” theories “do not offer convincing arguments against the conventional model of [GHG] emission-induced climate change,” and “substantially higher atmospheric concentrations of greenhouse gases” constituted a “potential threat,”<sup>112</sup> the GCC and its associates continued to implement the Plan to spread doubt that carbon emissions were contributing to dangerous global warming. This campaign has been extensively documented by the Union of Concerned Scientists, which reports that, in the years that followed, the denial network created by the Plan “masqueraded as a credible scientific alternative, but . . . publicized discredited studies and cherry-picked information to present misleading conclusions.”<sup>113</sup>

## II. IS CLIMATE CHANGE DENIAL A CRIME?

*Then I thought . . . I would call it the Emerald City, and to make the name fit better I put green spectacles on all the people, so that everything they saw was green. . . . [M]y people have worn green glasses on their eyes so long that most of them think it really is an Emerald City.*

—The Wizard of Oz<sup>114</sup>

While consensus among legitimate climate scientists grew during the 1990s, certain corporations whose profits were seen to be jeopardized by limitations on CO<sub>2</sub> emissions embarked on a massive, well-funded and highly successful public relations campaign to obscure the findings of the vast

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109. Memorandum to “Members of GCC-STAC” (Dec. 21, 1995), *available at* <http://graphics8.nytimes.com/packages/images/nytint/docs/global-climate-coalition-aiam-climate-change-primer/original.pdf> [hereinafter GCC Approval Draft]; *see also* HOGGAN & LITTLEMORE, *supra* note 2, at 12 (emphasis added) (citing Andrew Revkin, *Industry Ignored Its Scientists on Climate*, N.Y. TIMES (Apr. 23, 2009), <http://www.nytimes.com/2009/04/24/science/earth/24deny.html?pagewanted=all> (reporting on the now-defunct GCC)). Revkin reported that this statement was later stricken from the publicly-released document. Revkin, *supra*.

110. Kivalina Complaint, *supra* note 58, ¶ 207.

111. *Id.*

112. *See* GCC Approval Draft, *supra* note 109, at 16–17 (emphasis added).

113. *Smoke, Mirrors*, *supra* note 2, at 10.

114. L. FRANK BAUM, *THE WIZARD OF OZ* 130 (Collector’s Library, 2010) (1900).

majority of climate scientists and confuse the general public about the causes of climate change. Like the campaign by Big Tobacco to conceal the dangers of smoking from the public, the purpose is to indefinitely forestall governmental response to a crisis. That this plan of deception would be at the expense of the environment should have been apparent to those involved in the deceit, including officers of large energy companies whose fiscal duty is to understand and anticipate the environmental impacts of their corporate actions.<sup>115</sup> Yet the environmental consequences of their actions seem to have been given little or no consideration.

It will be immediately clear to many that the public relations effort to confuse the public about climate change described above is unethical; however, that alone doesn't make it criminal. To determine if such behavior rises to the level of crime, it first may be useful to examine the question from a philosophical perspective. Historically, there are two rationales under which deception has been condemned by philosophers: the first maintains that the act of lying is morally wrong in and of itself, whereas the second looks to the *effects* of the lie and the harm it may potentially cause to determine if the lie is severe enough to warrant legal prohibition.<sup>116</sup> The first view is generally called the deontological theory, traced to St. Augustine and St. Thomas Aquinas, whose premise was that lying is intrinsically wrong as a sin contrary to the laws of nature.<sup>117</sup> And yet to criminalize lying for its own sake, or based solely on the motives of the liar, would be to completely ignore the real reason such behavior has been deemed criminal down through the ages: its potentially harmful *effects*. Focusing on the effects of a deception, in contrast to the deontological theory, is termed the "consequentialist" or harm-oriented view—the germ of which can be found in the utilitarian writings of John Stuart Mill. In this view, the criminality of an act of deception can be found not so much in the intrinsic immorality of the act itself as in the degree of harm it has the potential to produce, that is, in its *consequences*.

What, then, are the consequences of the program of deceit outlined above? Certainly, the deception itself must be morally condemned. But more than that, the perpetrators of this deception must have been aware that its foreseeable impacts could be devastating for both the human race and the Earth itself. It is not enough to say that the motives of deniers are less than vile; that they are simply guilty of a moral lapse in their zeal to protect the interests of their clients or shareholders. To say that implies that guarding the profits of fossil

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115. See, e.g., Perry E. Wallace, *Climate Change, Corporate Strategy, and Corporate Law Duties*, 44 WAKE FOREST L. REV. 757 (2009); Mark Latham, *Environmental Liabilities and the Federal Securities Laws: A Proposal for Improved Disclosure of Climate Change-Related Risks*, 39 ENVTL. L. 647 (2009).

116. See Bryan J. Druzin & Jessica Li, *The Criminalization of Lying: Under What Circumstances, If Any, Should Lies Be Made Criminal?*, 101 J. CRIM. L. & CRIMINOLOGY 529, 533 (2010) (citing Arnold Isenberg, *Deontology and the Ethics of Lying*, 24 PHIL. & PHENOMENOLOGICAL RES. 463, 466 (1964)).

117. *Id.* at 534.

fuel companies, a purpose in and of itself without moral stigma, wholly absolves the denier of fraud in the service of that motive and all responsibility for the foreseeable consequences of the fraud to humankind. Although the *actus reus* is different, the same might be said of Jack the Ripper, whose underlying motives were never ascertained and will in all likelihood remain forever a mystery.<sup>118</sup> In both instances, it is primarily the *effects*, not the motive, that steep a morally reprehensible act in criminality.

The behavior of deniers is fundamentally and thoroughly deceptive: it sounds in fraud, not just based on the motives of its perpetrators, but because the foreseeable consequences of their acts are so grave. In a worst-case scenario, continued “business as usual” could cause the climate to pass “tipping points” leading to runaway warming that could spell the extermination of the human race and even the end of the Earth as a planet capable of sustaining life.<sup>119</sup> Even without such an unthinkable outcome, the effects on humanity and its institutions will likely be devastating, long-lasting and lethal.

Misrepresentation, deceit or fraud is actionable in tort in a variety of contexts. Such actions may be based on the statutory and common law offenses of false pretenses (false representation of fact designed to deprive the victim of property or other pecuniary loss), defamation, and misrepresentation in contract.<sup>120</sup> However, from ancient times, fraud, though usually proscribed in the tort context, was “regarded as eminently criminal in character.”<sup>121</sup> Misrepresentations punishable as crimes in the United States include perjury and false declarations, making false statements to a federal official “designed to pervert or undermine functions of governmental departments or agencies,” false impersonation, conspiracy to defraud the government, and generic mail/wire fraud.<sup>122</sup> In early common law, criminal fraud was limited to “cases that involved the defrauding of the public,” while fraudulent conduct between private parties was addressed only in civil proceedings.<sup>123</sup> *Black’s* definition of fraud, which essentially amounts to “I know it when I see it,” is:

[a]ll multifarious means which human ingenuity can devise, and which are resorted to by one individual to get an advantage over another by false

118. See, e.g., PHILIP SUGDEN, *THE COMPLETE HISTORY OF JACK THE RIPPER* 371, 467–71 (paperback ed. 1995) (there is some evidence that the Ripper’s purpose was to obtain organ specimens for medical research).

119. HANSEN, *supra* note 25, at 236, 274–76. Hansen refers to this as the “runaway greenhouse effect” or “Venus syndrome.” *Id.* at 223–36.

120. Druzin & Li, *supra* note 116, at 539.

121. Ellen S. Podgor, *Criminal Fraud*, 48 AM. U. L. REV. 729, 736 (1999). Jewish law has prohibited fraud since the Middle Ages. Maimonides would prohibit deceit by concealing a defect or merely “creating a false impression.” He writes: “It is forbidden to deceive people in buying and selling or to deceive them by creating a false impression. . . . If one knows that an article he is selling has a defect, he must inform the buyer about it.” MISHNEH TORAH, LAWS OF SALE 18:1, cited by Nahum Rakover, *Misrepresentation and Fraud in Jewish Law*, MYJEWISHLEARNING.COM, [http://www.myjewishlearning.com/practices/Ethics/Business\\_Ethics/In\\_Practice/Business\\_Ethics\\_and\\_Jewish\\_Law/Fraud\\_and\\_Misrepresentation.shtml](http://www.myjewishlearning.com/practices/Ethics/Business_Ethics/In_Practice/Business_Ethics_and_Jewish_Law/Fraud_and_Misrepresentation.shtml) (last visited on July 21, 2012).

122. Druzin & Li, *supra* note 116, at 545–51.

123. *Id.* at 548.

suggestions or suppression of truth, and includes all surprise, trick, cunning, dissembling, and any unfair way by which another is cheated. . . . [It] includes anything calculated to deceive, whether it be a single act or combination of circumstances, whether the suppression of truth or the suggestion of what is false, whether it be by direct falsehood or by innuendo, by speech or by silence, by word of mouth, or by look or gesture.<sup>124</sup>

This shows that fraud is not a defined crime with prescribed elements.<sup>125</sup> Judge Holmes of the Fifth Circuit put it this way: “[T]he law does not define fraud; it needs no definition; it is as old as falsehood and as versable as human ingenuity.”<sup>126</sup>

Because criminal fraud takes a variety of forms, the precise definition of fraudulent conduct varies according to the statute under which it is criminalized.<sup>127</sup> In English law, acts of criminal fraud were originally punished as “deception offences” under the Theft Acts, which were replaced by the Fraud Act in 2006.<sup>128</sup> Criminal fraud under English law is generally defined as “deceit” or “secrecy,” and is often used interchangeably in the United States with the term “deceit.”<sup>129</sup> In the United States, fraud is punishable under a variety of state and federal laws, but is more a “concept” at the core of those criminal statutes than a crime in itself.<sup>130</sup> Under federal law, statutes prohibiting so-called “mail fraud”<sup>131</sup> and “conspiracy to defraud”<sup>132</sup> have been applied to encompass an increasingly broad range of deceitful conduct.<sup>133</sup>

While some have criticized these “generic” fraud statutes as ambiguous and promoting “prosecutorial indiscretions,”<sup>134</sup> the statutes have nevertheless proved highly effective in the hands of federal prosecutors.<sup>135</sup> For example, the government’s civil suit against Big Tobacco, *United States v. Philip Morris*,

124. BLACK’S LAW DICTIONARY 594 (5th ed. 1979).

125. Druzin & Li, *supra* note 116, at 548–49; Podgor, *supra* note 121, at 730.

126. Podgor, *supra* note 121, at 739 (citing *Weiss v. United States*, 122 F.2d 675, 681 (5th Cir. 1941)).

127. This Article does not address “false advertising” as policed by the Federal Trade Commission (FTC) under section 5(a) of the Federal Trade Commission Act (FTCA), 15 U.S.C. § 45(a) (2006). Nor does it discuss private false advertising suits brought under Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a)(1) (2006). However it is worth noting that a representation may be considered false under the Lanham Act if it is “untrue as a result of the failure to disclose a material fact,” including both misstatements and only partially correct statements, or if it is based on “*flawed and insignificant research*,” defined as “representations found to be *unsupported by accepted authority or research or which are contradicted by prevailing authority or research*.” West’s Encyclopedia of American Law, *False Advertising*, ANSWERS.COM, <http://www.answers.com/topic/false-advertising> (last visited June 15, 2011) (emphasis added).

128. Druzin & Li, *supra* note 116, at 549.

129. Podgor, *supra* note 121, at 737.

130. *Id.* at 730.

131. 18 U.S.C. § 1341 (2006).

132. 18 U.S.C. § 371.

133. Podgor, *supra* note 121, at 730–31.

134. *Id.* at 735.

135. See Christopher G. Green & Christopher P. Hammon, *Mail and Wire Fraud*, 35 AM. CRIM. L. REV. 943, 943–44 (1998).

discussed *supra*, was brought under the Racketeer Influenced and Corrupt Organizations Act (RICO). RICO requires the plaintiffs to establish “a pattern of racketeering activity” or conspiracy to engage in racketeering under 18 U.S.C. § 1962(c) and (d), as well as the elements of the underlying conduct constituting the racketeering acts, in that case numerous instances of mail and wire fraud under 18 U.S.C. §§ 1341 and 1343.<sup>136</sup> Thus, the “generic” or common law offense of mail/wire fraud as embodied in federal law may form the basis for both civil and criminal actions for fraudulent or deceptive conduct under *other* federal statutes.<sup>137</sup>

This Article does not further address fraud in the civil context, nor does it examine state criminal statutes, but is instead limited to inquiring whether climate change denial constitutes criminal fraud under two of the most frequently used federal fraud statutes. This entails two lines of inquiry: first, does the deceptive behavior defraud individual citizens or the public generally under the “generic” federal mail and wire fraud statutes, 18 U.S.C. §§ 1341, 1343; and second, does the behavior defraud the government under the “conspiracy to defraud the United States” statute, 18 U.S.C. § 371?<sup>138</sup>

#### A. *Mail/Wire Fraud*

The federal mail and wire fraud statutes are generic criminal fraud statutes. The elements of mail fraud under 18 U.S.C. § 1341 are fairly

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136. *United States v. Philip Morris USA, Inc.*, 449 F. Supp. 2d 1, 851, 867 (D.D.C. 2006). The RICO statute, 18 U.S.C. §§ 1961–1968, requires “a pattern of racketeering activity” on the part of each defendant. 18 U.S.C. § 1962(c) (2006). “[A]t least two acts of racketeering activity” are necessary to form a pattern. *H.J., Inc. v. Nw. Bell Tel. Co.*, 492 U.S. 229, 237 (1989) (quoting 18 U.S.C. § 1961(5) (2006)). The district court found the requisite pattern committed by each defendant. *Philip Morris*, 449 F. Supp. 2d at 889.

137. Note that under RICO broad injunctive relief may be sought to address future deceptive conduct, although in ruling on an interlocutory appeal from the District Court’s denial of summary judgment on the government’s claim for a “disgorgement” remedy in the *Philip Morris* case, the D.C. Circuit held that disgorgement, as a remedial or restitution remedy, is not available in civil RICO cases, thus precluding the recovery of \$280 billion sought in that case. *United States v. Philip Morris USA, Inc.* (“Disgorgement Opinion”), 396 F.3d 1190, 1199 (D.C. Cir. 2005). *But see* *United States v. Carson*, 52 F.3d 1173, 1181 (2d Cir. 1995) (holding that disgorgement is an available remedy to prevent and restrain future acts, indicating split among the Circuits). Nevertheless, “divestiture,” “dissolution or reorganization,” injunctive relief “to prevent and restrain” future violations, and recovery of treble damages and attorney’s fees by *private* litigants under 18 U.S.C. § 1964(c) are not precluded under the *Philip Morris* Disgorgement Opinion. The RICO statute reads in part:

The district courts of the United States shall have jurisdiction to prevent and restrain violations of section 1962 of this chapter by issuing appropriate orders, including, but not limited to: ordering any person to divest himself of any interest, direct or indirect, in any enterprise; imposing reasonable restrictions on the future activities or investments of any person, including, but not limited to, prohibiting any person from engaging in the same type of endeavor as the enterprise engaged in, the activities of which affect interstate or foreign commerce; or ordering dissolution or reorganization of any enterprise, making due provision for the rights of innocent persons.

18 U.S.C. § 1964(a) (2006).

138. Related but not discussed here is the crime of making false statements to a federal official under 18 U.S.C. § 1001(a) (2006).

straightforward in that the government must prove: (1) a scheme to defraud, and (2) the use of the mails for the purpose of executing that scheme.<sup>139</sup> The statute of limitations for mail or wire fraud is five years under § 3282, except that it becomes ten years “if the offense affects a financial institution” under § 3293(2). Prosecution is timely as long as the execution of the scheme through use of the mails comes within the limitations period, even though the scheme itself may have been in existence prior to the statutory period.<sup>140</sup> Maximum penalties for mail fraud are \$1 million in fines and thirty years imprisonment.<sup>141</sup> The elements of wire fraud under § 1343 are identical to those of mail fraud, except that they require interstate telephonic or other electronic communications in carrying out the scheme.<sup>142</sup> Thus, the same

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139. See generally U.S. DEP'T OF JUSTICE, UNITED STATES ATTORNEYS' MANUAL, §§ 9.43939–975, available at [http://www.justice.gov/usao/eousa/foia\\_reading\\_room/usam/title9/43mcrim.htm](http://www.justice.gov/usao/eousa/foia_reading_room/usam/title9/43mcrim.htm) (last visited Mar. 28, 2011); Laura A. Eilers & Harvey B. Silikovitz, *Mail and Wire Fraud*, 31 AM. CRIM. L. REV. 703, 704 (1994); Schmuck v. United States, 489 U.S. 705, 721 (1989) (“There are two elements in mail fraud: (1) having devised or intending to devise a scheme to defraud (or to perform specified fraudulent acts), and (2) use of the mail for the purpose of executing, or attempting to execute, the scheme (or specified fraudulent acts).”); see also *Pereira v. United States*, 347 U.S. 1, 8 (1954).

140. See O. OBERMAIER AND R. MORVILLO, WHITE COLLAR CRIME: BUSINESS AND REGULATORY OFFENSES, §9.04[5] (Rel. 2, 1991); see also *United States v. Garfinkel*, 29 F.3d 1253, 1259 (8th Cir. 1994) (“In the case of continuing offenses . . . the Ex Post Facto clause is not violated by application of a statute to an enterprise that began prior to, but continued after, the effective date of [the statute].”); *United States v. Reetz*, 18 F.3d 595, 598 (8th Cir. 1994) (noting that application of the version of the Sentencing Guidelines enacted during a continuing offense does not violate the Ex Post Facto clause); *United States v. Hammen*, 977 F.2d 379, 385 (7th Cir. 1992) (holding that application of § 1346 to a mail fraud scheme that spanned the effective date of the statute is permissible because the scheme was still “alive”); *United States v. Alkins*, 925 F.2d 541, 549 (2d Cir. 1991) (holding that focus should be on the defendant’s conduct subsequent to the effective date of § 1346).

141. 18 U.S.C. § 1341 (2006). The statute reads as follows:

Whoever, having devised or intending to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises, or to sell, dispose of, loan, exchange, alter, give away, distribute, supply, or furnish or procure for unlawful use any counterfeit or spurious coin, obligation, security, or other article, or anything represented to be or intimated or held out to be such counterfeit or spurious article, for the purpose of executing such scheme or artifice or attempting so to do, places in any post office or authorized depository for mail matter, any matter or thing whatever to be sent or delivered by the Postal Service, or deposits or causes to be deposited any matter or thing whatever to be sent or delivered by any private or commercial interstate carrier, or takes or receives therefrom, any such matter or thing, or knowingly causes to be delivered by mail or such carrier according to the direction thereon, or at the place at which it is directed to be delivered by the person to whom it is addressed, any such matter or thing, shall be fined under this title or imprisoned not more than 20 years, or both. If the violation occurs in relation to, or involving any benefit authorized, transported, transmitted, transferred, disbursed, or paid in connection with, a presidentially declared major disaster or emergency (as those terms are defined in section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, or affects a financial institution, such person shall be fined not more than \$1,000,000 or imprisoned not more than 30 years, or both.

142. *United States v. Briscoe*, 65 F.3d 576, 583 (7th Cir. 1995) (citing *United States v. Ames Sintering Co.*, 927 F.2d 232, 234 (6th Cir. 1990) (per curiam); see also *United States v. Hanson*, 41 F.3d 580, 583 (10th Cir. 1994); *United States v. Faulkner*, 17 F.3d 745, 771 (5th Cir. 1994); *United States v. Frey*, 42 F.3d 795, 797 (3d Cir. 1994); *United States v. Maxwell*, 920 F.2d 1028, 1035 (D.C. Cir. 1990).

elements and general legal principles apply to both offenses with regard to the “scheme to defraud” element.<sup>143</sup>

Formulation or participation in a public relations campaign to deny or obscure the facts of global warming in order to continue highly profitable CO<sub>2</sub> emissions may constitute participation in a “scheme to defraud” the public for private gain, that is, “to get an advantage over another” through deceit.<sup>144</sup> In the electronic age, communications in furtherance of that scheme across state lines would not be difficult to establish. Nor should the common law requirement that the deceitful speech be “material” pose an obstacle in the climate change denial context, given the obvious and significant importance of the facts of climate change to a “reasonable person,” including all consumers of fossil fuels. The D.C. Circuit held in *Philip Morris* that the “materiality requirement is met if the matter at issue is ‘of importance to a reasonable person in making a decision about a particular matter or transaction.’”<sup>145</sup> It would be difficult for defendants in a climate change fraud action to plausibly maintain that the widespread and catastrophic environmental effects predicted by climate science would not be considered material or important to a reasonable person in weighing the costs and benefits of using fossil fuels.

Yet there may be three principal challenges under United States law to allegations of fraud, deceit, or misrepresentation in the context of climate change denial: (1) the robustness of the First Amendment to the Constitution in protecting free speech and association; (2) the necessity of proving fraudulent intent to participate in a “scheme to defraud” on the part of individual defendants; and (3) the need under the “generic” mail/wire fraud statutes to show the “scheme to defraud” entailed the deprivation of a victim’s money or property. These challenges, though grounded in legal precedent, may be overcome in the following ways.

### 1. *Constitutional Issues*

The First Amendment of the U.S. Constitution protects both corporate speech and association, and will certainly be interposed as the principal objection to a charge of climate change denier fraud. This is particularly to be expected if the speech objected to includes attempting to influence government through lobbying or expression of opinion on matters of public policy. Yet the First Amendment has never been held to protect dishonest or fraudulent speech in any context, whether “commercial” or “political” in content, and the same principle applies to climate change denial.

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143. See *Carpenter v. United States*, 484 U.S. 19, 25 n.6 (1987); *United States v. Lemire*, 720 F.2d 1327, 1334-35 n.6 (D.C. Cir. 1983) (“The requisite elements of ‘scheme to defraud’ under the wire fraud statute [§ 1343] and the mail fraud statute [§ 1341], are identical. Thus, cases construing mail fraud apply to the wire fraud statute as well.”).

144. BLACK’S LAW DICTIONARY 594 (5th ed. 1979).

145. *United States v. Philip Morris USA, Inc.*, 566 F.3d 1095, 1122 (D.C. Cir. 2009).

Corporations engaging in such denial, through their own statements or through those of their surrogates, are certain to raise the First Amendment as their primary defense if challenged. Indeed, the federal courts have traditionally afforded corporate speech broad latitude as free speech protected by the Constitution. Corporations as “persons” under the Fourteenth Amendment enjoy the protection of the First Amendment to report the news,<sup>146</sup> broadcast television programs,<sup>147</sup> and advertise.<sup>148</sup> Corporations enjoy the “right to petition the government, the right to speak out on matters of public concern, and the right to associate with others.”<sup>149</sup> Thus, corporations cannot be held liable for lobbying activities if that would impede “the free flow of information to governmental decision-makers.”<sup>150</sup> Nor can liability be premised on the “collective efforts of groups and organizations to influence government action,” since such collective action has been held protected by both the rights of speech and association.<sup>151</sup> Furthermore, the rights of corporations include freedom to engage in research and to participate “in the public debate.”<sup>152</sup>

Corporations can make campaign contributions to defeat a state referendum,<sup>153</sup> express opinions on controversial public policy issues in monthly electric bill inserts,<sup>154</sup> decline to include consumer advocacy inserts with the bills,<sup>155</sup> and take “a public position on matters in which they are

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146. *N.Y. Times Co. v. Sullivan*, 376 U.S. 254, 268 (1964).

147. *See generally* *Red Lion Broad. Co. v. FCC*, 395 U.S. 367 (1969).

148. *Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, Inc. (Virginia Pharmacy)*, 425 U.S. 748 (1976). They cannot, however, “engage in obscenity, commit fraud, or publish fighting words.” *Moellenberg & DeJulius, supra* note 13, at 559.

149. *Moellenberg & DeJulius, supra* note 13, at 559.

150. *Id.* at 560.

151. *Id.* at 562 (citing *Cal. Motor Transp. Co. v. Trucking Unlimited*, 404 U.S. 508, 510–11 (1972)). This is known as the “Noerr-Pennington” doctrine, which protects “petitioners” attempting to influence government action. *See United Mine Workers of Am. v. Pennington*, 381 U.S. 657, 670 (1965); *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 136 (1961). In *Second Class Speakers*, *Moellenberg & DeJulius* rely on two lower court opinions to the effect that “taking a particular view in a scientific debate” before the Occupational Safety and Health Administration (OSHA) concerning proposed safety standards for a particular chemical (*Senart v. Mobay Chemical Corp.*, 597 F. Supp. 502, 506 (D. Minn. 1984)) and attempting to influence OSHA regulation of silica (*Nat’l Industrial Sands Ass’n v. Gibson*, 897 S.W.2d 769 (Tex. 1995)) are protected corporate speech under the doctrine. *Moellenberg & DeJulius, supra* note 13, at 561–62. However, in neither case was that constitutional issue dispositive. In the first case (*Senart*) the district court dismissed plaintiffs’ “conspiracy” or “concert of action” count for failure to allege a tort by the conspirators; and in the second case (*Gibson*), the appellate court overruled the district court’s exercise of jurisdiction over the trade association (NISA). *Senart*, 597 F. Supp. at 507; *Gibson*, 897 S.W.2d at 776. In any event, the doctrine does not protect “deliberately false or misleading statements.” *United States v. Philip Morris USA, Inc.*, 566 F.3d 1095, 1123 (D.C. Cir. 2009) (“[N]either the *Noerr-Pennington* doctrine nor the First Amendment more generally protects petitions predicated on fraud or deliberate misrepresentation.” (quoting *Edmondson & Gallagher v. Alban Towers Tenants Ass’n*, 48 F.3d 1260, 1267 (D.C. Cir. 1995))).

152. *Consol. Edison Co. v. Pub. Serv. Comm’n*, 447 U.S. 530, 535, 544 (1980).

153. *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 776 (1978).

154. *Consol. Edison*, 447 U.S. at 541.

155. *Pac. Gas & Elec. Co. v. Pub. Utils. Comm’n*, 475 U.S. 1, 16 (1986).

financially interested.”<sup>156</sup> The Supreme Court has said that “the liberty of man to search for *truth* ought not to be fettered, no matter what orthodoxies he may challenge.”<sup>157</sup> As the Supreme Court famously stated in the defamation context, “[u]nder the First Amendment there is no such thing as a false *idea* . . . [b]ut there is no constitutional value in false statements of fact.”<sup>158</sup> Opinion, no matter how “pernicious,” should “depend for its correction not on the conscience of judges and juries but on the competition of other ideas.”<sup>159</sup>

Judge Learned Hand summarized the protections afforded by the First Amendment to matters of public debate as follows: The First Amendment “presupposes that right conclusions are more likely to be gathered out of a multitude of tongues, than through any kind of authoritative selection. To many this is, and always will be, folly; but we have staked upon it our all.”<sup>160</sup>

Moreover, the First Amendment also protects the right to freely associate. Thus, “non-violent, lawful” collective action of an organization is protected and liability must be imposed based on an individual member’s own conduct and speech.<sup>161</sup> The climate change denial campaign has largely been carried out through corporate-funded “front” groups, including public relations firms, seeded “grass roots” or “Astroturf” organizations, conservative “think tanks,” trade associations, non-profit institutes, and other organizations.<sup>162</sup> Linking the actions of those groups to the corporations or individuals providing their funding may be viewed as an attempt to restrict their First Amendment rights of association. This assumes, however, that the groups possess “lawful” goals. The Supreme Court has held that “[f]or liability to be imposed by reason of association alone, it is necessary to establish that the group itself possessed unlawful goals and that the individual held a specific intent to further those illegal aims.”<sup>163</sup> Applying this principle to corporate associations, Judge Alito writing for the Third Circuit held that a corporation (Pfizer) could not be held liable based on its membership, funding, and attendance at meetings of a lobbying trade organization alone.<sup>164</sup> The plaintiffs had contended that “the [trade association] disseminated misleading information about the danger of asbestos in schools . . . designed to reduce or limit Pfizer’s and the other defendants’ liability exposure . . . by encouraging [plaintiffs] either not to abate or to use cheaper abatement methods.”<sup>165</sup> “If true,” the court stated, “these

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156. *Sims v. Tinney*, 482 F. Supp. 794, 801 (D.S.C. 1977) (quoting *Noerr*, 365 U.S. at 139–40), *aff’d without opinion*, 615 F.2d 1358 (4th Cir. 1979).

157. *Dennis v. United States*, 341 U.S. 494, 550 (1951) (Frankfurter, J., concurring) (emphasis added).

158. *Gertz v. Robert Welch, Inc.*, 418 U.S. 323, 339–40 (1974) (emphasis added).

159. *Id.* at 339–40.

160. *N.Y. Times Co. v. Sullivan*, 376 U.S. 254, 269–70 (1964), *quoting* *United States v. Associated Press*, 52 F. Supp. 362, 372 (S.D.N.Y. 1943).

161. *NAACP v. Claiborne Hardware Co.*, 458 U.S. 886, 925–26 (1982).

162. *See supra* note 81.

163. *NAACP*, 458 U.S. at 920.

164. *In re Asbestos Sch. Litig.*, 46 F.3d 1284, 1294 (3d Cir. 1994).

165. *Id.* at 1290 n.4.

allegations might satisfy the elements of fraudulent misrepresentation.”<sup>166</sup> The court indicated that its holding might be different “if there were evidence that Pfizer had ‘tacitly or overtly agreed’ with the other defendants to continue selling its product without warnings or had been a party to ‘written agreements, meetings, and other communications among asbestos defendants to conceal their knowledge of the dangers of asbestos from the public.’”<sup>167</sup> However, as to that, the court found “no such evidence.”<sup>168</sup> In other words, the holding in Pfizer might have been different if it had been shown the trade association possessed unlawful goals, that is, engaged in fraud, and that Pfizer joined it to further those objectives. Similarly, a corporation or individual funding a front group engaged in fraudulent climate change denial would not be able to avail itself of a right-of-association defense once the government proved it supported that group to further the group’s objectives and those objectives were “unlawful.”

It is important to stress that the Constitution does not protect *dishonest* speech in any context. The First Amendment does not require “a blanket exemption from fraud liability” for a defendant who intentionally misleads the public.<sup>169</sup> In *Madigan v. Telemarketing Associates*, the Illinois Supreme Court had upheld dismissal of a claim for fraud brought by the Illinois Attorney General against two for-profit telemarketing firms raising funds for a Vietnam veterans’ charity, 85 percent of which they retained as fees. Though not required to disclose their fees under Supreme Court precedent, the telemarketers made affirmative misrepresentations in stating that “a significant amount of each dollar donated would be paid over to [the veterans organization],” and that “the funds donated would go to further . . . charitable purposes.”<sup>170</sup> On appeal, Justice Ginsberg writing for a unanimous Court held that mere failure to volunteer the fundraiser’s fee was insufficient by itself to state a claim for fraud, but in order to ensure that the public is “positioned to make informed choices about their charitable giving” consistent with the First Amendment, “[s]tates may maintain fraud actions when fundraisers make false or misleading representations designed to deceive donors about how their donations will be used.”<sup>171</sup>

The First Amendment protects erroneous statements, factual errors or honest misstatements of fact made by a newspaper about a public official in a libel suit.<sup>172</sup> Yet untruthful speech is not protected just because it is “commercial” in nature, even though truthful commercial speech enjoys constitutional protection.<sup>173</sup> Nor is “insulting, and even outrageous, speech” in

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166. *Id.*

167. *Id.* at 1292 (emphasis added).

168. *Id.*

169. *Illinois ex rel. Madigan v. Telemarketing Assocs., Inc.*, 538 U.S. 600, 621 (2003).

170. *Id.* at 605.

171. *Id.* at 624.

172. *N.Y. Times Co. v. Sullivan*, 376 U.S. 254, 279–80 (1964).

173. *Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, Inc.*, 425 U.S. 748, 771 (1976).

public debate protected *if that speech is duplicitous*. The argument that an unfettered interchange of ideas is necessary in public discourse cuts both ways. Deception has no value under that formulation and, further, it acts to mute or distort the power of Judge Learned Hand's "multitude of tongues"<sup>174</sup> to influence public policy. It is precisely because the public discussion of climate change is crucial to the future of the human race that honesty in that discussion is essential. There is no better illustration of this point than the influence of the deceptive public relations campaign on the current understanding of the general public concerning the basic findings of climate change, which, are primarily questions of scientific fact and not "opinion."<sup>175</sup>

Moreover, the guarantee of free speech does not apply to a deliberately false statement made "with knowledge that it was false or with *reckless disregard of whether it was false or not*."<sup>176</sup> The Supreme Court has held that not only the intentional lie, but the negligent or "careless error" as well, are "of such slight social value" to the public debate as to deny them constitutional protection: "They belong to that category of utterances which 'are no essential part of any exposition of ideas, and are of such slight social value as a step to truth that any benefit that may be derived from them is clearly outweighed by the social interest in order and morality.'"<sup>177</sup> Thus climate change deniers cannot interpose the First Amendment as a defense to a charge of fraud by professing incomplete or faulty knowledge of climate science, in effect basing their defense upon willful ignorance or selective understanding. Nor can they assert an unconditional right to express "opinions" based on such incomplete knowledge. To merit First Amendment protection, good faith "opinion" cannot be disembodied from fact.

The district court in *Philip Morris* held that a supposed good faith "opinion," *even if genuinely held*, is actionable as fraud if either: (a) there is no *objectively* reasonable basis for it, *or* (b) the speaker is aware of facts "tending to seriously undermine" the statement which are not disclosed.<sup>178</sup> The court continued:

Accordingly, even where a speaker may not be aware of undisclosed facts and issues an opinion in supposed good faith, the statement will provide grounds for fraud where it can be proved that there is no reasonable basis for the speaker's belief. Were this not the case, companies would be able to

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174. See *Sullivan*, 376 U.S. at 269–70.

175. See *supra* note 10 and accompanying text.

176. *Sullivan*, 376 U.S. at 280 (emphasis added).

177. *Gertz v. Robert Welch, Inc.*, 418 U.S. 323, 339–40 (1974) (quoting *Chaplinsky v. New Hampshire*, 315 U.S. 568, 572 (1942)).

178. *United States v. Philip Morris USA, Inc.*, 449 F. Supp. 2d 1, 854 (D.D.C. 2006) ("In the context of securities fraud litigation, courts have found that a 'statement of belief contains at least three implicit factual assertions: (1) that the statement is genuinely believed; (2) that there is [a] reasonable basis for that belief; and (3) that the speaker is not aware of any undisclosed facts tending to seriously undermine the accuracy of the statement. A projection or statement of belief may be actionable to the extent that one of these implied factual assertions is inaccurate.'" (quoting *In re Apple Computer Sec. Litig.*, 886 F.2d 1109, 1113 (9th Cir. 1989))).

shield themselves from liability by keeping their spokespersons in the dark about facts that are inconsistent with their public statements.<sup>179</sup>

The stock-in-trade of climate change denialism is concealment: the selective use of limited data as well as discredited or baseless scientific claims to argue a pre-conceived position.<sup>180</sup> Even if such assertions cannot be shown to have been made in bad faith, or even if it likewise cannot be shown that the denier was aware of undisclosed facts tending to undermine them, so long as it still can be proved that there is no objectively reasonable basis for the “opinion” expressed, the First Amendment affords the “opinion” no protection.

Do corporations have an unfettered right to express themselves on matters of public policy? Certainly, they cannot do so fraudulently, but a convincing argument also may be made that nothing a corporation says is entirely “political,” that is, non-commercial, and therefore its utterances and those of its surrogates should be subject to heightened judicial scrutiny.

In a perceptive and enlightening article provocatively titled *Against Freedom of Commercial Expression*, Professor Tamara Piety argues against expansion of existing First Amendment protections for corporate and commercial speech as having potentially “significant negative consequences for the public interest” in, among other things, “environmental policy.”<sup>181</sup> She argues that “for-profit entities are not appropriate rights holders under the First Amendment” since “it is inappropriate to treat artificial entities as if they were human beings.”<sup>182</sup> The corporate fiction and its corollary, the fictional corporate shareholder, she argues, are not only fictional, they are essentially single-focus entities created and protected by law for the sole purpose of financial gain.<sup>183</sup> Just as the fictional, two-dimensional person in mathematics can only exist in an infinitesimally thin plane, corporate speech, whether “commercial” or “political” or concerning other matters of public policy, is inevitably and legally constrained to one narrow purpose, the maximization of profit.<sup>184</sup> Corporate speech, Piety maintains, is therefore *always* “commercial,”<sup>185</sup> and furthermore the doctrine protecting “commercial” speech, which is “of relatively recent vintage,”<sup>186</sup> is founded primarily upon the grounds that the hearers—that is, the consuming public—are entitled to the

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179. *Id.*

180. *Cf.* BAUM, *supra* note 114, 130.

181. Tamara R. Piety, *Against Freedom of Commercial Expression*, 29 CARDOZO L. REV. 2583, 2585 (2008).

182. *Id.* at 2585–86.

183. *Id.* at 2593 (“Every time a corporation offers its opinion about climate change . . . or any other political or social issue of public concern, the only legitimate basis for it doing so, pursuant to principles of corporations law, is that management has made the determination that this communication would enhance the corporation’s profitability.”).

184. *Id.* at 2623 (“Pursuant to conventional interpretations of black letter corporate law, the corporation’s officers and directors have primarily one duty—to enhance shareholder value.”).

185. *Id.* at 2645.

186. *Id.* at 2586.

information disseminated, rather than upon the rights of the speaking corporation to disseminate it.<sup>187</sup>

The commercial speech doctrine is considered to have originated with *Virginia Pharmacy* in 1976,<sup>188</sup> in which the Supreme Court was asked to decide if the State of Virginia could prohibit pharmacists from advertising drug prices.<sup>189</sup> The consumer advocates who brought the suit argued that, as listeners, they had a First Amendment right to that information, which the State sought to repress, a theory previously proposed by Professor Martin Redish in a 1971 article.<sup>190</sup> Redish had argued that speech in aid of commerce was protected because such information “was critical to market function” and promoted “social welfare and self actualization.”<sup>191</sup> Such protection for *truthful* commercial speech was necessary, therefore, on behalf of the public (i.e., in the “marketplace of ideas”), not the speaker. The Supreme Court adopted Redish’s argument with regard to commercial speech whole in *Virginia Pharmacy* on the grounds that there is a First Amendment right to “receive information and ideas” and that freedom of speech “necessarily protects the right to receive.”<sup>192</sup> However, the Court found it necessary to add that the protections afforded by the First Amendment to commercial *or any* corporate speech do not extend to deceptive or misleading speech, holding that “[u]ntruthful speech, commercial or otherwise, has never been protected for its own sake.”<sup>193</sup> Even if the speech is not “provably false,” but only “deceptive or misleading,” the Court held it can still be prohibited without running afoul of the First Amendment.<sup>194</sup> Elaborating on this point in a footnote, the Court emphasized that commercial speech by its nature may be subject to an even more rigorous standard regarding truthfulness:

[T]he greater objectivity and hardiness of commercial speech, may make it less necessary to tolerate inaccurate statements for fear of silencing the speaker. They may also make it appropriate to require that a commercial message appear in such a form, or *include such additional information, warnings, and disclaimers, as are necessary to prevent its being deceptive.*<sup>195</sup>

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187. *Id.* at 2599–00.

188. *Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, Inc.*, 425 U.S. 748 (1976).

189. *Piety*, *supra* note 181, at 2599; *Va. Pharmacy*, 425 U.S. at 749–53.

190. *See generally* Martin H. Redish, *The First Amendment in the Marketplace: Commercial Speech and the Values of Free Expression*, 39 GEO. WASH. L. REV. 429 (1971).

191. *Piety*, *supra* note 181, at 2600–01.

192. *Va. Pharmacy*, 425 U.S. at 757 (citing *Kleindienst v. Mandel*, 408 U.S. 753, 762–63 (1972)).

193. *Id.* at 771 (citing *Gertz v. Robert Welch, Inc.*, 418 U.S. 323, 340 (1974); *Konigsberg v. State Bar*, 366 U.S. 36, 49 n.10 (1961)).

194. *Id.*

195. *Id.* at 771 n.24 (emphasis added) (citations omitted).

The Court reaffirmed in a subsequent case, *Central Hudson Gas & Electric Corp. v. Public Service Commission*, that “commercial” speech is only protected *if it is truthful*.<sup>196</sup>

However, despite basing its defense of truthful corporate *commercial* speech on the right of the public to truthful information, in a separate line of cases addressing corporate *political* speech, the Supreme Court appears to have fallen into a kind of “pathetic fallacy,”<sup>197</sup> premising the rights of corporations to fund political advertisements,<sup>198</sup> make political contributions,<sup>199</sup> and engage in “issue advertising”<sup>200</sup> on the inherent rights of the corporate speaker to self-expression. This line of cases culminates in *Citizens United v. FEC*,<sup>201</sup> where the Supreme Court overruled its prior 1990 *Austin v. Michigan Chamber of Commerce* decision<sup>202</sup> in which the Court, placing the emphasis on the public’s right to unbiased information, had upheld a Michigan statute prohibiting independent political expenditures by corporations.<sup>203</sup> The Court in *Austin* had recognized a new governmental interest in preventing “the corrosive and distorting effects of immense aggregations of [corporate] wealth . . . that have little or no correlation to the public’s support for the corporation’s political ideas.”<sup>204</sup> The Supreme Court in its *Citizens United* reversal of *Austin* based its holding on the “proposition that the First Amendment bars regulatory distinctions based on a speaker’s identity, including its ‘identity’ as a corporation.”<sup>205</sup> The Court’s jurisprudence, therefore, appears to be “built on the notion of the corporation as a ‘person’—a person with rights to freedom of expression equal to those of human beings.”<sup>206</sup>

Yet Justice Stevens, writing for the dissent and joined by Justices Ginsburg, Breyer, and Sotomayor, was deeply troubled by the majority’s flesh-blind, egalitarian approach:

The conceit that corporations must be treated identically to natural persons in the political sphere is not only inaccurate but also inadequate to justify the Court’s disposition of this case. . . . In the context of election to public office, the distinction between corporate and human speakers is significant. Although they make enormous contributions to our society, corporations are not actually members of it. They cannot vote or run for office. Because

196. *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n*, 447 U.S. 557, 566 (1980) (“For commercial speech to come within the First Amendment, it at least must concern lawful activity and not be misleading.”).

197. “The pathetic fallacy, anthropomorphic fallacy, or sentimental fallacy is the treatment of inanimate objects as if they had human feelings, thought, or sensations.” *Pathetic Fallacy*, WIKIPEDIA, [http://en.wikipedia.org/wiki/Pathetic\\_fallacy](http://en.wikipedia.org/wiki/Pathetic_fallacy) (last visited Sept. 29, 2011).

198. *See* *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 776 (1978).

199. *See* *Buckley v. Valeo*, 424 U.S. 1, 51 (1976).

200. *FEC v. Wis. Right to Life, Inc.*, 551 U.S. 449, 457 (2007).

201. *Citizens United v. FEC*, 130 S. Ct. 876, 883 (2010).

202. *Austin v. Mich. Chamber of Commerce*, 494 U.S. 652 (1990).

203. *Id.* at 669; *see also* *McConnell v. FEC*, 540 U.S. 93, 224 (2003).

204. *Austin*, 494 U.S. at 660.

205. *Citizens United*, 130 S. Ct. at 930 (Stevens, J., dissenting).

206. *Piety*, *supra* note 181, at 2612–13.

they may be managed and controlled by nonresidents, their interests may conflict in fundamental respects with the interests of eligible voters. The financial resources, legal structure, and instrumental orientation of corporations raise legitimate concerns about their role in the electoral process. Our lawmakers have a compelling constitutional basis, if not also a democratic duty, to take measures designed to guard against the potentially deleterious effects of corporate spending in local and national races.<sup>207</sup>

Not only do corporations have disproportionate resources to amplify their speech in the public debate, their interests in many respects conflict with that of the human beings whose future they would chart. Corporations have no need for democracy, and may in some circumstances flourish in its absence; nor do they have a stake in purely national interests, being multi-national in outlook and practice.<sup>208</sup> Transnational corporations have been described as “firms that have no intrinsic loyalty to any country,” which operate “on a transnational basis, and naturally come to view the goals and objectives of each society in which they work as just another set of business conditions.”<sup>209</sup>

Indeed, in the context of climate change, no corporation can feel the chill of an unprecedented flood or hurricane storm-surge, nor the discomfort of a prolonged summer heat wave, nor hunger from a lost crop, nor thirst in the sting of a blinding windstorm, nor agonizing despair for the future of its progeny as can a flesh-and-blood human being.

Corporations are “not accountable to voters except through the mechanism of governmental control.”<sup>210</sup> And there are indeed legal constraints to corporate speech. As the Supreme Court emphasized in *Virginia Pharmacy*, commercial speech must above all be truthful. A company may only increase profits within “the limits of the law.”<sup>211</sup> Professor Piety quotes no less an authority than Milton Friedman on this question, emphasizing that while the profit motive is legitimately regarded as a corporate prime directive, it is not unconstrained by law. “There is one and only one social responsibility of business,” Professor Friedman writes, “to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition *without deception or fraud*.”<sup>212</sup> As long as climate change deniers can be shown to have engaged in fraud, that is, knowing and willful deception, the First Amendment affords them no protection. This leads to the second possible challenge: the need to show an individual defendant acted with the required *mens rea*—intent to defraud.

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207. *Citizens United*, 130 S. Ct. at 930 (Stevens, J., dissenting).

208. Piety, *supra* note 181, at 2623–34.

209. William H. Rodgers, Jr. & Anna T. Moritz, *The Worst Case and the Worst Example: An Agenda for Any Young Lawyer Who Wants to Save the World from Climate Chaos*, 17 SOUTHEASTERN ENVTL. L.J. 295, 306–07 (citing JAMES K. GALBRAITH, *THE PREDATOR STATE: HOW CONSERVATIVES ABANDONED THE FREE MARKET AND WHY LIBERALS SHOULD TOO* 144 (2008)).

210. Piety, *supra* note 181, at 2632.

211. *Id.* at 2633.

212. *Id.* (quoting Milton Friedman, *The Social Responsibility of Business is to Increase its Profits*, N.Y. TIMES MAG., Sept. 13, 1970) (emphasis added).

## 2. *Fraudulent Intent*

To “defraud” under the law requires intent to defraud: the *mens rea* of the offense. Thus the First Circuit has set forth the elements of wire fraud as follows: “1) a scheme to defraud by means of false pretenses, 2) the defendant’s *knowing and willful participation in the scheme with the intent to defraud*, and 3) the use of interstate wire communications in furtherance of the scheme.”<sup>213</sup> The D.C. Circuit has held that, because “actual fraud” is not an element, “proof of fraudulent intent is critical,”<sup>214</sup> although the scheme need not have succeeded for the defendant to be found guilty.<sup>215</sup>

Deniers will argue that they lack the requisite intent to defraud, since they either lacked knowledge of the scheme or if they did know of it, they were only expressing their “opinions” independently and had no intention of joining any larger enterprise. The terms “scheme” or “artifice” are not defined under the mail/wire fraud statute, and the courts have shown a historical reluctance to define either term “except in the broadest and most general terms.”<sup>216</sup>

However, it is important to recognize that it is the scheme itself which is the basis of the offense, not the fraud. Therefore, fraud in the execution is not required, nor need the scheme succeed. So, for example, the D.C. Circuit has held that “[i]t is the scheme to defraud and not actual fraud that is required.”<sup>217</sup> Nor do victims of the scheme have to be identified by the prosecutor.<sup>218</sup> More significantly, *no actual loss* to the victim is required.<sup>219</sup> In fact, to the extent that the scheme involves deprivation of money, it is not even necessary that the United States allege the precise *amount* of money realized as a result of the scheme, since the scheme need not have succeeded at all.<sup>220</sup> Furthermore, once the existence of a scheme is proved, it is not necessary to prove every allegation of the offense; it is only necessary to prove that the scheme to

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213. *United States v. Cassiere*, 4 F.3d 1006, 1011 (1st Cir. 1993) (emphasis added) (citing *United States v. Serrano*, 870 F.2d 1, 6 (1st Cir. 1989)).

214. *United States v. Diggs*, 613 F.2d 988, 997 (D.C. Cir. 1979) (citing *United States v. Brown*, 540 F.2d 364, 374 (8th Cir. 1976); *United States v. Regent Office Supply Co.*, 421 F.2d 1174, 1180-81 (2d Cir. 1970)).

215. *United States v. Reid*, 533 F.2d 1255, 1264 n.34 (D.C. Cir. 1976) (“Proof that someone was actually defrauded is unnecessary simply because the critical element in a ‘scheme to defraud’ is ‘fraudulent intent.’”).

216. U.S. DEP’T OF JUSTICE, UNITED STATES ATTORNEYS’ MANUAL § 942, available at [http://www.justice.gov/usao/eousa/foia\\_reading\\_room/usam/title9/43mcrmm.htm](http://www.justice.gov/usao/eousa/foia_reading_room/usam/title9/43mcrmm.htm) (last visited Mar. 28, 2011); *United States v. Lemire*, 720 F.2d 1327, 1335 (D.C. Cir. 1983) (“Congress did not define ‘scheme or artifice to defraud’ when it first coined that phrase, nor has it since. Instead that expression has taken on its present meaning from 111 years of case law.”).

217. *Reid*, 533 F.2d at 1264; see also *United States v. Coachman*, 727 F.2d 1293, 1302–03 n.43 (D.C. Cir. 1984).

218. See *United States v. Mizyed*, 927 F.2d 979, 981 (7th Cir. 1991).

219. See *United States v. Barber*, 881 F.2d 345, 348–49 (7th Cir. 1989); see also *United States v. Ginsburg*, 909 F.2d 982, 988 n.8 (7th Cir. 1990) (noting that no actual loss of money or property need be alleged); *United States v. Bucey*, 876 F.2d 1297, 1311 (7th Cir. 1989) (holding that “the ultimate success of the fraud and the actual defrauding of a victim” are not required); *United States v. Pollack*, 534 F.2d 964, 971 (D.C. Cir. 1976).

220. *United States v. Jordan*, 626 F.2d 928, 931 (D.C. Cir. 1980).

defraud existed.<sup>221</sup> The government only need prove that the defendant “knowingly and willingly participated in the scheme,”<sup>222</sup> or was a “knowing and active participant.”<sup>223</sup>

Moreover, the gullibility or sophistication of the victim is immaterial. To require the success of the scheme to defraud would be to criminalize only those schemes which target gullible victims, and excuse fraud leveled at those more likely to detect it.<sup>224</sup> Therefore, “it makes no difference whether the persons the scheme is intended to defraud are gullible or skeptical, dull or bright.”<sup>225</sup> Even “monumental credulity” of a victim is no defense.<sup>226</sup> Thus, it is no defense for climate change deniers to claim either that the public had the understanding to see through their scheme of deception or, in the alternative, that the deniers cannot be held responsible for the folly of an overly-gullible public.

The Seventh Circuit has defined “intent to defraud” as “willful participation in [the] scheme with knowledge of its fraudulent nature and with intent that these illicit objectives be achieved.”<sup>227</sup> However, the requisite intent “may be inferred from the totality of the circumstances and need not be proven by direct evidence.”<sup>228</sup> “[A] person’s state of mind is rarely susceptible of proof by direct evidence, so specific intent to defraud may be, and most often is, inferred from the totality of the circumstances, including indirect and circumstantial evidence.”<sup>229</sup> For example, knowledge may be imputed to individuals and organizations with the expertise and resources to, in effect,

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221. See, e.g., *United States v. Stull*, 743 F.2d 439, 442 n.2 (6th Cir. 1984) (“It is well established that proof of every allegation is not required in order to convict; the government need only prove that the scheme to defraud existed.”); *United States v. Halbert*, 640 F.2d 1000, 1008 (9th Cir. 1981) (“[T]he Government need not prove every misrepresentation charged conjunctively in the indictment.”); *Jordan*, 626 F.2d at 930 (“The Government is not required to prove the details of a scheme.”); *United States v. Amrep Corp.*, 560 F.2d 539, 546 (2d Cir. 1977) (“A scheme to defraud may consist of numerous elements, no particular one of which need be proved if there is sufficient overall proof that the scheme exists.”); *Anderson v. United States*, 369 F.2d 11, 15 (8th Cir. 1966) (holding that all instances of illicit conduct need not be proved to sustain a conviction).

222. *United States v. Maxwell*, 920 F.2d 1028, 1036 (D.C. Cir. 1990) (citing *United States v. Lanier*, 838 F.2d 281, 284 (8th Cir. 1988) (holding that evidence was sufficient where defendant did not directly make misrepresentations to victims but did participate in scheme knowing it was fraudulent)).

223. *United States v. Wiehoff*, 748 F.2d 1158, 1161 (7th Cir. 1984) (holding that evidence need only show that a defendant was a “knowing and active participant” in a scheme to defraud).

224. *Pollack*, 534 F.2d at 971 (holding that requiring actual loss to the victim “would lead to the illogical result that the legality of a defendant’s conduct would depend on his fortuitous choice of a gullible victim.”) (quoted in *Maxwell*, 920 F.2d at 1036).

225. *Maxwell*, 920 F.2d at 1036 (D.C. Cir. 1990) (quoting *United States v. Brien*, 617 F.2d 299, 311 (1st Cir. 1980)).

226. *Id.* (quoting *Deaver v. United States*, 155 F.2d 740, 744–45 (D.C. Cir. 1946)).

227. *United States v. Bailey*, 859 F.2d 1265, 1273 (7th Cir. 1988) (quoting *United States v. Price*, 623 F.2d 587, 591 (9th Cir. 1980)); see also *United States v. Pearlstein*, 576 F.2d 531, 537 (3d Cir. 1978); *United States v. Stull*, 743 F.2d 439, 442 (6th Cir. 1984).

228. *United States v. Alston*, 609 F.2d 531, 538 (D.C. Cir. 1979) (citing *United States v. Arnold*, 543 F.2d 1224, 1225-26 (8th Cir. 1976)); see also *United States v. Cusino*, 694 F.2d 185, 187 (9th Cir. 1982) (citing *United States v. Beecroft*, 608 F.2d 753, 757 (9th Cir. 1979) (“Intent can be inferred from statements and conduct.”)).

229. *United States v. Philip Morris USA, Inc.*, 566 F.3d 1095, 1118 (D.C. Cir. 2009) (citing *Alston*, 609 F.2d at 538; *United States v. Reid*, 533 F.2d 1255, 1264 (D.C. Cir. 1976)).

“know better.” In *Philip Morris*, the district court relied “on indirect and circumstantial evidence indicating that the senior corporate officials knew that their public statements, and those that they approved for their corporations, were false or misleading,”<sup>230</sup> in part because those statements “were inconsistent with the internal knowledge and practice of the corporation itself.”<sup>231</sup>

The CEO of a major corporation has a fiduciary duty to the shareholders of that corporation to understand and anticipate changes in its markets as well as regulatory schemes affecting its future operations.<sup>232</sup> “At the heart of corporate governance is the duty of corporate managers to make appropriate decisions, based on their informed reading of signals from market and other phenomena, that advance the interests of the corporation and its shareholders.”<sup>233</sup> The interests of American corporations could be severely jeopardized by “major, uncontrolled events” associated with climate change that threaten the very markets upon which those corporations depend.<sup>234</sup> In addition, corporate officers and directors have a fiduciary duty of oversight and monitoring.<sup>235</sup> Corporate directors can be held personally liable for “an unconsidered failure . . . to act in circumstances in which due attention would . . . have prevented [a] loss.”<sup>236</sup> Federal securities law requires disclosure of corporate risk to the Securities and Exchange Commission and the public. Failure to disclose risks associated with climate change, including physical risk to infrastructure and other assets, risk of more stringent future governmental regulation, and both public and private litigation risk may subject corporate officers and directors to derivative suits for failure to adequately monitor such risks or for breach of fiduciary oversight responsibility.<sup>237</sup>

It is difficult to imagine that the CEO of a large energy company, with access to the best professional and scientific intelligence money can buy, could be wholly ignorant of the basics of peer-reviewed, mainstream climate science, considering his or her presumed credentials, education and fiduciary responsibilities. Adam Bryant, writing for *The New York Times*, reports that among the broader lessons learned from interviews with over seventy corporate leaders, successful CEOs share the common trait of “passionate curiosity” and “ask big-picture questions.”<sup>238</sup> These successful CEOs are “relentless”

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230. *Id.* at 1119.

231. *Id.* (quoting *United States v. Philip Morris USA, Inc.*, 449 F. Supp. 2d 1, 853 (D.D.C. 2006)).

232. Perry E. Wallace, *Global Climate Change and the Challenge to Modern American Corporate Governance*, 55 SMU L. REV. 493, 512 (2002).

233. *Id.*

234. *Id.* at 511.

235. Perry E. Wallace, *Climate Change, Corporate Strategy, and Corporate Law Duties*, 44 WAKE FOREST L. REV. 757, 760 (2009).

236. *Id.* at 760 (citing *In re Caremark Int'l Inc. Derivative Litig.*, 698 A.2d 959, 967 (Del. Ch. 1996) (emphasis omitted)).

237. Wallace, *supra* note 115, at 760–64.

238. Adam Bryant, *Distilling the Wisdom of C.E.O. s*, N.Y. TIMES (April 17, 2011), [http://www.nytimes.com/2011/04/17/business/17excerpt.htm?\\_r=1&pagewanted=print](http://www.nytimes.com/2011/04/17/business/17excerpt.htm?_r=1&pagewanted=print).

questioners, Bryant says, who are “not necessarily the smartest people in the room, but they are the best students—the letters [CEO] could just as easily stand for ‘chief education officer.’”<sup>239</sup>

Similarly, a scientist holding a Ph.D. in climate science, or even in a field tangential or wholly unrelated to climate science, cannot be presumed to lack the sophistication necessary to understand the relatively straightforward concepts which to an impartial observer would render the basic facts of climate change undeniable. Such people cannot be compared to the layperson who may be understandably bewildered about climate science in the face of a howling media echo of manufactured uncertainty. It would be difficult for these individuals to claim they are unaware of the very public relations campaign they are engaged in furthering.<sup>240</sup>

In addition, fraudulent intent may be inferred if it can be shown that a representation has been made with *reckless indifference* to its truth or falsity.<sup>241</sup> For example, extravagant claims about a device for which financial backing was sought from investors was enough for the Ninth Circuit to infer fraudulent intent in *United States v. Cusino*.<sup>242</sup> Thus climate change deniers could be found to have acted with fraudulent intent for failure to adequately confirm the truth or falsity of their pronouncements, or for espousing arguments which are spurious or have been discredited by mainstream climate scientists.

Fraudulent intent may also be inferred from half-truths or the *concealment* of material facts.<sup>243</sup> In *Lustiger v. United States*, Lustiger was convicted of mail fraud for misleading representations made in connection with a land-investment scheme.<sup>244</sup> Lustiger’s advertising materials, the court held, were “in some respects false and, apart from falsity were, when considered as a whole, fraudulently deceptive and misleading, exhibiting an intent and purpose to defraud.”<sup>245</sup> The court found that the fraud lay not so much in what Lustiger said, but in what he *didn’t* say: the fraud lay in the omission of pertinent facts, not in their misrepresentation.<sup>246</sup> The court held that “[i]f a scheme is devised with the intent to defraud . . . the fact that there is no misrepresentation of a single existing fact is immaterial. It is only necessary to prove that it is a scheme *reasonably calculated to deceive*.”<sup>247</sup>

239. *Id.*

240. *See, e.g., Smoke, Mirrors, supra* note 2, app. B.

241. *United States v. Cusino*, 694 F.2d 185, 187 (9th Cir. 1982).

242. *Id.* at 187; *see also United States v. Love*, 535 F.2d 1152 (9th Cir. 1976) (“[O]ne who acts with reckless indifference as to whether a representation is true or false is chargeable with knowledge of its falsity.”); *Irwin v. United States*, 338 F.2d 770, 774 (9th Cir. 1964) (“One who acts with reckless indifference as to whether a representation is true or false is chargeable as if he had knowledge of its falsity.”).

243. *Lustiger v. United States*, 386 F.2d 132, 138 (9th Cir. 1967); *see Irwin*, 338 F.2d at 773; *United States v. Beecroft*, 608 F.2d 753 at 757 (9th Cir. 1979).

244. *Lustiger*, 386 F.2d at 138.

245. *Id.*

246. *Id.* (“[D]eceitful statements of half truths or the concealment of material facts is actual fraud violative of the mail fraud statute.”).

247. *Id.* (citing *Irwin*, 338 F.2d at 773) (emphasis added).

Therefore, even if representations made by climate change deniers are not false in and of themselves, failure to disclose material facts that might disprove or refute such contentions may be evidence of intent, indicating that the scheme was “reasonably calculated to deceive.” For example, the main thrust of the Action Plan described above was, as the Plan itself states, to continually stress to the press, the public, and public officials the “uncertainties” in climate science. No mention was made of the need for balance in such representations. Conveying climate *consensus* was not a part of the denialist public relations campaign; in fact, the whole purpose of the campaign was to conceal the facts of climate change from the public. Could not a court, applying the reasoning of the Ninth Circuit in *Lustiger*, find that this emphasis on the uncertainties alone, concealing or omitting facts necessary to a full understanding of climate science, constituted “a scheme reasonably calculated to deceive”?<sup>248</sup>

Finally, fraudulent intent may simply be inferred *from the injurious effects which would result if the scheme were carried out*.<sup>249</sup> The D.C. Circuit in *United States v. Reid* held that although the purpose of the scheme must be to injure the victim, that purpose “may be inferred when the scheme has such effect as a necessary result of carrying it out.”<sup>250</sup> Climate change deniers would have a difficult time attempting to refute that the purpose of their campaign of disinformation was to harm humanity, once a climate science consensus had formed that GHG emissions were contributing to global warming, since the whole purpose of their deception, as stated in the Plan, was to avoid governmental restrictions on those emissions.

Nor, in this case, must such knowledge necessarily be imputed. For example, as has been shown above, the fossil fuel industry’s own scientific advisers as early as 1996 were counseling that GHG emissions were contributing to global warming and posed a threat to humanity.<sup>251</sup> Moreover, international efforts to produce a reputable summary of the state of climate science resulted in the creation of the IPCC in 1988 and issuance of its subsequent assessment reports. For a CEO of an energy company or a scientist regularly making public statements, accepting speaking engagements, and publishing articles on climate science to profess ignorance of the IPCC assessment reports, or to question the validity of their most basic, peer-reviewed findings, stretches credulity past the breaking point.

### 3. *Deprivation of Money or Property*

Another objection to establishing fraud in the climate change denial context arises from the necessity of proving that the scheme involved the

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248. *Id.*

249. *United States v. Reid*, 533 F.2d 1255, 1264 n.34 (D.C. Cir. 1976).

250. *Id.* at 1264 (citing *Horman v. United States*, 116 F. 350, 352 (6th Cir. 1902); *see also* *United States v. Regent Office Supply Co.*, 421 F.2d 1174, 1180-81 (2d Cir. 1970); *United States v. George*, 477 F.2d 508, 512 (7th Cir. 1973); *New Eng. Enters. v. United States*, 400 F.2d 58, 72 (1st Cir. 1968).

251. *See supra* notes 110, 113 and accompanying text.

intentional deprivation of money or property. Such an objection would emphasize that environmental harm has traditionally been thought of as limited to the loss of “intangible” benefits, such as aesthetic enjoyment and recreational opportunities.<sup>252</sup> A scheme to defraud has historically required the intended deprivation of money, property rights or “something of value.”<sup>253</sup> Thus, the Eighth Circuit has defined the first element of mail/wire fraud, a “scheme to defraud,” as a scheme to defraud another “out of money.”<sup>254</sup> The Supreme Court has held in the broadest terms that: “[T]he words ‘to defraud’ in the mail fraud statute have the ‘common understanding’ of ‘wrongdoing one in his property rights by dishonest methods or schemes.’”<sup>255</sup>

Although a “scheme to defraud” historically has been construed as limited to the deprivation of property rights,<sup>256</sup> over the years there have been both judicial and congressional attempts to broaden it to include “intangible” non-property rights, such as the right to “honest services” or good government.<sup>257</sup> However, during the last few decades of the twentieth century, the Supreme Court grew increasingly concerned about the broad sweep of the statute, and in *McNally v. United States*, the Court held that mail fraud does not encompass “schemes to defraud citizens of their intangible rights to honest and impartial government” and is “limited in scope to the protection of property rights.”<sup>258</sup> Just months after the *McNally* decision, the Court somewhat incongruously held in *Carpenter v. United States* that confidential business information, despite its intangible nature, is “property” protected by the mail and wire fraud statutes.<sup>259</sup> *Carpenter* thus distinguishes intangible *property* rights, which may remain protected by the mail and wire fraud statutes, from intangible *non-property* rights, which *McNally* left unprotected.

Nevertheless, after the Supreme Court read protection of the intangible right to “honest services” out of the mail/wire fraud statute, Congress put it back in by passing 18 U.S.C. § 1346, effective November 18, 1988, which defined the term “scheme or artifice to defraud” as including a scheme or artifice to deprive another of “the intangible right of honest services.”<sup>260</sup> While

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252. See, e.g., *Sierra Club v. Morton*, 405 U.S. 727, 735 (1972) (“The alleged injury will be felt directly only by those who use Mineral King and Sequoia National Park, and for whom the aesthetic and recreational values of the area will be lessened by the highway and ski resort.”).

253. See *Carpenter v. United States*, 484 U.S. 19, 27 (1987).

254. *United States v. Proffit*, 49 F.3d 404, 406 n.1 (8th Cir. 1995). The elements of wire fraud as defined by the Eighth Circuit are: (1) that the defendant voluntarily and intentionally devised or participated in a scheme to defraud another out of money; (2) that the defendant did so with the intent to defraud; (3) that it was reasonably foreseeable that interstate wire communications would be used; and (4) that interstate wire communications were in fact used. *Id.*

255. *Carpenter*, 484 U.S. at 27; see also *McNally v. United States*, 483 U.S. 350, 358 (1987); *Hammerschmidt v. United States*, 265 U.S. 182, 188 (1924).

256. *Carpenter*, 484 U.S. at 27.

257. Nicholas J. Wagoner, *Honest-Services Fraud: The Supreme Court Defuses the Government’s Weapon of Mass Discretion in Skilling v. United States*, 51 S. TEX. L. REV. 1087, 1094–97 (2010).

258. *McNally*, 483 U.S. at 350, 360.

259. *Carpenter*, 484 U.S. at 25.

260. Wagoner, *supra* note 257, at 1101–02; 18 U.S.C. § 1346 (2006).

this seemed for several decades to resolve the intangible rights question,<sup>261</sup> in *Skilling v. United States*,<sup>262</sup> the Supreme Court placed a significant limitation on the “honest services” amendment by narrowly construing it to “cover only bribery and kickback schemes.”<sup>263</sup> That decision, however, left *Carpenter* intact, leaving open the question of the scope of “intangible” property rights protected under the mail fraud and wire fraud statutes.<sup>264</sup>

In addressing this question in *Skilling*, the Supreme Court attempted to draw a distinction between property interests protected by the mail fraud statute and unprotected “intangible rights,” such as the right to “honest services,” based on a presumed “symmetry” between the harm suffered by the victim and the benefit to the defrauder in the first instance, contrasted with a lack of such symmetry in the latter.<sup>265</sup> The Court held: “Unlike fraud in which the victim’s loss of money or property supplied the defendant’s gain, with one the mirror image of the other, *see, e.g., United States v. Starr*, 816 F.2d 94, 101 (CA2 1987), the honest-services theory targeted corruption that lacked similar symmetry.”<sup>266</sup> The Second Circuit in *Starr* had stated, “[w]hile a finding that defendants garnered some benefit from their scheme may be helpful to the jury to establish motive, it cannot be probative of fraudulent intent unless it results, or is contemplated to result, from a corresponding loss or injury to the victim of the fraud.”<sup>267</sup>

Whether or not this principle would apply to intangible property as well as tangible property may be an open question, but it should be reemphasized that it is not necessary for the government to prove either that the fraudulent scheme was executed or that it succeeded.<sup>268</sup> Furthermore, not only would the victims not have to be identified by name in an indictment,<sup>269</sup> they would not need to have suffered any *actual* loss of a property interest as a result of the scheme.<sup>270</sup>

261. *Id.*, at 1102–03.

262. *Skilling v. United States*, 130 S.Ct. 2896 (2010).

263. *Skilling*, 130 S.Ct. at 2933.

264. *See, e.g., United States v. DeFries*, 43 F.3d 707, 709–11 (D.C. Cir. 1995) (union ballots are tangible property); *United States v. Henry*, 29 F.3d 112, 114–15 (3d Cir. 1994) (fair bidding opportunity is not a property right); *United States v. F.J. Vollmer & Co.*, 1 F.3d 1511, 1521 (7th Cir. 1993) (government’s regulatory interests not protected, citing cases concerning licenses and permits); *United States v. Loney*, 959 F.2d 1332, 1336 (5th Cir. 1992) (flight award coupons as “something of value” are property); *United States v. Madeoy*, 912 F.2d 1486, 1492 (D.C. Cir. 1990) (“An FHA insurance commitment, by which the Government promises to pay the lender if the borrower defaults on the loan, is a ‘property interest,’ not an ‘intangible right’ . . . because it involves the Government’s ‘control over how its money [is] spent.’”).

265. *Skilling*, 130 S. Ct. at 2926.

266. *Id.*

267. *United States v. Starr*, 816 F.2d 94, 101 (2d Cir. 1987).

268. *Reid*, 533 F.2d at 1264; *see also United States v. Coachman*, 727 F.2d 1293, 1302–03 n.43 (D.C. Cir. 1984).

269. *See United States v. Mizyed*, 927 F.2d 979, 981 (7th Cir. 1991).

270. *See United States v. Barber*, 881 F.2d 345, 348–49 (7th Cir. 1989); *see also United States v. Ginsburg*, 909 F.2d 982, 988 n.8 (7th Cir. 1990) (noting that no actual loss of money or property need be alleged); *United States v. Bucey*, 876 F.2d 1297, 1311 (7th Cir. 1989) (holding that “the ultimate success of the fraud and the actual defrauding of a victim” are not required); *United States v. Pollack*, 534 F.2d 964, 971 (D.C. Cir. 1976).

A corollary is that it is not necessary that the United States allege a precise amount of money or property realized as a result of the scheme, since the scheme need not have succeeded at all.<sup>271</sup> The key to proving a scheme to defraud a victim of *tangible* property, according to the Supreme Court in *Skilling*, is to be able to show that the scheme contemplated a gain to the defrauder which is the “mirror image” of the anticipated or foreseeable loss to the victim.<sup>272</sup>

In *Philip Morris*, the district court had no apparent difficulty finding the deprivation of a tangible property right in the sale of tobacco products. The consumer was considered to have been defrauded by being induced to purchase a defective or dangerous product, from which the seller derived an unjust profit. In other words, the requisite reciprocity was assumed to be present in the commercial transaction itself.<sup>273</sup> But does such a reciprocal relationship between the anticipated benefit to the defrauder and the victim’s damages exist in relation to the harmful effects of global warming associated with GHG emissions? The sale of fossil fuels to the individual consumer—whereby each is defrauded to the extent of the transaction (that is, wrongfully induced to purchase a harmful or defective product)—may be sufficient to meet this element of proof.

However, there is an obvious difference between the two scenarios. Consumers of tobacco products have been duped into purchasing a product that will have undisclosed negative health effects upon them as a direct result of their entirely voluntary, personal use of that product; whereas fossil fuel consumers are being deceived into continuing to purchase a product whose use is almost universal and whose impact is not felt until it combines with the effects of countless other consumer transactions. More important, this view does not reflect the true character and scope of the transaction at large: the vast and inordinate profits garnered by the fossil fuel industry through the use of fraud, set against the enormity of the ensuing harm to the environment. A more comprehensive and accurate analysis would be to regard the “victim” as society at large, since those who stand to profit from the continued emission of greenhouse gases enabled by the deception described above do so at the expense of the consuming public.

Since the 1960s, environmentalists and policymakers have increasingly viewed environmental problems through an economic lens.<sup>274</sup> Economist William Baxter summarized this trend in 1974: “[E]nvironmental problems *are*

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271. *United States v. Jordan*, 626 F.2d 928, 931 (D.C. Cir. 1980).

272. *See Skilling v. United States*, 130 S.Ct. 2896 (2010).

273. *See, e.g., United States v. Philip Morris USA, Inc.*, 449 F. Supp. 2d 1, 890 (D.D.C. 2006) (“[T]he Enterprise’s overarching scheme [was] to defraud consumers and potential consumers of cigarettes.”). One might also say that purchasers of cigarettes were being fraudulently induced to part with something much more valuable than the price of a pack of cigarettes: life itself. *See SHARON Y. EUBANKS & STANTON A. GLANZ, BAD ACTS: THE RACKETEERING CASE AGAINST THE TOBACCO INDUSTRY* 36 (2012).

274. Mollie Lee, *Environmental Economics: A Market Failure Approach to the Commerce Clause*, 116 YALE L.J. 456, 477–78 (2006).

economics problems.”<sup>275</sup> Although the economic approach to environmental valuation has been criticized by some,<sup>276</sup> it nevertheless “has become a dominant mode—perhaps *the* dominant mode—of thinking about environmental policy.”<sup>277</sup> Traditional economics holds that in a free market system with each individual pursuing his or her own interests, the result inevitably will be to promote the public interest. This is reflective of Adam Smith’s eighteenth-century theory of the “invisible hand,” whereby each individual seeking “only his own gain” is “led by an invisible hand to promote an end which was no part of his intention.”<sup>278</sup>

However, there are frequently social costs and/or benefits associated with the manufacture of goods or provision of services which are not accounted for in the economic models. Sometimes referred to as “externalities,” these are societal costs or benefits that are not reflected in market transactions.<sup>279</sup> Externalities have been defined as “[t]he costs and benefits which arise when the social or economic activities of one group of people have an impact on another, and when the first group fail to fully account for their impact.”<sup>280</sup> Negative externalities exact a social cost, while positive externalities are socially beneficial. Negative externalities lead to what is referred to as “market failure,” whereby the free market fails to account for external costs imposed on society at large. Such costs are not reflected in the purchase price and therefore are (at least initially) paid by neither the producer nor the consumer, resulting in an inefficient allocation of resources.<sup>281</sup> Environmental pollution is one such negative externality.<sup>282</sup> A second cause of market failure lies in the failure to place a value on the inherent public good of resources accessible to all, which are either depleted through the process of manufacturing or despoiled through pollution resulting from it.<sup>283</sup> A related concept is what has been called the

275. *Id.*

276. See, e.g., MARK SAGOFF, *THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT* 6 (1988); James L. Nicoll, *The Irrationality of Economic Rationality in the Restoration of Natural Resources*, 42 ARIZ. L. REV. 463, 479 (2000).

277. Lee, *supra* note 274, at 477–78 (citing ROBERT V. PERCIVAL ET AL., *ENVIRONMENTAL REGULATIONS: LAW, SCIENCE, AND POLICY* 24 (4th ed. 2003) (“Because economic concepts and terminology are so prevalent in this field, it is vital that everyone approaching environmental law be conversant with those concepts and terminology—if only so that criticism of them can be informed and astute.”)).

278. Lee, *supra* note 274, at 478 (quoting ADAM SMITH, *THE WEALTH OF NATIONS* 423 (Edwin Cannan ed., *The Modern Library* 1937) (1776)).

279. Lee, *supra* note 274, at 478–82.

280. EUROPEAN COMM’N, DG ENV’T, *A STUDY ON THE ECONOMIC VALUATION OF ENVIRONMENTAL EXTERNALITIES FROM LANDFILL DISPOSAL AND INCINERATION OF WASTE* ii (2000), available at [http://ec.europa.eu/environment/waste/studies/pdf/econ\\_eva\\_landfill\\_report.pdf](http://ec.europa.eu/environment/waste/studies/pdf/econ_eva_landfill_report.pdf).

281. National Oceanic and Atmospheric Administration Coastal Services Center, *Restoration Economics* (2009), <http://digitalcorporation.org/corp/nps/files/govdocs1/096/096369.html>; Lee, *supra* note 274, at 478.

282. Lee, *supra* note 274, at 479 n.140 (citing Rudy Perkins, Note, *Electricity Deregulation, Environmental Externalities and the Limitations of Price*, 39 B.C. L. REV. 993, 994 (1998) (describing air pollution from a coal plant as an externality)).

283. Lee, *supra* note 274, at 479.

“tragedy of the commons,” the problem of overexploitation of resources free to all but “valued by none,” such as unregulated ocean fisheries subject to over-fishing.<sup>284</sup>

Negative externalities, public goods, and commons are distinct economic concepts, but they basically describe the same problem: when public costs are not captured in private transactions, the result is an unsustainable and inefficient use of resources with hidden costs which ultimately must be borne by the producer, the consumer, or the public at large.<sup>285</sup> Environmental regulation, for instance, imposes a cost on the producer designed to capture, through abatement measures, the external costs of pollution which otherwise would fall upon society in the form of increased health care costs and the depletion or degradation of natural resources.<sup>286</sup> As one writer puts it: “Environmental regulation is necessary from an economic standpoint because it corrects for the market’s failure to internalize the costs of pollution or to generate an efficient amount of public goods such as clean air.”<sup>287</sup>

The concept of externalities has been well-established for more than half a century.<sup>288</sup> However, since the 1960s a great deal of progress has been made towards *quantifying* or valuing externalities, that is, placing a dollar cost on such externalities, primarily for the purpose of “internalizing” them (including them in the purchase price, thus making them “internal” to market transactions) through public policy initiatives.<sup>289</sup> There are two basic approaches to valuing the cost of negative externalities: (1) direct damage estimation and (2) estimation of the cost of abatement measures.<sup>290</sup> Calculating direct damages involves estimating human health and environmental harm in dollars linked to emissions of a particular pollutant, then tallying the results for all pollutants.<sup>291</sup> Cost of abatement approaches, on the other hand, use the cost of pollution controls as a proxy for negative externality costs associated with a particular pollutant.<sup>292</sup> In general, externality costs can be calculated through the damage estimation approach using the following equation:

$$\text{Externality Cost} = (\text{Size of Insult}) \times (\text{Value of Environmental Damage/unit of insult}),$$

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284. *Id.* at 480 (citing H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. POL. ECON. 124, 135 (1954); Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968), reprinted in *ECONOMICS OF THE ENVIRONMENT* (Nancy S. Dorfman & Robert Dorfman eds., 3d ed. 1993)).

285. Lee, *supra* note 274, at 480.

286. Kirsten H. Engel, *The Dormant Commerce Clause Threat to Market-Based Environmental Regulation: The Case of Electricity Deregulation*, 26 *ECOLOGY L.Q.* 243, 251 (1999).

287. *Id.*

288. EUROPEAN COMM’N, *supra* note 280, at 9.

289. *Id.*

290. Jonathan Koomey & Florentin Krause, Lawrence Berkeley Laboratory, *Introduction to Environmental Externality Costs*, in *HANDBOOK ON ENERGY EFFICIENCY IN 1997* 6–7 (1997), available at [http://siteresources.worldbank.org/EXTRENERGYTK/Resources/5138246-1237906527727/Introduction\\_to\\_Environmental\\_Externality\\_Costs.pdf](http://siteresources.worldbank.org/EXTRENERGYTK/Resources/5138246-1237906527727/Introduction_to_Environmental_Externality_Costs.pdf).

291. *Id.*

292. *Id.*

where: *Externality Cost* = the total external cost to society, in dollars; *Size of Insult* is expressed in physical units (lbs emitted or hectares degraded); and *Value of Environmental Damage* (VED) is expressed in dollars per physical unit of insult.<sup>293</sup>

Building upon this basic concept, negative externalities from power plant fuel consumption, for example, can be described by the following equation:

$$\text{Externality Cost } (\$/kwh) = EF \text{ (lbs/Btu)} \times HR \text{ (Btu/kwh)} \times VED \text{ (\$/lb)},$$

where: *EF* = Emission Factor, in lbs/Btu of fuel consumed; *HR* = Heat Rate of power plant, in Btus/kwh; and *VED* = Value of Environmental Damage, in  $\$/lb$ .<sup>294</sup>

There are a number of unresolved questions with regard to calculating negative externality costs associated with global warming due to GHG emissions, including the cumulative nature of greenhouse gases and their persistence in the atmosphere over centuries or millennia, the discount rate assumed for such long-term environmental effects, allowances for future adaptation and mitigation measures, and possible use of “equity weighting” to allow for disproportionate effects of climate change on poorer countries.<sup>295</sup> Nevertheless, valuation of environmental externalities is increasingly important in setting energy policy, particularly in assessing the costs of climate change associated with GHG emissions. For example, California has been described as “arguably at the leading edge of externality policy,” owing to the use of externality valuation in its electricity planning process.<sup>296</sup> In Europe, the European Commission sponsored the *ExternE* computer program designed to estimate externalities associated with energy production.<sup>297</sup> A 1998 assessment of global warming costs by *ExternE [1998]*, based on environmental impacts estimated by the IPCC, range from 0.018 to 0.046 Euro/kg of CO<sub>2</sub>, with a median of 0.029 Euro/kg.<sup>298</sup> In the United States, a similar project has been jointly sponsored by the U.S. Department of Energy and the European Commission.<sup>299</sup>

In 2011, the United Nations-backed Principles for Responsible Investment and the United Nations Environment Programme Finance Initiative commissioned Trucost, a company which “has developed a comprehensive approach to calculating quantitative environmental impacts,” to calculate the cost of global environmental externalities, including those associated with

293. *Id.* at 5.

294. *Id.*

295. David Pearce, Keynote Address at the Workshop on Energy Policy and Externalities: The Life Cycle Analysis Approach, Paris, at 9–12 (Nov. 15–16, 2001), available at [http://www.cserge.ucl.ac.uk/NEA%20\\_%20Energy%20Policy%20and%20Externalities.pdf](http://www.cserge.ucl.ac.uk/NEA%20_%20Energy%20Policy%20and%20Externalities.pdf).

296. Koomey & Krause, *supra* note 290, at 7.

297. Pearce, *supra* note 295, at 2.

298. A. RABL, THE IMPORTANCE OF EXTERNAL COSTS FOR THE COMPETITIVENESS OF RENEWABLE ENERGIES 4 (2000), available at [http://www.cenerg.ensmp.fr/francais/themes/impact/pdf/Articles2000/Solar-GlobEnergy\(Rabl\).pdf](http://www.cenerg.ensmp.fr/francais/themes/impact/pdf/Articles2000/Solar-GlobEnergy(Rabl).pdf).

299. Pearce, *supra* note 295, at 2.

climate change, and their impact on the economy, public energy companies and institutional investors.<sup>300</sup> The study concluded that the cost of all environmental externalities is high and increasing, and that global *annual* environmental externality costs caused by human activity amounted to an estimated \$6.6 *trillion* in 2008, equivalent to 11 percent of global gross domestic product (GDP). Assuming a “business as usual” scenario, “global environmental costs are projected to reach US\$28.6 trillion, equivalent to 18% of GDP in 2050.”<sup>301</sup> GHG emissions “and resulting climate change impacts” accounted for *most* of the total environmental externality costs, above, rising from 69 percent of all externality costs in 2008 to a projected 73 percent in 2050.<sup>302</sup> Global *annual* externality costs from *GHG emissions* were calculated at approximately \$4.5 *trillion* in 2008, representing the present value (in 2008 dollars) of future climate change impacts from all GHG emissions during that year.<sup>303</sup> Rising costs due to escalating GHG emissions under a “business as usual” scenario (that is, no meaningful reductions in rising GHG emissions due to regulation), combined with “mounting climate change impacts,” are projected by the United Nations Environment Programme study to result in annual global externality costs of \$21 trillion by 2050, 13 percent of global GDP.<sup>304</sup>

It should be apparent that, as with any real estate appraisal, there is no precise or uniform way to value such externalities, yet the fact that governments and private institutions, in particular the insurance industry,<sup>305</sup> are seriously engaged in developing and refining economic models aimed at quantifying the costs of climate change due to GHG emissions is enough to indicate that attaching dollar values to environmental degradation is more than simply attempting to value the loss of the “intangible” aesthetic enjoyment and recreational benefits of a healthy, clean and sustainable environment, which are also social costs of pollution. Assessing environmental costs primarily entails valuing the “tangible” real and personal property interests of the public at large which will be negatively affected by climate change. Those tangible property interests include real estate and improvements endangered by coastal flooding, loss of income associated with diminished tourism in areas negatively affected, crop failures due to drought, damage to infrastructure and private property from inland flooding and increasingly severe storms, as well as the considerable costs of avoidance or *adaptation* that places such as Tuvalu and the Cataret Islands in the South Pacific will incur to relocate their populations as sea levels

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300. PRI ASSOCIATION & UNEP FINANCE INITIATIVE, UNIVERSAL OWNERSHIP, WHY ENVIRONMENTAL EXTERNALITIES MATTER TO INSTITUTIONAL INVESTORS 10, 57 (Wolfgang Engshuber, et al., eds., 2011), available at [http://www.unepfi.org/fileadmin/documents/universal\\_ownership\\_full.pdf](http://www.unepfi.org/fileadmin/documents/universal_ownership_full.pdf).

301. *Id.* at 4.

302. *Id.*

303. *Id.* at 4 n.2, 18.

304. *Id.* at 18.

305. GELBSPAN, HEAT, *supra* note 7, at 88.

rise, or that London may incur to build a new Thames Barrier.<sup>306</sup> “Climate change,” as Nicolas Stern, former chief economist of the World Bank, puts it, “is the greatest market failure the world has ever seen.”<sup>307</sup>

Such costs do not lack the reciprocity required by the Supreme Court as a characteristic of mail fraud, wherein the gain to the defrauder is a “mirror image” of the victim’s loss,<sup>308</sup> since negative external or social costs of GHG emissions which are not captured in today’s market transactions constitute debts chargeable either to the energy sector or the public at large, *but not both*. Where the former benefits by avoiding externality costs, the latter is harmed to an equal degree by being forced to absorb them. Debts or contingent obligations for reimbursement have been held “tangible” property under the mail fraud statute by the federal courts.<sup>309</sup> As has been seen above, establishing the precise amount of social costs is unnecessary to show a deprivation of property under the mail/wire fraud statute.<sup>310</sup> Furthermore, the victims need not have suffered any actual loss of a property interest at all, since the scheme to defraud need not have succeeded.<sup>311</sup> All that is required, to prove a scheme to defraud a victim of *tangible* property, is that the scheme entailed an anticipated gain to the defrauder which “mirrors” the anticipated or foreseeable loss to the victim.<sup>312</sup> Officers of denier energy companies cannot be presumed to be ignorant of the negative externality costs of their operations to be borne by the public at large, since their plan of deception amounts to nothing less than a scheme to conceal from the public *the very knowledge that such costs exist*.

### B. Conspiracy to Defraud the United States

Generally, a conspiracy to defraud the United States under 18 U.S.C. § 371 encompasses any conduct which would “interfere with or obstruct one of its lawful governmental functions by deceit, craft or trickery, or at least by means that are dishonest.”<sup>313</sup> The government need not suffer any loss of

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306. See PEARCE, *supra* note 30, at 55–59.

307. WEART, *supra* note 63, at 195.

308. See *Skilling v. United States*, 130 S.Ct. 2896, 2926 (2010).

309. See, e.g., *United States v. Loney*, 959 F.2d 1332, 1336 (5th Cir. 1992) (flight award coupons are property); *United States v. Madeoy*, 912 F.2d 1486, 1492 (D.C. Cir. 1990) (FHA insurance commitment, by which the Government promises to pay the lender if the borrower defaults on the loan, is a “property interest,” not an “intangible right”).

310. See *United States v. Jordan*, 626 F.2d 928, 931 (D.C. Cir. 1980).

311. See *United States v. Barber*, 881 F.2d 345, 348–49 (7th Cir. 1989); see also *United States v. Ginsburg*, 909 F.2d 982, 988 n.8 (7th Cir. 1990) (noting that no actual loss of money or property need be alleged); *United States v. Bucey*, 876 F.2d 1297, 1311 (7th Cir. 1989) (holding that “the ultimate success of the fraud and the actual defrauding of a victim” are not required); *United States v. Pollack*, 534 F.2d at 971 (D.C. Cir. 1976).

312. *Skilling*, 130 S. Ct. at 2926.

313. U.S. DEP’T OF JUSTICE, CRIMINAL TAX MANUAL § 23.07(1)(b) (quoting *Hammerschmidt v. United States*, 265 U.S. 182, 188 (1924)), available at <http://www.justice.gov/tax/readingroom/2008ctm/CTM%20Chapter%2023.htm#TOC1>.

money or property in order to establish the offense.<sup>314</sup> Section 371, titled “Conspiracy to commit offense or to defraud United States” provides, in part, that:

If two or more persons conspire either to commit any offense against the United States, or to defraud the United States, or any agency thereof in any manner or for any purpose, and one or more of such persons do any act to effect the object of the conspiracy, each shall be fined under this title or imprisoned not more than five years, or both.<sup>315</sup>

Because the agreement may be either to commit a federal offense *or* to defraud the United States, § 371 criminalizes two types of agreements: (1) conspiracies to commit a specific offense against the United States (the “offense” clause), and (2) conspiracies to defraud the United States (the “defraud” clause).<sup>316</sup> The “offense” clause is broad and reaches conspiracies to commit any offense specifically prohibited by other federal statutes. The “defraud” clause is more narrowly defined and prohibits conspiring to defraud the U.S. government.<sup>317</sup> Under the “defraud” clause, the government must prove the victim of the fraud was the United States or an agency of the United States.<sup>318</sup> Corporations as well as individuals may be held criminally liable under § 371.<sup>319</sup>

The principal purpose of the “defraud” clause is to protect the integrity of governmental operations from impairment or frustration through deceptive practices.<sup>320</sup> Section 371 reaches “any conspiracy for the purpose of impairing, obstructing, or defeating the lawful function of any department of government.”<sup>321</sup> In an Eleventh Circuit case upholding the conviction of two

314. See *United States v. Ballistrea*, 101 F.3d 827, 832 (2d Cir. 1996) (“[18 U.S.C. § 371] not only reaches schemes which deprive the government of money or property, but also is designed to protect the integrity of the United States and its agencies.”). In addition to imprisonment, the maximum fine for a felony conviction under § 371 is \$250,000 for individuals and \$500,000 for “organizations,” unless the pecuniary gain from the offense or the “pecuniary loss to a person other than the defendant” exceeds those amounts, in which case the maximum fine is *twice the gain or loss, whichever is greater.*” 18 U.S.C. § 3571(b)(3), (c)(3), (d) (2006) (emphasis added).

315. 18 U.S.C. § 371 (2006).

316. *United States v. Kraig*, 99 F.3d 1361, 1366 (6th Cir. 1996); *United States v. Hitt*, 249 F.3d 1010, 1015 (D.C. Cir. 2001); *United States v. Arch Trading Co.*, 987 F.2d 1087, 1091 (4th Cir. 1993); *United States v. Murphy*, 957 F.2d 550, 552 (8th Cir.1992); *United States v. Helmsley*, 941 F.2d 71, 90 (2d Cir. 1991).

317. *United States v. Hurley*, 957 F.2d 1, 3 (1st Cir. 1992); *United States v. Tuohey*, 867 F.2d 534, 536–37 (9th Cir. 1989); *United States v. Cure*, 804 F.2d 625, 628 (11th Cir. 1986).

318. See *United States v. Johnson*, 383 U.S. 169, 172 (1966); *United States v. Lane*, 765 F.2d 1376, 1379 (9th Cir. 1985); *United States v. Pintar*, 630 F.2d 1270, 1278 (8th Cir. 1980).

319. See, e.g., *United States v. Stevens*, 909 F.2d 431, 432–33 (11th Cir. 1990); *United States v. Peters*, 732 F.2d 1004, 1008 (1st Cir. 1984); *United States v. S & Vee Cartage Co.*, 704 F.2d 914, 920 (6th Cir. 1983).

320. *Tuohey*, 867 F.2d at 537 (“[T]he ‘defraud’ part of section 371 criminalizes any willful impairment of a legitimate function of government, whether or not the improper acts or objective are criminal under another statute.”); *Tanner v. United States*, 483 U.S. 107, 128 (1987).

321. *Dennis v. United States*, 384 U.S. 855, 861 (1966); *United States v. Burgin*, 621 F.2d 1352, 1356 (5th Cir. 1980) (“The term ‘defraud’ as used in § 371 not only reaches financial or property loss through employment of a deceptive scheme, but also is designed and intended to protect the integrity of the United States and its agencies, programs and policies.”) (citing *United States v. Johnson*, 383 U.S. 169 (1965); *Haas v. Henkel*, 216 U.S. 462 (1910); *United States v. Brasco*, 516 F.2d 816 (2d Cir. 1975);

defendants for impeding, impairing, obstructing, and defeating the lawful functions of the U.S. Rural Electrification Administration through fraud in connection with a contract for construction of a power plant using federally-guaranteed funds, the court held that “the United States has a fundamental interest in the manner in which projects receiving its aid are conducted.”<sup>322</sup> The court continued: “This interest is not limited strictly to accounting for United States Government funds invested in the project, but extends to seeing that the entire project is administered honestly and efficiently and without corruption and waste.”<sup>323</sup>

There have been numerous U.S. governmental initiatives, beginning in the 1970s, to assess and compile scientific information on climate change and global warming for policy and planning purposes.<sup>324</sup> Such planning involves not only mitigation efforts intended to avoid climate catastrophe, but adaptation measures as well, which recognize the need for future public planning to account for rising sea levels, more violent weather extremes, heat-related illness, droughts, food and water shortages, and so forth.<sup>325</sup> These are not merely bureaucratic, record-keeping issues; they affect the health and safety of every citizen, as well as their financial and property interests. It is essential for the well-being of the public at large and the integrity of government itself that these functions be “honestly and efficiently” administered.<sup>326</sup> To the extent that those involved in furthering the climate change denial public relations plan sought, not just to influence or persuade consistent with their free speech rights,<sup>327</sup> but to *frustrate, impede, impair, or obstruct* such information-

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Shushan v. United States, 117 F.2d 110 (5th Cir. 1941); United States v. Sweig, 316 F. Supp. 1148 (S.D.N.Y.1970)).

322. United States v. Conover, 772 F.2d 765, 771 (11th Cir. 1985) (citing United States v. Hay, 527 F.2d 990, 998 (10th Cir. 1975)).

323. *Id.*

324. See generally WEART, *supra* note 63, at 86–113.

325. See, e.g., CAL. NATURAL RES. AGENCY, 2009 CALIFORNIA CLIMATE ADAPTATION STRATEGY: A REPORT TO THE GOVERNOR OF CALIFORNIA IN RESPONSE TO EXECUTIVE ORDER S-13-2008 Executive Summary (2009), available at <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F-ES.pdf>; N.Y. STATE ENERGY AND DEV. AUTH., CLIMAID SYNTHESIS REPORT, AN INTEGRATED ASSESSMENT FOR EFFECTIVE CLIMATE CHANGE ADAPTATION STRATEGIES IN NEW YORK STATE (2010), available at [http://www.nyserda.ny.gov/~media/Files/Publications/Research/Environmental/EMEP/climaid/responding-to-climate-change-synthesis.ashx?sc\\_database=web](http://www.nyserda.ny.gov/~media/Files/Publications/Research/Environmental/EMEP/climaid/responding-to-climate-change-synthesis.ashx?sc_database=web); N.Y. STATE CLIMATE ACTION COUNCIL, NEW YORK STATE CLIMATE ACTION PLAN INTERIM REPORT ch. 11 (2010), available at <http://www.nyclimatechange.us/InterimReport.cfm>. The New York State Department of Environmental Conservation has begun initiatives addressing climate change adaptation and mitigation, including statewide greenhouse gas inventory and reduction initiatives, Regional Greenhouse Gas Initiatives (RGGI), and a “Climate Smart Communities” program involving local communities. *Energy/Climate Solutions*, STATE DEP’T OF ENVTL. CONSERV., <http://www.dec.ny.gov/energy/43384.html#adaptation> (last visited Mar. 15, 2011).

326. *Conover*, 772 F.2d at 771.

327. As noted *supra* note 151, such activities come within the ambit of the *Noerr-Pennington* doctrine, which protects attempts “to persuade the legislature or the executive to take particular action with respect to a law.” *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 136 (1961). However, as the D.C. Circuit held in *United States v. Philip Morris USA, Inc.*, “the doctrine does not protect deliberately false or misleading statements. “[N]either the *Noerr-Pennington* doctrine

gathering efforts through misrepresentation, deception or dishonesty, they may have violated § 371.

But is the statute broad enough to reach such behavior? Cases interpreting the “defraud” prong of § 371 rely heavily on two early Supreme Court cases, *Haas v. Henkel*<sup>328</sup> and *Hammerschmidt v. United States*.<sup>329</sup> These cases bear scrutiny, since they make clear that for over a century the scope of the “defraud” clause has been interpreted extremely broadly, prohibiting the use of deceit to obstruct or impair governmental functions and efficiency by, for example, leaking or falsifying governmental reports thus destroying their value as “fair, impartial and reasonably accurate.”<sup>330</sup>

In *Haas*, the defendant was charged with conspiring to induce a public official to give the co-conspirators advance information scheduled to be published in a Department of Agriculture report and with falsifying one such report, both for the purpose of speculation in the cotton market.<sup>331</sup> *Haas* contended on appeal, *inter alia*, that the government’s indictments failed to allege a conspiracy to defraud the United States, since the government had suffered no pecuniary loss.<sup>332</sup> The Supreme Court held that “it is not essential that such a conspiracy shall contemplate a financial loss or that one shall result,” since the statute “is broad enough in its terms to include any conspiracy for the purpose of impairing, obstructing or defeating the lawful function of any department of Government.”<sup>333</sup> Because, the Court continued, the gathering of statistics by the Department of Agriculture “is the exercise of a function within the purview of the Constitution, it must follow that any conspiracy which is calculated to obstruct or impair its efficiency and destroy the value of its operations and reports *as fair, impartial and reasonably accurate*, would be to defraud the United States.”<sup>334</sup>

In a later case, *Hammerschmidt*, thirteen individuals were convicted under the “defraud” clause for conspiring to defraud the United States by printing and distributing handbills advocating resistance to the draft imposed by the Selective Service Act of May 18, 1917.<sup>335</sup> The Sixth Circuit upheld their conviction, but the Supreme Court reversed, holding that the indictment should have been quashed since the government had failed to allege fraud as an

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nor the First Amendment more generally protects petitions predicated on fraud or deliberate misrepresentation.’ *Edmondson & Gallagher v. Alban Towers Tenants Ass’n*, 48 F.3d 1260, 1267 (D.C. Cir. 1995).” *United States v. Philip Morris USA, Inc.*, 566 F.3d 1095, 1123 (D.C. Cir. 2009).

328. 216 U.S. 462 (1910).

329. 265 U.S. 182 (1924).

330. *Haas*, 216 U.S. at 479–80. Note that in criminal tax prosecutions, this is generally called a “Klein conspiracy,” where the defendant conspired to defraud the United States by “impeding, impairing, obstructing and defeating the lawful government functions of the Department of the Treasury in the collection of the revenue: to wit, income taxes.” *United States v. Klein*, 247 F.2d 908, 915 (2d Cir. 1957).

331. *Haas*, 216 U.S. at 477–78.

332. *Id.* at 479.

333. *Id.*

334. *Id.* at 479–80 (emphasis added).

335. *Hammerschmidt*, 265 U.S. at 185.

essential element.<sup>336</sup> The Court, in stressing that the use of fraudulent or deceptive means is necessary as an element of the “defraud” prong, provided the following definition of “to defraud”:

To conspire to defraud the United States means . . . to interfere with or obstruct one of its lawful governmental functions *by deceit, craft or trickery, or at least by means that are dishonest*. It is not necessary that the Government shall be subjected to property or pecuniary loss by the fraud, but only that its legitimate official action and purpose shall be defeated *by misrepresentation, chicanery* or the overreaching of those charged with carrying out the governmental intention.<sup>337</sup>

Therefore, under *Hammerschmidt*, *deceit, dishonesty, misrepresentation, chicanery, trickery, or even “craft”* in the scheme is enough to establish the defrauding element of the statute.<sup>338</sup> Without parsing the dictionary definitions of these words, it is apparent from their use that a wide range of deceptive practices would be encompassed within the prohibited conduct of the statute. Subsequent cases have upheld this broad interpretation, such that § 371 now encompasses conduct which is not criminal under a separate statute,<sup>339</sup> nor is § 371 limited by either the common-law or statutory mail/wire fraud definition of “defraud.”<sup>340</sup> All that need be shown is that the co-conspirators agreed to interfere with or obstruct a lawful governmental function “by deceit, craft or trickery, or at least by means that are dishonest.”<sup>341</sup> Outright lies would surely be included in this broad formula, but so too would the overall scheme of disinformation, including omissions, previously described.

Like the “offense” clause, the “defraud” clause requires the government to prove the basic elements of a § 371 conspiracy: (1) an agreement to defraud the United States,<sup>342</sup> (2) knowing and voluntary participation (intent or membership), and (3) an overt act.<sup>343</sup> Since the “overt act” element is satisfied if *at least one* member of the conspiracy committed an “overt act” in furtherance of the conspiracy,<sup>344</sup> this Article will address the first two elements.

336. *Id.* at 188–89.

337. *Id.* at 188 (emphasis added); *see also* United States v. Collins, 78 F.3d 1021, 1037 (6th Cir. 1996); United States v. Caldwell, 989 F.2d 1056, 1058 (9th Cir. 1993).

338. *Hammerschmidt*, 265 U.S. at 188.

339. United States v. Tuohey, 867 F.2d 534, 536–37 (9th Cir. 1989).

340. McNally v. United States, 483 U.S. 350, 356 (1987).

341. *Hammerschmidt*, 265 U.S. at 188; United States v. Hurley, 957 F.2d 1, 4–5 (1st Cir. 1992); United States v. Jerkins, 871 F.2d 598, 603 (6th Cir. 1989).

342. That is, to interfere with or obstruct a lawful function of government by deceitful means. *See Hammerschmidt*, 265 U.S. at 188.

343. *See* 18 U.S.C. § 371; *see also* U.S. DEP’T OF JUSTICE, *supra* note 313, § 23.02 (“Elements”).

344. *Yates v. United States*, 354 U.S. 298, 334 (1957), *overruled on other grounds by* *Burks v. United States*, 437 U.S. 1, 12 (1978) (“It is not necessary that an overt act be the substantive crime charged in the indictment as the object of the conspiracy. . . . Nor, indeed, need such an act, taken by itself, even be criminal in character. . . . The function of the overt act in a conspiracy prosecution is simply to manifest ‘that the conspiracy is at work’ . . . and is neither a project still resting solely in the minds of the conspirators nor a fully completed operation no longer in existence.”). *See generally, supra* note 8 and accompanying text. Note that overt acts may include acts of *concealment*, provided they occur before the purpose of the conspiracy has been accomplished. *Grunewald v. United States*,

### *I. Agreement to Defraud the United States*

The “agreement” itself is the first element and the “gist” of the crime of conspiracy to defraud.<sup>345</sup> That is because entering into the agreement is the crime: the Supreme Court has held that “a conspiracy may exist and be punished whether or not the substantive crime ensues, for the conspiracy is a distinct evil, dangerous to the public, and so punishable in itself.”<sup>346</sup> Therefore, although the statute requires an “overt act” in furtherance of the conspiracy, the agreement to commit an unlawful act is punishable in and of itself and the ultimate success of the purpose of the agreement is irrelevant.<sup>347</sup>

There need not be an express or formal agreement; a tacit understanding is sufficient.<sup>348</sup> For an agreement to exist, it is not necessary that it be in writing, or even expressly stated, nor need it spell out all the details of its execution.<sup>349</sup> Nor need the government prove that all the conspirators participated in every aspect of the agreement or knew all the details of the actions necessary to carry it out. Indeed, “[t]here is no requirement that every member of the conspiracy participate in every transaction to find a single conspiracy, nor must the evidence show that each conspirator knew the others or the details of each venture making up the conspiracy.”<sup>350</sup> The conspiracy may even have multiple objectives and involve sub-agreements.<sup>351</sup>

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353 U.S. 391, 405 (1957). The conspiracy has certainly “been at work” for several decades, and remains “at work.” See, e.g., Kevin Grandia, *Oil Lobby’s “Energy Citizens” Astroturf Campaign Exposed*, THE HUFFINGTON POST (Aug. 13, 2009), [http://www.huffingtonpost.com/kevin-grandia/leaked-memo---oil-lobbys\\_b\\_259149.html#](http://www.huffingtonpost.com/kevin-grandia/leaked-memo---oil-lobbys_b_259149.html#) (reporting on an August 2009 email memo obtained by Greenpeace describing plans for a “nationwide astroturf campaign attacking climate legislation” through the recruiting of “employees, retirees, vendors and contractors to attend ‘Energy Citizen’ rallies in key Congressional districts nationwide.”). For ongoing denier activities, including recently-leaked 2012 denier strategy documents, see generally DESMOGBLOG.COM, <http://www.desmogblog.com> (last visited Mar. 28, 2012).

345. *United States v. Falcone*, 311 U.S. 205, 210 (1940); see also *Iannelli v. United States*, 420 U.S. 770, 785 n.17 (1975) (“The essence of the crime of conspiracy is agreement.”) (citing *Pereira v. United States*, 347 U.S. 1, 11–12 (1954); *Braverman v. United States*, 317 U.S. 49, 53 (1942); *Morrison v. California*, 291 U.S. 82, 92–93 (1934)).

346. *Salinas v. United States*, 522 U.S. 52, 65 (1997) (citing *Callanan v. United States*, 364 U.S. 587, 594 (1961)).

347. *United States v. Jimenez Recio*, 537 U.S. 270, 274–75 (2003).

348. *Iannelli*, 420 U.S. at 777 n.10; *United States v. Martin*, 790 F.2d 1215, 1219 (5th Cir. 1986).

349. *United States v. Aubin*, 87 F.3d 141, 145 (5th Cir. 1996); *United States v. Boone*, 951 F.2d 1526, 1543 (9th Cir. 1992); *United States v. DePew*, 932 F.2d 324, 326 (4th Cir. 1991); *United States v. Pearce*, 912 F.2d 159, 161 (6th Cir. 1990); *United States v. Powell*, 853 F.2d 601, 604 (8th Cir. 1988); *United States v. Elledge*, 723 F.2d 864, 868 (11th Cir. 1984).

350. *United States v. Gonzalez*, 940 F.2d 1413, 1422 (11th Cir. 1991) (citing *United States v. Stitzer*, 785 F.2d 1506, 1518 (11th Cir. 1986)).

351. *Braverman v. United States*, 317 U.S. 49, 53 (1942); *United States v. Maldonado-Rivera*, 922 F.2d 934, 963 (2d Cir. 1990); *United States v. Warner*, 690 F.2d 545, 550 n.8 (6th Cir. 1982); *United States v. Zemek*, 634 F.2d 1159, 1167 (9th Cir. 1980); *United States v. Rodriguez*, 585 F.2d 1234, 1248–49 (5th Cir. 1978), *overruled on other grounds by United States v. Michelena-Orovio*, 719 F.2d 738 (5th Cir. 1983) (en banc).

Moreover, a conspiracy to defraud the United States need not even be the main objective of the conspirators.<sup>352</sup> To establish the existence of an “agreement” requires that the government prove at least two persons reached a mutual understanding to further the goals of the conspiracy,<sup>353</sup> but the second person need not be named as a defendant or in the indictment at all.<sup>354</sup> Furthermore, “it is not necessary for a conspirator to know the identity of his co-conspirators or the exact role which they play in the conspiracy.”<sup>355</sup> Corporations, their officers, agents, or employees can conspire with one another in violation of the statute; however, no conspiracy can exist between a single individual and a corporation wholly under that person’s control.<sup>356</sup> Yet two or more corporate officials may not only conspire with one another, but with their own corporation as well. The First Circuit has held that “[t]he actions of two or more agents of a corporation, conspiring together on behalf of the corporation, may lead to conspiracy convictions of the agents (because the corporate veil does not shield them from criminal liability) and of the corporation (because its agents conspired on its behalf).”<sup>357</sup>

Also, “[t]he nature of the agreement comprising a conspiracy can be inferred from circumstantial evidence.”<sup>358</sup> For the evidence to sustain a conviction, “it is not necessary that the evidence show an express or formal agreement; evidence of ‘a tacit understanding is sufficient.’”<sup>359</sup> As the Fifth Circuit has stated: “[W]here the circumstances are such as to warrant a jury in finding that the conspirators had a unity of purpose or a common design and understanding, or a meeting of minds in an unlawful arrangement, the conclusion that a conspiracy is established is justified.”<sup>360</sup> The existence of an

352. “A conspiracy may have multiple objectives, but if one of the objectives, even a minor one, is the evasion of federal taxes, the offense is made out, even though the primary objective may be concealment of another crime.” *United States v. Collins*, 78 F.3d 1021, 1037–38 (6th Cir. 1996) (citing *Ingram v. United States*, 360 U.S. 672, 679–80 (1959)).

353. See, e.g., *United States v. Chase*, 372 F.2d 453, 459 (4th Cir. 1967); *Sears v. United States*, 343 F.2d 139, 141–42 (5th Cir. 1965).

354. *Rogers v. United States*, 340 U.S. 367, 375 (1951) (“[I]dentity of the other members of the conspiracy is not needed, inasmuch as one person can be convicted of conspiring with persons whose names are unknown.”).

355. *Sears*, 343 F.2d at 141–42 (citing *Rogers*, 340 U.S. at 367; *Sigers v. United States*, 321 F.2d 843 (5th Cir. 1963); *United States v. Dardi*, 330 F.2d 316 (2d Cir. 1964); *United States v. Wenzel*, 311 F.2d 164 (4th Cir. 1962); *Isaacs v. United States*, 301 F.2d 706 (8th Cir. 1962)).

356. *United States v. Stevens*, 909 F.2d 431, 432–34 (11th Cir. 1990).

357. *United States v. Peters*, 732 F.2d 1004, 1008 (1st Cir. 1984) (citing *United States v. S & Vee Cartage Co.*, 704 F.2d 914, 920 (6th Cir. 1983); *United States v. Hartley*, 678 F.2d 961, 970–72 (11th Cir. 1982); *Dussouy v. Gulf Coast Inv. Corp.*, 660 F.2d 594, 603 (5th Cir. 1981) (dictum)).

358. *United States v. Schultz*, 855 F.2d 1217, 1221 (6th Cir. 1988) (citing *United States v. Butler*, 618 F.2d 411, 414 (6th Cir. 1980)).

359. *United States v. Aubin*, 87 F.3d 141, 145 (5th Cir. 1996) (citing *Iannelli v. United States*, 420 U.S. 770, 777 n.10 (1975); *United States v. Hopkins*, 916 F.2d 207, 212 (5th Cir. 1990)).

360. *Hopkins*, 916 F.2d at 212 (citing *Am. Tobacco Co. v. United States*, 328 U.S. 781, 810 (1946); *United States v. Cuni*, 689 F.2d 1353, 1356 (11th Cir. 1982); *United States v. Graves*, 669 F.2d 964, 969 (5th Cir. 1982)).

agreement may be inferred from the totality of the circumstances, including actions and statements of the conspirators.<sup>361</sup>

In *United States v. McKee*, defendant construction company owners were members of a religious sect who opposed paying taxes based on their opposition to war.<sup>362</sup> Defendants were convicted of conspiracy to defraud the United States and tax evasion for concealing payroll information from the Internal Revenue Service, failing to properly withhold payroll taxes, and failing to file individual tax returns.<sup>363</sup> On appeal, defendants complained of the government's failure to prove the existence of an "agreement" under § 371 through direct evidence.<sup>364</sup> The court, however, stated that "illegal agreements are rarely, if ever, reduced to writing or verbalized with the precision that is characteristic of a written contract."<sup>365</sup> Instead, the court continued, an illegal agreement "can be, and almost always is, an implicit agreement among the parties to the conspiracy."<sup>366</sup> Because "a conspiratorial agreement can be proven circumstantially based upon reasonable inferences drawn from actions and statements of the conspirators or from the circumstances surrounding the scheme," a tacit or implicit agreement is sufficient.<sup>367</sup> Based on defendants' advocacy of non-payment of taxes as well as their overt acts and omissions in furtherance of that goal, an agreement could be inferred, the court found, because the evidence showed "some common design with unity of purpose to impede [the government]."<sup>368</sup>

With regard to the campaign to cast doubt upon the basic facts of climate science, there is ample evidence of a "unity of purpose or a common design and understanding" for the purpose of "impairing, obstructing or defeating the lawful function" of a number of governmental entities charged with obtaining and disseminating scientific information to the public and policy-makers.<sup>369</sup> First, the existence of a "unity of purpose" or "common design" is evident from the Action Plan and other documents which provide a blueprint for an extensive, sophisticated, and elaborately-funded public relations plan whose purpose is none other than to oppose and obscure the most basic, factual findings of climate scientists. As we have seen, the purpose of the Action Plan is to promote climate science "uncertainties" until "'climate change' becomes a non-issue" and "there are no further initiatives to thwart the threat of climate

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361. *United States v. McKee*, 506 F.3d 225, 238 (3d Cir. 2007).

362. *Id.*

363. *Id.* at 228.

364. *Id.* at 238.

365. *Id.*

366. *Id.*

367. *Id.* (citing *United States v. Smith*, 294 F.3d 473, 478 (3d Cir. 2002) (tacit agreement sufficient); *United States v. Barr*, 963 F.2d 641, 650 (3d Cir. 1992) ("It is well settled that a written or spoken agreement among alleged co-conspirators is unnecessary; rather, indirect evidence of [a] mere tacit understanding will suffice.")).

368. *Id.* at 239.

369. See *Haas v. Henkel*, 216 U.S. 462, 479 (1910); *United States v. Hopkins*, 916 F.2d 207, 212 (5th Cir. 1990).

change.”<sup>370</sup> Given the urgency and necessity of governmental action to address climate change based on the consensus of climate scientists since at least the early 1990s, the assertion that climate science does not support governmental action to curb GHG emissions—the *mantra* of climate change deniers which has been factually untrue for several decades—<sup>371</sup> is profoundly deceptive. It may not be difficult to establish that those entities which saw fit to fund the actions of TASSC, the GCC, ICE, and the GCSCT, including execution of the Action Plan, shared the goals and aspirations of those “front groups,” providing evidence of a “unity of purpose” or “common design” to obscure and distort the facts of climate science in representations made to federal officials in order to forestall governmental efforts to address climate change.<sup>372</sup> Even without the Plan, such a common purpose could be inferred from the concerted actions of climate deniers themselves. An “agreement” can be inferred from the totality of the circumstances, including actions and statements of the conspirators.<sup>373</sup>

Second, the principle purpose of the Plan was ultimately to thwart or impede governmental information gathering and policymaking in order to prevent or forestall curbs on greenhouse gas emissions for as long as possible. The Supreme Court in *Haas* held that any conspiracy calculated to “obstruct or impair” the efficiency of a governmental agency by destroying “the value of its operations and reports *as fair, impartial and reasonably accurate*,” would be to defraud the United States.<sup>374</sup> As part of their strategy, climate deniers appeared before Congressional committees with responsibility for funding climate research, engaged in lobbying activities, made *ad hominem* attacks on government scientists, and belittled government initiatives to address climate change, such as those of NASA and EPA.<sup>375</sup> The climate deniers’ message has been remarkably consistent. Whether they claimed anthropogenic global warming was not happening, or that it was happening but would be inconsequential, or that the costs of addressing it would be greater than its ultimate impact, the conclusion has always been the same: climate science does not support reductions in fossil fuel emissions.<sup>376</sup>

The Plan itself is not just directed at the public but also outlines a sophisticated lobbying strategy aimed at government officials. The Plan calls for establishment of a “Global Climate Science Data Center” (GCSDC), to be “established in Washington” to “inject credible science and scientific accountability into the global climate debate, thereby raising questions about and undercutting the ‘prevailing scientific wisdom.’”<sup>377</sup> The GCSDC, states the

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370. Action Plan, *supra* note 101, at 3.

371. See generally HOGGAN & LITTLEMORE, *supra* note 2, ch. 10, at 118–33 (“From Denial to Delay”).

372. See discussion of “front groups” *supra* Part I.C.

373. *United States v. McKee*, 506 F.3d 225, 238 (3d Cir. 2007).

374. *Haas*, 216 U.S. at 479–80 (emphasis added).

375. See generally *supra* Part I.

376. See *id.*

377. Action Plan, *supra* note 101, at 4.

Plan, is to be staffed “initially with professionals on loan from various companies and associations with a major interest in the climate issue,” with “knowledge and experience in,” among other things, “Congressional relations and knowledge of where individual Senators stand on the climate issue.”<sup>378</sup> The GCSDC was to “become a one-stop resource on climate science for members of Congress, the media, industry and all others concerned” and “a *sound* scientific alternative to the IPCC.”<sup>379</sup> Through a “National Direct Outreach and Education” initiative, the Plan calls for “a direct outreach program to inform and educate members of Congress, state officials, industry leadership, and school teachers/students about uncertainties in climate science.”<sup>380</sup> The Plan continues:

This strategy will enable Congress, state officials and industry leaders [to] be able to raise such serious questions about the Kyoto treaty’s scientific underpinnings that American policy-makers not only will refuse to endorse it, they will seek to prevent progress toward implementation at the Buenos Aires meeting in November or through other ways.<sup>381</sup>

Tactics included conducting “science briefings for Congress, governors, state legislators, and industry leaders,” and developing “information kits on climate science targeted specifically at the needs of government officials and industry leaders . . . to further disseminate information on climate science *uncertainties* and thereby arm these influentials [sic] to raise questions on the science issue.”<sup>382</sup>

In a particularly ominous provision, the Plan implies that the purpose of direct outreach to teachers/students is to embed contrarian uncertainty in the collective mind of the general public in order to “erect a barrier” against all future governmental efforts to address climate change.<sup>383</sup> To accomplish this, the GCSDC was to include a “Science Education Task Group” to “serve as the point of outreach to the National Science Teachers Association (NSTA) and other influential science education organizations,” and to “[d]istribute educational materials directly to schools and through grassroots organizations of climate science partners (companies, organizations that participate in this effort).”<sup>384</sup> This attempt at molding children’s minds to “erect a barrier” against all future climate change regulation is reminiscent of Nazi anti-Semitic

378. *Id.*

379. *Id.* at 5 (emphasis added). Note the use of the word “sound” as in “sound science.” Given that in the denial-sphere “sound” is a euphemism for “contrarian,” what is really intended is: “a *contrarian* scientific alternative to the IPCC.” See *supra* note 90 and accompanying text.

380. *Id.*

381. *Id.*

382. *Id.* at 5–6 (emphasis added).

383. *Id.* at 5 (“Informing teachers/students about uncertainties in climate science will begin to erect a barrier against further efforts to impose Kyoto-like measures in the future.”).

384. *Id.* at 6. To translate this last quoted phrase: in addition to dissemination of educational materials stressing climate change “uncertainties” directly to teachers and students, sympathetic information-laundering front groups were to be used for that purpose as well.

propaganda directed at children, of which there was a considerable amount in Hitler's Germany.<sup>385</sup>

In Congressional hearings held in 1996, "contrarian" witnesses were instrumental in convincing House Science Committee members to cut funding for NASA's "Mission to Planet Earth" by \$400 million and the National Oceanic and Atmospheric Administration's program researching the effects of warming on ocean ecosystems by one-third, and to entirely defund EPA's global monitoring program to assess the impact of climate change on vulnerable ecosystems.<sup>386</sup> Yet government funding of climate research is critical for our understanding of the climate crisis and how to deal with it. This was stated succinctly by William Ruckelshaus, first Administrator of the EPA:

If the critical questions about climate change involve gaining a better understanding of what impacts to expect and what rate of change we might see, then the government must be the entity funding the research. At this point, we urgently need much more research on the nature of the problem. Unfortunately, to the extent that industry funds scientists, it does so to debunk the IPCC. . . . It is clear the government has to take the lead by providing the research.<sup>387</sup>

Ruckelshaus's argument appears to rest on the importance of the research, as well as the necessity for a disinterested source of funding to avoid conflict of interest. Yet Ross Gelbspan in *The Heat is On* identifies another reason: the assurance of scientific rigor and integrity which government sponsorship provides.<sup>388</sup> Gelbspan explains:

Government-funded science provides an assurance of integrity. Conducted according to the exacting standards of professional academic research, it is the arena where truth has the greatest chance, however small, of being revealed. To compromise the standards of scientific research would be to open the door to a direct assault on society's most highly developed body of knowledge.<sup>389</sup>

And yet in 1996, based largely on testimony by climate deniers, the government essentially turned its back on climate research. Although the 1980s

385. See generally CHRISTA KAMENETSKY, CHILDREN'S LITERATURE IN HITLER'S GERMANY: THE CULTURAL POLICY OF NATIONAL SOCIALISM (1986); Jeffrey Herf, *The "Jewish War": Goebbels and the Antisemitic Campaigns of the Nazi Propaganda Ministry*, 19 HOLOCAUST AND GENOCIDE STUDIES 51 (2005). Note that Julius Streicher, editor of Nuremberg's notorious anti-Semitic newspaper, *Der Stürmer*, and sentenced to death by the Nuremberg Tribunal for his Nazi propaganda, was a former elementary schoolteacher who published a number of vicious anti-Semitic children's books during the Nazi era which were widely distributed. See Mary Mills, *Propaganda and Children During the Hitler Years*, THE NIZKOR PROJECT, <http://www.nizkor.org/hweb/people/m/mills-mary/mills-00.html> (last visited May 5, 2011); RANDALL L. BYTWERK, JULIUS STREICHER: NAZI EDITOR OF THE NOTORIOUS ANTI-SEMITIC NEWSPAPER DER STURMER (2001); Holocaust Encyclopedia, *Julius Streicher*, UNITED STATES HOLOCAUST MEMORIAL MUSEUM, <http://www.ushmm.org/wlc/en/article.php?ModuleId=10007129> (last visited May 5, 2011).

386. GELBSPAN, HEAT, *supra* note 7, at 76.

387. *Id.* at 56–57.

388. *Id.* at 57.

389. *Id.*

had seen large increases in global environmental research funding by the federal government, in 1996 “Congress turned that tradition of bipartisan support for science on its head.”<sup>390</sup>

These and other actions may be evidence of an “agreement” to “obstruct or impair” the efficiency of the United States government by representing to government officials, in one form or another, that climate science does not support governmental action to regulate GHG emissions. Federal prosecutors could argue that such actions had the purpose of destroying the value of governmental “operations and reports as fair, impartial and reasonably accurate.”<sup>391</sup>

## 2. *Knowing and Voluntary Participation*

Although the Action Plan and other actions of the front groups funded by the fossil fuel industry and friends may provide evidence of the existence of a conspiracy or “agreement” to defraud the government, a particular defendant, either a corporation or individual, must still be shown to have voluntarily participated in the conspiracy. To establish “membership” in a conspiracy the government must prove that (a) the defendant knew of the conspiracy and (b) intended to join it with the purpose of accomplishing its objectives.<sup>392</sup> Climate change denial involves a number of Fortune 500 corporations and front groups, each of which claims hundreds of corporate members and financial supporters, as well as paid lobbyists, public relations firms, and recruited scientists. Ferreting out the participation of all these individuals and organizations in the conspiracy and establishing their various roles would be a daunting task. However, the government is not obligated to name all the co-conspirators, nor prove each conspirator was aware of all the actions of the other co-conspirators or participated in all aspects of the conspiracy.<sup>393</sup> A defendant may join a conspiracy without knowing all its details or members. The Supreme Court has held that:

Secrecy and concealment are essential features of successful conspiracy. The more completely they are achieved, the more successful the crime. Hence the law rightly gives room for allowing the conviction of those discovered upon showing sufficiently the essential nature of the plan and their connections with it, without requiring evidence of knowledge of all its details or of the participation of others. Otherwise the difficulties, not only

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390. *Id.* at 78.

391. *Haas v. Henkel*, 216 U.S. 462, 479–80 (1910).

392. *See United States v. Berger*, 224 F.3d 107, 114–15 (2d Cir. 2000); *United States v. Evans*, 970 F.2d 663, 668 (10th Cir. 1992); *United States v. Lynch*, 934 F.2d 1226, 1231 (11th Cir. 1991); *United States v. Brown*, 934 F.2d 886, 889 (7th Cir. 1991); *United States v. Sanchez*, 928 F.2d 1450, 1457 (6th Cir. 1991); *United States v. Esparza*, 876 F.2d 1390, 1392 (9th Cir. 1989); *United States v. Yanin*, 868 F.2d 130, 133 (5th Cir. 1989); *United States v. Christian*, 786 F.2d 203, 211 (6th Cir. 1986); *United States v. Norris*, 749 F.2d 1116, 1121 (4th Cir. 1984); *United States v. Flaherty*, 668 F.2d 566, 580 (1st Cir. 1981).

393. *Berger*, 224 F.3d at 114–15; *United States v. Colson*, 662 F.2d 1389, 1391 (11th Cir. 1981); *United States v. Brunetti*, 615 F.2d 899, 903 (10th Cir. 1980).

of discovery, but of certainty in proof and of correlating proof with pleading would become insuperable, and conspirators would go free by their very ingenuity.<sup>394</sup>

Thus, the government would have the advantage of being able to select only those who played the most prominent or egregious roles in the conspiracy for prosecution.<sup>395</sup> However, even if a defendant only agreed to play a minor role in the conspiracy, to establish membership the government need only prove that the defendant understood the overall purpose or essential nature of the conspiracy and intentionally joined in it.<sup>396</sup>

Since the essence of the conspiracy was to convince government officials of something that was not true—that climate science, lacking consensus, did not support governmental action to mitigate GHG emissions—direct statements to that effect by individuals, corporations and other organizations through corporate websites, press releases, distribution of “educational” materials, and other public statements may be direct evidence of knowledge of and knowing participation in the conspiracy. Even a “slight connection” to the conspiracy is sufficient to establish membership.<sup>397</sup> And direct evidence may not be necessary: “all the elements of a conspiracy charge, including intent and knowledge of illicit purpose, ‘may be proven entirely by circumstantial evidence.’”<sup>398</sup> Knowledge of the conspiracy may be inferred from the defendant’s own acts and statements.<sup>399</sup> Further, the Supreme Court has held that “[p]articipation in a criminal conspiracy need not be proved by direct evidence; a common purpose and plan may be inferred from a ‘development and a collocation of circumstances.’”<sup>400</sup> Thus, corporate funding of a trade organization, think tank, or other front group which in its public statements revealed it was dedicated to defeating all governmental action to address climate change through regulation of GHG emissions by representing to government officials that climate science was “uncertain,” could be evidence that the CEO of the funding corporation or the corporation itself “knew” of the

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394. *Blumenthal v. United States*, 332 U.S. 539, 557 (1947).

395. Potential defendants may be fewer than one would think. In *MERCHANTS OF DOUBT*, Oreskes and Conway documented that relatively few scientists, a mere “handful,” have played a vocal role in the climate change disinformation campaign. See *ORESQUES & CONWAY*, *supra* note 8. Furthermore, when the Inuit population of Kivalina sued for compensation for harm inflicted by climate change, including a claim that they had been defrauded by the public relations campaign described above, they only named some two-dozen corporate entities. Kivalina Complaint, *supra* note 58, at 1–55. But see Kirk B. Maag, Note, *Climate Change Litigation: Drawing Lines to Avoid Strict, Joint and Several Liability*, 98 *GEO. L.J.* 185, 212–23 (2009) (maintaining Kivalina plaintiffs alleged joint and several liability).

396. *United States v. Lopez*, 443 F.3d 1026, 1030 (8th Cir. 2006) (en banc); *United States v. Andrews*, 953 F.2d 1312, 1318 (11th Cir. 1992); *United States v. Roberts*, 881 F.2d 95, 101 (4th Cir. 1989); *United States v. Alvarez*, 625 F.2d 1196, 1198 (5th Cir. 1980).

397. *United States v. Strickland*, 245 F.3d 368, 385 (4th Cir. 2001) (citing *United States v. Brooks*, 957 F.2d 1138, 1147 (4th Cir. 1992)).

398. *United States v. Lore*, 430 F.3d 190, 204 (3d Cir. 2005) (citing *United States v. Schramm*, 75 F.3d 156, 159 (3d Cir. 1996)); see also *United States v. Klein*, 515 F.2d 751, 754 (3d Cir. 1975).

399. See *United States v. Kane*, 944 F.2d 1406, 1410–11 (7th Cir. 1991).

400. *Glasser v. United States*, 315 U.S. 60, 80 (1942).

conspiracy to spread “uncertainty” and took positive and knowing steps to join it.

Defenses to allegations of “participation” in a conspiracy may include freedom of association protected by the First Amendment to the Constitution, because “association alone will not support a conviction for conspiracy.”<sup>401</sup> Therefore, “[m]ere association with conspirators, knowledge of a conspiracy, and presence during conspiratorial discussions are not sufficient proof.”<sup>402</sup> For liability to be imposed “by reason of association alone . . . it is necessary to establish that *the group itself possessed unlawful goals* and that the individual held a specific intent to further those illegal aims.”<sup>403</sup> A defendant with ties to a front or “grassroots” group advocating inaction on climate change might claim that the prosecution was improperly attempting to link that defendant to the larger conspiracy based on mere association with the group alone. The government would counter, however, that evidence, direct or indirect, that the defendant intended to join the group with the purpose of accomplishing its objectives overcomes this objection, as long as it could also be shown that the group itself, by participating in the conspiracy, had “unlawful goals.”<sup>404</sup> Funding of such a group, for example, might constitute “indirect” evidence that a defendant intended to further the group’s unlawful goals.

Once membership in the conspiracy has been established, continued participation is presumed until one of two things happens: the goal of the conspiracy is defeated or the defendant withdraws from the conspiracy or disavows it.<sup>405</sup> Thus, “withdrawal” is a defense, and if successful, the statute of limitations period begins to run from the date of withdrawal for the withdrawing defendant.<sup>406</sup> The Supreme Court has stated that “[a]ffirmative acts inconsistent with the object of the conspiracy and communicated in a manner reasonably calculated to reach co-conspirators have generally been regarded as sufficient to establish withdrawal or abandonment.”<sup>407</sup> However, mere cessation of conspiratorial activity alone is insufficient;<sup>408</sup> the defendant must take some affirmative action to defeat the object of the conspiracy.<sup>409</sup> “A

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401. *United States v. McKee*, 506 F.3d 225, 243 (3d Cir. 2007).

402. *United States v. Knox*, 68 F.3d 990, 995 (7th Cir. 1995).

403. *McKee*, 506 F.3d at 238–39 (emphasis added) (citing *NAACP v. Claiborne Hardware*, 458 U.S. 886, 918–19 (1982)).

404. *McKee*, 506 F.3d at 238–39; *United States v. Berger*, 224 F.3d 107, 114–15 (2d Cir. 2000).

405. *See, e.g.*, *United States v. Vaquero*, 997 F.2d 78, 82 (5th Cir. 1993); *United States v. West*, 877 F.2d 281, 289 (4th Cir. 1989); *United States v. Juodakis*, 834 F.2d 1099, 1103 (1st Cir. 1987); *United States v. Finestone*, 816 F.2d 583, 589 (11th Cir. 1987).

406. *See, e.g.*, *Berger*, 224 F.3d at 118–19; *United States v. Krasn*, 614 F.2d 1229, 1236 (9th Cir. 1980). The statute of limitations for the offense of conspiracy to defraud the government is five years. *See* 18 U.S.C. § 3282 (2006).

407. *United States v. U.S. Gypsum Co.*, 438 U.S. 422, 464–65 (1978).

408. *Hyde v. United States*, 225 U.S. 347, 369 (1912).

409. *United States v. Lash*, 937 F.2d 1077, 1083 (6th Cir. 1991) (citing *United States v. Battista*, 646 F.2d 237, 246 (6th Cir. 1981)); *see also West*, 877 F.2d at 289 (“Withdrawal must be shown by evidence that the defendant acted to defeat or disavow the purposes of the conspiracy.”); *Berger*, 224

defendant is presumed to continue involvement in a conspiracy unless that defendant makes a substantial affirmative showing of withdrawal, abandonment, or defeat of the conspiratorial purpose.<sup>410</sup> The burden of proof is usually on the defendant to establish withdrawal as an affirmative defense.<sup>411</sup> Without affirmative action to disavow or defeat the purposes of the conspiracy, a defendant remains liable for all actions taken by the other conspirators in furtherance of the conspiracy.<sup>412</sup>

Thus, individuals and corporations who are rethinking their roles in what might constitute a conspiracy to defraud the government by misrepresenting climate science would be well-advised to mark their withdrawal with conspicuous and well-publicized actions and statements disavowing it. Affirmative steps to fund legitimate and necessary climate research, research aimed at developing sustainable energy technologies, or research into carbon mitigation measures might be examples of such corporate actions. Energy companies with a history of funding climate change denial may want to consider staying ahead of the regulatory curve by investing in renewable energy and ceasing short-sighted lobbying efforts aimed at resisting all governmental regulation of GHG emissions, as evidence of an affirmative withdrawal from or renunciation of any conspiracy.

#### CONCLUSION

*There is no cause more urgent, no dedication more fitting than to protect the future of our species.*

—Carl Sagan<sup>413</sup>

Although there are expected to be mitigation costs associated with weaning the world from fossil fuels and moving towards an economy of sustainable growth, incurrence of those costs is inevitable. The energy industry cannot continue with “business as usual” indefinitely owing to the inevitable depletion of fossil fuels in another century or so.<sup>414</sup> In the interim, the increasing scarcity of oil, gas, and coal reserves will drive the industry to adopt more extreme measures to extract them, running increasingly costly

F.3d at 118–19; *United States v. Antar*, 53 F.3d 568, 583 (3d Cir. 1995), *overruled on other grounds by Smith v. Berg*, 247 F.3d 532, 534 (3d Cir. 2001).

410. *Hyde*, 225 U.S. at 369; *Vaquero*, 997 F.2d at 82 (citing *United States v. Branch*, 850 F.2d 1080 (5th Cir. 1988)).

411. *Berger*, 224 F.3d at 118–19; *United States v. Dale*, 991 F.2d 819, 854 (D.C. Cir. 1993); *Lash*, 937 F.2d at 1083–84. *But see West*, 877 F.2d at 289 (holding that burden shifted to government on showing of withdrawal); *United States v. Jannotti*, 729 F.2d 213, 221 (3d Cir. 1984) (determining that burden, initially on defense, shifted to government).

412. *Lash*, 937 F.2d at 1084 (citing *Battista*, 646 F.2d at 246; *Blue v. United States*, 138 F.2d 351, 360 (6th Cir. 1943)).

413. CARL SAGAN, *BILLIONS AND BILLIONS: THOUGHTS ON LIFE AND DEATH AT THE BRINK OF THE MILLENNIUM* 75 (1997).

414. *See Fossil fuel*, WIKIPEDIA, [http://en.wikipedia.org/wiki/Fossil\\_fuel](http://en.wikipedia.org/wiki/Fossil_fuel) (last visited Nov. 8, 2011).

environmental risks in doing so. And the longer we wait, the higher the costs will be to humankind, since in addition to costs of *mitigation* those costs will also include the significant and escalating costs of climate change *adaptation*.

Yet there are some who, for profit, would recklessly gamble with the future of humanity and the Earth. As a strong global consensus began to emerge in the 1990s among climate scientists that anthropogenic global warming posed a grave threat to humankind, some in the fossil fuel industry began an extensive public relations campaign to keep that knowledge from the public and governmental officials. This campaign has been highly successful. Conservative politicians in the United States today are almost united in opposition both to domestic GHG regulation and international cooperation in reducing GHG worldwide. Thus, not only has the U.S. government failed to respond to the crisis, but the ability of the United States to provide international leadership on climate change has been severely eroded.

The denial campaign is designed for one purpose alone: *to deceive*. Its purpose is to prevent government regulation of CO<sub>2</sub> emissions by creating out of whole cloth a monumental illusion: that a controversy exists among climatologists about the basic facts, as well as the climate implications, of global warming. To create the impression in the public mind of such a controversy, the denial campaign deliberately set out to create a vast artificial edifice, a Hollywood set of false facades and roads leading nowhere complete with lab-coated actors mouthing carefully tested and scripted messages. The purpose is to hide from the public the dangers of the conspirators' principal product, fossil fuels, by creating a soothing alternate reality to cast doubt upon the looming threat of global environmental catastrophe predicted by mainstream climate science. It is fundamentally deceptive in purpose, conception and execution.

Yet, one may say, though this plan of deception may be morally repugnant, why focus on criminality when other legal means may be available through government regulation or in tort to curb GHG emissions? The answer to this question is that freedom of speech—both individual and corporate—and the reverence with which it is regarded in our society notwithstanding, we cannot allow fraudulent or deceptive speech to paralyze the public debate on a subject no less important than the survival of the human species and the future of the Earth itself. We punish fraud with a vengeance in the myriad and ingenious ways it manifests itself in such mundane matters as payment of taxes, banking and other financial transactions, consumer advertising, internet malfeasance, applications for licenses, and other contractual undertakings. And fraud is a broadly defined crime, encompassing not just the outright lie, but deception, misrepresentation, concealment, factual omissions and other “badges” or indications of fraud, any of which may be evidence of both the scheme to defraud itself and the defrauder's criminal intent. One may well wonder why this essential weapon of the prosecutor's arsenal, thought to be vitally necessary to protect all our financial, cultural and governmental institutions from deceit in both small and large matters, is ineffective to prevent

a massive deception pressed upon the general public of such scope and effect *as to endanger the future of humankind itself*. Furthermore, establishing liability under criminal fraud statutes can serve as a basis for civil claims, such as the RICO action in *Philip Morris*, through which the government or private parties may seek court-ordered relief to enjoin or sanction further fraudulent activity by the corporations and individuals concerned.<sup>415</sup>

Anthropogenic climate change may be the greatest trial humankind has faced in all its brief, 200-millennium sojourn on this planet.<sup>416</sup> Yet we must not forget that it is our science, only relatively recently developed, that has brought us *both* prosperity and crisis: unprecedented wealth and comfort, but at a grievous cost—unprecedented harm to our fragile environment.<sup>417</sup> We cannot expect to profit so from science but discard it when it becomes inconvenient, when it counsels frugality in the avoidance of catastrophic harm. Science remains our best survival tool. And yet there are those who would discard that tool by taking us into a new dark age, who urge upon us an illusion of greater and greater affluence through unrestrained exploitation of the Earth's resources, while attempting to hide from us the devastating environmental consequences of their predations. If we remain blinded by that shimmering mirage, ignoring the environmental dangers facing us, science is warning us that as a species we are in peril. The alternative is also before us: sustainability and *enduring* prosperity.<sup>418</sup> Let us choose wisely, with open eyes.

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415. See *supra* note 137 and accompanying text.

416. HANSEN, *supra* note 25, at 145.

417. SAGAN, *supra* note 413, at 100–01.

418. See, e.g., Mark Z. Jacobson & Mark A. Delucchi, *A Path to Sustainable Energy by 2030*, SCI. AM., Nov. 2009, at 58.

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