

Precautionary Paralysis:

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Recently, American President Barack Obama's administration announced that it would consider active techniques of geo-engineering, "the intentional large-scale manipulation of the environment,"^[1] as a method of controlling the planet's climate.^[2] This strategy, along with increased emissions regulation and government subsidies to create so-called "green" jobs, represents a possible means to mitigate anthropogenic global warming (AGW), which the administration believes is a significant threat both to human civilization and to the ecosystem as a whole. While the empirical data clearly demonstrate that a warming trend has occurred between the early 19th and early 21st century, critics of the AGW hypothesis maintain that this was largely due to natural phenomena, and that human emissions of greenhouse gasses (GHGs), particularly carbon dioxide, have not been conclusively shown to contribute to significant global climate change. Because of this, critics believe that the administration's proposals are economically wasteful, socially harmful, and environmentally dangerous.

To answer this argument, AGW theorists cite a maxim that has come to be known as the "precautionary principle" (PP). While it can be formulated in different ways and with varying degrees of rigor, most (if not all) versions justify risk management action even if causality is not definitively established. As phrased in the 1992 *Rio Declaration on Environment and Development* (a fairly weak version), the PP states:

"Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."^[3]

Since the AGW hypothesis indicates catastrophic damage to the environment if warming is not brought under control, many environmental groups, especially the UN Intergovernmental Panel on Climate Change (IPCC), claim the PP as sufficient justification for vigorous action in order to reduce

atmospheric carbon emissions. However, in his article *Beyond the Precautionary Principle*, Cass Sunstein argues that in its pure form, this guideline prohibits any action, including inaction, and *ipso facto* provides no guidance at all.[\[4\]](#) In this paper, I will bring the precautionary principle's self-negation into sharp relief within the context of environmental ethics, and argue that it cannot be used to justify the counter-carbon proposals of the Obama administration and the IPCC.

The implications of carbon-based AGW make this issue an ideal proscenium for the application of the PP as it is commonly formulated. While there appears to be a significant consensus among climate scientists that human-induced greenhousing, if not ameliorated, will result in runaway warming, the science behind the AGW hypothesis is vulnerable to serious and credible challenges. The most direct criticism is that the hypothesis of carbon-based temperature forcing does not agree with the empirical data. In a peer-reviewed and exhaustively documented paper, Robinson, Robinson, and Soon use a variety of metrics to establish that the 19th- 20th century warming trend correlates poorly with hydrocarbon use, and correlates well with solar activity.[\[5\]](#) In a recent EPA submission, Nicola Scafetta's examination of the data concludes that the IPCC severely underestimates the effects of insolation on current climate and paleoclimate.[\[6\]](#) Scafetta also raises questions about another objection to AGW science: methodology and data collection. He points out that corrupt temperature data from urban heat islands and third world nations could render up to half of the warming trend since 1980 spurious.[\[7\]](#) In 2007, a team of researchers investigated data collection methods of the U.S. National Climate Data Center, and found:

“Their global observing network, the heart and soul of surface weather measurement, is a disaster. Urbanization has placed many sites in unsuitable locations — on hot black asphalt, next to trash burn barrels, beside heat exhaust vents, even attached to hot chimneys and above outdoor grills!”[\[8\]](#)

But perhaps the most significant criticism of the AGW hypothesis is that it relies primarily upon

computer modeling rather than empirical data to reach its frightening (and normative) conclusions.^[9]
^[10] In his discussion of the social construction of AGW, Demeritt enumerates several significant climate features that global climate models (GCMs) have difficulty rendering, especially the effects of aerosols. He points out that models are subjectively “tuned” by modelers to more closely fit the empirical data^[11], and that crude parameterizations are used in order to avoid the computational problems of realistically simulating aerosols and sea ice albedo.^[12] Despite these problems, Demeritt points out that “users [climate scientists] often regard model output with much greater confidence than do the modelers themselves.”^[13] While these criticisms of AGW science do not categorically refute the hypothesis, they do demonstrate that matters of causality have not been definitively established.^[1] The precautionary principle is intended to resolve exactly this type of situation—serious but uncertain potential risk. Can it?

The “Wingspread Declaration” of 1998, the precautionary principle as formulated by a group of environmentalists, reads:

“When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not established scientifically. In this context the proponent of the activity, rather than the public, shall bear the burden of proof.”^[14]

This is clearly a more rigorous version of the PP than the Rio Declaration, and seems to bear directly upon the AGW issue, particularly as applied to carbon dioxide emitters. To test the validity of Wingspread ethics, let us consider two analogous environmental defense efforts: the Federal Clean Air Act and grass-roots opposition to nuclear electricity generation in the US.

In 1990, the US Environmental Protection Agency passed legislation that required oxygenates (such as ethanol or MTBE) to be added to gasoline in order to reduce atmospheric concentrations of

carbon monoxide and ground-level ozone, both of which represented known health hazards.[\[15\]](#) In the late 20th century, environmentalists throughout the US applied pressure to prohibit nuclear energy generation, based upon human health and environmental risks. These cases would seem to represent appropriate applications of Wingspread—type ethics, in that the proponents of nuclear energy and untreated gasoline would have been forced to prove that their actions would *not* harm the environment in order to avoid precautionary measures. But since environmental advocates themselves were “proponents of an activity” (the introduction of regulation or prohibition), they too would have been forced by Wingspread ethics to demonstrate that *their* actions would not harm human health or the environment. In the absence of such “proof”, Wingspread would have prohibited their actions, as well. Retrospectively, we can see that their well-intentioned efforts to defend the environment actually caused considerable environmental damage and human suffering, due to tunnel vision and unintended consequences.

MTBE is a highly mobile, highly persistent contaminant of groundwater.[\[16\]](#) The strong odor and flavor is sufficient to render potable water unusable at extremely low concentrations, and in higher concentrations MTBE is suspected of exacerbating asthma, disrupting endocrine function, and causing cancer. In 1995, MTBE was detected within the public water system of Santa Monica, California, and within a year the city lost the use of 71% of its local water supply. The cost of addressing the problem will range from tens to hundreds of millions of dollars for California spills, and spills have been detected nationwide.[\[17\]](#) MTBE is being withdrawn from use in favor of ethanol, yet this decision also has unintended consequences. Increased demand for biofuels has driven up grain prices, causing shortages and worldwide hunger. While the wealthy can easily adapt to these problems, the economically disadvantaged are disproportionately affected.

Opposition to nuclear energy has also proven to be environmentally detrimental. France meets approximately 80% of its energy requirements with nuclear power, and does so in a safe and

environmentally friendly manner.^[18] American anti-nuclear activism, on the other hand, has resulted in US reliance upon fossil fuels, which require far more extensive and invasive mining than nuclear fuels.^[19] Unlike hydrocarbons, nuclear fuel can be reprocessed and recycled via breeder reactors, further reducing environmental impact. Dependence upon foreign oil has resulted in significant energy price increases, again punishing the economically disadvantaged. And ironically, the most significant unintended consequence of anti-nuclear environmentalism is that it has created exactly the conditions that are said to lead to AGW—massive hydrocarbon use, and as a result, enormous carbon dioxide emissions.

These cases show that, in strong formulations such as the Wingspread Declaration, the precautionary principle is ineffectual as a guide to environmental ethics, because neither “exploiters” nor “defenders” can epistemically predict the ultimate consequences of their actions on the ecosystem, and therefore no choice can be made (setting aside for a moment the idea that taking no action is also a prohibited choice). Can a weaker form, such as the Rio Declaration, serve to justify IPCC and Obama proposals to negotiate the carbon-based AGW issue? The two preconditions for employing any form of the PP—1: *threat of substantial harm* and 2: *lack of scientific certainty regarding the probability of that threat*—are clearly in evidence. But the less rigorous third element of Rio: “cost-effective measures to prevent environmental degradation” proves just as ineffectual as stronger forms of PP. Indirect action such as Spanish-style government subsidy of “green” energy jobs and “cap-and-trade” carbon emissions regulation carries enormous economic and human costs, and direct action such as geoengineering threatens environmental degradation that cannot be ruled out as a possible consequence.

In his article “Study of the Effects on Employment of Public Aid to Renewable Energy Sources,” Gabriel Calzada Alvarez of Universidad Rey Juan Carlos discusses the economic costs associated with the Spanish subsidy plan that the Obama administration wishes to emulate. His

research indicated that for every 5 “green” jobs created, 9 jobs in other sectors were destroyed.[\[20\]](#) Even more significantly, approximately 90% of the green jobs were in fabrication and startup roles, while only about 10% were permanent operational jobs.[\[21\]](#) This directly penalizes the working class, while efforts to economize caused the Spanish government to appeal to large producers, thereby directly benefitting big business. Financing these subsidies will require either significant tax increases or energy rate increases of up to 31% in order to meet the debt burden, further increasing the distress of the working class.[\[22\]](#) In 1990, Smil predicted that significant employers would divest in nations with “green” energy policies in favor of unregulated energy markets,[\[23\]](#) and Alvarez’s research confirms this, pointing out that several major corporations have reduced their Spanish operations and expanded in or relocated to more economically competitive EU nations.[\[24\]](#) Alvarez concludes that these issues are systemic, and would most likely affect the US if it adopts the Spanish policy as indicated by President Obama.[\[25\]](#)

Various strategies of carbon economics (such as “cap-and-trade”) have been suggested to offset the effects of regulation on poor people and poor nations, but Smil points out that this is a mathematical impossibility. If AGW is a true state of affairs, Smil maintains that no exceptions can be made, since even major emissions reductions by developed nations would have a small net result on atmospheric carbon concentrations.[\[26\]](#) While America is the world’s leader in conspicuous carbon emission *per capita*, a Brazilian peasant who clears a single hectare of rainforest for farmland would be responsible for 600 tons of atmospheric carbon—30 years’ worth for an American—and this process may be repeated within as little as 10 years.[\[27\]](#) The effort must be omnilateral in order to make an appreciable difference in carbon concentrations, but such a resolution of this scope would result in the establishment of a permanent third world, whose member nations would not have the resources to pull themselves out of poverty. Alvarez cites a US Congressional brief which suggests that an internal cap-and-trade policy would cost the poorest quintile 3% of their annual income, while benefitting the

wealthiest quintile.^[28] Energy is a fundamental infrastructure need, and the unavoidable increases in energy costs created by anti-carbon policy will fall disproportionately upon already underprivileged nations and persons.

Even if atmospheric carbon dioxide is leading to a climate catastrophe, these enormous costs carry no assurances of effectiveness. Some AGW scientists have suggested that the “tipping point” or climate threshold has already been reached. Others have stated that the role of carbon dioxide is minor compared to that of more efficient GHGs such as methane and CFCs.^[29] So in addition to scientific uncertainty regarding the presence of an actual threat, an ethicist of AGW science is faced with doubt that the proposed remedy, costly as it is, will have any effect even if the threat is real. And if active measures such as geoengineering are taken, she cannot be certain that they will not unintentionally degrade the environment as in the cases of MTBA and the rejection of nuclear energy. Due to the dubious “cost-effectiveness” of the IPCC and Obama anti-carbon proposals, the Rio formulation of the precautionary principle cannot serve to justify them. While strong formulations like Wingspread are self-negating (in the same vein as the verificationist principle of logical positivism), weak versions lack enough traction to provide useful guidance for the issue of AGW. Because of this, policymakers must find a different ethical guide.

“Ronald Prinn, director of the MIT Center for Global Change Science, observed in his testimony before the House Science Committee that “the needed policy response [to global warming] is uncertain because the science is uncertain.”^[30] What, then, is the normative role of environmental science within the framework of this discussion? Sunstein calls for “wider viewscreens” and broader perspectives than the precautionary principle provides.^[31] AGW science certainly describes a possible state of affairs, but by abandoning AGW tunnel vision, we see the multitude of imminent, tangible, and unquestionable threats to human health and the environment that can be addressed in cost-effective ways.

I assert that the questionable methodology and social construction of AGW has formed a feedback loop, which has polarized this issue along political rather than scientific grounds. The result is a folk taxonomy in which opposition to this hypothesis is seen as *ipso facto* anti-progressive and anti-environment.^[ii] Paradoxically, this has served to damage the political case for AGW precautions by hampering the credibility of AGW science among conservatives (who can point to the feedback loop as counter-evidence).

Because AGW represents such a significant threat of possible harm, I therefore argue that the ethicist of climate science should focus on de-politicizing this issue by calling for a broad public discussion of the social construction of AGW, as well as increased standardization and transparency of climate science methodology (especially GCMs, the fundamental tool of climate forecasting). Because this issue concerns public policy, the public must be made aware of such things as the hypothetical (rather than predictive) nature of forward-looking GCMs, as well as the subjective “tweaking” and parameterizations that are commonly used to allow GCMs to fit with the historical data. Above all, the public must be informed of the limitations of GCMs, particularly their limited ability to account for natural phenomena such as the feedbacks between clouds and climate. The self-evaluation caused by this increase in transparency will reduce the effects of social construction on the science of climatology, and therefore guide policymakers on scientific, rather than political, grounds.

ⁱ The intent of this paper is to discuss the precautionary principle as an ethical guide, not to evaluate the validity of AGW as a scientific hypothesis. However, application of the PP is unnecessary in the absence of legitimate and credible scientific doubt as to the validity of AGW. See appendix for comments from current and former IPCC members, which demonstrate that such doubt does indeed exist at sophisticated scientific levels.

ⁱⁱ Consider the case of pioneering physicist Freeman Dyson, a committed liberal and proud Obama voter, who has been marginalized by the left as a conservative dupe, a tool of the oil industry, and even senile because of his skepticism regarding AGW.

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[3] Sunstein, Cass R. "Beyond the Precautionary Principle." *University of Pennsylvania Law Review* Vol. 151, No. 3 (January 2003), p.1006

[4] Ibid, p. 1004

[5] Arthur B. Robinson, Noah E. Robinson, Willie Soon. "Environmental Effects of Increased Atmospheric Carbon Dioxide." *Journal of American Physicians and Surgeons*, 2007

[6] Scafetta, Nicola. "Climate Change and Its Causes: A Discussion About Some Key Issues." *Environmental Protection Agency*. 2009. [http://yosemite.epa.gov/ee/epa/wpi.nsf/09133da7fb9a95db85256698006641d1/7a5516152467a30b85257562006c89a6/\\$FILE/scafetta-epa-2009.pdf](http://yosemite.epa.gov/ee/epa/wpi.nsf/09133da7fb9a95db85256698006641d1/7a5516152467a30b85257562006c89a6/$FILE/scafetta-epa-2009.pdf) (accessed April 27, 2009), p. 68

[7] Ibid, p.24

[8] Marc Marano, Matthew Dempsey. "Minority Page." *U.S. Senate Committee on Environment and Public Works*. December 20, 2007. <http://epw.senate.gov/public/index.cfm?FuseAction=Minority.SenateReport#report> (accessed April 24, 2009).

- [9] Smil, Vaclav. "Planetary Warming: Realities and Responses." *Population and Development Review* (Population Council) 16, no. 1 (1990), <http://www.jstor.org/stable/1972527>, p.6
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- [11] Ibid, p. 323
- [12] Ibid, p. 326
- [13] Ibid, p. 327
- [14] Sunstein, p. 1006
- [15] Malcolm MacGarvin, et al. *Late lessons from early warnings: The Precautionary Principle 1896-2000*. Environmental issue report, Luxembourg: European Environment Agency/Office for Official Publications of the European Communities, 2001, http://www.rachel.org/lib/late_lessons_from_early_warnings.030201.pdf p. 110
- [16] Ibid, p. 112
- [17] Ibid, p. 114
- [18] Holton, W. Conrad. "Power Surge: Renewed Interest in Nuclear Energy." *Environmental Health Perspectives, Vol. 113, No. 11* (Brogan and Partners) 113, no. 11 (2005), p. A744. <http://www.jstor.org/stable/3436551>
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- [20] Gabriel Calzada Alvarez, Ph.D. "Study of the effects on employment of public aid to renewable energy sources (draft)." *juandemariana.org*. March 2009. <http://www.juandemariana.org/pdf/090327-employment-public-aid-renewable.pdf> (accessed April 21, 2009), p. 28

- [21] Ibid, p. 30
- [22] Ibid, p. 2
- [23] Smil, p. 20
- [24] Alvarez, p. 3
- [25] Ibid, p. 3
- [26] Smil, p. 17
- [27] Ibid, p. 19
- [28] Alvarez, p. 2
- [29] Smil, p. 10
- [30] Demeritt, p. 320
- [31] Sunstein, p. 1056

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Appendix

Source: US Senate Minority page listed in bibliography

Former IPCC author and El Niño expert Rosa Compagnucci, the author of two IPCC reports in 2001 (Working Group II – Latin America Chapter), is a researcher with the National Science and Technology Commission who has published peer-reviewed papers. Compagnucci is also a professor in the Department of Atmosphere Sciences in the University of Buenos Aires.

Compagnucci refuted man-made climate claims in 2007. "Is global warming something unusual, say, the last two thousand years?" Compagnucci said, according to a December 2, 2007 article in the Argentine publication Perfil.com. [Translated] The article was titled, "A Group of Argentine Scientists Skeptical of Climate Change." Compagnucci believes humans have only contributed a few tenths of a degree to warming on Earth and that solar activity is a key driver of climate, according to the article. "There was a global warming in medieval times, during the years between 800 and 1300. And that made Greenland, now covered with ice, christened with a name [by the Vikings] that refers to land green: 'Greenland.'"

Nuclear Physicist and Chemical Engineer Dr. Philip Lloyd, a UN IPCC co-coordinating lead author on the Technical Report on Carbon Capture & Storage, was in charge of South Africa's Chamber of Mines' Metallurgy Laboratory and was a former professor at University of Witwatersrand where he established a course in environmental chemical engineering. Lloyd has served as President of the South African Institution of Chemical Engineers, the Federation of Societies of Professional Engineers, and the Associated Scientific and Technical Societies of Southern Africa. Lloyd, who has authored over 150 refereed publications, currently serves as an honorary research fellow with the Energy Research Centre at the University of Cape Town. Lloyd rejects man-made climate fears. "I have grave difficulties in finding any but the most circumstantial evidence for any human impact on the climate," Lloyd wrote to EPW on January 18, 2008. "The quantity of CO₂ we produce is insignificant in terms of the natural circulation between air, water and soil. I have tried numerous tests for radiative effects, and all have failed. I have tried to develop an isotopic method for identifying stable C¹² (from fossil fuels) and merely ended up understanding the difference between the major plant chemistries and their differing ability to use the different isotopes. I have studied the ice core record, in detail, and am concerned that those who claim to have a model of our climate future haven't a clue about the forces driving our climate past," Lloyd wrote. "I am particularly concerned that the rigor of science seems to have been sacrificed on an altar of fundraising. I am doing a detailed assessment of the IPCC reports and the Summaries for Policy Makers, identifying the way in which the Summaries have distorted the science. I have found examples of a Summary saying precisely the opposite of what the scientists said," he concluded.

Climatologist Dr. Robert Balling of Arizona State University, the former head of the university's

Office of Climatology, has served as a climate consultant to the United Nations Environment Program, the World Climate Program, the World Meteorological Organization, and the United Nations Educational, Scientific and Cultural Organization. Balling, who has also served in the UN IPCC, would have preferred former Vice President Al Gore had won the presidency in 2000. He has authored several books on global warming, including *The Heated Debate* and *The Satanic Gases*. Balling expressed skepticism about man-made climate fears in 2007. "In my lifetime, this global-warming issue might fade away," Balling said in a November 11, 2007 interview with the *Arizona Republic* newspaper. Noting the pressure he feels as a skeptical scientist, Balling explained, "Somehow I've been branded this horrible person who belongs in the depths of hell." He added, "There's just no tolerance right now." The article explained, "Balling's research over the years has explored sun activity, pollution from volcanoes, the urban-heat-island effect and errors in past temperature models as possible causes of rising temperatures."

Dr. Richard Courtney, a UN IPCC expert reviewer and a UK-based climate and atmospheric science consultant, declared the case for man-made climate fears is weakening. "The case for anthropogenic (human-caused) global warming (AGW) is getting weaker and weaker, not 'stronger and stronger and stronger' as many have claimed," Courtney wrote on November 27, 2007.

MIT Climate Scientist Dr. Richard Lindzen, former UN IPCC lead author and reviewer and an Alfred P. Sloan Professor of Meteorology, Dept. of Earth, Atmospheric and Planetary Sciences, called fears of man-made global warming "silly" in January 31, 2007 CNN interview.

Dr. Patrick J. Michaels, a UN IPCC reviewer, Virginia State Climatologist from 1980-2007, past president of the American Association of State Climatologists, author of numerous peer-reviewed scientific studies on climate change, and University of Virginia professor of environmental sciences, called Gore's film "science fiction" in a February 23, 2007 article. "The main point of [Gore's] movie is that, unless we do something very serious, very soon about carbon dioxide emissions, much of Greenland's 630,000 cubic miles of ice is going to fall into the ocean, raising sea levels over twenty feet by the year 2100," Michaels wrote. Michaels lost his position as the VA State Climatologist after a clash with the state's Governor: "I was told that I could not speak in public," Michaels said in a September 29, 2007 Washington Post interview. Excerpt from article: "Michaels has argued that the climate is becoming warmer but that the consequences will not be as dire as others have predicted. Gov. Kaine had warned. Michaels not to use his official title in discussing his views. 'I resigned as Virginia state climatologist because I was told that I could not speak in public on my area of expertise, global warming, as state climatologist,' Michaels said in a statement this week provided by the libertarian Cato Institute, where he has been a fellow since 1992. 'It was impossible to maintain academic freedom with this speech restriction.'

Climatologist Dr. Robert E. Davis, a Professor at University of Virginia, a former UN IPCC contributor and past president of the Association of American Geographers, and past-chair of the American Meteorological Society's Committee on Biometeorology and Aerobiology, dismissed what he termed "hysteria over global warming." "We keep hearing about historically warm years, warm decades, or warm centuries, uncharacteristically long or severe droughts, etc. for which mankind's striving for a high quality of life is to blame, via the internal combustion engine and its by-product, carbon dioxide. But in reality, in most cases, we have a tragically short record of good observations to really determine how much of a record we're even close to setting,"

Yury Izrael, the director of Global Climate and Ecology Institute, a member of the Russian Academy of Sciences and UN IPCC Vice President, rejected man-made global warming fears. "There is no proven link between human activity and global warming,"

UN IPCC Contributing Author Dr. Aynsley Kellow is a former professor of Social Sciences of the Australian School of Environmental Studies at Griffith University who has presented papers to the Australian Academy of Science and co-authored the book *International Environmental Policy: Interests and the Failure of the Kyoto Process*. Kellow, who was a referee for Chapter 19 in the IPCC's fourth assessment report which covered "Key Vulnerabilities and Risk Assessment," questioned the premise of the IPCC's gloomy future predictions.

Atmospheric scientist and hurricane expert Dr. Christopher W. Landsea NOAA's National Hurricane Center who served the UN IPCC as both an author and a reviewer and has published numerous peer-reviewed research noted that recent hurricane activity is not linked to man-made factors.

Alabama State Climatologist Dr. John Christy of the University of Alabama in Huntsville and NASA, served as a UN IPCC lead author in 2001 for the 3rd assessment report and detailed how he witnessed scientists distorting the science. "I was at the table with three Europeans, and we were having lunch. And they were talking about their role as lead authors. And they were talking about how they were trying to make the report so dramatic that the United States would just have to sign that Kyoto Protocol," Christy told CNN on May 2, 2007.

IPCC reviewer and climate researcher and scientist Dr. Vincent Gray of New Zealand, an expert reviewer on every single draft of the IPCC reports going back to 1990 and author of *The Greenhouse Delusion: A Critique of "Climate Change 2001*, declared, "The claims of the IPCC are dangerous unscientific nonsense" in an April 10, 2007 article. Gray is also a member of The New Zealand Climate Science Coalition. "All [UN IPCC does] is make 'projections' and 'estimates'. No climate model has ever been properly tested, which is what 'validation' means, and their 'projections' are nothing more than the opinions of 'experts' with a conflict of interest, because they are paid to produce the models. There is no actual scientific evidence for all these 'projections' and 'estimates'.

Dr. David Wojick is a UN IPCC expert reviewer, who earned his PhD in Philosophy of Science and co-founded the Department of Engineering and Public Policy at Carnegie-Mellon University. "In point of fact, the hypothesis that solar variability and not human activity is warming the oceans goes a long way to explain the puzzling idea that the Earth's surface may be warming while the atmosphere is not. The GHG (greenhouse gas) hypothesis does not do this,"

Dr. Paul Reiter, a malaria expert formerly of the Centers for Disease Control and Prevention and professor of entomology and tropical disease with the Pasteur Institute in Paris, participated in the UN IPCC process and now calls the concept of consensus on global warming a "sham." Professor Reiter, an expert in malaria, had to threaten legal action to have his name removed from the IPCC. "That is how they make it seem that all the top scientists are agreed," he said on March 5, 2007. "It's not true." Reiter has written more than 30 papers in peer-reviewed journals.

IPCC 2007 Expert Reviewer [Madhav Khandekar, a Ph.D meteorologist](#), a scientist with the Natural Resources Stewardship Project who has over 45 years experience in climatology, meteorology and oceanography, and who has published nearly 100 papers, reports, book reviews and a book on *Ocean Wave Analysis and Modeling*, slammed the UN IPCC process. "To my dismay, IPCC authors ignored all my comments and suggestions for major changes in the FOD (First Order Draft) and sent me the SOD (Second Order Draft) with essentially the same text as the FOD. None of the authors of the chapter bothered to directly communicate with me (or with other expert reviewers with whom I communicate on a regular basis) on many issues that were raised in my review. This is not an acceptable scientific review process," Khandekar wrote in a May 28, 2007 letter to the editor of Canada's The Hill Times. "...Adherents of the IPCC science like to insist that the debate over climate change science is over and it is now time for action. I urge [those IPCC supporters] to browse through

recent issues of major international journals in climate and related science. Hardly a week goes by without a significant paper being published questioning the science," Khandekar added. "The science of climate change is continuously evolving. The IPCC and its authors have closed their minds and eyes to this evolving science which points to solar variability as the prime driver of earth's climate and not the human-added greenhouse gases," he concluded.

Australian climate data analyst John McLean authored a September 2007 study which found the UN IPCC peer-review process is "an illusion." A September 2007 analysis of the IPCC (Intergovernmental Panel on Climate Change) scientific review process entitled "Peer Review? What Peer Review?" revealed very few scientists are actively involved in the UN's peer-review process. According to McLean's analysis, "The IPCC would have us believe that its reports are diligently reviewed by many hundreds of scientists and that these reviewers endorse the contents of the report. Analyses of reviewer comments show a very different and disturbing story." The paper continued, "In [the IPCC's] Chapter 9, the key science chapter, the IPCC concludes that 'it is very highly likely that greenhouse gas forcing has been the dominant cause of the observed global warming over the last 50 years.' The IPCC leads us to believe that this statement is very much supported by the majority of reviewers. The reality is that there is surprisingly little explicit support for this key notion. Among the 23 independent reviewers just 4 explicitly endorsed the chapter with its hypothesis, and one other endorsed only a specific section. Moreover, only 62 of the IPCC's 308 reviewers commented on this chapter at all." The analysis concluded, "The IPCC reports appear to be largely based on a consensus of scientific papers, but those papers are the product of research for which the funding is strongly influenced by previous IPCC reports. This makes the claim of a human influence self-perpetuating and for a corruption of the normal scientific process."

UN IPCC reviewer, global warming author, and economist Dr. Hans H.J. Labohm, a lecturer at the Netherlands Defense Academy, started out as a man-made global warming believer but he later switched his view after conducting climate research. Labohm wrote on August 19, 2006, "I started as an anthropogenic global warming believer, then I read the [UN's IPCC] Summary for Policymakers and the research of prominent skeptics." "After that, I changed my mind," Labohm explained. **Labohm co-authored the 2004 book *Man-Made Global Warming: Unraveling a Dogma* with Eindhoven University of Technology emeritus professor of chemical engineer Dick Thoenes who was the former chairman of the Royal Netherlands Chemical Society.** Labohm was one of the 60 scientists who wrote an April 6, 2006 letter urging withdrawal of Kyoto to Canadian Prime Minister Stephen Harper which stated in part, "'Climate change is real' is a meaningless phrase used repeatedly by activists to convince the public that a climate catastrophe is looming and humanity is the cause. Neither of these fears is justified. Global climate changes all the time due to natural causes and the human impact still remains impossible to distinguish from this natural 'noise.'"

Computer modeler Dr. Donald DuBois, who holds a PhD in Philosophy of Science, has spent most of his career modeling computer networks for NASA's International Space Station, GE Space Systems, the Air Force, and the Navy. DuBois is very skeptical of climate computer models predicting doom. "I know something about how misleading models can be, and the fact that their underlying assumptions can completely predetermine the results of the model. If the major climate models that are having a major impact on public policy were documented and put in the public domain, other qualified professionals around the world would be interested in looking into the validity of these models," DuBois wrote to EPW on May 17, 2007. "Right now, climate science is a black box that is

highly questionable with unstated assumptions and model inputs. It is especially urgent that these models come out in the open considering how much climate change legislation could cost the United States and the world economies. Ross McKittrick's difficulty in getting the information from [Michael] Mann on his famous 'hockey stick' [temperature] curve is a case in point which should be a scandal not worth repeating. The cost of documenting the models and making them available would be a trifle; the cost of not doing so could be astronomical," DuBois wrote.

Precautionary Paralysis

J.E.H. Simon