Excerpts from:

Global Warming and Climate Change in Perspective: Truths and Myths About Carbon Dioxide, Scientific Consensus, and Climate Models

by William Happer (February 28, 2009)

Statement to the U.S. Senate Environment and Public Works Committee by William Happer, Cyrus Fogg Brackett Professor of Physics Princeton University, made on February 25, 2009.

We have been in a period of global warming over the past 200 years, but there have been several periods, like the last ten years, when the warming has ceased, and there have even been periods of substantial cooling, as from 1940 to 1970. Atmospheric concentrations of carbon dioxide (CO_2) have increased from about 280 to 380 parts per million over past 100 years. The combustion of fossil fuels, coal, oil and natural gas, has contributed to the increase of CO_2 in the atmosphere. And finally, increasing concentrations of CO_2 in the atmosphere will cause the earth's surface to warm. The key question is: will the net effect of the warming, and any other effects of the CO_2, be good or bad for humanity?

I believe that the increase of CO_2 is not a cause for alarm and will be good for mankind.

But what about the frightening consequences of increasing levels of CO_2 that we keep hearing about? In a word, they are wildly exaggerated…Let me turn now to the science and try to explain why I and many scientists like me are not alarmed by increasing levels of CO_2.

The earth's climate really is strongly affected by the greenhouse effect, although the physics is not the same as that which makes real, glassed-in greenhouses work. Without greenhouse warming, the earth would be much too cold to sustain its current abundance of life. However, at least 90% of greenhouse warming is due to water vapor and clouds. Carbon dioxide is a bit player.

Since most of the greenhouse effect for the earth is due to water vapor and clouds, added CO_2 must substantially increase water's contribution to lead to the frightening scenarios that are bandied about. The buzz word here is that there is "positive feedback." With each passing year, experimental observations further undermine the claim of a large positive feedback from water. In fact, observations suggest that the feedback is close to zero and may even be negative. That is, water vapor and clouds may actually diminish the already small global warming expected from CO_2, not amplify it.

But the climate is warming and CO_2 is increasing. Doesn't this prove that CO_2 is causing global warming through the greenhouse effect? No, the current warming period began about 1800 at the end of the little ice age, long before there was an appreciable increase of CO_2. There have been similar and even larger warmings several times in the 10,000 years since the end of the last ice age. These earlier warmings clearly had nothing to do with the combustion of fossil fuels. The current warming also seems to be due mostly to natural causes, not to increasing levels of carbon dioxide. Over the past ten years there has been no global warming, and in fact a slight cooling. This is not at all what was predicted by the IPCC models.

The climate has changed many times in the past with no help by mankind. Recall that the Romans grew grapes in Britain around the year 100, and Viking settlers prospered on small farms in Greenland for several centuries during the Medieval Climate Optimum around 1100.

The existence of climate variability in the past has long been an embarrassment to those who claim that all climate change is due to man and that man can control it.

When I was a schoolboy, my textbooks on earth science showed a prominent "medieval warm period" at the time the Vikings settled Greenland, followed by a vicious "little ice age" that drove them out. So I was very surprised when I first saw the celebrated "hockey stick curve," in the Third Assessment Report of the IPCC. I could hardly believe my eyes. Both the little ice age and the Medieval Warm Period were gone, and the newly revised temperature of the world since the year 1000 had suddenly become absolutely flat until the last hundred years when it shot up like the blade on a hockey stick. This was far from an obscure detail, and the hockey stick was trumpeted around the world as evidence that the end was near. We now know that the hockey stick has nothing to do with reality but was the result of incorrect handling of proxy temperature records and incorrect statistical analysis. There really was a little ice age and there really was a medieval warm period that was as warm or warmer than today.

The whole hockey-stick episode reminds me of the motto of Orwell's Ministry of Information in the novel "1984:" "He who controls the present, controls the past. He who controls the past, controls the future." The IPCC has made no serious attempt to model the natural variations of the earth's temperature in the past. Whatever caused these large past variations, it was not due to people burning coal and oil. If you can't model the past, where you know the answer pretty well, how can you model the future?

I keep hearing about the "pollutant CO2," or about "poisoning the atmosphere" with CO2, or about minimizing our "carbon footprint." This brings to mind another Orwellian pronouncement that is worth pondering: "But if thought corrupts language, language can also corrupt thought." CO2 is not a pollutant and it is not a poison and we should not corrupt the English language by depriving "pollutant" and "poison" of their original meaning. Our exhaled breath contains about 4% CO2. That is 40,000 parts per million, or about 100 times the current atmospheric concentration. CO2 is absolutely essential for life on earth. Commercial greenhouse operators often use CO2 as a fertilizer to improve the health and growth rate of their plants.

I remember being forced to read Voltaire's novel, Candide, when I was young. You recall that Dr. Pangloss repeatedly assured young Candide that he was living in "the best of all possible worlds," presumably also with the best of all CO2 concentrations. That we are (or were) living at the best of all CO2 concentrations seems to be a tacit assumption of the IPCC executive summaries for policy makers. Enormous effort and imagination have gone into showing that increasing concentrations of CO2 will be catastrophic, cities will be flooded by sea-level rises that are ten or more times bigger than even IPCC predicts, there will be mass extinctions of species, billions of people will die, tipping points will render the planet a desert. A few months ago I read that global warming will soon bring on a devastating epidemic of kidney stones. If you write down all the ills attributed to global warming you fill up a very thick book.

Many of the frightening scenarios about global warming come from large computer calculations, "general circulation models," that try to mimic the behavior of the earth's climate as more CO2 is added to the atmosphere. It is true that climate models use increasingly capable and increasingly expensive computers. But their predictions have not been very good. For example, none of them predicted the lack of warming that we have experienced during the past ten years. All the models assume the water feedback is positive, while satellite observations suggest that the feedback is zero or negative.

[There is a] frequent assertion that there is a consensus behind the idea that there is an impending disaster from climate change, and that it may already be too late to avert this catastrophe, even if we stop burning fossil fuels now. We are told that only a few flat-earthers still have any doubt about the calamitous effects of continued CO2 emissions. There are a number of answers to this assertion.

First, what is correct in science is not determined by consensus but by experiment and observations. Historically, the consensus is often wrong…Secondly, I do not think there is a consensus about an impending climate crisis. I personally certainly don't believe we are facing a crisis unless we create one for ourselves... Many others, wiser

than I am, share my view. The number of those with the courage to speak out is growing.

There may be an illusion of consensus… Many distinguished scientific journals now have editors who further the agenda of climate-change alarmism. Research papers with scientific findings contrary to the dogma of climate calamity are rejected by reviewers, many of whom fear that their research funding will be cut if any doubt is cast on the coming climate catastrophe.

children should not be force-fed propaganda, masquerading as science. Many of you may know that in 2007 a British Court ruled that if Al Gore's book, "An Inconvenient Truth," was used in public schools, the children had to be told of eleven particularly troubling inaccuracies. You can easily find a list of the inaccuracies on the internet, but I will mention one. The court ruled that it was not possible to attribute hurricane Katrina to CO2. Indeed, had we taken a few of the many billions of dollars we have been spending on climate change research and propaganda and fixed the dykes and pumps around the New Orleans, most of the damage from Hurricane Katrina could have been avoided.

The sea level is indeed rising, just as it has for the past 20,000 years since the end of the last ice age. Fairly accurate measurements of sea level have been available since about 1800. These measurements show no sign of any acceleration. The rising sea level can be a serious local problem for heavily-populated, low-lying areas like New Orleans, where land subsidence compounds the problem. But to think that limiting CO2 emissions will stop sea level rise is a dangerous illusion. It is also possible that the warming seas around Antarctica will cause more snowfall over the continent and will counteract the sea-level rise. In any case, the rising sea level is a problem that needs quick local action for locations like New Orleans rather than slow action globally.

I regret that the climate-change issue has become confused with serious problems like secure energy supplies, protecting our environment, and figuring out where future generations will get energy supplies after we have burned all the fossil fuel we can find. We should not confuse these laudable goals with hysterics about carbon footprints. For example, when weighing pluses and minuses of the continued or increased use of coal, the negative issue should not be increased atmospheric CO2, which is probably good for mankind. We should focus on real issues like damage to the land and waterways by strip mining, inadequate remediation, hazards to miners, the release of real pollutants and poisons like mercury, other heavy metals, organic carcinogens, etc. Life is about making decisions and decisions are about trade-offs. The Congress can choose to promote investment in technology that addresses real problems and scientific research that will let us cope with real problems more efficiently. Or they can act on unreasonable fears and suppress energy use, economic growth and the benefits that come from the creation of national wealth.

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