

# A CASE AGAINST PRECIPITOUS CLIMATE ACTION

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by Dr. Richard Lindzen, MIT | January 15, 2011

The notion of a static, unchanging climate is foreign to the history of the earth or any other planet with a fluid envelope. The fact that the developed world went into hysterics over changes in global mean temperature anomaly of a few tenths of a degree will astound future generations. Such hysteria simply represents the scientific illiteracy of much of the public, the susceptibility of the public to the substitution of repetition for truth, and the exploitation of these weaknesses by politicians, environmental promoters, and, after 20 years of media drum beating, many others as well.

Climate is always changing. We have had ice ages and warmer periods when alligators were found in Spitzbergen. Ice ages have occurred in a hundred thousand year cycle for the last 700 thousand years, and there have been previous periods that appear to have been warmer than the present despite CO<sub>2</sub> levels being lower than they are now.

More recently, we have had the medieval warm period and the little ice age. During the latter, alpine glaciers advanced to the chagrin of overrun villages. Since the beginning of the 19th Century these glaciers have been retreating. Frankly, we don't fully understand either the advance or the retreat.

For small changes in climate associated with tenths of a degree, there is no need for any external cause. The earth is never exactly in equilibrium. The motions of the massive oceans where heat is moved between deep layers and the surface provides variability on time scales from years to centuries. Recent work (Tsonis et al, 2007), suggests that this variability is enough to account for all climate change since the 19th Century.

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For warming since 1979, there is a further problem. The dominant role of cumulus convection in the tropics requires that temperature approximately follow what is called a moist adiabatic profile. This requires that warming in the tropical upper troposphere be 2-3 times greater than at the surface. Indeed, all models do show this, but the data doesn't and this means that something is wrong with the data.

It is well known that above about 2 km altitude, the tropical temperatures are pretty homogeneous in the horizontal so that sampling is not a problem. Below two km (roughly the height of what is referred to as the trade wind inversion), there is much more horizontal variability, and, therefore, there is a profound sampling problem.

Under the circumstances, it is reasonable to conclude that the problem resides in the surface data, and that the actual trend at the surface is about 60% too large. Even the claimed trend is larger than what models would have projected but for the inclusion of an arbitrary fudge factor due to aerosol cooling. The discrepancy was reported by Lindzen (2007) and by Douglass et al (2007). Inevitably in climate science, when data conflicts with models, a small coterie of scientists can be counted upon to modify the data.

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Thus, Santer, et al (2008), argue that stretching uncertainties in observations and models might marginally eliminate the inconsistency. That the data should always need correcting to agree with models is totally implausible and indicative of a certain corruption within the climate science community.

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It turns out that there is a much more fundamental and unambiguous check of the role of feedbacks in enhancing greenhouse warming that also shows that all models are greatly exaggerating climate sensitivity.

Here, it must be noted that the greenhouse effect operates by inhibiting the cooling of the climate

by reducing net outgoing radiation. However, the contribution of increasing CO<sub>2</sub> alone does not, in fact, lead to much warming (approximately 1 deg. C for each doubling of CO<sub>2</sub>). The larger predictions from climate models are due to the fact that, within these models, the more important greenhouse substances, water vapor and clouds, act to greatly amplify whatever CO<sub>2</sub> does.

This is referred to as a positive feedback. It means that increases in surface temperature are accompanied by reductions in the net outgoing radiation – thus enhancing the greenhouse warming. All climate models show such changes when forced by observed surface temperatures.

Satellite observations of the earth's radiation budget allow us to determine whether such a reduction does, in fact, accompany increases in

surface temperature in nature. As it turns out, the satellite data from the ERBE instrument (Barkstrom, 1984, Wong et al, 2006) shows that the feedback in nature is strongly negative –

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This analysis makes clear that even when all models agree, they can all be wrong, and that this is the situation for the all important question of climate sensitivity. Unfortunately, Lindzen and Choi (2009) contained a number of errors; however, as shown in a paper currently under review, these errors were not relevant to the main conclusion.

According to the UN's Intergovernmental Panel on Climate Change, the greenhouse forcing from man made greenhouse gases is already about 86% of what one expects from a doubling of CO<sub>2</sub> (with about half

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coming from methane, nitrous oxide, freons and ozone), and alarming predictions depend on models for which the sensitivity to a doubling for CO<sub>2</sub> is greater than 2C which implies that we should already have seen much more warming than we have seen thus far, even if all the warming we have seen so far were due to man.

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Modelers defend this situation, as we have already noted, by arguing that aerosols have cancelled much of the warming (viz Schwartz et al, 2010), and that models adequately account for natural unforced internal variability.

However, a recent paper (Ramanathan, 2007) points out that aerosols can warm as well as cool, while scientists at the UK's Hadley Centre for Climate Research recently noted that their model did not appropriately deal with natural internal variability thus demolishing the basis for the IPCC's iconic attribution (Smith et al, 2007). Interestingly (though not unexpectedly), the British paper did not stress this. Rather, they speculated that natural internal variability might step aside in 2009, allowing warming to resume. Resume? Thus, the fact that warming has ceased for the past fourteen years is acknowledged. It should be noted that, more recently, German modelers have moved the date for 'resumption' up to 2015 (Keenlyside et al, 2008).

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Climate alarmists respond that some of the hottest years on record have occurred during the past decade. Given that we are in a relatively warm period, this is not surprising, but it says nothing about trends.

Given that the evidence (and I have noted only a few of many pieces of evidence) strongly implies that anthropogenic warming has been greatly exaggerated, the basis for alarm due to such warming is similarly diminished.

However, a really important point is that the case for alarm would still be weak even if anthropogenic global warming were significant.

Polar bears, arctic summer sea ice, regional droughts and floods, coral bleaching, hurricanes, alpine glaciers, malaria, etc. etc. all depend not on some global average of surface temperature anomaly, but on a huge number of regional variables including temperature, humidity, cloud cover, precipitation, and direction and magnitude of wind. The state of the ocean is also often crucial. Our ability to forecast any of these over periods beyond a few days is minimal (a leading modeler refers to it as essentially guesswork).

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Yet, each catastrophic forecast depends on each of these being in a specific range. The odds of any specific catastrophe actually occurring are almost zero. This was equally true for earlier forecasts of famine for the 1980's, global cooling in the 1970's, Y2K and many others.

Regionally, year to year fluctuations in temperature are over four times larger than fluctuations in the global mean. Much of this variation has to be independent of the global mean; otherwise the global mean would vary much more. This is simply to note that factors other than global warming are more important to any specific situation. This is not to say that disasters will not occur; they always have occurred and this will not change in the future. Fighting global warming with symbolic gestures will certainly not change this. However, history tells us that greater wealth and development can profoundly increase our resilience.

In view of the above, one may reasonably ask why there is the current alarm, and, in particular, why the astounding upsurge in alarmism of the past 4 years.

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When an issue like global warming is around for over twenty years, numerous agendas are developed to exploit the issue.

The interests of the environmental movement in acquiring more power, influence, and donations are reasonably clear. So too are the interests of bureaucrats for whom control of CO<sub>2</sub> is a dream-come-true. After all, CO<sub>2</sub> is a product of breathing itself. Politicians can see the possibility of taxation that will be cheerfully accepted because it is necessary for 'saving' the earth. Nations have seen how to exploit this issue in order to gain competitive advantages. But, by now, things have gone much further. The case of ENRON (a now bankrupt Texas energy firm) is illustrative in this respect.

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Before disintegrating in a pyrotechnic display of unscrupulous manipulation, ENRON had been one of the most intense lobbyists for Kyoto. It had hoped to become a trading firm dealing in carbon emission rights. This was no small hope. These rights are likely to amount to over a trillion dollars, and the commissions will run into many billions.

Hedge funds are actively examining the possibilities; so was the late Lehman Brothers. Goldman Sachs has lobbied extensively for the 'cap and trade' bill, and is well positioned to make billions. It is probably no accident that Gore, himself, is associated with such activities. The sale of indulgences is

already in full swing with organizations selling offsets to one's carbon footprint while sometimes acknowledging that the offsets are irrelevant.

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Archer Daniels Midland (America's largest agribusiness) has successfully lobbied for ethanol requirements for gasoline, and the resulting demand for ethanol may already be contributing to large increases in corn prices and associated hardship in the developing world (not to mention poorer car performance).

And finally, there are the numerous well-meaning individuals who have allowed propagandists to convince them that in accepting the alarmist view of anthropogenic climate change, they are displaying intelligence and virtue. For them, their psychic welfare is at stake.



With all this at stake, one can readily suspect that there might be a sense of urgency provoked by the possibility that warming may have ceased and that the case for such warming as was seen being due in significant measure to man, disintegrating. For those committed to the more venal agendas, the need to act soon, before the public appreciates the situation, is real indeed.

However, for more serious leaders, the need to courageously resist hysteria is clear. Wasting resources on symbolically fighting ever present climate change is no substitute for prudence. Nor is the assumption that the earth's climate reached a point of perfection in the middle of the twentieth century a sign of intelligence.

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## REFERENCES

- Barkstrom, B.R., 1984: The Earth Radiation Budget Experiment (ERBE), Bull. Amer. Meteor. Soc., 65, 1170–1185.
- Douglass, D.H., J.R. Christy, B.D. Persona and S. F. Singer, 2007: A comparison of tropical temperature trends with model predictions, Int. J. Climate., DOI: 10.1002/joc.1651.
- Keenlyside, N.S., M. Lateen, et al, 2008: Advancing decadal-scale climate prediction in the North Atlantic sector, Nature, 453, 84-88.
- Lindzen, R.S. and Y.-S. Choi, 2009: On the determination of climate feedbacks from ERBE data, accepted Geophys. Res. Ltrs.
- Lindzen, R.S., 2007: Taking greenhouse warming seriously. Energy & Environment, 18, 937-950.
- Ramanathan, V., M.V. Ramana, et al, 2007: Warming trends in Asia amplified by brown cloud solar absorption, Nature, 448, 575-578.

Santer, B. D., P. W. Thorne, L. Haimberger, K. E. Taylor, T. M. L. Wigley, J. R. Lanzante, S. Solomon, M. Free, P. J. Gleckler, P. D. Jones, T. R. Karl, S. A. Klein, C. Mears, D. Nychka, G. A. Schmidt, S. C. Sherwood, and F. J. Wentz, 2008: Consistency of modelled and observed temperature trends in the tropical troposphere, *Intl. J. of Climatology*, 28, 1703-1722.

Schwartz, S.E., R.J. Charlson, R.A. Kahn, J.A. Ogren, and H. Rodhe, 2010: Why hasn't the Earth warmed as much as expected?, *J. Climate*, 23, 2453-2464.

Smith, D.M., S. Cusack, A.W. Colman, C.K. Folland, G.R. Harris, J.M. Murphy, 2007: Improved Surface Temperature Prediction for the Coming Decade from a Global Climate Model, *Science*, 317, 796-799.

Tsonis, A. A., K. Swanson, and S. Kravtsov, 2007: A new dynamical mechanism for major climate shifts, *Geophys. Res. Ltrs.*, 34, L13705, doi:10.1029/2007GL030288.

Wong, T., B. A. Wielicki, et al., 2006: Reexamination of the observed decadal variability of the earth radiation budget using altitude-corrected ERBE/ERBS nonscanner WFOV Data, *J. Climate*, 19, 4028-4040.

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