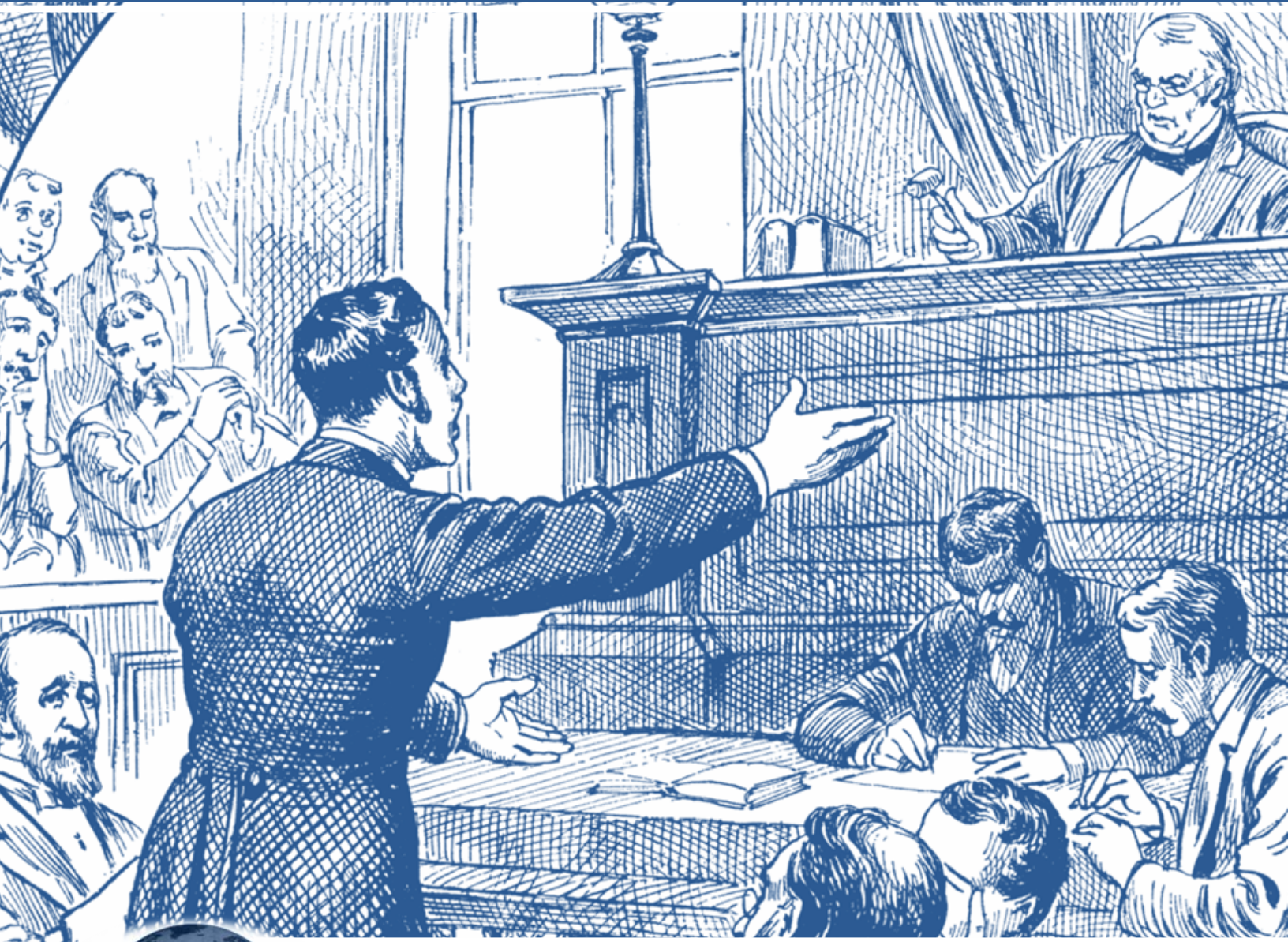


REPLY TO A CLIMATE-EXTREMIST

by Christopher Monckton of Brenchley



SPPI ORIGINAL PAPER



August 13, 2012

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In August 2012, a climate extremist addressed to various skeptical climate researchers what he offensively called “an appeal to you to be reasonable”. Christopher Monckton of Brenchley replied, whereupon the extremist – unable or unwilling to produce a single scientific argument – said he did not wish to pursue the debate further. This paper is an extended version of the reply to the climate extremist.

Dear N., I shall overlook your appeal to me and others to “be reasonable” – unpleasantly and unjustifiably implying that merely because we disagree with you we are unreasonable.

You make the following four unreasonable assertions, explicitly or by implication:

1. The predictions about "global warming" made by James Hansen in 1988 have proven accurate, because he says so.
2. James Hansen, in a recent Washington Post op-ed, was right to attribute certain extreme-weather events over the past two years to manmade "global warming".
3. The majority of climate scientists endorse your extremist view of Man's influence on the climate, and are more likely to be correct than the minority.
4. If we cannot be sure what the truth is, we should act on the balance of probabilities.

I shall dispose of these explicit or implicit propositions *seriatim*.

Hansen's predictions about global warming made in a now-notorious graph that he put before Congress on a very hot day in June 1988 ... have proven to be as absurdly exaggerated as much else of what Hansen and Gore say about "global warming".

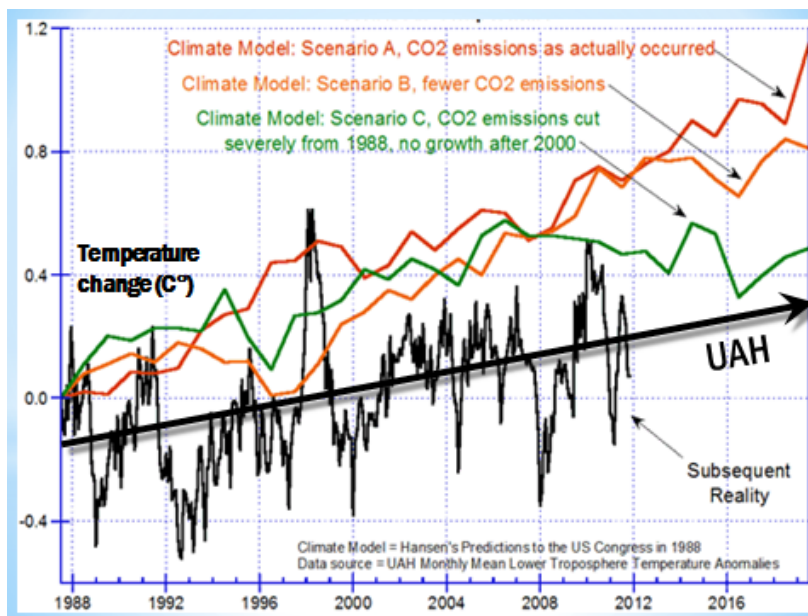
First, Hansen's predictions about global warming made in a now-notorious graph that he put before Congress on a very hot day in June 1988 that was chosen by Al Gore (who also arranged for the air-conditioning in the hearing room to be disabled), are very far from accurate. They have proven to be as absurdly exaggerated as much else of what Hansen and Gore say about "global warming".

I am not sure whether you are capable of determining the least-squares linear-regression trend on a data series, but, if you are not, then you were most unwise to take Hansen's word for this or anything. Hansen supplied three separate predictions of global warming from 1988 to the present and beyond: the current temperature trend is actually somewhat below his least projection, which was made on the basis that CO₂ concentration in the atmosphere would have been stabilized by 2000. In fact, CO₂ concentration has continued to rise at an accelerated rate.

As a result of the artificial warming bias caused by urbanization and of the poor design, siting, and maintenance of temperature-monitoring stations, warming over land since 1990 has been overstated in the official record, perhaps by as much as double.

Hansen's claim of "accuracy" for his disastrously exaggerated predictions of 1988 – which, of course, were based on a mere computer model that contained flux adjustments many times larger than the minuscule perturbations he was attempting to describe – is based on a comparison of his "CO₂-stabilized-by-2000" curve with the trend in land temperatures only. However, his original predictions were for global land and sea temperatures.

That should be enough to lead you to make at least some attempt in future to verify statements from notoriously politicized and unreliable sources, rather than merely parroting them excitedly because they appear to lend specious support to some fatuous quasi-religious belief that you may hold.



James Hansen's three predictions of "global warming, 1988-2020 (red, amber, and green curves), as presented to Congress in a hearing room without air-conditioning on an exceptionally hot day in June of that year. The least prediction, represented by the green curve, was made on the assumption that CO₂ emissions would diminish rapidly from 1988 onward and would stabilize by 2000. No stabilization has occurred: CO₂ concentration is rising at a record rate. Yet global mean surface temperature

(black curve), measured reliably by the satellites of the University of Alabama at Huntsville, has risen at well below Hansen's "CO₂ stabilization" case, and a very long way below his two other predictions, which were based on the more realistic assumption that CO₂ emissions – and consequently concentrations – would continue to rise. Hansen bases his contention that this obviously failed prediction was accurate on

a comparison between the observed temperature trends over land only and his three predictions, which were for global temperature change. It is well known that temperatures over land have risen more rapidly than those over the sea. Furthermore, McKittrick & Michaels (2007) and Watts (2012) have both concluded that, as a result of the artificial warming bias caused by urbanization and of the poor design, siting, and maintenance of temperature-monitoring stations, warming over land since 1990 has been overstated in the official record, perhaps by as much as double. Taken from a diagram by Dr. David Evans.

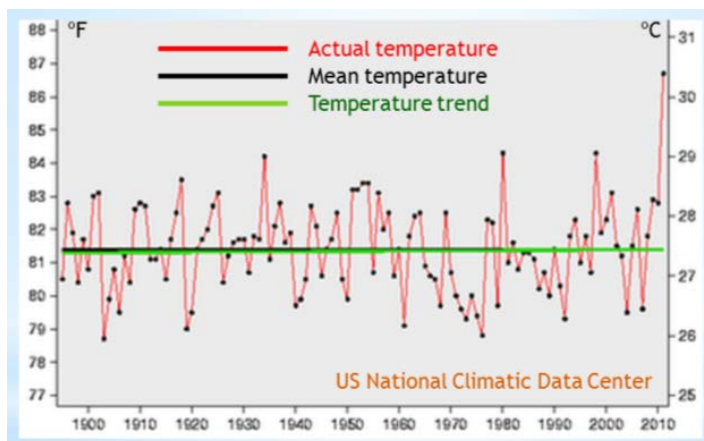
Secondly, as you would know if you were capable of performing the not particularly difficult feat of determining a linear-regression trend, there has been no "global warming" whatsoever since 1997. Any claim, whether by the joke figure Hansen or by anyone else, to the effect that extreme-weather events over the past two years are attributable to "global warming", when there has not been any "global warming" for a decade and a half, ought surely to appear at least somewhat implausible, even to you.

There has been no "global warming" whatsoever since 1997.

True, the fundamental equations of physics do not require that the arrow of time should run in one direction only, but no observation to the contrary has ever been made. It follows that imagined future "global warming" cannot be causing extreme-weather events today.

Yes, Hansen – with his gift for self-publicity – has obtained massive coverage among numerous scientifically-illiterate, politically-prejudiced, habitually-unquestioning, and instinctually-deferential news media for his conclusion that "we can state, with a high degree of confidence, that extreme anomalies such as those in Texas and Oklahoma in 2011 and Moscow in 2020 were a consequence of global warming, because their likelihood in the absence of global warming was exceedingly small".

The temperature in Oklahoma in 2011, for instance, was 7-8 F° above normal, but even if one imagines that all of the "global warming" of the past 60 years was manmade there has only been about 1 F° of it: and even the IPCC admits that up to half of the warming since 1950 could have been natural. In that event, no more than 10% of the transient heat-wave in Oklahoma could have been caused by us. The heat-wave would have occurred anyway, but it would have been at most 1 F° less severe.



Temperature in Texas, 1895-2011, showing no significant trend over the period. The spike in temperature in summer 2011 cannot, therefore, have been caused by manmade "global warming". There was no corresponding spike in CO₂ concentration in 2011.

As for Texas, there was indeed a temperature spike in June to August 2011, and again the anomaly was several degrees. But the long-run temperature trend in Texas is little more than zero. Once again, the only respectable conclusion is that only a minuscule fraction of the hot weather in Texas in 2011 was attributable to Man.

The extreme-weather events of the past two years, including the Texahoma heatwave, the droughts and fires in Russia, the floods in Pakistan, and the second-coldest British December

since records began in 1695, were caused by a well-known atmospheric phenomenon known as a “blocking high”, by which a high-pressure system becomes so strong that it halts the normal flow of weather, sometimes for weeks or months at a time.

Blocking highs do not occur any more frequently today than formerly, and no plausible mechanism has been suggested by which warmer weather causes blocking

highs. Indeed, the truth is the other way about: blocking highs cause warmer weather in summer, cooler weather in winter, and wetter weather in stormy conditions.

Several learned and highly critical commentaries on Hansen's daft paper have already appeared, from which you should surely have been aware that citing him as though he were an authority rather than a profiteering polemicist and self-publicist would be unlikely to commend your argument to us or to anyone rational.

Thirdly, there is no good evidence that "the majority of climate scientists", as you call them, agrees with your tediously extremist and unscientifically founded alarmism. Even if there were such evidence, I am Classically trained and have had drilled into me the dozen commonest logical fallacies in human discourse, not the least of which is the *argumentum ad populum* - the fallacy of arguing from a presumed consensus.

Even if there were a consensus in support of Hansen's nonsense that you so sedulously but imprudently endorse (and, if anything, there is now an overwhelming consensus against it), the mere fact of that consensus would tell us nothing about the truth or falsity of the proposition to which we are told that consensus assents.

Indeed, it was when I first realized that very nearly every argument for the climate-extremist case was founded (as your present argument is) upon consensus that I began looking more

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carefully at what I had been told climate scientists believed. It did not take long to discover that the supposed consensus did not and does not exist.

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Fourthly, as a businessman and as a policy-maker I am not in the habit of making decisions on the balance of probabilities (for that is the economics of the casino): and, even if I were, the growing evidence that the climate-extremists' lavishly-overdone predictions are altogether out of the right ballpark would tilt the probabilities very firmly in favour of inaction. However, any experienced policymaker knows that the resources of the taxpayer – to say nothing of his patience – are finite, and any experienced businessman knows that if the cost of addressing a problem greatly exceeds the cost of the problem itself the problem should be left alone.

I shall be chairing the panel on climate economics at the annual seminars of the World Federation of Scientists on planetary emergencies in Sicily next week, and it has proven quite impossible to find any serious economist who is now willing to assert that very heavy spending today on making imagined (and largely imaginary) "global warming" go away is or could ever be cost-effective.

In short, even if it were certain that the world would warm by 1.5 Celsius degrees this century as a result of the CO₂ we emit this century (and 1.5 degrees is the IPCC's current and not very alarming central estimate), it would be one or two orders of magnitude less cost-effective to try to stop that small and harmless warming by CO₂-mitigation policies than to let it happen and to adapt to it in a focused way.

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The silly exaggerations of Stern, who used a near-zero discount rate to provide artificial and false justification for squandering billions of dollars of taxpayers' money on trying to make "global warming" go away, were based on his heroically idiotic assumption that there was a 10% chance that "global warming" would bring the world to an end within this century. Justifiably, these extremist notions have very little support in the community of economists: and, though the news media enthused over them at the time, they now look sad and dated. I have studied the relevant equations myself, and have presented them at numerous scientific conferences. There has been little disagreement from my audiences, because the economic case against taking any action today to mitigate CO₂ emissions is so overwhelming.

It is important not to approach these scientific questions qualitatively. They are, at root, quantitative questions – for otherwise scientists would have nothing scientific to say about

them. You appear to be lamentably unfamiliar with the relevant quantities, so let me conclude by giving you a few to be thinking about.

How much CO₂-driven warming does the IPCC predict?

As I have said above, the IPCC predicts, as the implicit central estimate in its 2007 report, taken as the mean of all six emissions scenarios, that the CO₂ we add to the air this century will only cause 1.5 C warming by 2100, with a further 0.7 C from other greenhouse gases and 0.6 C warming now inevitable as a result of our past sins of emission. Go to table SPM.3 in the Summary for Policy-Makers of the IPCC's *Fourth Assessment Report* and you will see for yourself that the mean of the 21st-century warmings on

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each of the six emissions scenarios is 2.8 C°, and that 0.6 C° of this is stated to be irrevocably in the pipeline. According to the IPCC, 70% of manmade warming is from CO₂, and 70% of 2.2 C° is 1.5 C°. No doubt you will find this figure surprisingly low: but that is the fault of the IPCC itself, which has been extremely careful to conceal just how small its predicted warming to 2100 from the CO₂ we shall emit over the coming century actually is.

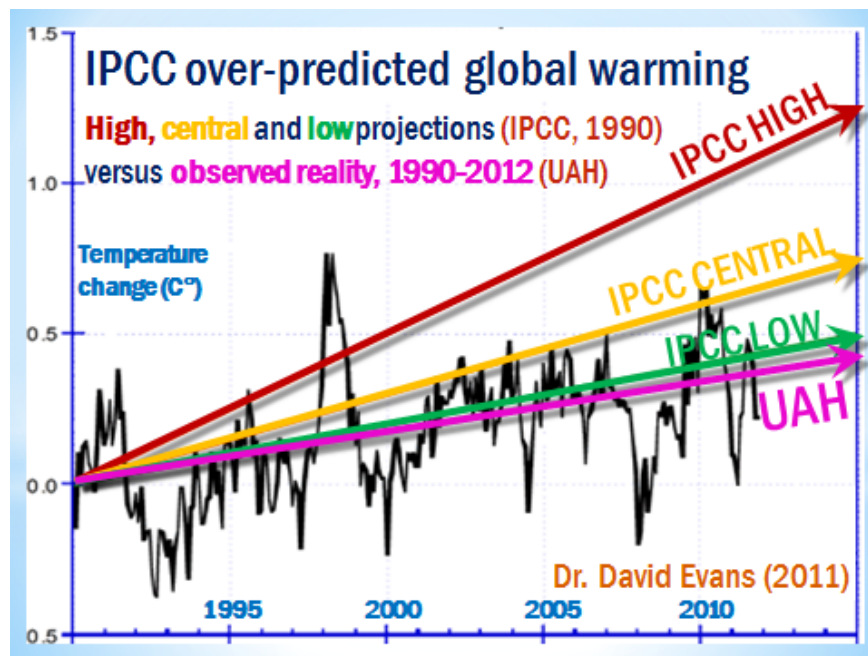
Almost all policies that attempt to address "global warming", even if their intended outcomes are expressed in terms of CO₂-equivalence, are confined exclusively or near-exclusively to mitigating emissions of CO₂ only. The corollary is that even if all CO₂ emissions had ceased by 2000, at immense expense to the global economy, the world would only be 1.5 C cooler by 2100 than it would otherwise have been.

This, combined with the extravagant cost of all CO₂-mitigation measures, is why attempting to prevent "global warming" would cost many times more than the minor damage that the very small CO₂-driven warming predicted by the IPCC would cause.

Have the IPCC's past predictions proven accurate?

The IPCC's projections, like those of Hansen, have proven to be exaggerations. In 1990 it predicted 1 C manmade warming by 2025. Its exact words, on p. xii of its 1990 report, are "a likely increase in global mean surface temperature of about 1 C° above the present value ... by 2025". Yet the observed warming two-thirds of the way from 1990 to 2025 is less than 0.3 C, suggesting that the IPCC's central prediction was a 100% exaggeration.

The IPCC's projections, like those of Hansen, have proven to be exaggerations.



The IPCC's exaggeration of "global warming" is shown in this plot by Dr. David Evans, superimposing the high (red), central (amber), and low (green) predictions from the IPCC's 1990 report upon the actual temperature record from the satellites of the University of Alabama at Huntsville (anomalies in black, trend in magenta).

That is by no means the only inaccurate temperature prediction made by the IPCC in its 1990 report, which also says (on page xii): "Under the IPCC business-as-usual (Scenario A) emissions of greenhouse gases, the average rate of increase of global mean temperature during the next century is estimated to be about 0.3 C° per decade" (ranging from 0.2-0.5 C°/decade). Yet the observed warming rate from 1990-2001 is less than half the central estimate, and well below even the least estimate, at just .14 C°/decade. °

Has the IPCC revised its predictions downward to allow for its disastrous over-predictions of warming since 1990? Yes, it has. Turn to page 798 of its *Fourth Assessment Report* of 2007, and you will find, in the opening paragraph of Box 10.2, a statement to the effect that the multi-model mean central estimate of global warming once the climate has returned to equilibrium (in 1000-3000 years) after a doubling of CO₂ concentration was 3.8 C° in the 1995 report, 3.5 C° in the 2001 report, and 3.26 C° in the 2007 report.

Box 10.2: Equilibrium Climate Sensitivity

The likely range¹ for equilibrium climate sensitivity was estimated in the TAR (Technical Summary, Section F.3; Cubasch et al., 2001) to be 1.5°C to 4.5°C. The range was the same as in an early report of the National Research Council (Charney, 1979), and the two previous IPCC assessment reports (Mitchell et al., 1990; Kattenberg et al., 1996). These estimates were expert assessments largely based on equilibrium climate sensitivities simulated by atmospheric GCMs coupled to non-dynamic slab oceans. The mean ± 1 standard deviation values from these models were 3.8°C \pm 0.78°C in the SAR (17 models), 3.5°C \pm 0.92°C in the TAR (15 models) and in this assessment 3.26°C \pm 0.69°C (18 models).

The revealing admission, buried on p. 798 of the IPCC's *Fourth Assessment Report* (2007), that the central estimate of "global warming" once the climate has returned to equilibrium over the next 1000-3000 years after a doubling of CO₂ concentration has fallen from 3.8 to 3.5 and now to 3.26 C°.

The IPCC has had to revise its central warming projection downward in each successive quinquennial report.



Attempting to make a warming prediction over up to 3000 years to two decimal places is hubristic.

Note, first, that the IPCC has had to revise its central warming projection downward in each successive quinquennial report; secondly, that the downward revisions are far too small to be credible; thirdly, that attempting to make a warming prediction over up to 3000 years to two decimal places is hubristic; fourthly, that the IPCC's 2007 report continues to predict warming of 0.2 C°/decade for the first two decades of this century, even though the outturn since 1990 has been just 0.14 C°/decade.

The National Oceanographic and Atmospheric Administration, in its 2008 State of the Climate

report, said that 15 years without any statistically-significant "global warming" would indicate that the models on which the central predictions of future warming are based were wrong. Well, there has indeed been no "global warming" for 15 years. The models were – and are – wrong.

Does the NOAA come out and admit that the models are wrong? No. Instead, it develops a new set of temperature-monitoring stations for the United States, each correctly designed, situated, and maintained, and then – when it finds that the results from these properly-managed stations show far less warming than the unreliable, urban-biased, ill-maintained former stations – comes out with a public statement to the effect that this July in the U.S. was warmer than any previous month in recorded history, relying upon the older stations to get the result it wants. In fact, according to the more accurate and newer stations, July 2012 was cooler than the previous record by a full 2 F°.

From disfiguring episodes such as this, which occur over and over again, you may begin to appreciate why it is that I am reluctant to rely on any supposed "consensus" of *soi-disant* "experts": for any such reliance would perpetrate not one but two logical fallacies – that of consensus, and that of appeal to authority.

You ought to have been similarly reluctant: instead, however, you merely repeat whatever official nonsense is handed down to you, apparently on the two manifestly inadequate grounds that the nonsense is official and that it accords with your quasi-religious belief. You are entitled to your religion, of course: but it is not appropriate for you to designate the likes of me as unreasonable because – on solid scientific and empirical grounds – we find your dogmas to be inconsistent with reality and truth.

There has indeed been no "global warming" for 15 years.



According to the more accurate and newer stations, July 2012 was cooler than the previous record by a full 2 F°.

How much CO₂-driven warming will likely occur this century?

The rate of "global warming" since 1950, as the least-

squares linear-regression trend on the Hadley/CRU data favored by the IPCC, is equivalent to just 1.2 C/century: and even the IPCC admits that up to half of that warming may have been natural. And, of course, the anthropogenic element in that warming includes not only CO₂ but

all other greenhouse gases, from which it follows that on the trend of the past 60 years the warming in the remainder of this century caused by our emissions of CO₂ is very unlikely to exceed 0.8 C and could be as little as 0.4 C.

Let me explain these remarkably low values. You can calculate the least-squares trend for yourself, to establish that the warming of the past 62 years, expressed as a centennial rate, is indeed equivalent to just 1.2 C°/century. If that rate were to continue

(and there is little reason to suppose that it will accelerate), then 70% of it, or 0.8 C°, would be attributable to CO₂. But if only half of the warming were natural, make that just 0.4 C°.

If so, then the cost-ineffectiveness of attempts to mitigate such trivial amounts of CO₂-driven warming becomes still more obvious. You will now see why the IPCC is so careful not to state explicitly just how little CO₂-driven warming it really predicts. Yet you can be reassured, as a lover of mere "consensus", that all of the values I have cited in this reply are mainstream climate science. I have carefully given references and explanations so that you can verify them for yourself.

You may attempt to argue that, because the industrialization of China, India, and other third-world countries is now occurring so rapidly, CO₂ concentrations are likely to rise very quickly, leading to an acceleration of the warming rate.

No, there will not be much acceleration of the rate of manmade warming, because the influence of CO₂ on temperature is logarithmic: each successive molecule of CO₂ we return to the atmosphere from which it once came has less warming effect than its predecessor. This logarithmic attenuation of the warming effect of CO₂ and of some other greenhouse gases has a substantial effect in canceling the consequences of rapid industrialization.

I have carefully given references and explanations so that you can verify them for yourself.

$$\Delta F = 5.35 \ln \left(\frac{C}{C_0} \right)$$

Since the radiative forcing from a change in CO₂ concentration is a logarithmic function of the proportionate change in concentration, each successive molecule of CO₂ that we release back to the atmosphere has less warming effect than its predecessors.

The influence of CO₂ on temperature is logarithmic: each successive molecule of CO₂ we return to the atmosphere from which it once came has less warming effect than its predecessor.

Man's increasing liberation of CO₂ is much offset by the reducing warming effect of each additional CO₂ molecule. This, too, is mainstream climate science. The IPCC's current estimate of the radiative forcing caused by any change in CO₂ concentration, following Myhre *et al.* (1998), is 5.35 times the logarithm of the proportionate change. From the word "logarithm" there, my conclusion follows.

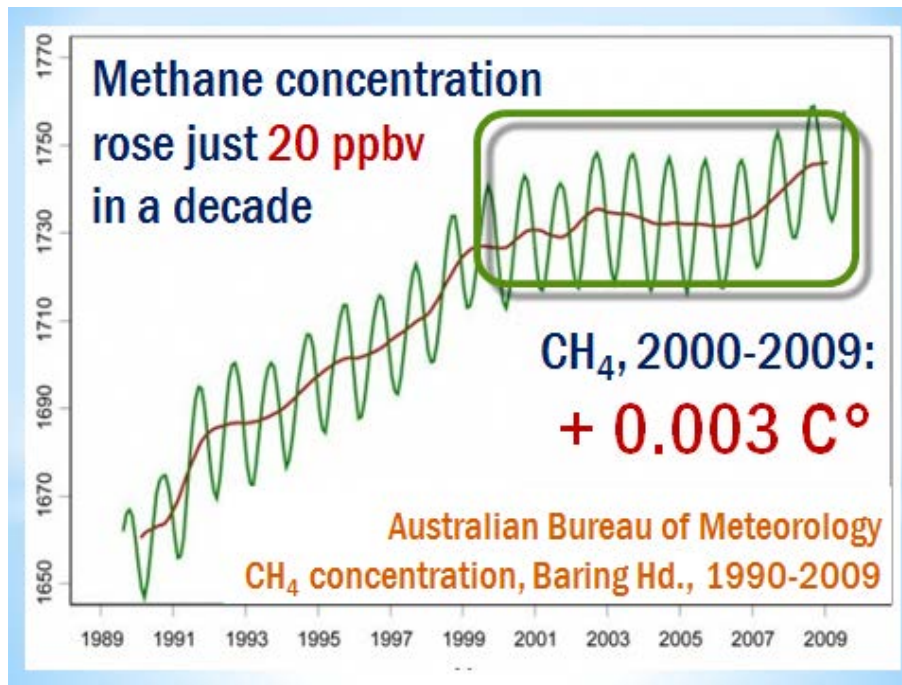
The central point is that, even if the IPCC's central estimates of future warming were correct (and we now know they are very considerable overstatements), it is very difficult to make out a case that the world is menaced in any dangerous degree.

You may also argue that I am concentrating too much on CO₂ alone. But CO₂ alone is what very nearly all current measures to mitigate future "global warming" address. Besides, the 0.6 C° warming "in the pipeline" that the IPCC

The central point is that, even if the IPCC's central estimates of future warming were correct (and we now know they are very considerable overstatements), it is very difficult to make out a case that the world is menaced in any dangerous degree.

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imagines to be unavoidable depends upon the assumption that temperature feedbacks are very strongly net-positive – an assumption that is increasingly under question in the mainstream scientific literature. I shall deal with this point in more detail later.



Methane concentration in the first decade of the present century, from Baring Head, Australia (Australian Bureau of Meteorology)

Furthermore, the 0.7 C° non-CO₂ greenhouse warming implicitly predicted by the IPCC for this century is also an overstatement. The only significant non-CO₂ greenhouse gas is methane: but its concentration has only risen by 20 parts per *billion* over the past decade. At that rate, it would cause just 0.3 C° of warming by 2100. One should halve the IPCC's implicit 0.7 C° non-CO₂ greenhouse warming.

That leaves 0.8 C° (at most) from CO₂, and 0.35 C° (at most) from other greenhouse gases: a total of little more than 1 C° warming over the 21st century. Is it really worth spending a single red cent on preventing that? Of course not.

Is the IPCC justified in multiplying direct CO₂-driven warming by 3?

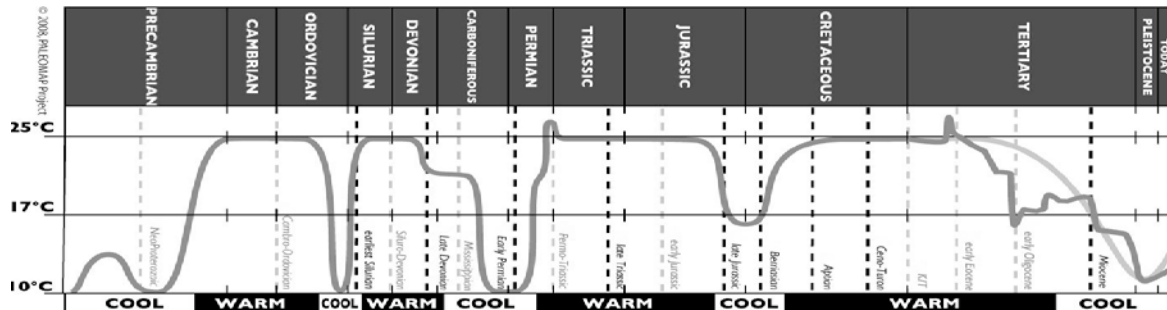
No. The IPCC's grossly

overstated and now failed predictions of climatic apocalypse are based on an unproven and undemonstrable assumption that the direct warming caused by CO₂ and other greenhouse gases must be multiplied by 3 to allow for what are called "temperature feedbacks".

$$b = f_{\text{H2O}} + f_{\text{lap}} + f_{\text{alb}} + f_{\text{cld}} + f_{\text{CO2}} + \dots$$

The feedback-sum b is the sum of the water-vapor, lapse-rate, surface-albedo, cloud, CO₂ and other feedbacks, not one of which can be measured. This feedback-sum is greater than 2 in the IPCC's current estimation, which, after mutual amplification, is said to multiply the direct warming from CO₂ and other greenhouse gases by 3.

Not one of these feedbacks can be or has been reliably measured, but there is growing evidence in the literature to confirm evidence from the paleoclimate to the effect that, given the formidable temperature-stability of the Earth over the past 64 million years (with temperatures fluctuating by only 3% either side of the long-term mean), the very large net-positive feedbacks posited by the IPCC are simply impossible.



750 million years of global mean surface temperature, reconstructed by Scotese (1999), showing variations not exceeding 8 °C (<3%) either side of the 18 °C mean.

There is good evidence to suggest that the feedbacks are in fact somewhat net-negative, acting to attenuate rather than to amplify the direct warming from greenhouse gases. Whether or not this is the case, you will no doubt now begin to realize the scientific – in addition to the *a-priori* logical – reason why

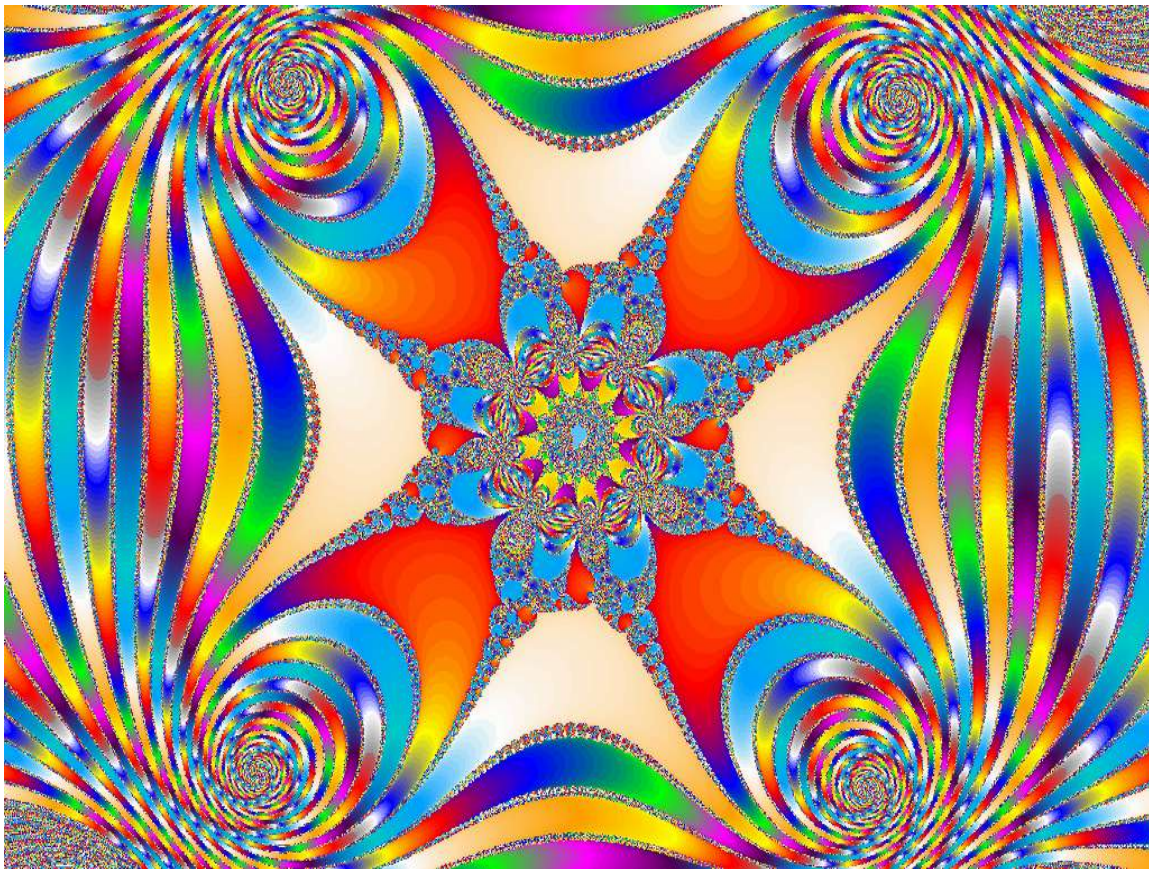
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there can be no consensus about how much manmade warming we can expect. Two-thirds of that warming depends on what is, in essence, guesswork – and uneducated guesswork at that.

How can there be a “consensus” about the future evolution of a chaotic object?

All guesswork about the future evolution of global temperature is likely to be uneducated, not least because, mathematically speaking, the climate is “a coupled, non-linear, chaotic object”, so that “the long-term prediction of future climate states is not possible” by any method (IPCC, 2001, para. 14.2.2.2).



This image of a Maltese Cross festooned with silk ribbons is a tiny region of the Argand plane covered by a fragment of the Mandelbrot set. The most complex object in mathematics, generated by a very simple equation, is chaotic. Each color change on the image represents a phase-transition or bifurcation (known to climate-extremists as a “tipping-point”). Yet the Argand co-ordinates of the top-left and bottom-right pixels in the image are identical to 12 decimal places: a beautiful illustration of the fact that “tipping-points” occur just as often following minuscule perturbations as they do following major perturbations. The natural variability of the climate, therefore, is every bit as capable of generating extreme-weather events as a climate warmed by, say, 3 or 5 C° compared with today. The fascinating complexity of the image also illustrates how difficult it is to predict the evolution of objects that behave chaotically. No such image was possible until modern, high-resolution computer screens became available.

The IPCC tries to overcome the problem caused by the fact that the climate behaves as a chaotic object by attempting to construct probability distributions of climate sensitivity. However, when trying to model a chaotic object, it is no less impossible to derive credible probability distributions of future “global warming” than to derive estimates with error-bars.

When trying to model a chaotic object, it is no less impossible to derive credible probability distributions of future “global warming” than to derive estimates with error-bars.

The chaoticity of the climate, which is deterministic but not determinable by any method available to us, is a further – and very powerful – reason why there can be no consensus about whether future “global warming” is at all likely to prove dangerous or damaging. Precisely because the climate

behaves chaotically and is thus inherently unpredictable to anything like the precision necessary to tell us how much “global warming” our influence may cause anyone who argues from “consensus” on the climate question is talking demonstrable scientific nonsense. We shall have to wait and see. Judging by the past 60 years’ outturn, we have very little to worry about.

Anyone who argues from “consensus” on the climate question is talking demonstrable scientific nonsense.

You are entitled to your opinions, but if you present them as

though they were the revealed truths of some New-Age religion rather than the properly-quantified and properly-verified and properly-evidenced scientific conclusions of a mature and rational mind, you cannot expect to be treated seriously.

However uncongenial it may be to you to find that Man and his planet are not menaced by imminent doom caused by our insignificant perturbation of the composition of the atmosphere, you will not convince us or anyone to the contrary unless and until you argue rationally.

The science is in,
the truth is out,
Al Gore is through,
the game is up,
and the scare is over.

In the absence of any rational justification, your point of view no longer even has the merit of being fashionable. The science is in, the truth is out, Al Gore is through, the game is up, and the scare is over.

Monckton of Brenchley



Cover photo of a courtroom scene provided by
the [Educational Technology Clearinghouse](#).



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