

Cooking the books

By Christopher Monckton of Brenchley

Mr. John Cook, who runs a website puzzlingly entitled *Skeptical Science* (for he is not in the least sceptical of the “official” position) seems annoyed that I won the 2011 televised debate with Dr. Denniss of the Australia Institute, and has published a commentary on what I said. It has been suggested that I should reply to the commentary. So, *seriatim*, I shall consider the points made. Mr. Cook’s comments are in Roman face: my replies are in bold face. Since Mr. Cook accuses me of lying, I have asked him to be good enough to make sure that this reply to his commentary is posted on his website in the interest of balance.

Chaotic climate

Cook: “Monckton launched his Gish Gallop by arguing that climate cannot be predicted in the long-term because it's too chaotic because, [Monckton says],

‘the climate is chaotic...it is not predictable in the long-term...they [the IPCC] say that the climate is a coupled, non-linear, chaotic object, and that therefore the long-term prediction of future climate states is not possible.’

... It’s really quite self-evident that Monckton’s statement here is incorrect.”

Reply: Paragraph 14.2.2.2 of the IPCC’s 2001 report says:

“In sum, a strategy must recognise what is possible. In climate research and modelling, we should recognise that we are dealing with a coupled non-linear chaotic system, and therefore that the long-term prediction of future climate states is not possible.”

My quotation from the IPCC, given from memory, was in substance accurate. Here and throughout, I shall ignore Mr. Cook’s numerous, disfiguring, *ad-hominem* comments.

Consensus

Cook: “Monckton proceeds to demonstrate his confusion about the causal relationship between science and consensus: [he says: ‘the idea that you decide any scientific question by mere consensus [is incorrect].’ ... He suggests that somehow climate science is done by first creating a consensus when in reality the consensus exists because the scientific evidence supporting the anthropogenic global warming theory is so strong.”

Reply: This seems a quibble. Dr. Denniss had said he was satisfied with the science because there was a consensus. He had appealed repeatedly to consensus. Yet in the Aristotelian canon the *argumentum ad populum*, or headcount fallacy, is rightly regarded as unacceptable because the consensus view – and whatever “science” the consensus opinion is founded upon – may or may not be correct, and the mere fact

that there is a consensus tells us nothing about the correctness of the consensus opinion or of the rationale behind that opinion.

Adding carbon dioxide to an atmosphere will cause warming, but we need not (and should not) plead “consensus” in aid of that notion: for it is a result long proven by experiment, and has no need of “consensus” to sanctify it. However, the real scientific debate is about *how much* warming extra CO₂ in the air will cause. There is no “consensus” on that; and, even if there were, science is not done by consensus.

Mediaeval warm period

Cook: “Every single peer-reviewed millennial temperature reconstruction agrees that current temperatures are hotter than during the peak of the [Mediaeval Warm Period]. ...

Reply: At www.co2science.org, Dr. Craig Idso maintains a database of papers by more than 1000 scientists from more than 400 institutions in more than 40 countries providing evidence that the medieval warm period was real, was global, and was generally warmer than the present, sometimes by as much as 3-4 C°. Many of these papers provide millennial reconstructions.

Cook: “The climate scientists involved in creating those first millennial proxy temperature reconstructions are not under criminal investigation.”

Reply: The Attorney-General of the Commonwealth of Virginia, Mr. Cuccinelli, issued a press statement on May 28, 2010, repeating an earlier statement that –

“The revelations of Climategate indicate that some climate data may have been deliberately manipulated to arrive at pre-set conclusions. The use of manipulated data to apply for taxpayer-funded research grants in Virginia is potentially fraud. ... This is a fraud investigation.”

Fraud, in the Commonwealth of Virginia as in most jurisdictions, is a criminal offence. The Attorney-General’s investigation is being conducted in terms of the Fraud Against Taxpayers Act 2000.

Is there a human fingerprint?

Cook: “The scientific literature at the time [of the 1995 Second Assessment Report of the IPCC] clearly demonstrated a number of ‘fingerprints’ of human-caused global warming.”

Reply: The scientists’ final draft of the 1995 Report said plainly, on five separate occasions, that no evidence of an anthropogenic influence on global climate was detectable, and that it was not known when such an influence would become evident.

However, a single scientist, Dr. Ben Santer of Lawrence Livermore National Laboratory, rewrote the draft at the IPCC’s request, deleting all five statements, replacing them with a single statement to the effect that

a human influence on global climate was now discernible, and making some 200 consequential amendments.

These changes were considered by a political contact group, but they were not referred back to the vast majority of the authors whose texts Dr. Santer had tampered with, and whose five-times-stated principal conclusion he had single-handedly and unjustifiably negated.

We now have the evidence of Prof. “Phil” Jones of the University of East Anglia, in one of the recently-released Climategate emails, that the warming of the past century falls well within the natural variability of the climate – consistent with the conclusion that Dr. Santer had negated.

The IPCC’s fraudulent statistical technique

Cook: “Monckton proceeds to make another bizarre claim about the IPCC reports which we’ve never heard before: that they use a ‘fraudulent statistical technique’ to inflate global warming’ ... As long as the claim sounds like it could be true, the audience likely cannot determine the difference between a fact and a lie.”

Reply: Mr. Cook is here accusing me of lying. Yet my email address is well enough known and Mr. Cook could have asked me for my evidence for the fraudulent statistical technique before he decided to call me a liar. He did not do so. Like the hapless Professor Abraham, he did not bother to check the facts with me before making his malevolent and, as I shall now show, baseless accusation.

The IPCC’s *Fourth Assessment Report*, 2007, carries in three places a graph in which the Hadley Center’s global mean surface temperature anomaly dataset from 1850-2005 is displayed with four arbitrarily-chosen trend-lines overlaid upon it. At each place where the altered graph is displayed, the incorrect conclusion is drawn that because trend-lines starting closer to the present have a steeper slope than those starting farther back, the rate of warming is accelerating and that we are to blame.

I wrote both to Railroad Engineer Pachauri (in 2009) and to a lead author of the 2007 report (in 2011), and visited both of them in person, to report this defective graph. They both refused to have it corrected, though neither was able to argue that the technique was appropriate. I have now had the data anonymized and reviewed by a statistician, who has confirmed that the technique is unacceptable. In the circumstances, the refusal of the two senior IPCC figures to correct the error constitutes fraud and, when the statistician has been shown the context of the data that he saw in an anonymized form, the police authorities in the relevant nations will be notified and prosecution sought.

Climate sensitivity

Cook: “Where Monckton gets this claim that the Australian government’s central climate sensitivity estimate to doubled CO₂ is 5.1 C° is a complete mystery.

Reply: The “mystery” could and should have been cleared up by Mr. Cook simply asking me. The estimate is that of Professor Ross Garnaut, the

Australian Government's economic adviser on climate questions. It is on that figure that his economic analysis – accepted by the Australian Government – centres.

Cook: “Monckton also repeats a myth ... that most climate sensitivity estimates are based on models, and those few which are based on observations arrive at lower estimates. The only study which matches Monckton's description is the immensely-flawed Lindzen and Choi (2009).”

Reply: I am not sure what qualifications Mr. Cook has to find Professor Lindzen's work “immensely flawed”. However, among the numerous papers that find climate sensitivity low are Douglass *et al.* (2004, 2007) and Coleman & Thorne (2005), who reported the absence of the projected fingerprint of anthropogenic greenhouse-gas warming in the tropical mid-troposphere; Douglass & Christy (2009), who found the overall feedback gain in the climate system to be somewhat net-negative; Wentz *et al.* (2007), who found that the rate of evaporation from the Earth's surface with warming rose thrice as fast as the models predicted, implying climate-sensitivity is overstated threefold in the models; Shaviv (2005, 2011), who found that if the cosmic-ray influence on climate were factored into palaeoclimate reconstructions the climate sensitivities cohered at 1-1.7 C° per CO₂ doubling, one-half to one-third of the IPCC's central estimate; Paltridge *et al.* (2009), who found that additional water vapor at altitude (caused by warming) tends to subside to lower altitudes, allowing radiation to escape to space much as before and greatly reducing the water vapor feedback implicit in a naïve application of the Clausius-Clapeyron relation; Spencer and Braswell (2010, 2011), who found the cloud feedback as strongly negative as the IPCC finds it positive, explicitly confirming Lindzen & Choi's estimated climate sensitivity; Loehle & Scafetta (2011), who followed Tsonis *et al.* (2006) in finding that much of the warming of the period 1976-2001 was caused not by us but by the natural cycles in the climate system, notably the great ocean oscillations; etc., etc.

Cook: “Monckton at various times has claimed that climate sensitivity to doubled CO₂ is anywhere between 0.2 and 1.6 C°.”

Reply: I have indeed done climate sensitivity estimates by a variety of methods, and those methods tend to cohere at a low sensitivity. The IPCC at various times has claimed that a central estimate of climate sensitivity is 3.8 C° (1995); 3.5 C° (2001); and 3.26 C° (2007); and its range of estimates of 21st-century warming in the 2007 report is 1.1-6.4 C°. Ranges of estimates are usual where it is not possible to derive an exact value.

Carbon pricing economics

Cook: “Monckton employs the common ‘skeptic’ trick of focusing on the costs of carbon pricing while completely ignoring the benefits.”

Reply: On the contrary: my analysis, presented in detail at the Los Alamos Santa Fe climate conference in 2011, explicitly calculates the costs of taxing, trading, regulating, reducing, or replacing CO₂ and sets

against the costs the cost of not preventing the quantum of “global warming” that will be reduced this century as a result of the “investment”. Yet again, if Mr. Cook had bothered to check I could have sent him my slides and the underlying paper.

Cook: “Economic studies consistently predict that the benefits [of carbon dioxide control] will outweigh the costs several times over.”

Reply: No, they don't. True, the Stern and Garnaut reports – neither of them peer-reviewed – came to this conclusion by questionable methods, including the use of an absurdly low inter-temporal discount rate. However, if one were permitted to use the word “consensus”, one would have to point out that the overwhelming majority of economic studies on the subject (which are summarized in my paper) find the cost of climate action greatly exceeds the cost of inaction. Indeed, two review papers – Lomborg (2007) and Tol (2009) – found near-unanimity on this point in the peer-reviewed literature. Cook is here forced back on to the argument from consensus, citing only an opinion survey of “economists with climate expertise”. However, he does not say how many were interviewed, how they were selected, what weightings and other methods were used: and, in any event, the study was not peer-reviewed. Science is not, repeat not, repeat not done by opinion surveys or any form of head-count.

Abrupt warming

Cook: “Monckton proceeds to claim that abrupt climate change simply does not happen:

‘Ask the question how in science there could be any chance that the rate of just roughly 1 C° per century of warming that has been occurring could suddenly become roughly 5 C° per century as it were overnight. There is no physical basis in science for any such sudden lurch in what has proven to be an immensely stable climate.’

The paleoclimate record begs to differ. A stable climate is the exception, not the norm, at least over long timescales.”

Reply: Mr. Cook displays a graph of temperature changes over the past 450,000 years. At the resolution of the graph, and at the resolution of the proxy reconstructions on which it was based, it would be quite impossible to detect or display a 5 C° warming over a period of as little as a century.

Global temperatures have indeed remained stable over the past 100 million years, varying by just 3% either side of the long-term mean. That 3% is around 8 C° up or down compared with today, and it is enough to give us a hothouse Earth at the high end and an ice age at the low end.

However, very extreme temperature change can only happen in a very short time when conditions are very different from what they are today. For instance, at the end of the Younger Dryas cooling event, 11,400 years ago, temperature in Antarctica rose by 5 C° in just three years, according

to the ice cores (which, over that recent period, still have sufficient resolution to allow determination of annual temperatures). No such lurch in temperatures has happened since, and none is reasonably foreseeable.

We now have confirmation from the UK Met Office that there has been no “global warming” to speak of for 15 years. That is hardly the profile of an imminent 5 C° increase in global temperature. Bottom line: a stable climate is the rule, not the exception: and nothing that we can do to alter the climate can cause a major change such as that which terminates ice ages. Remember Canute: our power is limited.

Human influence on the climate

Cook: “There has never before been a large human influence on the climate, so why should we expect it to behave exactly as it has in the past when only natural effects were at work?”

Reply: I did not say that the climate will behave “exactly” as it has in the past. We are capable of exerting *some* influence over it, but not very much. The notion that we can exercise a large influence is based on the mistaken idea that the initial warming from a doubling of CO₂ concentration (which might be about 1 K) will be tripled by net-positive temperature feedbacks. This unfortunate assumption is what truly separates the IPCC from scientific reality. The IPCC makes the mistake of assuming that the feedback mathematics that apply to an electronic circuit (Bode, 1945) are also applicable to the climate. In two very important respects that the models are tuned to overlook, this is not so. First, precisely because the climate has proven temperature-stable, we may legitimately infer that major amplifications or attenuations caused by feedbacks have simply not been occurring.

Secondly, the Bode equation for mutual amplification of feedbacks in an electronic circuit has a singularity (just above the maximum temperature predicted by the Stern report, for instance, or by Murphy *et al.*, 2009) at which the very strongly net-positive feedbacks that reinforce warming suddenly become just as strongly net-negative, dampening it. I have not yet heard of a convincing physical explanation for any such proposed behaviour as applied to the climate. But if we must use the Bode equation then it necessarily follows from the climate’s formidable temperature-stability that the feedback loop gain in the climate system is either zero or somewhat net-negative. A climate subject to the very strongly net-positive feedbacks imagined by the IPCC simply would not have remained as stable as it has.

Has Earth warmed as expected?

Cook: “Monckton ... repeats ... that Earth hasn’t warmed as much as expected ... [He says] ‘If we go back to 1750 ... using the Central England Temperature Record as a proxy for global temperatures ... we’ve had 0.9 C° of warming ...’. It should go without saying that the temperature record for a single geographic location cannot be an accurate proxy for average global temperature.”

Reply: Central England is at a latitude suitable to take the long-run temperature record as a fair proxy for global temperatures. However, if Mr. Cook were unhappy with that, he could and should have contacted me to ask for an independent verification of the 0.9 C° warming since 1750. Hansen (1984) found 0.5 C° of warming had occurred until that year, and there has been 0.4 C° of warming since, making 0.9 C°. Indeed, in another article on Mr. Cook's website he himself uses a value of 0.8 C° in the context of a discussion of warming since 1750.

The significance, of course, is that the radiative forcings we have caused since 1750 are equivalent to those from a doubling of CO₂ concentration, suggesting that the transient sensitivity to CO₂ doubling is around 1 C°.

Cook: "... Human aerosol emissions, which have a cooling effect, have also increased over this period. And while 3 C° is the IPCC's best estimate for *equilibrium* climate sensitivity, the climate system is not yet in equilibrium. Neglecting these two factors (aerosols and thermal inertia of the global climate), as Monckton and Lindzen have done, will certainly give you an underestimate of equilibrium sensitivity, by a large margin. This is how Monckton supports his lowball climate sensitivity claim – by neglecting two important climate factors."

Reply: Once again, Mr. Cook has failed to check his facts with me. Of course my calculations include the effect of aerosols (which, however, is by no means as certain in its magnitude as Mr. Cook seems to think). And of course I have not ignored temperature feedbacks (which Mr. Cook mistakenly confuses with "the thermal inertia of the global climate": actually, it is I who have been arguing that there is considerable homeostasis in global temperatures, and he who had earlier been arguing that global climate was not stable). If I am right about temperature feedbacks (see above), then the equilibrium sensitivity will be about the same as the transient sensitivity – around 1 C°. And that, on most analyses, would actually be beneficial.

Cook: "The warming over the past 60 years is consistent with the IPCC climate sensitivity range and inconsistent with Lindzen and Monckton's lowball climate sensitivity claims. Monckton claims the observational data supports his low sensitivity claims – reality is that observational data contradicts them."

Reply: Warming from 1950 to date was 0.7 C°. Net forcings since 1950 were 1.8 Watts per square meter, using the functions given in Myhre (1998) for the major greenhouse gases and making due allowance for aerosols and other negative anthropogenic forcings. The transient climate-sensitivity parameter over the period was thus 0.4 Celsius degrees per Watt per square meter, consistent with the 0.5 derivable from Table 10.26 on page 803 of IPCC (2007) on each of the IPCC's six emissions scenarios. In that event, the transient warming in response to a doubling of CO₂ concentration over the present century would be $0.4(5.35 \ln 2) = 1.5$ C°, again using a function from Myhre (1998). Interestingly, the IPCC's implicit central estimate of warming from CO₂ this century, derivable by two distinct methods, is also 1.5 C°.

In short, even if the IPCC is right about the warming this century from CO₂, that warming is simply not going to be enough to cause damage.

Lying

Cook: “Monckton spent almost the entire debate misrepresenting the scientific (and economic) literature at best, lying at worst.”

Reply: Now that readers have had a chance to hear both sides, they will be able to form a view on who was lying and who was not.