BOOK REVIEW

BOOK: Heaven and Earth, Connor Court Publishing P/L, Ballan, Victoria, 2009

AUTHOR: Ian Plimer – Is a Geologist and a professor at the University of Adelaide and is a director of several mining companies. His distinguished career is outlined on the page "About the author".

REVIEWER: Brian Harrisson

DATE: 15th June 2011

SOURCE: http://www.brains-stachel.com (will be active shortly)

OUTLINE OF BOOK: The authors stated aim is to show that an understanding of climate requires an amalgam of 17 separate disciplines. The introduction sketches his main arguments. These are that climate science can only be understood by understanding what has gone on historically. As the only extended records of climate are in the earth's surface and few "non earth science" scientists, have knowledge of geology, they are not qualified to comment on climate change. Climate is affected by a numerous variables that do not include atmospheric CO2. Hence the theory that CO2 drives global warming is flawed. He further claims that as predictive climate models cannot take the large number of relevant variables into consideration they predict simplistically flawed outcomes. The use of models lacks scientific discipline in the sense that true science requires evaluation of climate fact and not so called "projected fact". These flaws are accentuated by the politics of climate change. Reports issued by the Intergovernmental Panel on Climate Change (IPCC) and those by Stern and Garnaut are not the result of scientific consensus but a consensus of Governments with different agendas appropriately doctored to eliminate dissenting opinions by people who are themselves aren't qualified in the climate science discipline. The end result is that the IPCC reports and those that followed are flawed and do not support the claim that human activity creates global warming.

The succeeding chapters provide detailed arguments and data that purport to justify these assertions:

a) History: The author claims after the end of the last glaciations period (-116,000 to -14,000 years) there have been a continuous cycle of warming and cooling culminating a period of warming since about 1850, interspersed intermittent cold periods. We live in an interglacial period. The point being made is that warming and cooling climate is natural.
b) Sun: Is a major driver of climate and this has not been adequately considered by climate science. Additional drivers include cosmic ray forcing and planetary perturbations called Milankovitch forcing. The affects of greenhouse gasses in the atmosphere piggy-back on the principal drivers of climate and may amplify changes. The implication is that greenhouse gasses cannot cause changes in climate.
c) Earth: The notion that carbon cycle is controlled by chemical reactions between water air and rocks is valid as is the theory that these processes have stopped runaway icehouse or greenhouse affects. The notion of tipping points is however a non scientific myth. During the

Ordovician-Silurian glaciations period CO2 was more than 4,000 ppmv showing that CO2 does not drive warming. Since multi cellular life first appeared there has been a constant draw down of CO2 from the atmosphere. There was once more than 100 times the current levels indicating widely fluctuating levels of atmospheric CO2 are normal. There have been extinctions and migration of flora and fauna. Super volcanoes have shaped the earth and the content of the atmosphere. The affects of changes to the earth's angle of rotation on climate have not been considered adequately.

d) Ice: Ice ages have dominated climate for 20% of the time and their size has waxed and waned. Ice surging armadas of icebergs is a permanent feature of glaciations and does not indicate global warming. There is a perennial polar sea saw
e) Water: Sea levels have varied massively over time and store massive amounts of CO2 which correlates with temperature. A lot of this emanates from undersea volcanoes and cycles through the atmosphere, life, soils and rocks according to systems that are non-linear, chaotic and turbulent and because of this is not susceptible to computer modelling. There has not been any noted acceleration of sea level rise during the period of industrialization.
f) Air: There is no such thing as a greenhouse affect. The measurements of temperature by thermometer, on which much of the climate warming theory are based, are flawed and the more sophisticated and accurate satellite and balloon measurements show that the planet is not warming. Atmospheric carbon only represents .001% of the earth's total carbon inventory (implying that its influence can only be small). Much of the carbon inventory is ignored by the IPCC in its models as are the clouds which have a significant influence on climate.

The author believes that error engendered views have permeated the world community such that global warming has now become an ideology (my word). This has obsessed Governments, distorted the science, and ostracized scientific professionals who do not embrace the ideology. This has limited scientific freedoms except for those scientists who accept the doctrine of the faith. The system becomes self perpetuating in that only scientists who conform receive grants and can publish. The result is that virtually all published work supports the false ideology. Other people who support the ideologically driven views include Governments, presumably operators in carbon markets and others who benefit from the massive expenditure spent on combating non existent global warming. The author considers the expenditure would have been better spent alleviating poverty in third world countries. He asserts that this situation developed because climate scientists relied on their unreliable computer models and would not admit that they don't really know what is likely to happen to climate in the future.

On the basis of this reality he successively attacks the Kyoto protocol and the various IPCC, Stern and Garnaut reports. Finally he asks the question "what if I am wrong?" He canvasses the need to use the "cautionary principle" but rejects it as unnecessary. He is essentially arguing that he is not wrong and that humanity created climate change does not exist.

REVIEW COMMENTS: As a natural sceptic I was eager to read Professor Plimer's book. Up until that point I accepted the widely held view that human activity is causing a warming of the planet. His

book has done nothing to change that acceptance. The author talks a lot about the science but does not engage in it in any serious way. His book is more concerned with the politics, economics and philosophy of global warming where science is used merely a background prop. The real objective of the book is to demolish the view that human behaviour is causing the planet to warm. As to the reasons for this I will leave readers to ponder.

His commentary will of course be strongly supported by those who have a vested interest in current climate wisdom being shown to be wrong. The book is an annoying but interesting read even if only because it may well become the climate equivalent of the first book on the science of creationism. The book can not be taken seriously as a contribution to the climate debate. It lacks any semblance of balance. There was not one letter in the conventional climate wisdom "alphabet" that the author considered to be well formed. Neither side of any public debate is ever totally right or wrong so any author who pretends that he is is suspect on these grounds alone. I'm just sorry that the book was written by a Professor at one of Australia's main Universities. This comment does not challenge the notion that, everyone is or should be entitled to hold their own opinions. It is only that those of civic leaders should also be somewhat more measured. The following comments are intended to illustrate how those of the author do not meet these criteria:

a. The author's ideas are not capable of being acted upon.

   The conventional climate models (CCM) present a reasonably complete explanation based on currently accepted science, of how the climate processes and systems work. They are so well understood that they can be defined mathematically and programmed. They also explain how human activity is likely to interfere with them. In essence the models are complete within themselves, albeit in a somewhat flawed form if you accept the author's views. However the author neither describes nor illustrates these models in his book and fails to demonstrate that he understands their workings. The author would well know that scientists who propose a change of paradigm need to demonstrate that they have clear understanding of the work that their work is intended to topple and he has not done this.

   There is also a problem of scientific continuity. The history of science is replete with examples of universally accepted scientific paradigms being overtaken and replaced by new "better" ones. The replacement of Newton's model of gravity by that of Einstein's in a specialised areas of physics, provides a good example of a swap of one theory for the other without loose ends allowing science continued on its merry way.

   In this case though, even if you accept everything the author asserts in his book a swap would not be possible because the ideas are not fitted into any coherent, rational climate framework. Unlike the gravity example the author does not or perhaps cannot suggest how and where the CCM should be modified to incorporate his ideas. Nor does he put forward his own model to replace the current one. In essence he would appear to be happy to leave the science in limbo. If the author is serious he should give climate science something of substance it can work with.

b. The so called proof that "CO2 does not cause warming" is not proof at all.

The proof that, CO2 can not produce climate change is of this kind: *"very high atmospheric CO2 readings existed during periods of high glaciations so CO2 cannot be a driver of global warming"*. Such naivety is breathtaking. It is akin to making the statement: *"There was a full moon last night and there were no possums around, so possums do not come out when the moon is full."*

The author should know that historical records only give the end results and these do not give sufficient information to show they were arrived at. The "marginal" movements of CO2 and temperatures are needed to do this. The answer to this question would elicit the required information: *"At the point in time being referred to, given that the atmospheric CO2 reading was (X_1) and the global temperature reading was (Y_1) what would (Y_2) be if (X_1) increased or decreased by a given % to (X_2)?"* If the author is correct (Y_2) = (Y_1) after the change. If the conventional climate wisdom is correct, (Y_2) ≠ (Y_1). It is unlikely that the historical record would provide this information. Even so this absence does not justify using incorrect data to draw erroneous conclusions.

c. The author's claim that "The Global temperature is not warming?" is misconceived.

It will depend on the method used to examine the question. A simple example will illustrate this point.

If a movement in temperatures over a defined period is the method, there would be two lots of input for each of two variables: Temperature start = (A), Temperature end = (B), Start date = (1), End date = (2) the temperature movement would be ($B_2 – A_1$) where negative means decline and positive increase. Assuming that the author's data is correct that method would give these answers for varying period lengths:

i. Last 150 years – yes
ii. Last 200 years – no
iii. Last 50 years – yes
iv. Last 800 years – no

The author appears to agree that temperatures have increased over the last 150 years and this crudely coincides with a significant period of human emissions and growth of atmospheric CO2. This information together with the flaws in the authors proof shown in (b) above contradicts his overall assertion that human activities have not caused global warming.

d. The author's criticisms of computer based CCM cannot be taken seriously.

The author appears to misunderstand what computer modelling is all about. It is well known that computer models simplify reality. In complex areas like climate they are not expected to precisely predict outcomes. They are expected to give a "feel" a range of possible outcomes for a range of scenarios. To do this they do not need to include all of the variables affecting climate change but only the important ones and then only at a level of accuracy that is sufficient to gain a feel for the "what if" scenarios considered. Modellers can make allowances for the possibility that slight variations in the initial conditions can cause large differences in outcomes. The value

of models lie as much in helping scientists understand how complex systems work as much as it lies in scenario testing or what the author wrongly prefers to call predicting climate.

The author's assertion that computer modelling is not science is a trivial semantic point.

e. The authors denial of the "precautionary principle" (PP) is strategically flawed

The author has asserted that he can't be wrong on climate change hence the use of the PP is superfluous. This attitude is arrogant in the extreme. Given the possible outcomes from climate warming it is potentially dangerous and strategically flawed as shown below. The PP postulates that players should avoid a course that may involve serious harm to people, even if the probability of harm occurring is low. It is used in game theory and in business decision making.

A simplified example illustrates the point. Option 1 is: To assume that the author is right and so do nothing to reduce the emissions of CO2. The potential consequences of a wrong decision are likely to be in the range modest to catastrophic. Option 2 is: To assume that the author is wrong and take action to avoid the potential consequences. The potential costs of this are to incur unnecessary costs. If we adopt option 1 and the author is wrong humanity will bear consequences that range up to catastrophic. If we adopt Option 2 and the author is right there will be some costs but we will have removed any chance of a catastrophe. Assuming that people are more important than money Option 2 is the rational way to go.

f. Tipping points do exist

The author claims that there is no such thing as a "tipping point", otherwise referred to as critical mass, threshold or boiling point, within a climatic framework. The concept of the "Tipping point" has been shown to exist in physics, climate, sociology and politics so there is reason to believe that it could exist in climate. He does not explain how he reached this conclusion nor provided substantive evidence for this assertion and should do so.

I do not want to pollute factual comment with opinion but I can't let pass the observation that the author needs to take this stance to prosecute his case against conventional climate science. This considers that human warming could result in a climate tipping point.

g. There is a lot of interesting but irrelevant information in the book.

There may well be some validity in the author's claims that an IPCC report was doctored, that Climate scientists are inadequately trained, that global warming is the new scientific ideology, that this results in scientific papers by honest scientific journeymen and women being unjustly rejected by the peer review system, that there is a conspiracy within and between Governments, and that many scientists, economists and other professionals are prostituting themselves and their professions. The evidence adduced by the author if true is of concern but does not make the claims true in general. Even if the author's claims were proven to be totally true in every

respect, it is not at all relevant to the resolution of the key issues that the book is really all about, namely:

1. Whether global temperature is rising?
2. Whether rising atmospheric CO2 is causing it?
3. Whether humanity generated CO2 contributes to warming?

My responses to these 3 issues are: **yes, likely, likely.** This is a good place to end the review.
