

Manning Clark House address

'The debate over Anthropogenic Global Warming'

22 March 2011

We are all here, I think, because I suggested to Sebastian that there might be some sort of debate about 'anthropogenic global warming', rather than a one-sided exposition. I did so because many people say the matter is very important, and it is plainly also most contentious. To understand why our government is going down the path that it has chosen while the USA is not doing so, we need to know more than simply the local and American political contexts. What is 'climate change' all about? Why is there any debate at all? Why are people so divided about it? The answers to these questions involve different elements of history, politics, ideology, narrative, science, mathematics and statistics. You can get some handle on it by recognising that if the matter were quite straightforward we would be doing something else tonight. In my judgment it is not at all straightforward, and it is hardly getting any more so.

You will appreciate that although I have had a long experience in advising governments in the area of science, technology and research, my current role with the Federal Government is in the area of the planning and management of the national capital, and with the ACT Government it is in the area of theatre, art and historic places. So I will say nothing at all about either government's response to the issue, either in my talk or later in answering questions. My role here is to facilitate a discussion and to raise your interest in what is, for me at least, one of the most interesting and frustrating issues in the politics of the last fifty years. But I will talk at once about the kinds of pressures that weigh on all democratically elected governments, and even on some governments that are apparently autocratic.

To begin, we human beings dislike uncertainty about the future, and governments are under pressure to reduce uncertainty, and thus to come to a decision, about many issues. We may not like a given decision, but at least we know what is going to happen in that area, or what is likely to happen. The claim that we humans are facing a catastrophe if we do not change our collective and individual behaviour is a very strong one, and since it is supported by eminent people and apparently by some eminent organisations, governments have to at least say something about that claim and provide a satisfactory account of it and what they are prepared to do about it. This has been difficult in every democracy, for reasons that you will appreciate. But nonetheless they have to do it, as they have to do in many other contentious areas. If they don't, they look weak and hesitant, and that appearance is likely to cause a loss of public confidence in them and the subsequent election of their rivals. In my judgment the business of government is much more difficult than it was fifty years ago, when I started my PhD, and it is more difficult everywhere, not just here. The reasons are complex, and I can't enter upon them this evening, though they would make a good address at some other time.

You may think that in this case of global warming, or in another one altogether, the right course of action is obvious, and it should be followed. Public servants are there to advise Ministers as to the options available to them, but it is the Ministers, who have been elected, who have to make the final decisions. I might think that my Minister is 'brave', or perhaps not brave enough. But having given my advice, I accept that my role as an adviser is finished. I then await the decision, and the consequences. Before you attack or criticise a government or minister for a decision in a particular matter, you need to understand the context in which the decisions have been made. You will need to know all the options that were provided to the Minister or the Cabinet. You will need to know the other concerns weighing on Minister or Cabinet at the same time. You will rarely get all this from the mainstream media: their role is to tell stories, stories that make us want to read or watch or listen — stories that have arresting headlines. So media stories are usually dramatic, or romantic, or terrifying, or angry. On occasion you will know something more about a particular story, and want to object that there is another side. There nearly always is another side, and my role tonight is to give you an appreciation of both sides. I do not have a passionate view about it, though many do, on both sides.

And two final introductory remarks. First, while there are two sides in the AGW debate, there are many shades of opinion on each side. Partly for this reason, the differences between the two sides are often not clear-cut. They do find it difficult to talk to one another, however, or to find much common ground. The principal cause, I think, is that one side, what I will call 'the orthodoxy', is convinced that AGW is real, urgent and potentially catastrophic: its interest is in finding and promoting solutions. The other side, what I will call 'the dissenters', is convinced that the orthodox have rushed ahead without investigating or defining the problem properly. So they are looking hard at something that the orthodox have left behind a long time ago. You may recall Al Gore saying, as he stepped forward to receive his Nobel Peace Prize, that 'the science is settled!' Another such remark is that 'the time for debate is over'. You can see that such an attitude leaves little room for discussion except about remedies.

Second, each side seems to me to exhibit something called 'confirmation bias' — that is, only seeing and valuing arguments and evidence that support their own position. The most obvious example is the way in which AGW proponents will announce that a new study 'proves' or shows conclusively that the threat of global warming is real. Sceptics often do the same, — any study that is at odds with the orthodoxy is pointed to as evidence that the whole AGW edifice is flimsy. There are simply thousands of papers in the literature that can be brought to bear on the issue, and my guess is that in ten years time only a handful of them will still be referred to. Along with confirmation bias goes a familiar academic strategy: each side has built argumentative defences against attack. So the AGW side will demand that critics provide an alternative explanation for whatever global warming has occurred; in default, they will say, their view must be right. The sceptical side demands proof, through laboratory experiments or through observation, that AGW is real. In my judgment neither defence is sound. One does not have to have an alternative explanation in order to show the deficiencies in someone else's argument, and the earth's climate does not provide many opportunities for laboratory experiment, while

getting good observational data for a planet, as I shall explain, is not as simple as it might appear.

The public servants who have to advise on climate change are not fools, and they know all this. Very few fools ever get to be Ministers, and Ministers are always aware of the problems in formulating policy. So if you think that governments are hesitant, or slow to act, or seem to fumble, you can bet there are awkward problems in the area. Some desired options will not be possible. No government in the world, for example, will close down its coal-fired electricity generators because of fears about carbon dioxide emissions, because coal is still the major provider of electricity in most developed countries, and our whole society simply depends, today, on the regular, reliable and instant availability of electricity.

As you see, I am using the phrase ‘anthropogenic global warming’ to denote our subject, but you can also think of it as ‘human-induced climate change’, ‘climate change disruption’, or ‘catastrophic anthropogenic global warming’. They all mean the same. I’m using AGW, the original term, because it focuses attention on the core of the issue, while the phrase ‘climate change’ is ambiguous, since climates have changed over time for reasons of natural variability, and will continue to do so.

Someone, in one of the debates I have been reading on the net (Judith Curry’s ‘Climate etc.’, which I recommend unreservedly as a website which educates, debates and does both largely free from insult) described AGW as having the highest stakes and the lowest signal-to-noise ratio of any issue in his lifetime. I think I would agree. As for the high stakes, Kevin Rudd described ‘climate change’ as ‘the greatest moral, economic and social challenge of our time’, while Tony Blair of the UK called it ‘the world’s greatest environmental challenge’. There was a time when any political leader had to say things like this almost every week. That time seems to have gone, at least for the moment. AGW is much less in the public mind, in the talk of our politicians, and in the mainstream media.

I assume that you all know at least a little of the history of the AGW issue, and the role of the Inter-Governmental panel on Climate Change (IPCC), and I’ll answer questions about them afterwards if you wish. What I want to do tonight is to focus about the last couple of years, and try to summarise where the issue currently is, and what the core debates are about. I will do that as neutrally as I can. If I focus more on the dissenting side, that is because it gets less attention in the mainstream media, and because Dr Glikson will do an excellent job of presenting what I have called the orthodox view.

The central AGW proposition

Let me remind you of what is said to be the case, and what the discussions are about. I think a fair summary of what I would style the central AGW argument runs as follows. I have drawn the first five elements from the IPCC’s Summary for Policy Makers of the AR4 in 2007, and the last from stories that emerge from the media from time to time, most recently from Professor Garnaut.

- (1) The earth is warming.
- (2) This warming is unprecedented.
- (3) The warming is caused by the human burning of fossil fuels.
- (4) The warming is dangerous to humanity, perhaps catastrophic.
- (5) The only way to prevent dangerous outcomes is to curtail greenhouse gas emissions, everywhere.
- (6) Things are getting worse, not better.

This text should be familiar, because we have been hearing it for much of the last five years or so. And you can find argument and apparent evidence to support all six statements, though not conclusively. It has become customary to hear people who dissent from any of them described as ‘deniers’, a term which, to me at any rate, has unpleasant associations with the Holocaust, and to which I object. Although I use the terms ‘the orthodox’ and ‘the dissenters’, in fact, it is all rather more complicated than ‘the IPCC is correct in every particular’ *versus* ‘the IPCC is completely wrong’. I’ll say more about that a little later

AGW as Orthodoxy

The highpoint of the issue’s salience, in at least the Western world, was the two-year period from the award of the Nobel Peace Prize in October 2007 to Al Gore and the IPCC, to the lead-up to the Copenhagen Climate Conference at the end of 2009. The Conference itself was so large an event that it strained the resources of Denmark’s capital city, since it drew something like 25,000 people, who included many heads of state and prime ministers, including our own (the Australian delegation numbered 114), representatives from 194 countries, and battalions of reporters, television crews and commentators.

It was, at least in terms of the expectations that had been developed for its outcome, an almost comic flop. Its successor, in Cancun in Mexico late last year, hardly rated a mention in the mainstream media. A number of factors seem to have produced this dramatic decline. The most powerful was the plain fact that the developing countries would not curtail their own economic development by reducing greenhouse gas emissions unless the developed countries paid them generously to do so — and with respect to China and India, perhaps not even then. But the Western countries were and most still are in the grip of the Global Financial Crisis, and have neither the will nor the resources to provide much largesse at all. Their close attention has moved to deficits, unemployment and a feeble economy.

The second, in my judgment, was a growing feeling, around the political systems of the world, that the case against carbon dioxide, as the principal villain in all this, had been exaggerated and over-dramatised — that is, the arguments and evidence weren’t perceived, after all, to be quite as compelling as the AGW proponents had made out. If the case had been stronger there would have been less need for the continual denunciation of questioners or critics as ‘deniers’ attacking ‘science’. You can see something of this

shift in public discourse: less talk of ‘combatting climate change’, and more of the need for ‘energy efficiency’ and similar terms.

The third was a series of contemporaneous events that themselves cast doubt on the objectivity and adherence to scientific principles of the IPCC and its supporters. Shortly before the Copenhagen conference an enormous quantity of emails became available, either through whistle-blowing or through hacking, that purported to have come from the Climate Research Centre (CRU) of the University of East Anglia in England, a principal supplier of scientific information to the IPCC and to climate science generally. The emails did not make comfortable reading, since they showed scientists colluding to suppress inconvenient articles attacking their own work, acting to avoid FOI requests seeking data and code, and subverting the IPCC’s own rules about publishing. Within days it was plain that the emails were real. Three inquiries held to investigate what had actually happened in CRU, now commonly referred to as ‘Climategate’, purported to clear the scientists of any wrongdoing, but (in my opinion) none of these inquiries satisfies the ordinary tests of conflict of interest or thoroughness.

A fourth was a series of mistakes and gaffes that centred on the IPCC and its Fourth Assessment Report (AR4) in 2007. Despite the IPCC’s claim that its reliance on peer-reviewed scientific work was gold standard, a close examination of the actual sources for much of the work cited showed that this was not so. Some of the cited work had in fact come from Greenpeace and the WWF. A claim in the AR4 that the Indian glaciers could melt by 2035 turned out to be both wrong and based on a journalist’s story. Another exaggeration concerned prospects for the Amazonian rain-forest.

Finally, despite the basic proposition that the world is warming up, and that the warming flows from human use of fossil fuels, the city of Copenhagen was assailed during the Conference by the worst snowstorm for a long time, and both the 09/10 and 10/11 northern hemisphere winters have been unusually severe. Some AGW proponents can be found to argue that these severe winters are due to climate change, but since climate change is due to global warming, one is thus forced to argue that that heating up causes cooling down, which is an awkward proposition to put forward to most audiences. The projections for global warming in the first decade of the 20th century set out in the IPCC’s third report (TAR) have in fact been much higher than actual observations, a fact which caused one of the ‘Climategate’ emailers, Kevin Trenberth, to write to his colleagues that it was a ‘travesty’ that the predicted warming had not occurred. In truth, since the highpoint of 1998, a spike associated to a large degree with Australia’s climatic friend and foe ENSO (the El Nino Southern Oscillation), whatever global warming has occurred since seems to have been subdued. Carbon dioxide continues to be added to the atmosphere, but warming has not climbed at the previous rate. The flooding we have experienced in the last six months is at odds with the orthodox forecasts of continued drought.

Put together, these events and their consequences seem to me to explain why people are less interested in AGW, and why the media have largely dropped the issue. Governments have generally followed suit. There has been, nonetheless, a continual counter-defence

from the orthodox, who have always enjoyed support from the mainstream media, even if that support is less pronounced now, and from those parts of any government that have the task of ‘combatting climate change’, or monitoring it, or protecting the environment, and of course from the non-government organisations like Greenpeace, the WWF and the ACF, for whom AGW appears to be an article of faith.

AGW in the ‘blogosphere’

It seems to me that the AGW debate has shifted to, and is alive and well in, what is now called ‘the blogosphere’ — the set of websites all over the world interested in the issue. There are at least several hundred of them, and there may be thousands. Their readership is uncounted but, I would estimate, very large. It may be in the millions. Twenty years ago the world of what we now call ‘climate science’ hardly existed, and its output was confined to academic journals. The Internet and its astonishing spread have changed all that. ‘Peer-reviewed’ journals are still the locus of important published work, but by and large the peer-review process operates to support the orthodoxy (as it does in every field). The real debate takes place in the websites in response to published papers, and it is immediate. Long before a response to a given paper can go through the hoops of peer review, responses to peer critiques, deadlines, the backlog of publication, and all the rest, the paper to which it is a response may already have been completely dissected in many websites, and argument about its point, methodology and conclusions may have raged on within, and between, rival websites. Within ten years, I should think, Internet technology will have fundamentally changed the printed academic journal as we have known it since the 1880s.

Why does anyone take notice of what happens in cyberspace? Surely, you might say, most of this is opinionated nonsense. Well, apart from the problems with the journal form, we should note that many of those who participate in website discussions are retired or otherwise active scientists and academics who are highly competent in their own fields, and able to comment sensibly on published work. They no longer have much interest in publishing themselves, and nor do they need to possess an alternative ‘theory’, but they find the intellectual game that is alive in the AGW domain interesting and even exciting. I share their view. Websites like Judith Curry’s ‘Climate etc.’ offer what is an extended and continuing seminar in every aspect of climate science, led by people who are not only able scientists but often excellent educators as well. In my judgment, what appears in our newspapers, radio or television about climate change is usually well behind what you can find on the web. I have no doubt that the main websites are read and studied by those in any government who have to provide advice.

I think that there are six more or less distinguishable positions in the AGW debate, with some religious outriders, and I list them each with a short explanation. I do my best to avoid labels, other than ‘supporters’ and ‘dissenters’ of what I call the AGW, or IPCC, ‘orthodoxy’.

Supporters of the AGW orthodoxy

1 *Strongest* The IPCC has raised the alarm. We must do something now, and that something is to get global agreement to curtail greenhouse gas emissions. The science is clear, and now is the time to act. This is fact the orthodox or IPCC position.

2 *Partial Support* There is no doubt that adding more and more carbon dioxide into the atmosphere must increase the world's temperature. But we don't know yet how much extra warming there is likely to be.

3 *Lukewarm support* Adding more carbon dioxide will very likely increase the temperature, but there are other factors at work too, and the effect may well be pretty small, or even positive for some part of the world. We need to know much more before we do anything.

Dissenters

4 *Agnostic dissenters* The orthodox arguments rely heavily on models and conjectures. AGW is plausible and possible, but we need real evidence before we do anything. In particular, we need to be able to distinguish AGW from natural variability. A little warming may be good for humanity, as it seems to have been over the past thirty years.

5 *Sceptical dissenters* Many sceptics are well informed about one or other aspect of the central AGW proposition, and can show difficulties with it; they tend to argue that the failure of the orthodox to satisfy them in these domains means that the whole AGW proposition is void.

6 *Opponents* AGW theory is just a scam, a sign that the Marxists have taken over the green movement, an attempt by some to construct world government, a conspiracy, a sign of lazy journalists, the effort of bankrupt governments to stay in power, etc. There is nothing to it.

The religious

Both sides have what I would call religious outriders, whose intervention in the debate seems to come from a religious or spiritual basis. There are many versions of both, and what follows is certainly simplistic.

7 *Gaians* The earth itself and everything in it contains a life-force, of which humans are only a part. It is morally wrong for human beings to attack that which gives them life and meaning. Gaians are supporters of the orthodoxy, and there are a few of them in Australia, as Dr Flannery appears to be, from his new book. A more familiar viewpoint says that God has given us the earth to serve as stewards rather than as owners. And try Revelations 11:18 for what happens to destroyers of the earth.

8 Fundamentalists Taking their cue from *Genesis*, fundamentalists believe that the earth was constructed for humans to ‘subdue’ and ‘have dominion over every living thing’. In any case, God would not allow his own construction (the earth) to be despoiled. Fundamentalists are dissenters. This is a common position in the USA, but rare in Australia, at least in my experience

It needs to be said that Strong Supporters and Opponents can come to see all other positions as equally hostile to their own. It is common for a Strong Supporter to react to a simple question with a remark like ‘Hah! The usual tactic of a denier — ask a question that has been answered a hundred times!’ Opponents have appropriately scornful responses too. None of that helps understanding.

The points of division

Finally, what do they all argue about? Well, the first two AGW propositions depend on evidence — in particular, on temperature data. We only have instrumental measurements going back 150 years at best; thereafter we have to rely on proxies. At the moment rather more than 1000 thermometers cover the world, which is a big place (measuring temperature over the seas is an altogether different and worrying business). It is argued (and generally agreed) that the 20th century saw an increase of about 0.7 degrees in global temperature (which in any case is not a lot), but in my judgment the data are just awful, some seem to have been lost, and the proxies are even worse. Maybe the earth has warmed, maybe not; it doesn’t seem to have noticeably cooled, anyway. We know from historical evidence that parts of the planet have known warmer and cooler periods at times when there was unlikely to be much extra CO₂ being added to the atmosphere by human activity. There is great debate about how much the earth has warmed, whether or not it is recovering from the Little Ice Age, and whether or not it was warmer in the mediaeval period. You can choose your position, and cherry-pick your data; there’s plenty of it. We will probably never know the extent to which the earth has ‘globally’ warmed, or what that means.

Proposition three, the role of carbon dioxide, depends on the physics of atmospheric radiative transfer, and while this is the most robust component of climate models, both in theory and experimentally, a great deal depends, in practice, on what is called ‘climate sensitivity’ — that is, how climate actually works and the role within it of greenhouse gases other than carbon dioxide. To simplify: most participants, though not all, will accept that a doubling of CO₂ would by itself produce an increase of about 1 degree C, but that outcome will be much affected by the role of the main greenhouse gases, water vapour and its manifestation in clouds. AGW proponents see water vapour as amplifying the warming caused by carbon dioxide, dissenters generally see the effect as a minimisation. There are plausible arguments both ways, and not much evidence. Here, as elsewhere, the orthodoxy makes great use of models (General Circulation Models, or GCMs), but dissenters argue that we know too little about climate for such models to produce anything more than that with which they were initially fed.

Such modelling underpins the last three propositions, too. Whether warming is going to be dangerous or beneficial for humanity and where it might occur, and what effects any warming would have on rainfall, or storms, or anything else, depend on the outcome of the models. Since the IPCC itself says that the current level of scientific understanding of some of the variables in the climate models is low or very low, it is not clear why we should take especial interest in what the models say. They do not ‘predict’, incidentally, but produce ‘scenarios’ or ‘projections’, on an ‘if...then’ basis. Scary ones usually make it to the media, which like scary stories. But we have had an awful lot of them in the last few years, and people have begun to hear Matilda crying ‘Fire’.

Conclusion

There is much more real debate now, in early 2011, than there was in 2007, when I began to read and think about the issue. Although my own position remains agnostic, I can see that the continued burning of fossil fuels is likely to warm the atmosphere, and that the consequences might in the longer run be a serious concern for our descendants. In time we will have a better understanding both of our climate and of our attempts to model it and to learn from that modelling. Until then, this complex issue will continue to trouble governments everywhere, for the AGW proposition persists, and will continue to do so. It is not implausible, and it tells us that the future of humanity is at stake; that is a serious claim. People who have invested a lot of time and energy in their research or their advocacy do not give up easily. Nor do democratic governments, which are always constrained by what they have said and the decisions they have reached in the past. Nor do non-government organisations like Greenpeace and environmental groups generally — or concerned citizens. Passions run high in the AGW debate, and they will continue to do so until a new mega-worry emerges. I said earlier that someone writing on Judith Curry’s blog offered the opinion that he could not remember an issue where the stakes were so high and the signal-to-noise ratio so low. I wish I had thought of that line myself.

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