CLIMATE CHANGE

THE FACTS 2017

Contents

Introduction

Dr Jennifer Marohasy

There are certain things best not discussed with neighbours over the fence, at barbeques and at gatherings of the extended family; these topics used to include sex and politics, but more recently climate change has become a sensitive issue and has, consequently, crept onto the best-to-avoid list. At the same time as climate change has assumed this status, it has become a topic more likely to be included in a church sermon. Indeed, while once considered the concern of scientific institutions, climate change is now increasingly incorporated into faith-based initiatives with even Pope Francis weighing in, issuing an encyclical on the subject as explained in chapter 16 by Paul Driessen.

There are those who believe Pope Francis, and admire another climate change exponent, Al Gore – who marketed *An Inconvenient Truth* with comment, 'the fact of global warming is not in question' and that 'its consequences for the world we live in will be disastrous if left unchecked'. And then there are the die-hard sceptics who dare to doubt. Many claim that these climate sceptics and their support base have an undue political influence, successfully thwarting attempts to implement necessary public policy change.

This book is a collection of chapters by so-called climate sceptics. Each writer was asked to write on an aspect of the topic in which they are considered to have some expertise. *None* of them deny that climate

change is real, but instead, they point out how extremely complex the topic of Earth's climate is, with some of the contributors also querying the, often generally accepted, solutions.

As you will see, this is not a book with just one message, except perhaps that there is a need for more scrutiny of the data, and of our own prejudices. This book's reason for being is to give pause for thought, and to throw some alternative ideas and considerations into the mix.

Natural climate cycles

Fundamental to the climate sceptics' perspective on climate change is the fact that there are natural climate cycles, and that even the most extreme portrayals of late-twentieth-century warming fall within what we might expect from a natural warming cycle. As one of Australia's best known geologists Ian Plimer explains in chapter 20:

> Climate change has taken place for thousands of millions of years. Climate change occurred before humans evolved on Earth. Any extraordinary claim, such as that humans cause climate change, must be supported by similarly extraordinary evidence, but this has not been done. It has not been shown that any measured modern climate change is any different from past climate changes. The rate of temperature change, sea-level rise, and biota turnover is no different from the past.
>
> In the past, climate has changed due to numerous processes, and these processes are still driving it. During the time that humans have been on Earth there has been no correlation between temperature change and human emissions of carbon dioxide (CO_2). Past global warmings have not been driven by an increase in atmospheric CO_2.
>
> Without correlation, there can be no causation.

Professor Plimer was a colleague of the late Bob Carter, to whom this book is dedicated.

Professor Carter was a director of the Ocean Drilling Program – an international cooperative effort to explore and study the history,

composition and structure of the Earth's ocean basins. As Professor he had scrolls of data – time series – from the expeditions that he led as part of this program. I spent an evening with him at his home poring over one of his charts – a proxy record of New Zealand's climate over the past several thousand years, and we discussed how in this record from a sediment core the temperature could be seen to oscillate – there were natural climate cycles. His time series, or charts, for particular geographical locations, were printed out on long rolls of paper stretching the length of his kitchen table, and more. The end of the chart – that portion representing the present – was often dangling somewhere near the floor. These records provide an indication of the rate and magnitude of temperature change, as explained in chapter 21 – which is reprinted from his first book *Climate: The Counter Consensus*.

In an earlier chapter, Dr Nicola Scafetta, from the University of Napoli Federico II, discusses these natural cycles and explains how variations in solar luminosity – caused by the gravitational and electromagnetic oscillations of the heliosphere due to the revolution of the planets around the Sun, and even the tidal effects of the Moon – can drive oscillations in climate (chapter 3).

In chapter 4, Ken Ring, a commercially successful New Zealand based long-range weather forecaster, explains how the orbit of the Moon around the Earth can have a significant effect on local weather, with climate being the sum of all these weather events.

The physics of carbon dioxide

We are conditioned by the nightly news to believe that there is something extraordinary about current temperatures. There are any number of university professors – often quoted as part of an alleged 97% consensus on climate change – who assert a claimed catastrophic temperature increase from a doubling of atmospheric carbon dioxide (CO_2). Interestingly, those who speak publicly with most conviction – often quoting the

United Nations' Intergovernmental Panel on Climate Change (IPCC) – are from university geography departments. Yet it is an understanding of spectroscopy, normally the concern of analytical chemists and physicists, that is fundamental to explaining the likely impact of changes in the composition of the Earth's atmosphere on temperature.

Professor Svante Arrhenius was a chemist, who, in 1896, more than 120 years ago, was the very first person to propose that a doubling of atmospheric CO_2 could lead to a 5 to 6 °C increase in global temperatures. His calculations were speculative, and undertaken before modern high-resolution spectroscopy, which has enabled the measurement of the absorption and emission of infrared radiation by CO_2. This is explained by Dr John Abbot, an analytical chemist, and Dr John Nicol, a physicist with a background in spectroscopy, in chapter 19. Indeed, measurements from spectroscopy suggests that the sensitivity of the climate to increasing concentrations of CO_2 was grossly overestimated by Professor Arrhenius, and these overestimations persist in the computer-simulation models that underpin the work of the IPCC to this day.

Yet it is the output from these same computer-simulation models – wanting a solid experimental foundation in radiative physics – which are used to generate criteria for studies in many other disciplines. For example, the IPCC General Circulation Models define the low, medium and high scenarios for the study of ocean acidification.

The Great Barrier Reef and ocean acidification

Ocean acidification is an area of research where, in less than 20 years, the number of published papers has increased from about zero each year to nearly 800 (Abbot and Marohasy, chapter 2). Ocean acidification is sometimes referred to as global warming's evil twin; and, of course, most of these 800 peer-reviewed papers published each year will emphasise the detrimental effects of an assumed reduction in pH – often based

on output, yet again, from a computer simulation, extrapolating from laboratory experiments. In the case of ocean acidification, the scientists might have even added some hydrochloric acid to artificially reduce the pH of the water.

Science is currently funded and reported in such a way that inconvenient facts are more often ignored – and agreement with popular theory is emphasised.

Professor Peter Ridd, James Cook University, suggests this situation needs to stop if we are to address real and pressing problems, as opposed to wasting resources on invented issues (chapter 1). He makes this case with particular reference to the Great Barrier Reef, where he shows that not only are there the normal science distorting factors – such as only being able to get funding where there is a problem to be solved – but there is also the problem that many marine scientists are emotionally attached to their subject.

The economics of climate change

CO_2 is not only a so-called greenhouse gas, it is also a plant food. In chapter 13, Dr Craig Idso, from the Center for the Study of Carbon Dioxide and Global Change, emphasises the rather extraordinary productivity improvements over recent decades – particularly in agricultural crop yields – which he attributes in large measure to the powerful and positive effect of rising levels of atmospheric CO_2.

Dr Matt Ridley – with Bachelor of Arts and Doctor of Philosophy degrees from Oxford University, a science journalist, and a member of the United Kingdom's House of Lords – begins chapter 14 with a similar assessment: the claim that global warming is actually doing more *good* than harm – particularly through greening the planet.

In chapter 15, Dr Bjørn Lomborg of the Copenhagen Business School, explains the economics of the Paris Accord; he claims that adhering to the Accord is going to be very expensive while hardly affecting the global

climate at all. Which is perhaps why so many are increasingly investing so much in attempting to close down open and honest debate.

There is no unifying theory of climate

Simon Breheny, from the Institute of Public Affairs, explains in chapter 17 that some in academia are leading the charge to extend the criminal law to the punishment of climate heresy on the basis of moral negligence. They advocate that the law should extend to all activities that seek to undermine the public's understanding of the 'scientific consensus'. Of course, the notion of a 'consensus' is fundamental to modern politics, but is generally alien to traditional science – at least Enlightenment science as practised by true sceptics.

In reality, and to paraphrase Dr Willie Soon, from the Harvard–Smithsonian Center for Astrophysics, and Dr Sallie Baliunas, formerly the deputy director of the Mount Wilson Observatory, writing in chapter 11, there is – as yet – no coherent theory of climate. Rather, as Dr Pat Michaels, a senior fellow at the Cato Institute explains in chapter 18, the mainstream climate-science community is wasting much time cherrypicking data from weather balloons and satellites, all in an attempt to make the temperature data consistent with a particular, and somewhat broken, paradigm that places too much emphasis on CO_2.

An advantage of my approach in the compiling of the chapters for this book – an approach where there has been *no* real attempt to put everything into neat boxes – is that there are many surprises. I am referring to the snippets of apparently anomalous information scattered through the chapters. These can, hopefully, one day, be reconciled. As this occurs, we may begin to see the emergence of a coherent theory of climate – where output from computer-simulation models bears some resemblance to real-world measurements that have not first been 'homogenised'.

There are many chapters in this book about 'homogenisation' (chapters 5, 6, 7, 8 and 9 by Anthony Watts, Tony Heller, Dr Tom Quirk, Jo Nova

and me, respectively). Homogenisation, in essence, involves the remodelling of data, and is now a technique integral to the development of key official national and global measures of climate variability and change – including those endorsed by the IPCC.

It is generally stated that without homogenisation temperature series are unintelligible. But Dr Jaco Vlok from the University of Tasmania and I dispute this – clearly showing that there exists a very high degree of synchrony in all the maximum temperature series from the State of Victoria, Australia – beginning in January 1856 and ending in December 2016 (chapter 10). The individual temperature series move in unison suggesting they are an accurate recording of climate variability and change. But there is no long-term warming trend. There are, however, cycles of warming and cooling, with the warmest periods corresponding with times of drought.

Indeed, some climate sceptics consider the homogenisation technique used in the development of the official temperature trends to be intrinsically unscientific. They consider homogenisation a technique designed to generate output consistent with the computer-simulation models, which, in turn, are integral to the belief that there are consistent year-on-year temperature increases – contrary to the actual measurements. Temperature series that are a product of homogenisation could be considered 'alternative facts' – although, ironically, this is a term newly minted by those who generally agree with these self-same homogenised (remodelled) temperature constructs.

Conversely, many so-called sceptics will argue that the solution is to simply focus on the satellite data; however, this temperature record only begins in 1979. The satellite data is, nevertheless, a very valuable resource for understanding global and regional temperature change over the last nearly 40 years – as explained by Dr Roy Spencer, Science Team leader for the Advanced Microwave Scanning Radiometer on the National Aeronautics and Space Administration's (NASA) Aqua satellite, in chapter 12.

Conclusion

In the introduction to his newly published *Collected Poems*, Clive James – the author of so many phenomenal bestsellers in the UK and Australia – writes that at the end of a long life, and despite illness, he has kept writing for the last six years because, 'there were still some subjects waiting for their proper expression, so really I was beginning again'.

Clive James is a literary giant – his works are examined and re-examined regularly by the literary elite – but until now he has written only incidentally on climate change. In the final chapter of this book, James writes on exactly this subject. He acknowledges that he is no expert on computer-simulation modelling: 'I speak as one who knows nothing about the mathematics involved in modelling non-linear systems.' However, as he says: 'But I do know quite a lot about the mass media, and far too much about the abuse of language. So I feel qualified to advise against any triumphalist urge to compare the apparently imminent disintegration of the alarmist cause to the collapse of a house of cards.'

Clive James effectively places the current obsession with catastrophic climate change – and the imminent demise of the Great Barrier Reef – in a broader cultural context.

Which brings me back to the opening paragraph of this introduction – and to our conversations with neighbours, at barbeques, and at family gatherings. I cannot guarantee that after reading this book you will be better equipped to negotiate the politics of climate change. But hopefully you will have a better appreciation of the depth, breadth and complexity of the subject.