

CLIMATE:
THE COUNTER CONSENSUS

A PALAEOCLIMATOLOGIST SPEAKS

Robert M. Carter



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Climate: The Counter Consensus

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*To the scientists, technicians, administrative staff
and ships' and drilling crews of the
Deep Sea and Ocean Drilling Programmes,
whose exertions have helped to unlock
Planet Earth's archive of climate change.*

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The idea that human beings have changed and are changing the basic climate system of the Earth through their industrial activities and burning of fossil fuels – the essence of the Greens' theory of global warming – has about as much basis in science as Marxism and Freudianism. Global warming, like Marxism, is a political theory of actions, demanding compliance with its rules.

Marxism, Freudianism, global warming. These are proof – of which history offers so many examples – that people can be suckers on a grand scale. To their fanatical followers they are a substitute for religion. Global warming, in particular, is a creed, a faith, a dogma that has little to do with science. If people are in need of religion, why don't they just turn to the genuine article?

Paul Johnson

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Prefatory Essay

The author of *Climate: the Counter Consensus* and I disputed over the book's title. Professor Robert M. (Bob) Carter resisted the notion that anything he wrote might be taken to imply that science could ever be about 'consensus': science was about verifiable fact. I saw his point. But I argued that the popular 'consensus' was indeed that science was 'about' *consensus*; here was the democratic virus going about its business. Hence, precisely, said I, was how so much of the world, spoken for by the (largely democratically attuned) G8, had allowed itself to be aroused to a frenzy of alarm at climate change. The 'consensus' among scientists was that global warming was taking place, that it was an imminent threat to the 'survival of the planet', and that it was attributable wholly or at least significantly to man-generated emissions of carbon dioxide.

I was aware that that very statement of mine contained four *factual* mis-assumptions, including that scientific truth could ever be determined by 'consensus'. As others have surely pointed out, the prevailing 'consensus' among astronomers in the early seventeenth century was that the sun circled the Earth: Galileo was locked up for upholding the reverse.

The title of your book, I could assure our author, countered not merely the supposed consensual opinion of collective scientific peers but the validity of the very concept of a 'consensus' of scientific opinion.

As we are all now well aware, and Bob Carter makes clear in this work, such 'consensus' as may have been thought to prevail among the scientific community concerning the warming of the globe was sustained throughout by data assembled by a small clique of well-placed and often lately-arrived climatologists who have

been selective, slovenly or wilfully distortive in their evaluation of it. *They* have led the dance on this issue – a dance joined, I need not stress, since the 2008 Presidential election in the US, by the leaders of all but one of the democratic West, and all but one of the official Oppositions, the exceptions being, respectively, the economist Vaclav Klaus, President of the Czech Republic, and (somewhat shyly) Australia's Liberal-National Party opposition. There are symptoms at the time of my writing this of America's Republicans adopting a similar stance.

All others were responding, oblivious of cost and consequence, to what they and, most persuasively, their electorates had been gulled into accepting as scientific truth concerning anthropogenic global warming. The clique itself clung to its tenets for dear life, for it prospered from the ardent funding of their institutions, programmes, and university departments, and the fame and influence of the protagonists themselves.

An absence of academic discipline and personal scruple in this field of fast expanding international significance was evident early, not least to the present author. In the late 1980s the economist Professor Lester Lave of the Carnegie Mellon University of Pittsburgh, giving evidence to the Senate Committee on Energy and Natural Resources on the 'controversiality' of the theory of anthropogenic emissions of CO₂ affecting global temperature, was summarily silenced by Senator Al Gore. In 1992, Dr Richard Lindzen, America's pre-eminent atmospheric physicist, wrote a paper warning of the extraordinary pressure to stifle dissent or even debate on the issue. Meanwhile, alarmist predictions multiplied, were widely upheld, and left unchallenged. They were emanating, after all, from bodies or organizations of apparent authority and presumed objectivity, including of course the Intergovernmental Panel on Climate Change (IPCC), established in 1988 by two organs of the United Nations, at the instigation of the Swedish meteorologist Bert Bolin. Alongside the IPCC, as a prime source of its opinions, were the Hadley Centre for Climate Prediction, simultaneously established at the instigation of Margaret Thatcher as an adjunct to

the UK Met Office, and the Climatic Research Unit of the University of East Anglia. The IPCC's 31-person directorate, currently headed by the Indian businessman and economist Dr Rajendra Pachauri, was drawn not from scientists as such but from a miscellany of senior civil servants, academics and savants from a politically correct span of nationalities and continents.

Human responsibility for global warming rapidly took centre stage in the workings of the IPCC, its pronouncements, protocols and successive 'Earth Summits' at Rio de Janeiro, Kyoto, Bali, Bonn and Copenhagen between 1992 and 2009. Worldwide sentiment was mobilized by the traditional 'green' movements such as Friends of the Earth, Greenpeace and the World Wildlife Fund. There was a promise here of votes. The world's most gleaming politicians joined Al Gore in his declaration that 'the time for debate is over'. 'This disaster,' declared Tony Blair in 2006, 'is not set to happen in some science fiction future, many years ahead, but in our own lifetime.' 'The science is beyond dispute,' confirmed Barack Obama, campaigning for the Presidency against a Republican Party still tainted by scepticism, 'and the facts are clear.' So clear were the facts to the Chief Negotiator of the G77 (group of developing nations, including China) at the Copenhagen Earth Summit of 2009, Lumumba Stanislaus Di-Aping, from Sudan, that he declared the \$100 billion being offered to fund the containment of his members' carbon emissions and adapting to change 'would not be enough to buy the poor nations the coffins' for those swamped in their island states and facing 'certain death' in an Africa condemned to 'absolute devastation'.

Let us recall that the science of anthropogenic global warming (AGW) had been fertilized at its inception by the Green-ish, New Age-ish miasma of the Sixties, and its aura of ideological anarchism. The 'consensus' was visceral and visionary, even apocalyptic: to question or challenge its tenets was an emotional and, quite soon, ideological affront. Young thinkers at climate and economic summits expressed their protests by smashing windows of

global structures, be they banks or restaurants, winning honour in the name of 'saving the planet' from catastrophic warming. The somewhat hermetic doctrines of the quasi-Marxist Jerome Ravetz, proposing the right of what he called 'post-normal science' to manipulate scientific findings for social purposes, attained intellectual fashionability.

Yet from the early 1990s, especially in North America, a few voices of informed dissent have persistently and intelligently challenged the scientific basis of the alarmist consensus. By around 2005, the number of well qualified 'climate sceptics' had swelled considerably and their voices were beginning to be heard and even heeded. Among them was that of Professor Bob Carter, doyen of that rare international species, the palaeoclimatologist, whose discipline is central to the truth on this issue. Given the measure of stifling, and indeed intimidation, of the scientific community, dissent was perhaps heard more from those of other disciplines, especially economics and statistics. Thatcher's esteemed Chancellor of the Exchequer and former Secretary of State for Energy, Nigel Lawson, was an early voice counselling caution: he remains a force for clarity of thought and analysis. Elsewhere in Europe was his fellow statesman Vaclav Klaus, who like Lawson wrote his own book on the subject, and the distinguished scientist and France's former Minister for Education, Claude Allègre. The list of expert dissent in the first decade of the century prominently includes the names of the Canadian statistician and mining financial analyst, Steve McIntyre; the French engineer Christian Gerondeau, whose work *CO₂ – Un Mythe Planétaire* we are about to publish in an updated edition as *Climate: the Great Delusion*; and the economists Ross McKittrick and David Henderson, formerly senior statistician at the Organisation for Economic Co-operation and Development (OECD). Carter's fellow Australian, Ian Plimer, Professor of Mining Geology at the University of Adelaide, has valuably authored *Heaven and Earth*.

Reaching the sophisticated public through the media have been the campaigning author and journalist Christopher Booker;

the researcher Andrew Montford, author of *The Hockey Stick Illusion*, recently published to wide acclaim in this same Stacey International series, Independent Minds, consolidating his formidable following in the blogosphere. Several influential journalists in, at least, the British and American press were since 2009 beginning to perceive a monstrous deception at work. Among them (in Britain) is the feisty polemicist James Delingpole who dubbed as Climategate the exposure of the doctoring of the data by East Anglia University's Climatic Research Unit by emails leaked in December 2009. In Australia, the opinion writer Andrew Bolt has created a much visited blog which provides almost daily excoriation of global warming propaganda.

Professor Carter lays out in the present succinct yet comprehensive work a scenario which future generations will regard as a period of collective insanity. Investigations at that future time will be concerned not with climate change but with the Dionysiac delusion of a style and magnitude comparable to that which induced (for instance) the mass fervour for the promise of fascism in Italy and Germany in the 1920s and '30s, such as included within its range of dupes or fellow-travellers many of the *cognoscenti* of the period. We are already three generations beyond that period yet still await our serious historians to delve the full answer as to *how it could have been so*.

Perennially, mankind has been drawn to visions of eschatological extinction. Symptoms of this same instinct at work are to be seen in the allure of Armageddon, in the carefree abandonment to death-or-glory on the entry of nations into war and the concomitant plummeting of suicide rates. Catastrophilia is ever with us, accompanied by wild-eyed summons to action. Let me cite personal experience. In 1972 my eponymous publishing house was bringing out an up-to-the-minute series of books under the collective title 'Prospect for Man', mostly by respected environmentalists of the day, in the face of alarm at a comparable imminent catastrophe.

Our flagship title was the 170-page *Blueprint for Survival*. Over two million copies were sold or distributed. It was written by the editor of the *Ecologist*, Edward Goldsmith, and four others, and listed in the opening pages were 38 of Britain's most honoured scientists, economists and environmentalists who endorsed the work, including 18 Professors, two Nobel laureates, and seven Fellows of the Royal Society. The jacket explained that it concerned 'our imminent future, which individuals and governments can ignore only at their peril'. Armageddon was forecast well ahead of the year 2000, by which date, incidentally, hydrocarbon fuel sources would be exhausted as well as the world's copper, mercury, molybdenum, nickel, lead, platinum, zinc, silver and gold. There would be extensive desertification around the world, since the supply of cultivable land would have been exceeded by demand for it. As publisher, I wrote the Foreword, in which I opined 'the publication of a *Blueprint for Survival* will prove in years to come to have marked a turning point in attitudes which will affect the course of our civilisation.' The cause, however, of this impending catastrophe was not global warming: it was over-population.

We were fooled, were we not? We had got the science and demographics ridiculously wrong, the Nobel laureates, Fellows of the Royal Society, and the rest of us.

Edward Goldsmith's *Ecologist* magazine, supported by his brother Jimmy (the late Sir James), my old school friend, has come in due course to be edited by Jimmy's son Zac who for better or for worse is environmental adviser to David Cameron, Britain's Conservative leader. May my younger friend David take caution. These Goldsmiths are highly plausible.

The difference between that earlier and half-forgotten surge of alarmism and today's is in the more emphatically *religious* character of our present movement. There is the ethical dimension. As with over-population global warming is an issue to be given not only close academic attention but political action too; but the postulation of willed anthropogenic emissions of carbon dioxide

being responsible for irreversible warming carries an implication of blame and attendant guilt. Given the ideological tilt of the Green movement, the massive pollution of monolithic industry in socialized countries has been overlooked. The culprit immediately to hand was capitalism and 'big business'. *Green*, in Lawson's aphorism, became the new *red*. New Age sentiment sanctifying a vague return to nature and Gandhian craft, espoused the alarmism, especially in the burning of fossil fuels. John Houghton, a former Chair of the IPCC and a Fellow of the Royal Society, had purportedly been overheard passing the word around, 'Unless we announce disasters, no one will listen', and were it he to have uttered those words (for he has energetically denied it) they were surely listened to assiduously. The tendentious film to which Al Gore had given his name set the pulses racing. Even the Churches joined in. Man's greed, ran the rune, was about to destroy God's Earth.

A factor of what I venture to call genuine religion had come into play, in that it is present in the Abrahamic traditions. We recall Adam who in eating of the Tree of the Knowledge of Good and Evil attained to consciousness and chose to disobey; and hence his inherent sense of original sinfulness. For although Man may feel himself to be made in the image of God as the Book of Genesis avers, he at once discovers he cannot *be* God.

Instead, utopian fantasies possess and beguile the ever-seducible human psyche: in the century just past, most obviously and calamitously, Marxism – an *aperçu*, I may mention, of Dr Benny Peiser, the social anthropologist who is at present a colleague of Nigel Lawson on the latter's Global Warming Policy Foundation. That utopian brand outflanked and outlasted fascism, albeit not by all that much in the longer view of history. Into the ensuing world of more-or-less godless consumerism, the sense of sinful inadequacy has ineluctably persisted. The deeper live-ability of life, one daresay *meaning*, has remained teasingly elusive. The young of the developed world, so-called, and especially the idealistic, find themselves with the need to ascribe a sense of internal smear to

something or someone. Whom shall they blame, our innocents? Who must now wipe the planet clean of Man's carbon footprints? Why, the racketeers who have constructed the blighted world the innocent have been saddled with: the selfish and the greedy. By demonising others, the blight of guilt is eased.

To be fair to the Christian churches, in particular the Anglican, the dualism between creation and creation's dominant species, Man, is a heresy justly perceived: it has been on the prowl since Eden. But Canterbury's Archbishop, whom I admire, and who spoke at the Copenhagen summit, is found to be astride the wrong horse in the present somewhat fantastical guise which the contra-dualist contest appears. Christians are more readily gulled than most, and forgivably so.

This factor of encircling guilt, in which naturally the Green protesters are themselves complicit, is underlain by a deeper neurosis of our aeon, namely the presumed chasm of differentiation of Man from the Cosmos, such as has laid upon the human race a Manichaeistic obligation to exert its will upon the totality of the creation in which he exists. A characteristic of the Earth Summit at Copenhagen in December 2009 was the dismaying *hubris* by which such a politician as Gordon Brown could presume to promise that he would see to it that the rise in global temperatures would be restricted to 1.5 degrees Celsius. Not even the courtiers of King Canute would have suppressed a smirk. Yet the presumption still prevails that if the climate of the world is going awry, it must be Man's doing, and that it is for Man to rescue himself from his own folly.

That there is no evidence of the climate going awry in the longer view of climate history is what Professor Carter sets forth in this work. This is a proposition offensive to many since it removes from them what has become an alleviation of the neurosis – that is, removes the pretext to foist their opaque sense of guilt by loading it on others. The invented chimera of anthropogenic global warming, clutched at by the psyche, is in danger of being snatched away.

Indeed so, by such as Bob Carter. The self-declared innocents

are now to learn they have been betrayed by their prophets, who have dissembled, told half-truths, cherry-picked their data, fantastically exaggerated, and suppressed the circulation of better science. A great cloud of doubt and disillusion lowers over the entire issue on which the fate of the planet was supposed to hang.

At last the scientists with the right to be heard are writing for the general reader and for the common voters. Outstanding among them is Professor Carter, author of the present work. No other palaeoclimatologist stands above him in the range, precision of knowledge, and ability to communicate it. He writes with balance, humour and caution, and the courage to define the boundaries of both the known and unknown. But he knows the sophisticated world has been massively deceived. This work tells the measured truth of that deception.

How shall it all turn out? The vastly ramified financial edifices of carbon trading, inflated subsidies for essentially wasted sources of 'renewable' energy, the brokers and middlemen, the bankers' ramps, the existing and impending carbon taxes levied not only nationally but by multi-lateral treaty, the subsidized scourge of biofuels production so devastating to creation's diversity in the rainforests – what shall become of it all? The voters are getting to know: a potential democratic self-heal. We publish this work at that point where that decisive player in the drama, the electorate, is ready to wake up and face up to the truth. They will awake to impositions of formidable public expenditure which they know to be futile. Something has to give.

Tom Stacey
March 2010

Acronyms and abbreviations

AEF – Australian Environment Foundation
AMO – Atlantic multi-decadal oscillation
AP Index – average planetary magnetic index
CERN – European Organisation for Nuclear Research
CET – central England temperature index
CRU – Climatic Research Unit (University of East Anglia)
CSIRO – Commonwealth Science and Industrial Research Organization (Australia)
EMA – Emergency Management Australia
ENSO – El Niño-Southern Oscillation
EPA – Environment Protection Agency (US)
FEMA – Federal Emergency Management Agency (US)
GBR – Great Barrier Reef
GCM – general circulation model
Gt – Gigatonne
Gt C/yr – Gigatonne of carbon per year
IMO – International Meteorological Organization
INCCCA – Indian Network on Comprehensive Climate Change Assessment
IPCC – Intergovernmental Panel on Climate Change (United Nations)
 1AR – First Assessment Report by IPCC (1990)
 2AR – Second Assessment Report by IPCC (1996)
 3AR – Third Assessment Report by IPCC (2001)
 4AR – Fourth Assessment Report by IPCC (2007)
ky, ka – thousand years, thousand years ago
LIA – Little Ice Age
LOD – length of day
LRSL – local relative sea level
MSL – mean sea level
MSU – microwave sensing unit
mW/m² – milliwatts per square metre
My, Ma – million years, million years ago
NERC – National Environmental Research Council (UK)
NOAA – National Oceanic and Atmosphere Administration (US)
PDO – Pacific Decadal Oscillation
ppm – parts per million
RSS – Remote Sensing Systems
TSI – total solar irradiance
UAH – University of Alabama, Huntsville
UNEP – United Nations Environment Programme
UNFCCC – United Nations Framework Convention on Climate Change
W/m² – watts per square metre
WMO – World Meteorological Organization

Author's Preface

Climate change knows three realities. *Science reality*, which is what working scientists deal with on a daily basis. *Virtual reality*, which is the wholly imaginary world inside computer climate models. And *public reality*, which is the socio-political system within which politicians, business people and the general citizenry work.

The *science reality* is that climate is a complex, dynamic, natural system that no one wholly comprehends, though many scientists understand different small parts. So far, and despite the very strong public concern, science provides no unambiguous evidence that dangerous or even measurable human-caused global warming is occurring. Second, the *virtual reality* is that computer models predict future climate according to the assumptions that are programmed into them. There is no established Theory of Climate, and therefore the potential output of all realistic computer general circulation models (GCMs) encompasses a range of both future warmings and coolings, the outcome depending upon the way in which a particular model run is constructed. Different results can be produced at will simply by adjusting such poorly known parameters as the effects of cloud cover. Third, *public reality* is that, driven by strong environmental lobby groups and evangelistic scientists and journalists, to whom politicians in turn respond, there was a widespread but erroneous belief in our society in 2009 that dangerous global warming is occurring and that it has human causation.

The regular occurrence around the world of natural climate or climate-related disasters such as storms, floods, droughts and bushfires makes it self-evident that all countries, be they Western or third-world nations, need to possess sensible policies to deal with

national climate hazard. Furthermore, such policies need to be tailored to the particular risk environment in each country or large region (for instance, alert to typhoons in Japan and bush wildfires in California) rather than tailored to some amorphous 'global climate'; no-one, but no-one, lives in a global climate. Yet expensive television advertisements run in 2009 by, for example the British and Australian governments, make it clear that their current 'climate policy' is concerned with addressing the virtual reality of hypothetical human-caused global warming rather than the actual reality of everyday climate variability. In truth, Western nations don't have national climate policies at all, but rather imaginary global warming policies instead.

The current public 'debate' on climate is not so much a debate as it is an incessant and shrill campaign to scare the global citizenry into accepting dramatic changes in their way of life in pursuit of the false god of preventing dangerous global warming. Furthermore, this debate is persistently misrepresented by the media as being between morally admirable 'believers' and morally challenged 'deniers'. In reality, such shallow moralities have nothing to do with science, which derives its own considerable moral and practical authority from the objective use of facts, experiments and analytical reasoning to test hypotheses about the natural world.

It is widely believed, and wrongly, that the study of climate change is the exclusive province of meteorologists and climatologists. In reality, scientists who study climate change come from a very wide range of disciplines that can be grouped into three main categories. The first group comprises scientists who are expert in meteorology, atmospheric physics, atmospheric chemistry and computer modelling, who mostly study change over short periods of time, and are primarily concerned with *weather processes* (and, by extension, climate processes); a second group comprises geologists and other earth scientists, who hold the key to delineating *climate history* and the inference of ancient climate processes; finally, a third category comprises those persons who study enabling

disciplines like mathematics, statistics and (perhaps) engineering.

In this context, competent scientists from all these three groups accept, first, that global climate has always changed, and always will; second, that human activities (not just carbon dioxide emissions) definitely affect local climate, and have the potential, summed, to measurably affect global climate; and third, that carbon dioxide is a mild greenhouse gas. The true scientific debate, then, is about none of these issues, but rather about the sign and magnitude of any global human effect, and its likely significance when considered in the context of natural climate change and variability.

As a generalization, it can be said that most of the scientific alarm about dangerous climate change is generated by scientists in the meteorological and computer modelling group, whereas many (though not all) geological scientists see no cause for alarm when modern climate change is compared with the climate history that they see every time they stand at an outcrop, or examine a drill core. Of course, attaining a full perspective on climate change requires at least a passing familiarity with all of the three groups of disciplines, a demand that tests even the most polymathic of the scientific brethren. The fact that scientific opinion is divided over the global warming issue is therefore not unusual, and in part follows inevitably from the diversity of knowledge involved; discussion and rational argument are the lifeblood of science, and is indicative of a healthy rather than unhealthy state of affairs. Unlike policy, science is never 'settled'.

In this book I will describe the natural variations in climate that we are heir to, examine the possibility of an additional and measurable human effect, explain why carbon dioxide taxation is a non-solution to a non-problem, and finally show how a cost-effective and prudent climate policy can be included within national plans that address all major climatic hazards.

Chapters 1-6 outline the science of the climate change issue, including a discussion of the vexed virtual realities of GCM

computer modelling. Chapters 7-10 contain a discussion of the powerful social and political forces that are still calling for action against global warming at a time when the globe has actually been cooling for a decade. Chapter 11 identifies the forward path, which should be preparation for, and adaptation to, climate change as it happens irrespective of its causation. For many of the greatest human disasters are caused by natural climatic events, and it is self-evident that we need to handle them better. At the same time, it is simply hubris to imagine that our present understanding of planet Earth is adequate to allow us to successfully engineer future climate. Finally, Chapter 12 describes briefly the breaking of the Climategate scandal in November 2009 and the closely following IPCC climate summit meeting in Copenhagen in December, and Chapter 13 (*Postscriptum*) presents a final and balanced summary statement about the possible human influence on global climate.

My aim in this book has been not only to create an alternative narrative for the 1988-2009 global warming story. Rather, I wish also to encourage people to trust authority less and their own brains more as they assess the likely dangers of both known natural and hypothetical human-caused global climate change. Towards that end, as well as to enhance readability of the main text, most of the technical detail is provided in the sources listed in the end-notes, which provide many independent references to published papers, articles and high-quality web commentaries. Consulting these sources is rewarding in its own right, and it is also an excellent antidote for those who hitherto have heard only the 'authoritative' views of vested interest organizations such as the United Nations, government science agencies and national science academies.

Climate is, and will continue to be, created and controlled by immense and complex natural forces, not by political fiat. Any practical way forward out of the present 'stop global warming' fiasco must acknowledge that reality, as does the adaptive policy, Plan B, outlined in Chapter 11 of this book.

Introduction

Reality is only an illusion, albeit a very persistent one.

(Albert Einstein)

To effectively communicate, we must realize that we are all different in the way we perceive the world and use this understanding as a guide to our communication with others.

(Tony Robbins)

Before human-caused global warming¹ can become an economic, social or environmental problem, it first has to be identified by scientific study as a dangerous hazard for the planet, distinct from natural climate change.

This notwithstanding, several distinguished economists have recently written compendious papers or reports on the issue, for example the UK's Nicholas Stern², USA's William Nordhaus³ and Australia's Ross Garnaut⁴. These persons, and many other public commentators and politicians as well, have naively accepted that there is a scientific consensus (the phrase itself being an oxymoron) that dangerous, human-caused global warming is occurring, as set by the views and advice of the Intergovernmental Panel on Climate Change (IPCC)⁵.

The IPCC is the United Nations body that in 1995 allowed a single activist scientist, Ben Santer, to rewrite parts of the key Chapter 8 (*Detection of Climate Change and Attribution of Causes*) of its Second Assessment Report in alarmist terms, changing a previous wording that had been agreed among the other scientific authors. The rewriting was undertaken in order to make the chapter agree with a politically contrived statement in the

influential Summary for Policymakers, to whit 'the balance of evidence suggests a discernible human influence on global climate'. This statement being the opposite of the conclusion drawn in the original Chapter 8 text, it was obvious from that point onward that IPCC pronouncements needed to be subjected to independent critical analysis. Instead, the opposite has happened and increasingly the world's press and politicians have come to treat IPCC utterances as if they were scribed in stone by Moses. This is a reflection, first, of superb marketing by the IPCC and its supporting cast of influential environmental and scientific organizations (not to mention the bucket-loads of money that have been available in their support⁶); second, of strong media bias towards alarmist news stories in general, and global warming political correctness in particular; and, third, of a lack of legislators and senior bureaucrats possessed of a sound knowledge of even elementary science, coupled with a similar lack of science appreciation throughout the wider electorate – our societies thereby having become vulnerable to frisbee science, or spin.

Having decided around the turn of the twentieth century that 'the science was settled', for the IPCC said so, politicians in industrialized societies and their economic advisers started to implement policies that they assured the public would 'stop global warming', notably measures to inhibit the emission of the mild greenhouse gas carbon dioxide into the atmosphere. However, the acronym GIGO (garbage in, garbage out) that has long been applied to computer modelling endeavours applies also to economic studies that purport to give policy advice against the threat of future climate change. For the reality is that no-one can predict the specific way in which climate will change in the future, beyond the general statement that multi-decadal warming and cooling trends, and abrupt climatic changes, are all certain to continue to occur. It is also the case that the science advice of the IPCC is politically cast, and thereby fundamentally flawed and unsuitable for use in detailed economic forecasting and policy creation. This is why Stern's work, for example, has been able to be so severely criticized

on both scientific and economic grounds⁷, with respect to which the critical essays of Melbourne climate analyst John McLean⁸ provide searing insights into the unreliability of the IPCC.

MIT atmospheric physicist Richard Lindzen famously remarked of global warming alarmism a few years ago that 'The consensus was reached before the research had even begun.' Another distinguished natural scientist, the late Sir Charles Fleming from New Zealand, made a similarly prescient statement when he observed in 1986 that 'Any body of scientists that adopts pressure group tactics is endangering its status as the guardian of principles of scientific philosophy that are worth conserving.'

These quotations are apposite, because pressure-group tactics in pursuit of a falsely claimed consensus are now the characteristic *modus operandi* of the IPCC-led global warming alarmists who surround us at every turn. The recent sensational public exposure of email exchanges between climate scientists at the UK's Climatic Research Unit (an organization closely linked with the Meteorological Office's Hadley Centre) and their colleagues around the world has revealed the malfeasance involved for the whole world to see (Chapter 12).

The realities of climate change

Science reality

My reference files categorize climate change into more than one hundred subdiscipline areas of relevant knowledge. Like most other climate scientists, I possess deep expertise in at most two or three of these subdisciplines. Chris Essex and Ross McKittrick have observed⁹:

Global warming is a topic that sprawls in a thousand directions. There is no such thing as an 'expert' on global warming, because no one can master all the relevant subjects. On the subject of climate change everyone is an amateur on many if not most of the relevant topics.

It is therefore a brave scientist who essays an expert public opinion on the global warming issue, that bravery being always but one step from foolhardiness. And as for the many public dignitaries and celebrities whose global warming preachings fill out our daily news bulletins, their enthusiasm for a perceived worthy cause greatly exceeds their clarity of thought about climate change science, regarding which they are palpably innocent of knowledge.

In these difficult circumstances of complex science and public ignorance, how is science reality to be judged? This question was first carefully thought through in the late 1980s by the senior bureaucrats and scientists who were involved in the creation of the United Nations's IPCC. Key players at the time were Bert Bolin (Sweden), John Houghton (UK) and Maurice Strong (Canada), the two former persons going on to become Chairman of the IPCC and Chairman of Working Group 1 (science), respectively. The declared intention of the IPCC was to provide disinterested summaries of the state of climate science as judged from the published, refereed scientific literature. Henceforward, in the public and political eye, science reality was to be decided by the authority of the IPCC. Accordingly, in four successive Assessment Reports in 1990, 1996, 2001 and 2007 the IPCC has tried to imprint its belief in dangerous human-caused warming on politicians and the public alike, steamrolling relentlessly over the more balanced, non-alarmist views held by thousands of other qualified scientists. Inevitably, and despite the initial good intentions, what started in 1988 as a noble cause had by the time of the 2007 Fourth Assessment Report degenerated into a politically driven science and media circus.

As Chris Essex and Ross McKittrick have written¹⁰:

We do not need to guess what is the world view of the IPCC leaders. They do not attempt to hide it. They are committed, heart and soul, to the Doctrine [of dangerous human-caused global warming]. They believe it and they are advocates on its behalf. They have assembled a body of

evidence that they feel supports it and they travel the world promoting it.

There would be nothing wrong with this if it were only one half of a larger exercise in adjudication. But governments around the world have made the staggering error of treating the IPCC as if it is the only side we should listen to in the adjudication process. What is worse, when on a regular basis other scientists and scholars stand up and publicly disagree with the IPCC, governments panic because they are afraid the issue will get complicated, and undermine the sense of certainty that justifies their policy choices. So they label alternative views 'marginal' and those who hold them 'dissidents'.

The basic flaw that was incorporated into IPCC methodology from the beginning was the assumption that matters of science can be decided on authority or consensus; in fact, and as Galileo early showed, science as a method of investigating the world is the very antithesis of authority. A scientific truth is so not because the IPCC or an Academy of Science blesses it, or because most people believe it, but because it is formulated as a rigorous hypothesis that has survived testing by many different scientists.

The hypothesis of the IPCC was, and remains, that human greenhouse gas emissions (especially of carbon dioxide) are causing dangerous global warming. The IPCC concentrates its analyses of climate change on only the last few hundred years, and has repeatedly failed to give proper weight to the geological context of the short, 150-year long instrumental record. When viewed in geological context, and assessed against factual data, the greenhouse hypothesis fails. There is no evidence that late twentieth century rates of temperature increase were unusually rapid or reached an unnaturally high peak; no human-caused greenhouse signal has been measured or identified despite the expenditure since 1990 of many tens of billions of dollars searching

for it⁶; and global temperature, which peaked within the current natural cycle in the warm 1998 El Niño year, has been declining since then despite continuing increases in carbon dioxide emission.

Recognition of the post-1998 cooling has been strongly resisted by warming alarmists since it first became evident around 2006, despite which acknowledgement of the cooling has now spread to mainstream journals such as *Geophysical Research Letters* (GRL). A recent GRL paper by Judith Perlwitz and co-authors¹¹ refers to 'A precipitous drop in North American temperature in 1998', and continues that 'Doubts on the science of human-induced climate change have been cast by recent cooling. Noteworthy has been a decade-long decline (1998-2007) in globally averaged temperatures from the record heat of 1998.' In support of this statement, Perlwitz cites another GRL paper by Easterling and Wehner¹², who, whilst acknowledging the cooling, put a brave face on the matter by concluding that 'climate over the twenty-first century can and likely will produce periods of a decade or two where the globally averaged surface air temperature shows no trend or even slight cooling in the presence of longer-term warming.' It is clearly difficult for even the most straightforward of facts to shift the fierce belief in human-caused warming that is held by these and many other scientists.

In summary, the science reality in 2009 was that the IPCC's hypothesis of dangerous, human-caused global warming had been repeatedly tested and failed. In contrast, the proper null hypothesis that the global climatic changes that we observe today are natural in origin has yet to be disproven (Chapter 6). The only argument that remains to the IPCC – and it is solely a theoretical argument, not evidence of any kind – is that their unvalidated computer models project that carbon dioxide driven dangerous warming will occur in the future: just you wait and see! It is therefore to these models that we now turn.

Virtual reality

The general circulation computer climate models (GCMs) used by the IPCC are deterministic. Which is to say that they specify the climate system using a series of mathematical equations that are derived from the first principles of physics. For many parts of the climate system, such as the behaviour of turbulent fluids or the processes that occur within clouds, our incomplete knowledge of the physics requires the extensive use of parameterisation (read 'educated guesses') in the models, especially for the many climate processes that occur at a scale below the 100-300 km² size of the typical modelling grid.

Not surprisingly, therefore, the GCMs used by the IPCC have not been able to make successful climate predictions, nor to match the expected 'fingerprint' of greenhouse gas-driven temperature change over the late twentieth century. Regarding the first point, none of the models was able to forecast the path of the global average temperature statistic as it elapsed between 1990 and 2006. Regarding the second, GCMs persistently predict that greenhouse warming trends should increase with altitude, especially in the tropics, with most warming at around 10 km height; in contrast, actual observations show the opposite, with either flat or decreasing warming trends with increasing height in the troposphere¹³.

The modellers themselves acknowledge that they are unable to predict future climate, preferring the term 'projection' (which the IPCC, in turn, use as the basis for modelled socio-economic 'scenarios') to describe the output of their experiments. Individual models differ widely in their output under an imposed regime of doubled carbon dioxide. In 2001 and 2007, the IPCC cited a range of 1.8-5.6°C and 1.4-5.8°C warming by 2100, respectively, for the model outputs that they favoured, but this range can be varied further to include even negative outputs (i.e. cooling) by adjustment of some of the model parameters. Indeed, the selected GCM outputs that IPCC places before us are but a handful of visions of future climate from among the literally billions of

alternative future worlds that could be simulated using the self-same models.

It is clear from all of this, and from the more detailed discussion in Chapter 5, that climate GCMs do not produce predictive outputs that are suitable for direct application in policy making; it is therefore inappropriate to use IPCC model projections for planning, or even precautionary, purposes, as if they were real forecasts of future climate. Notwithstanding, it remains the case, amazingly, that the IPCC's claims of a dangerous human influence on climate now rest almost solely on their unrealistic, invalidated GCM climate projections. Which makes it intriguing that during recent planning for the next (5th) IPCC assessment report, due in 2015, senior UK Hadley Centre scientist, Martin Parry, is reported in a *Nature* article as saying: 'The case for climate change, from a scientific point of view, has been made. We're persuaded of the need for action. So the question is what action, and when.'

Well, the IPCC may be so persuaded, but the key question, of course, is what about the rest of us?

Public reality

The answer to that question is that opinion polls in 2007 and 2008 showed that most of the rest of us had become severely alarmed about the threat of human-caused climate change¹⁴. Therefore, public reality, as perceived until recently by most Western governments, is that their electorates have been expecting them to 'do something' about global warming, i.e. to introduce a carbon dioxide taxation system. Despite rapid swings in public opinion towards less alarmist beliefs in late 2009, it remains the case that there exists a strong disjunction between climate alarm as perceived by the public (strongly egged on by the press) and the science justification for that alarm. How come?

The means by which the public has been convinced that dangerous global warming is occurring are not subtle. The three main agents are the reports from the IPCC that I have already described; incessant bullying by environmental NGOs (such as

Greenpeace, World Wide Fund for Nature, Australian Conservation Foundation, Pew Foundation) and their allied scientists, and by science organizations, political groups and business; and the obliging promulgation of selectively alarmist climate information by the media. Indeed, the combined alarmist activities of the IPCC, crusading environmental NGOs, some individual leading climate scientists and many science agencies and academies can only be termed a propaganda campaign. However, because all of these many interest groups communicate with the public primarily through the gatekeepers of the press, it is the press that carries the prime responsibility for the unbalanced state of the current public discussion and opinion on global warming.

Note on language

Language is the essence of communication. Much science is couched in precise language that appears as jargon, even to well-educated non-scientists. Beyond that, where science bears on environmental issues, choice of language becomes more complex still because of its deliberate politicisation by special-interest groups. Thus phrases such as nuclear waste dump, alternative energy, dirty power, green power, carbon footprint, and more, have been skilfully coined and deployed precisely in order to influence the terms of the social debate.

Sometimes entirely new and inaccurate terminology is involved, as for example when the emotional phrase 'acidification of the ocean' appeared in the early 1990s. Earlier scientific papers related to this topic had carried prosaic, descriptive titles such as: 'The effect of increases in the atmospheric carbon dioxide content on the carbonate ion concentration of surface water at 25°C' (paper in *Limnology & Oceanography*, 1975), but soon an altogether more portentous style of title emerged, viz: 'Impacts of ocean acidification on marine fauna and ecosystems processes' (paper in *Journal of Marine Science*, 2008).

Scarcely surprisingly, the technique of controlling the language has been pursued vigorously in public discussions about

climate change, and especially where the three key terms global warming, climate change and greenhouse are concerned.

Global warming, climate change, greenhouse

To ask the question 'is global warming occurring?' might seem innocent enough. But the accurate answer is actually that 'it depends', and one of the things that it depends upon is what you mean by global warming in the first place (but see also Chapter 2).

Global warming is merely one of the two alternative directions of climate change. Over time periods of decades or longer, average global temperature rarely remains static but either increases or decreases in accord with natural cyclicity on many time-scales. Between about 1965-98, the instrumental record at the Earth's surface suggests that average global temperature increased by a modest few tenths of a degree, i.e. global warming *sensu stricto* occurred during the late twentieth century. However, to the general public, the phrase global warming has come to carry the meaning 'human caused global warming', and it is simply not true that the late twentieth century temperature increase can be shown to have a primary human cause.

Between 1988 and 2005, most media reporters writing about the 'global warming' issue used that term to headline or describe it. On 3 February 2005, that changed; almost overnight, and across the world, the phenomenon became re-referenced in the public arena under the phrase 'climate change'. This redefinition, which allowed weather and climate change of all types to be beaten up as a matter of concern, did not happen by accident but was the outcome of a now infamous 'Avoiding Dangerous Climate Change' meeting in Exeter¹⁵, co-ordinated by the UK Meteorological Office's Hadley Centre with the close involvement of several large green NGO's. The Exeter meeting had two main aims: first, replacing the term global warming (which was no longer happening) with climate change (which always would be); and, second, adopting, for entirely political reasons, a fanciful 2°C target as the 'dangerous' amount of warming that politicians should be

advised that they were to prevent. It is a tribute to the power of language, as well as depressing, to note that five years later the same two dishonesties continue to permeate nearly all public discussion of the global warming issue.

In fact, however, misuse of the term climate change significantly predates the Exeter meeting, for the term achieved the exalted status of legal misdefinition in the United Nation's Framework Convention on Climate Change (FCCC)¹⁶. This convention, which came into force in 1994, states in Article 1.2 that:

'Climate change' means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

In FCCC diplospeak, then, 'climate change' doesn't mean climate change, but rather 'human-caused by atmospheric alteration climate change'. Humpty Dumpty comes to mind.

To add to the confusion, the IPCC, which operates under the aegis of the FCCC, uses the term climate change in a more usual scientific way, for example in its Fourth Assessment Report⁵:

Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

Finally, we should note that the term 'greenhouse' as used in the media has become a sort of shorthand for all of this, and even more. The connotations implicit in the term greenhouse include not only global warming, but also human-caused global warming, and human-caused-by-loading-the-atmosphere-with-carbon-dioxide-global-warming.

Averages

Another powerful word that is much misapplied in the climate debate is 'average', for almost the entire public discussion concentrates on perceived deleterious changes in properties such as 'global average temperature' or 'global average sea-level'.

Such averages have no physical existence, but represent instead convenient statistics that are generated from many separate pieces of data gathered from disparate places. It is precisely for this reason that there is so much argument about the accuracy of various different estimates of temperature and sea-level history. For the construction of such averages requires data to be selected, corrected and statistically manipulated, activities which may be quite legitimately undertaken in different ways by different investigators and which then may lead to different outcomes.

Real world environmental effects are not imposed by changes in global average conditions, but by changes in specific local conditions. What is of concern to the citizens of the island of Tuvalu is whether their *local relative sea-level* is going up or down (and, despite much alarmist propaganda to the contrary, it exhibits no significant long-term trend – see Chapter 4), not what an imaginary *global average sea-level* may be doing.

This point is particularly important when applied to predictions of a future, warmer world. Were the world temperature average to increase appreciably, scientific principles, computer model predictions and current trends all agree that the manifestation of this will be that much of the warming will take place at high latitudes and in winter. In some places, such warming will have virtually no environmental impact: for example, an uninhabitable ice cap at -30°C will remain an uninhabitable ice cap at -27°C . In other places, such as at the fringes of such an ice cap, warming is likely to be beneficial (from our perspective, the planet being entirely neutral about the matter) because warmer temperatures and longer growing seasons will enhance the chances of the establishment and survival of biota there.

These comments notwithstanding, it is inescapable that most of the discussion regarding climate change presented in this book has had to be framed in the same terms as the public debate, i.e. in terms of changes to 'world average temperature'. But the reader should never forget that such abstraction is far removed from the physical realities of what will happen to his or her own local environment when climate change occurs. There, the relevant questions must always be 'how are the local conditions going to change?' (with temperature and sea-level each able to go either up or down), and 'will the environmental response to that change be positive or negative?' from a human point of view (with either outcome possible at a particular location).

To simply assert, as many do, that global warming is going to take place and that its impact is everywhere going to be negative is to make neither a scientifically based nor a sensible statement. Rather, it is a statement of devotion to the green religion that has been aptly called eco-salvationism.

Coda

'Do you believe in global warming?' the reporter asks (meaning, of course *'do you believe in dangerous global warming caused by human carbon dioxide emissions?'*).

'It depends,' I reply. *'For there are many different realities of climate change.'*

In chapters 1 to 4, we will turn to the first of those realities, that of science.