



ESSAY REVIEW

Mirrors and mazes: a guide through the climate debate

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The International Panel on Climate Change (IPCC) has dominated debate on Global Warming (later Climate Change) since its creation by the United Nations in 1988. Brady's book is largely an analysis of how they did it, and the 'mirrors and mazes' of the title refers to the tools used by magicians to trick their audience. He covers the scientific information and a lot more besides. I have read many books on climate change, but I found much new material here.

Chapter 1 sets the scene and reviews the climate debate. The present is not unprecedented, either in climate or alarm. 360 years ago there was panic in Europe over advancing glaciers, and in the 1970s the big scare was the coming Ice Age. The Modern panic started with increasing greenhouse gases and how it may lead to runaway Global Warming. On the way it was mixed with conservation issues, such as reducing CO₂ (or even carbon) by reducing use of fossil fuel (especially coal) and introducing alternative energy. We are reminded that Warren Buffet invested billions of dollars into alternative energy, as there are tax credits to offset against other businesses. Alternative energies have failed so far because there is no suitable battery technology. Despite no warming since 1998 the alarmist message is still to curtail global warming by reducing CO₂. The warming scenario is supported by charismatic prophets warning of catastrophe (floods, droughts, extinctions), who are never held responsible for failed predictions.

In reality CO₂ does not correlate with temperature either on the geological time scale or since the inception of the IPCC. In the ice age that occurred 450 my ago the CO₂ level was 10 to 15 times higher than today, but the one 350 my ago had CO₂ like that of today. The models used by IPCC failed to predict the 'pause' in rising temperatures. Sea levels have not risen to match the models. We have been told simple lies about global warming (and so CO₂) causing more extreme events.

In Ch 2 Brady bravely attempts to explain chaos (non-linear) theory. The climate system is so complex it cannot be treated with simple math formulae as in models: different outcomes can result from the same conditions.

The IPCC admitted this (IPCC 2001 Report, Section 14.2.2.2): "In climate research and modelling, we should recognize that we are dealing with a coupled non-linear chaotic system, and therefore long-term prediction of climate is not possible." But this did not stop them from using inappropriate mathematical models.

Brady then deals with aspects of balance, stability, and tipping points.

Chapter 3 deals with cycles and their complex interaction. Major ice ages coincide with periods when the solar system crossed one of the spiral arms of the Milky Way. The Milankovitch cycle results from changes in Earth distance from sun, and wobble and tilt of the Earth. Other cycles are Sunspot cycles and the 1500 year (Dansgaard) cycles. Ocean-atmosphere cycles include the El Niño-Southern Oscillation, the Pacific Decadal Oscillation, and many others.

The many cycles interact with each other like wheels within wheels, resonance might connect some cycles,

but even repeats of the same cycle are not identical.

Some of the irregular changes in climate are described in Chapter 4.

Since widespread temperature measurement started in the 19th century, it was noted that there are three warming periods roughly 1860-1880, 1910-1940 and 1975-1998. All three had similar temperature gradients, though different CO₂ levels, and only the last is attributed to AGW. The alarmists can only claim that the first two rises were natural climatic variations but the third was caused by industrial increase in CO₂.

The Holocene Thermal Maximum (8,000 to 4,500 years ago) was warmer than today and sea level was 2 m higher. The Minoan Period and the Roman Period were warmer than the Medieval Warm Period 1,000 years ago. Present day temperatures are NOT unprecedented.

European glaciers have excellent records of advance (cooling) and retreat (warming). They duly record the Minoan, Roman and Medieval warming. The modern retreat started in the 18th C, before any rise in CO₂ levels.

To produce his 'hockey stick' graph showing temperature rising at an ever-increasing rate, Michael Mann had to remove the Medieval warming period, despite the massive amount of evidence for its existence. But the IPCC 3rd report (2001) still used Mann's ideas.

Severe weather events are discussed in Chapter 5. The media describes any severe weather event as exceptional or unprecedented, and links it to increasing carbon dioxide levels, but Brady demonstrates the failure of this simple association.

Over the past 150 years the CO₂ levels increased 40% but there was no meaningful increase in storm frequency. The increase in human population and infrastructure means that storms today do more damage, but that does not mean there are more storms, as suggested by the alarmist journalist Monbiot: "The number of extreme weather events seems to have quintupled since the 1950s, according to the insurance company Munich Re."

Graphs of US Hurricanes and Australian cyclones show no increase over time.

Drought and Floods are both used by alarmists as evidence of 'Climate Change', implicitly associated with warming and carbon dioxide. Real data show no trend in the number of extremely dry periods in USA.

Sea level is discussed in Chapter 6. Tide gauges show a rise in the 20th C of about 1.5 mm/y, which is no cause for alarm. We don't really know where the water came from. There is no solid evidence for acceleration of sea level rise. But governments and consultants still appear to accept the IPCC predictions (properly 'projections') including extreme guess of 82 cm by 2100. [Not mentioned in this book but the National Oceanic and Atmospheric Administration (NOAA, 2016) is now using up to 6.6 feet (2 m) of sea level rise everywhere.]

Satellite measurement indicate higher sea level rise than tide gauges, but results have been adjusted and the raw data are not made public. Some even use satellite data as a benchmark and adjust the tide gauge data! In Australia and some Pacific islands there are superior Sea Frame gauges, but the data is merged with satellite data. So the Port Kembla Sea Frame shows a sea level rise three times that at the reliable Fort Denison gauge (100 km to the north) and Jervis Bay gauges (60 km south).

It is even worse to link the shonky satellite data to IPCC models, based as they are on a disproved link between CO₂ and warming. "Reliable tide gauge data should be the basis for regional development and infrastructure planning."

Rising sea levels impinge on the coast, and so lead to another area of dispute – coastal management – which is treated in Ch 7. Will rising sea levels lead to erosion and coastal retreat? Local authorities employ consultants, who in turn use IPCC Reports as non-controversial and accessible authority. If engineers are involved they tend to use the Bruun Rule. This 'rule' is based on forces working at right angles to a theoretically infinitely straight beach, ignoring real topography and processes such as longshore drift. It is virtually useless but gives neat numbers, such as "one m of sea level rise causes 100 m of coastal retreat".

There is no simple linear relationship between sea level rise and shoreline history. Policy should be based on actual changes recorded over the previous century. Regional differences are so great that each region needs a different policy, and no national policy would be helpful.

Sea Ice (Brady uses 'pack ice') and ice sheets and glaciers are treated in Chapter 8. Sea ice comes from frozen sea water and floats, so by Archimedes Principle it does not affect sea level, but it may tell us something about temperature. In the Arctic Ocean there is no land mass, so there is only sea ice. Available maps of sea ice show a warm Arctic period from 1920-1930s; cooling from 1938 onwards. Satellites show a dramatic decrease in ice from 2000 to 2012.

Mapping of Antarctic sea ice was difficult until satellite surveys in the 1970s. Since then it has steadily increased, contrary to climatic model predictions. The Arctic and Antarctic are out of sync, so they cannot both be due to increasing CO₂.

The growth or shrinkage of the Greenland and Antarctic ice sheet is described. Zwally et al. (2015) reported that the East Antarctic ice sheet is growing and more than compensating from loss by coastal glaciers. Between 2003 and 2008 it gained 82 billion tonnes of ice per year. Some interesting West Antarctica data comes from an ice core example. It shows the area had warmed since the 1950s but larger warming trends occurred in the 18th and 19th centuries. 'Overall there is no significant trend in the average deuterium record since 1702 A.D.' So the warming trend in West Antarctica is not 'unprecedented' as often claimed, and stronger warming occurred before any rise in carbon dioxide levels.

Many books on Warming start with the Greenhouse Effect, because the whole alarmist spectre starts with CO₂, but here it comes in as Chapter 9. I think this is appropriate as I have never met an alarmist who might change his mind because of some technical data on the greenhouse effect. Brady attempts to explain the radiation story and radiation bands. He then adds convection, and effect of the Earth's spin.

He describes the origin and distribution of the greenhouse gases and puts them in a rough 'order of merit' for their greenhouse effect. Water vapour is top at 82% and CO₂ second at 11%. The dominance of water vapour as a greenhouse gas does not lead to it correlating with heat. The hottest places on earth are dry deserts. The IPCC uses water to enhance the small effect from CO₂ alone, but the modelling of water vapour is a nightmare – beautifully described here. The entire IPCC global warming scenario is absolutely dependent on calculations about water vapour and "Should these calculations be wrong, the whole position of the IPCC collapses..."

The NASA Carbon Observatory satellite was launched in 2014 to give high resolution picture of CO₂ levels around the world. Some plumes of CO₂ were over the ocean, others over rainforest, and the only ones over industrial areas were in China.

Discussion of models, their problems and their basic assumptions comes in Ch 10. The grid blocks used in global models are huge and only one figure can be placed in each cell. The computer tells us how data put in might interact, but ignores the problems of chaos described earlier. To make a model work, estimates are inserted and then varied while the model is running, called tuning. "Fixing the model" is traced back to the Ancient Greeks ever-growing number of wheels and epicycles to explain celestial movements. Modern computer programmers acknowledge that some parameters inserted represent unresolved physical processes. How much faith can we have in models that depend on such parameters for their outcomes? Modern models make the epicycles look like respectable science.

To avoid responsibility the IPCC only gives 'projections' (derived from extending a line on a graph) and not 'predictions', but politicians, the media and consultants continue to treat their numbers exactly as predictions.

Between 1975 and 1998 temperature and CO₂ (as measured by NASA) were rising in tandem, but after that began to diverge, to the embarrassment of modellers. A leading IPCC author, Kevin Trenberth, opined "The fact is that we can't account for the lack of warming at the moment and it is a travesty that we can't." and went on to suggest the data must be wrong! But the pause he thought was an artefact is still with us today.

Brady discusses the ‘explanation’ that the pause is caused by heat buried in the ocean (but the heat cannot be found); by cooling caused by aerosols (but this cannot account for earlier coolings); and by volcanic eruption (which are not cyclic and do not fit our climate history). Very large eruptions do cause global cooling of about one degree C, but only for a few years.

The Equilibrium Climate Sensitivity Index (ECS) is an index based on many complex variables, and is *estimated* by physicists. There is no simple equation, so estimates vary widely. IPCC reports use 3°C, and this is widely accepted as fact by politicians, media, and alarmists.

The models have problems with wind, which can cause ablation of ice at temperatures below -30°C, and has revealed many meteorites in Antarctica.

Freeze –drying in tropical cumulo-nimbus clouds should be treated as a negative in a sensitivity index, the opposite of the present treatment.

IPCC models predict a tropical hot spot at an altitude of 10-15 km due to heat given out when water vapour condenses. This theoretical hot spot has never been proven despite over 20 million radiosonde balloon readings taken in tropical regions.

To study changes in the atmosphere over time modellers need a standard for comparison, and the US atmosphere of 1976 was selected as the ‘standard atmosphere’. We now know this is not like the whole world atmosphere, which has about twice as much water vapour. The wrong starting point increases the sensitivity of the models to increases in water vapour.

Heat transfer is hard to model but is absolutely necessary. The transfer of heat from the equator to the poles is one problem. Another is transfer from atmosphere to ocean. The heat capacity of the upper few metres of the ocean equals the total heat capacity of the atmosphere. “The ocean accounts for over 90% of total energy accumulation and for almost all uncertainty.”

Brady describes the huge importance of clouds, though they are generally neglected, and quotes Ian Plimer : “A change of just 1% in the cloudiness of planet Earth could account for all the 20th Century warming. However, the IPCC computers don’t do clouds.”

Some scientists have provided their own estimate of the ECS and are much lower than those of the IPCC. These have led the IPCC to lower its estimates, but only slightly. The chapter concludes wisely “Models and empirical observations are both indispensable tools of science, yet when discrepancies arise, observations should carry more weight than theory.”

With so much emphasis on CO₂ the sun took on a minor role. Yet the sun is the underlying force behind our climate. The sun, its products and its relationship to Earth are described in Ch. 11. There is discussion of sunspots, magnetic cycles, ultra violet rays, and total solar irradiance. Isotopes formed by cosmic rays, recorded in ice sheets and tree rings for example, provide strong evidence of the Sun’s influence and the Sun’s dominant role in the Earth’s climate. The Svensmark hypothesis is that cosmic rays spark nucleation of water droplets, increase low cloud, increase in reflected solar radiation and cooling. Brady notes some problems with the idea.

Sunspot cycles are well known, and times of low sun spot activity correlate with cold periods. The Maunder and, Dalton Minima were cold, and the low sunspot count at present suggests we are in for another time of cooling.

Brady concludes that it may take some future shock such as global cooling to bring the scientific world back to its senses and admit that in the past 40 years an exaggerated role has been ascribed to changing carbon dioxide levels.

This leads to discussion of other climate shocks in Ch. 12. The UN Environmental Program predicted that by 2010 there would be 50 million climate refugees. Actually the year 2010 had record agricultural production, a pause in world temperature and no acceleration in sea level rise. There is no mention of what happened to the perpetrators of this great hoax – presumably promoted. He goes on to discuss meteor and

comet strikes, solar flares, volcanoes, the frozen methane bomb (breakdown of submarine methyl hydrates) and super-floods. History tells us there will be future catastrophes, but they do not include those related to the faulty greenhouse-driven climate models of the IPCC.

Having assembled the evidence, Brady assesses the IPCC in Chapter 13. After a brief history of the IPCC and its publications he points out that right from the start it was assumed that greenhouse gases controlled temperature. From this arose the advice to control emissions to stop a rise in temperature. A number of future greenhouse scenarios were formulated in the IPCC Fifth Assessment Report (2014). The scenarios (called Representative Concentration Pathways) make assumptions on population, changes in methane concentration, fossil fuels and more. At present there are 300 baseline scenarios and 900 mitigation scenarios.

Brady provides an example of an IPCC Summary statement (Pachauri, 2014), with critical comment, and notes: The IPCC summary statements also contain interpretative propositions that are sometimes incorrect, and some not based on solid data. It suggests a scientific organisation derailed by its obsession with carbon dioxide.

He presents many examples (six pages) of IPCC speculation and false statements versus the truth. To pick just the shortest example:

IPCC Each of the three decades since 1980 have been successively warmer than any preceding decade since 1850.

False. The first two decades were warmer but temperatures have stalled in the latest decade. There is a brief section on conflicts of interest, mentioning Al Gore, Pachauri and Sterne and their business connection. A brief mention of the Climategate affair notes that many of the people involved are still dominant figures in IPCC committees. But Brady generally steers clear of personalities and politics and sadly, Donna Laframboise's brilliant expose of IPCC is not discussed or listed in the references.

In a grand final denouement he says that in IPCC reports even solid scientific data is processed and squeezed into a final shape by a clique of individuals so that the IPCC Summary statements reflect an exaggerated and false view about how the Earth's climate is behaving. At the present time there is no evidence of climate behaving outside its normal non-linear boundaries due to human influence.

The final chapter, 14, is a rather dismal view of 'what comes next'. It is somewhat spoiled by repeated use of 'scientist' to mean 'IPCC scientist' or 'alarmist scientist'. I am a scientist and I was offended to find myself in such company. "Science has caught an accelerator bug and is convinced that everything is going faster and faster." Count me out. Depressing features of the 'debate' include: the funding of research and of universities; the sacking or legal action against dissenters; the prevention of publication of opposing views; the economic arguments of emission control; the rush to alternative energy; the intervention of religion. He suggests that the path forward requires a complete restructuring of the IPCC (perhaps abolition would be better). He hopes that the day will come when the edifice of global warming, built over the past 40 years and fuelled by greenhouse gases, will collapse. If you want to know how the IPCC tricked you, this is the book for you.

References

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