Cold Hard Facts

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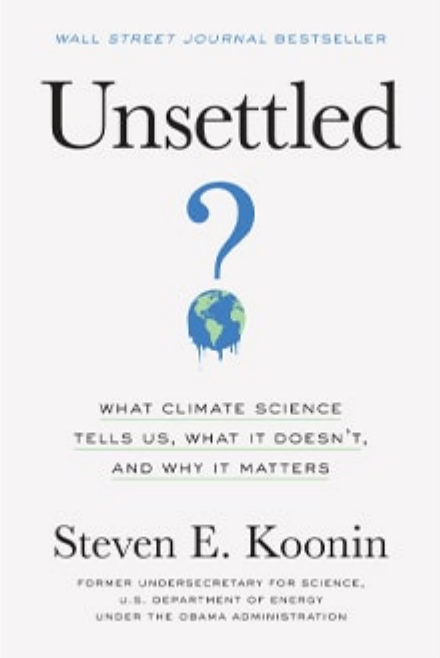
Real science rather than 'The Science' would provide a more accurate perspective of climate change, writes scientist and nuclear power advocate Ian Hore-Lacy.

In a sense, the title and strapline says it all! This book stresses the importance of rigorous and ethical science which is scrutinised and challenged rather than being allowed to furbish a narrative of 'The Science' of climate which gets a life of its own, supposedly 'settled' beyond serious question. It is about the importance of scientific integrity in grappling with complexity to enable faithful stewardship of God's wonderful creation. The main part of the book—190 pages—is about the science of the changing climate with its many uncertainties. The second part—47 pages—is about the response: what we might do, which is rather US-centric.



Unsettled. What climate science tells us, what it doesn't, and why it matters
Steven E. Koonin
BenBella Books, Inc, 2021, pp320

Professor Koonin is far from the first to counter the prevailing narrative on climate change, but probably no one has done it so comprehensively with credible authority. Having helped guide the US government's investments in energy policy and climate science for the Obama Administration, he accepted a role with the American Physical Society (APS) in 2013 to lead a workshop scrutinising the state of climate science following the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report (AR5, 2014).

One of many IPCC meetings, this time in Nepal.
Photo: Jitendra Raj Bajracharya/ICIMOD, Flickr

This made him realise just how unsettled that science actually is, and that

(the IPCC could not) make useful projections about how the climate will change over coming decades, much less what effect our actions will have on it.

Steven Koonin.

Photo: GLBRC/Flickr

Koonin became concerned “that the public and political debates were being misinformed” and that “climate alarmism has come to dominate US politics”, to which I would add this is hardly just a US phenomenon. Policies, especially trillion-dollar ones, need to “be informed by an accurate understanding of scientific certainties and uncertainties” rather than energised by talk of ‘climate emergency’.

Hence this book, in which Koonin says:

I believe it is a responsibility, almost an act of conscience, to portray without bias just how settled—or unsettled—the science truly is.

Considering the science publication process, including the IPCC’s, he notes that while the actual research contained in original reports may be subject to credible peer review, the summaries and conclusions are definitely not. They often aim to persuade rather than inform. Also, modelling is only ever very tentative, as the wild disagreement among them shows climate science is extraordinarily complex. He gives examples of errors and misrepresentations in what gets to the public, media and politicians. He suggests more effort should be spent “trying to understand why the climate models fail in describing the recent past and are so uncertain in their projections of the future”.

> Peer review can simply reinforce groupthink.

The climate change narrative in the popular media and some US government reports has been drastically over-egged, arising in part from obvious vested interests at both academic and media levels. Some, like Stephen Schneider, attribute this to the ‘double ethical bind’ of balancing effective communication with honesty, but Koonin explicitly rejects that notion and says:

It is the height of hubris for a scientist even to consider deliberately misinforming policy discussions in service of what they believe to be ethical (when scientists) are the only people who can bring objective science to the discussion, and that is the overriding ethical obligation … activism masquerading as The Science is pernicious.

This is strong stuff, setting forth some standards fundamental to any principled stewardship of God’s creation (aka ‘the environment’) on any issue: climate, forests, the Great Barrier Reef, COVID-19, whatever! Koonin’s occasional Biblical quotation and even a reference to the Council of Trent suggest where the source of Koonin’s principles might be found.

Koonin’s critique is more pointed against the US National Climate Assessments of 2014 and 2018, which tended to be ‘apocalyptic’, than against IPCC science in AR5.

There is strong alignment between Koonin’s suggestion for a Red Team/Blue Team review of climate reports and of Peter Ridd regarding Great Barrier Reef science, whereby a group of scientists rigorously questions papers and reports in their editorial stage to identify weak spots

and groupthink. A bit like the role of Opposition in Parliament. Maybe ‘The Science’ has become so widely prostituted that we need this process across the board to counter popular narratives. Peer review can simply reinforce groupthink. Koonin mentions Biden’s climate envoy, former US Secretary of State John Kerry, as being disparaging of the idea. Koonin urges scrutiny of science, and for most of us that means IPCC assessment reports rather than their agenda-laden public summaries. Certainly I, as a layman, find the contrast disconcerting. At the time of writing I have spent two days looking at the AR6 science, but not yet read the Summary for Policymakers (SPM). That the SPM may be unduly selective and draw conclusions beyond what is in the technical supporting literature has been noted in early critiques. One thing that struck me in AR6 was that the IPCC has toned down earlier alarmist possibilities regarding ‘tipping points’ etc.

> The dreams of the activists are unrealistic.

Implicit in the book is British writer Matt Ridley’s message that the politicisation of science leads to a loss of confidence in it, so that distrust breeds superstition. This is evident in public attitudes to genetically modified food, nuclear power and vaccines. Koonin agrees ‘The Science of COVID’ needs the same rigorous scrutiny as climate. The pernicious effect of social media on contentious matters is another issue.

The main part of the book is addressed to the layman, with a dearth of technical terms. He makes the point that “the process of science is less about collecting pieces of knowledge than it is about reducing the uncertainties in what we know”. He accepts that the IPCC assessment reports (to AR5 in 2013) are largely sound, and bases much of his detailed discussion on them, though “some elementary failures … mislead or misinform readers” and other elements are completely factual but not factually complete, hence misleading. As IPA Executive General Manager Scott Hargreaves pointed out in the final chapter of the IPA’s *Climate Change The Facts 2020*, even this position of cleaving to the IPCC’s technical conclusions (a space also occupied by Bjørn Lomborg) is still enough to have one labelled a ‘climate denier’.

Koonin discusses increasing world temperatures, the anthropogenic contribution, and the albedo effect (how much of the sun’s energy is reflected into space), in the lead up to a chapter on the climate models in which projections increasingly diverge. When the IPCC’s fifth assessment report was completed (2014), the effect of feedbacks on rising CO2 concentration remained unclear. Thus he concludes:

The uncertainties in modelling of both climate change and the consequences of future greenhouse gas emissions make it impossible today to provide reliable, quantitative statements about relative risks and consequences and benefits of rising greenhouse gases to the Earth system.

Chapters on heat, cyclones, precipitation, and sea levels document very small changes—mostly not anthropogenic—despite unrelenting media hype. Catastrophism based in those areas misrepresents the evidence. Similarly, Bjørn Lomborg has said cold deaths vastly outweigh heat deaths worldwide, citing a *Lance*t study showing “climate change in the past decades has avoided more cold deaths across every region than it has caused additional heat deaths”.

Bjorn Lomborg in Prague: cold deaths outweigh heat deaths.
Photo: Radek Cihla

Koonin acknowledges temperature rise since 1900 of perhaps 1.3°C and expects about the same this century, with some human contribution. In the scientific literature the net warming effect of greenhouse gases such as CO2 is called ‘radiative forcing’ and is measured in W/m2 (in Watts per square metre, the average amount of extra energy per each square metre of the Earth’s surface). Koonin puts the net human contribution somewhere between 1.1 and 3.3 W/m2, which is in line with the lowest IPCC AR6 scenarios (the three lowest of five AR6 scenarios are 1.9, 2.6 and 4.5 W/m2).

Koonin concludes the science part of the book by suggesting six red flags that should trigger active scepticism about climate change pronouncements or reports. These are:

- using pejoratives like ‘denier’ or ‘alarmist’ (politics or propaganda)
- appeal to the alleged ‘97 per cent consensus’ (without specifying what is actually agreed)
- confusing weather and climate (short-term versus long-term changes)
- omitting numbers
- quoting alarming quantities without any context
- confusing climate observations with climate projections.

Moving on from science to his consequent opinions, what can be done, what should be done, and what is likely to done? This is where his conclusions radically differ from those who want drastic action and want it now, regardless of the cost. He suggests the drivers of population and development (increasing wealth and human flourishing) are likely to grow energy demand by about 50 per cent from now to 2050, so even if the Paris targets are achieved as a first step there is no prospect of sufficient emissions reductions across the world to alter the climate significantly.

The dreams of the activists are unrealistic. ‘The Science’ on it could never be enough to decide critical questions: environmental and other values, and the benefits to humanity of reliable and affordable energy, will have an influence in every country and society. Thus Koonin believes the world will need to adapt to rather than seek to avoid climate change, but he also believes the expected warming (less than 2°C) is unlikely to be detrimental on the whole. No very radical change in human behaviour is likely or required. He is not saying ‘do nothing’, but rather ‘don’t panic’.

> The IPCC has toned down earlier alarmism.

Though evidently in favour of it, he barely mentions nuclear power. Perhaps he reckons the book has stirred enough already! He does say green policies favouring renewables but not nuclear “belie claims that we’re facing an existential threat”. Insofar as nuclear power is on any agendas in Australia, the focus is on small reactors that can entirely or largely be made in factories and easily fitted into our grid in place of coal-fired units (see also *IPA Review*, ‘Right Climate for Nuclear Power’, 2018). As our Prime Minister tiptoes around the climate change and absurd ‘Net Zero by 2050’ question with reference to technological solutions, this one is staring us in the face. We can only hope that if Australians accept nuclear-powered submarines are part of our defence requirement, then nuclear power will become part of our domestic energy solution.

For those more concerned than him, Koonin outlines the geoengineering Plan B of increasing the stratospheric albedo (so the planet reflects more of the energy from the Sun back into space) with sulphur, or by removing CO2 from the atmosphere either physically or by planting more trees. Apart from the planting of trees, it is some way off economic or political practicality and the side effects are very uncertain, but R&D would be prudent. Koonin’s bets are on adaptation, with abundant precedents demonstrating mankind’s ability to accomplish just that. That is also what seems evident to me on the basis of the latest IPCC Assessment Report 6 (AR6) which was released in August 2021.

The physical sciences volume of IPCC AR6 is an impressive publication of more than 3,700 pages, plus a 150-page Technical Summary. In great detail it shows little that is new or changed from its predecessor eight years ago, or unexpected, and confirms the IPCC conclusion that most observed global warming is anthropogenic: 1.07°C in a bit more than a century, slightly less than Koonin’s estimate.

Though it doesn’t convey any impression of the science being settled, it does significantly firm up our understanding of the complex science involved in the world’s climate so we have a better idea of what is happening. On that basis its scenarios to 2100 are clearer, though as with any models, nevertheless uncertain. Lower emissions lead to less warming and associated climatic and ocean effects. There is no obvious reason why the world cannot adapt to envisaged changes, though that will be easier in the reduced emissions scenarios. In August, Koonin wrote in the *Wall Street Journal* that it “fails to mention historical precedents that weaken the case that humanity’s influence on the climate has been catastrophic”. That said, he notes some improvements:

Refreshingly, the report deems its highest-emissions scenarios of the future unlikely, although you're mostly likely to hear those ones in media reports. The more plausible scenarios have an average global temperature in 2100 about 2.5°C warmer than the late 1800s. The globe has warmed 1°C since then, and the parties of the Paris Accord arbitrarily agreed to limit further warming to another degree. But since humanity's well-being has improved spectacularly, even as the globe warmed during the 20th century, it is absurd to suggest an additional degree of warming over the next century will be catastrophic. *Scientific American* published not one but two early critical opinion pieces on Koonin's book, yet declined to publish his rebuttal. The tone and substance of the critiques seem to justify the purpose and message of Koonin's book. His response in a blog post says the critics seem to have not read his book:

Most of that article's 1,000 words are scurrilous ad hominem and guilt-by-association aspersions from the 12 co-authors. Only three scientific criticisms are buried within their spluttering.

He also provided convincing responses to those three actual scientific criticisms.

In his conclusion Koonin reminds us of how much is understood about the climate despite its complexity, regrets the occasional misrepresentations by scientists, and emphasises that "simplistic descriptions of 'the problem' or putative 'solutions' will not result in wise choices" and "we need to move from The Science back to science". He says:

The truth is that real science is never entirely settled—that's how we make progress; it's what science is all about. Let's further our understanding rather than repeating orthodoxy.

Ridley makes this point even more strongly:

Conformity is the enemy of scientific progress, which depends on disagreement and challenge as opposed to dogmatic gate-keeping.

Of course, the fact that much science is sufficiently settled to act upon provides the basis of modern living.

Ian Hore-Lacy is a scientific generalist, a Senior Advisor of the World Nuclear Association, and a fellow of ISCAST: Christians in Science and Technology (www.iscast.org).

This article from the Spring 2021 edition of the IPA Review is written by scientist and nuclear power advocate Ian Hore-Lacy.