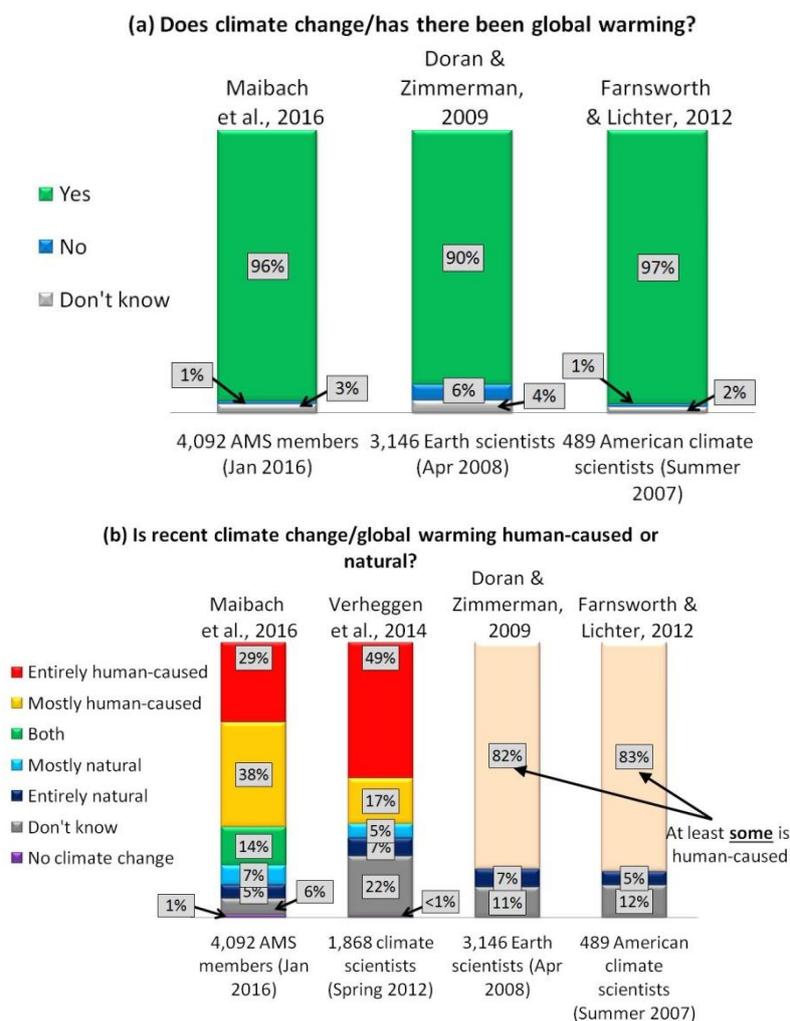


Scientific opinions on climate change

Matt Dempsey's recent article in this newspaper, about the role of methane emissions in climate change, prompted several commentators to repeat the claim that 90-97% of scientists agree that climate change is entirely human-caused and unprecedented. This claim is not true.

In the infographics, we have summarised four of the main surveys of scientists on climate change. We can see that, yes, 90-97% of scientists agree the climate changes and that there has been some global warming since the late 19th century. However, there is considerable debate over how much of these trends are natural and how much are human-caused.



Settled science?

In last week's issue of this newspaper, Prof. John Sweeney – a climate scientist at NUI Maynooth, past President of An Taisce and member of the Board of Directors of Friends of the Earth Ireland – criticised Matt Dempsey's reporting of a recent lecture in Dublin by an MIT climate scientist, Prof. Richard Lindzen. We were also at that lecture along with Sweeney and various other scientists and experts.

Both Sweeney and Lindzen have contributed to the UN's Intergovernmental Panel on Climate Change (IPCC) reports and both of them agree that the climate changes. However, they have very different views on the relative roles of human and natural factors.

So, when we noticed Sweeney at Lindzen's talk, we were looking forward to hearing them debate the science in the Q&A after the talk. However, remarkably, Sweeney didn't seem to have any scientific arguments to counter Lindzen's points. Instead, he chose to play the man and not the ball, and accused Lindzen of being a spokesperson for the tobacco industry. Lindzen categorically refuted his accusations and showed them to be nonsensical. But, regardless, this has absolutely nothing to do with the climate debate.

Bizarrely, in last week's Viewpoints, when Sweeney was supposedly offering "his side of the argument on climate change", he spent nearly half his article repeating his false accusations and smears against Lindzen. If the scientific evidence against Lindzen's points is as genuinely compelling as Sweeney claims, why doesn't he simply explain what's wrong with Lindzen's scientific arguments?

NGO fund-raising strategies

Perhaps Sweeney is taking a leaf from Dr. Chris Rose's 2010 book, "How to win campaigns". Rose is a former strategic advisor for Greenpeace International and also has worked for Friends of the Earth and the WWF. In his book, he recommends various campaign strategies for NGOs running campaigns based on "climate action", like Sweeney's An Taisce and Friends of the Earth.

Rose's main strategies can be summarised as follows:

1. Pick a specific problem with a simple solution, and frame it as both serious and urgent.
2. Pick an antagonist you can paint as the villain so that you, the protagonist, can be painted as the hero.
3. Insist the only reason your simple fix has not been carried out is because of those despicable antagonists.
4. Avoid getting involved in scientific discussions where you don't have control over the debate forum – if people see that there are other credible scientific views, they may question your claim that "the science is settled".

Rose's strategies are very effective when it comes to fund-raising. For instance, Greenpeace International have a yearly income of €300 million. However, these strategies also lead to a distorted and one-sided view of the science.

For instance, in Sweeney's article, he correctly points out that Irish temperatures have risen about half a degree in the last 30 years. However, as we discussed in a 2015 paper in Earth-Science Reviews, this followed a cooling of about half a degree since the 1940s. We gave a copy of this paper to Sweeney in 2015. He also commented on the melting of Arctic ice in the last two decades. Coincidentally, last week, we published a new study in Hydrological Sciences Journal, in which we showed that a similar melting of Arctic sea ice occurred in the 1940s, but was followed by three decades of sea ice growth.

Regarding Sweeney's comments on methane emissions, during his talk Lindzen highlighted serious scientific problems with the claim that methane emissions are a major contributor to climate change. He also made Sweeney's point that – in a molecule by molecule comparison – the infrared

activity of methane (CH₄) is 20-30 times stronger than carbon dioxide (CO₂). However, he pointed out that while CO₂ absorbs and emits in a region of the infrared spectrum where water vapour is a poor absorber and emitter, the corresponding CH₄ bands overlap with those of water vapour. The atmospheric concentration of methane is only 1.8 parts per million (ppm) or 0.00018%, while CO₂ is 400 ppm (0.04%). Any additional infrared effect from doubling or trebling our methane emissions would already be swamped by the presence of water vapour in the atmosphere.

It would be interesting to know if Sweeney has any genuine scientific critique of Lindzen's scientific arguments on the methane issue. If we are to implement major national policies based on science, then we should be looking at all of the science – not just the bits that suit our own personal views.

Dr. Michael Connolly and Dr. Ronan Connolly are independent scientists and environmentalists who have been actively carrying out climate research for nearly a decade. All of their climate research has been carried out voluntarily and they have received no funding for it.