

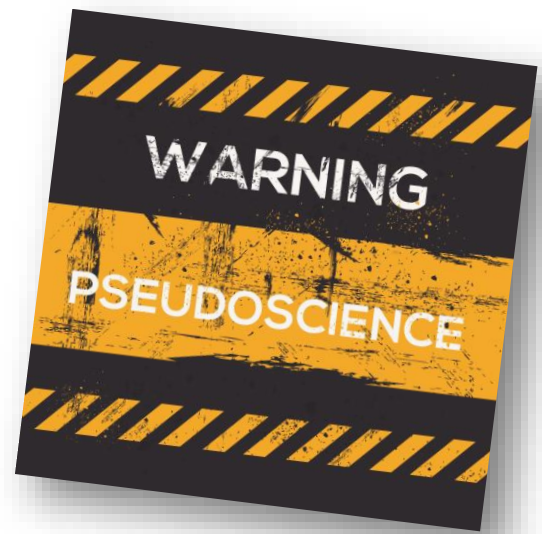
Lying with science: a guide to myth debunking

Pseudoscience is on the rise – and the media is completely hooked

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The Spectator

‘The whole aim of practical politics,’ wrote H.L. Mencken, ‘is to keep the populace alarmed (and hence clamorous to be led to safety) by menacing it with an endless series of hobgoblins, all of them imaginary.’ Newspapers, politicians and pressure groups have been moving smoothly for decades from one forecast apocalypse to another (nuclear power, acid rain, the ozone layer, mad cow disease, nanotechnology, genetically modified crops, the millennium bug...) without waiting to be proved right or wrong.

Increasingly, in a crowded market for alarm, it becomes necessary to make the scares up. More and more headlines about medical or environmental panics are based on published scientific papers, but ones that are little more than lies laundered into respectability with a little statistical legerdemain. Sometimes, even the exposure of the laundered lies fails to stop the scare. Dr Andrew Wakefield was struck off in 2010 after the General Medical Council found his 1998 study in the *Lancet* claiming a link between the MMR vaccine and autism to be fraudulent.



Yet Wakefield is now a celebrity anti-vaccine activist in the United States and has left his long-suffering wife for the supermodel Elle Macpherson. Anti-vax campaigning is a lucrative business. Meanwhile, the notion that chemicals such as bisphenol A, found in plastics, are acting as ‘endocrine disruptors’, interfering with human hormones even at very low doses, started with an outright fraudulent study that has since been retracted. Many low-quality studies on BPA have pushed this theory, but they have been torpedoed by high-quality analyses including a recent US government study called Clarity. Yet this is of course being largely ignored by the media and the activists. So the habit of laundering lies is catching on. Three times in the past month, pseudo-science flew around the world before the scientific truth had got its boots on (as Mark Twain did not say, but Jonathan Swift almost did): in stories about insect extinction, weedkiller causing

cancer, and increased flooding. The shamelessness of the apocalypses is increasingly blatant. They know that even if a story of impending doom is thoroughly debunked, the correction comes too late. The gullible media will have relayed the headline without checking, so the activists have made their fake-news hit, perhaps even raised funds on the back of it, and won.

Take the story on 10 February that 'insects could vanish within a century', as the *Guardian's* Damian Carrington put it, echoed by the BBC. The claim is, as even several science journalists and conservationists have now reported, bunk. The authors of the study, Francisco Sánchez-Bayo and Kris Wyckhuys, claimed to have reviewed 73 different studies to reach their conclusion that precisely 41 per cent of insect species are declining and 'unless we change our way of producing food, insects as a whole will go down the path of extinction in a few decades'. In fact the pair had started by putting the words 'insect' and 'decline' into a database, thereby ignoring any papers finding increases in insects, or no change in numbers.

They did not check that their findings were representative enough to draw numerical conclusions from. They even misinterpreted source papers to blame declines on pesticides, when the original paper was non-committal or found contradictory results. 'Several multivariate and correlative statistical analyses confirm that the impact of pesticides on biodiversity is larger than that of other intensive agriculture practices,' they wrote, specifically citing a paper that

actually found the opposite: that insect abundance was lower on farms where pesticide use was less.

They also relied heavily on two now famous recent papers claiming to have found fewer insects today than in the past, one in Germany and one in Puerto Rico. The first did not even compare the same locations in different years, so its conclusions are hardly reliable. The second compared samples taken in the same place in 1976 and 2012, finding fewer insects on the second occasion and blaming this on rapid warming in the region, rather than any other possible explanation, such as timing of rainfall in the two seasons. Yet it turned out that there had been no warming: the jump in temperature recorded by the local weather station was entirely caused by the thermometer having been moved to a different location in 1992. Whoops. Of course, human activities do affect insects, but ecologists I have consulted say local populations of some species are often undergoing huge changes, and that some species regularly die out in one location and are then regenerated by migrants. This is not to be confused with species extinction. The real evidence suggests that insect species are dying out at a similar rate to mammals and birds — which means about 1 to 5 per cent per century. A problem, but not Armageddon. Curiously, 41 per cent cropped up in another misleading story the same day, 10 February. This is the claim that exposure to glyphosate, the active ingredient in Roundup weedkiller, increases the incidence of a particular, very rare cancer, non-Hodgkin lymphoma (NHL). 'Exposure

to weed-killing products increases risk of cancer by 41 per cent,' said the *Guardian's* headline.

Once again, this paper is not a new study, but a desktop survey of other studies and its claim collapses under proper scrutiny. According to the epidemiologist Geoffrey Kabat, the paper combined one high-quality study with five poor-quality studies and chose the highest of five risk estimates reported in one of the latter to ensure it would reach statistical significance. The authors highlighted the dubious 41 per cent result, 'which they almost certainly realised would grab headlines and inspire fear'.

The background is important here. Vast sums of money are at stake. 'Predator' lawyers have been chasing glyphosate in the hope of tobacco-style payouts.

Unluckily for them, however, study after study keeps finding that glyphosate does not cause cancer. The US Environmental Protection Agency, the European Food Safety Authority, the UN's Food and Agriculture Organisation working with the World Health Organisation, the European Chemicals Agency, Health Canada and the German Federal Institute for Risk Assessment have all tried and failed to find any cancer risk in glyphosate.

The only exception is the International Agency for Research on Cancer (IARC), a rogue United Nations agency that has been taken over by environmental activists, which claimed that neat glyphosate was capable of causing cancer in animals if ingested. By the same criteria, IARC admits, coffee, tea and wine (which are indeed ingested) and working as a hairdresser are also carcinogenic; in fact,

out of 1,000 substances and other risks tested, IARC has found only one to be non-carcinogenic. The IARC study also did the usual pseudo-science thing of citing some results but was reported by Reuters to have discounted contradictory results from the same studies.

Following that claim, another study by the Agricultural Health Survey of 45,000 people actually exposed to glyphosate again found no association between glyphosate and any cancer, including NHL. Nobody outside the predator industry takes the IARC finding seriously.

Nonetheless, the study had a beneficial effect. Last year, citing the IARC study but not its debunking, a jury in California awarded a \$289 million jackpot to the family of a school groundskeeper who died of NHL. Meanwhile, an investigation by Reuters found that the conclusion of the IARC study had been altered shortly before the report's release and that the specialist consulted, Christopher Portier, started working with law firms suing Monsanto soon afterwards. Another case is due to start shortly, this time in federal court. More than 9,300 people with various cancers have filed similar cases. Talking of payouts, the third inexactitude to fly around the world two days later was the claim by the left-leaning political thinktank the Institute for Public Policy Research (IPPR) that, 'Since 2005, the number of floods across the world has increased by 15 times', which was directly quoted by the BBC's Roger Harrabin, in the usual headline-grabbing story about how we are all doomed.

This was (to borrow a phrase from Sir Nicholas Soames) ocean-going, weapons-

grade, château-bottled nonsense. There has been no increase in floods since 2005, let alone a 15-fold one. When challenged, IPPR said it was a 'typo', and that it meant since 1950. Well, that is nonsense, too. The Intergovernmental Panel on Climate Change regularly reviews data on floods and says it can find no trend: 'In summary, there continues to be a lack of evidence and thus low confidence regarding the sign of trend in the magnitude and/or frequency of floods on a global scale.' Fortunately, the IPPR gave a source for its absurd claim. This was 'GMO Analysis of EM-DAT 2018'. Paul Homewood, a private citizen who regularly catches climate alarmists out, explained in a blog what this meant. EM-DAT is a database of disasters that is wholly worthless as a source for such a claim, as it admits, because it only includes very small disasters such as traffic accidents but only for recent years. There is no evidence here of a trend at all. GMO is a big Boston asset management firm, whose founder and owner, Jeremy Grantham, just happens — you guessed it — to fund the Institute for Public Policy Research.

In the old days, investigative journalists would be all over this: a billionaire funding a pressure group that issues a press release that quotes the billionaire making a Horlicks of science but that nonetheless gets amplified, helping the pressure group attract more funds. But journalists' budgets have been cut, and it's easier to rewrite press releases.

Some people are willing to forgive exaggeration and error if it is in a good cause, like increasing concern about plastics or climate change. This is a risky

strategy because it encourages a Trump-like refusal to believe evidence even when that evidence is good. If we use up our energies panicking about phantom hobgoblins, we might have none left for the real scares: the over-fishing of the oceans, the effect of invasive alien species on island wildlife and the fact that polychlorinated biphenyls (PCBs), once used in the electrical industry but long since banned, still exist in high enough concentrations in British waters to prevent killer whales from breeding.