

Debunking myths and fake news: how can geoscientists fight misinformation and false claims?

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European Geosciences Union
2018 General Assembly
9 April 2018



Is it worth trying to debunk myths and fake news?

- If experts do not do their fair share of debunking myths and fake news, there is a danger that policymakers, businesspeople and the public will make important decisions that are misinformed (such as looking directly at the sun during an eclipse!).
- By debunking myths and fake news, experts perform a public service that is crucial to democracy.
- If experts do not uphold the public interest by debunking myths and fake news about their subjects, then who will?
- It is worth investing time in debunking myths and fake news, but only if your efforts are focused where they can have an impact.

Understand your target audiences

- People's views on issues such as climate change are rarely just based on their understanding of the facts. They are often also based on their beliefs and values.
- Many people filter and interpret new information to align them with views that they hold strongly and which are based on their beliefs and values eg about the size of government, the regulation of business, etc.
- It is very difficult, if not impossible, to convince people who campaign or promote their views on climate change that they are wrong. An argument about facts is unlikely to convince a hardcore 'sceptic'.
- However, the vast majority of people, including many policymakers and businesspeople, are not hardcore 'sceptics', and may be convinced by reason and argument, but usually only if their beliefs and values are not violated.

Recognise the sources of myths and fake news

- **Misinformation may be created by mistake eg based on personal experience - someone may think that snowy weather is an indication that seasonal or annual temperatures are not increasing because they are unaware of climate trends.**
- **However, some misinformation results from myths and fake news that are disseminated by campaigners to promote their cause. Their motivations may be difficult to detect.**
- **Sometimes campaigners are unaware that their information is inaccurate, and any deception is unintentional.**
- **Sometimes campaigners are aware that their information is inaccurate, and any deception is deliberate ie they are using propaganda.**

Combat propaganda

- **There is value in experts correcting myths and fake news that have been created by mistake. In this case, the aim is to engage with sources and audiences so that they can recognise and acknowledge the mistakes.**
- **There is even more value in experts debunking myths and fake news that is disseminated as propaganda by campaigners. In this case, the aim is to engage with audiences to prevent them from being misled.**
- **In many cases, campaigners are content if audiences become confused and are unable to distinguish propaganda from accurate information. Technical arguments between campaigners and experts create confusion rather than clarity for audiences.**

An asymmetric battle

- Climate change ‘sceptics’ often try to frame climate change as an issue with many points of view.
- Technical arguments between climate scientists and a climate change ‘sceptics’ may result in the audience believing there are two plausible points of view.
- Audiences usually do not have the means to verify themselves technical information about climate change and so have to make up their minds based on who they think is a more credible source.
- Expertise is not the only factor in determining credibility. It also depends on who seems trustworthy and reasonable.

Expertise, trust and credibility

- **People do not assess the quality of information on face value, but often take into account other factors eg the credibility of the source of the information ('the messenger').**
- **Trust in 'the messenger' depends not just on expertise, but also on his/her perceived integrity, which can be affected by preconceptions about an individual and his/her affiliations.**
- **Climate change 'sceptics' seek to become credible in the minds of their target audiences. They don't necessarily need their arguments to be proved right, but only to be regarded as reasonable alternatives.**

Debunking process

1. Be prompt – fake news and myths spread fast.
2. Be calm, clear and concise ie reasonable.
3. Identify the most important part of the myth or fake news.
4. Summarise it, being careful not to misrepresent.
5. Explain why it is wrong.
6. Present the truth.
7. If appropriate, highlight the lack of credibility of the source of the myth or fake news, particularly if there is a track record of inaccurate and misleading claims, or a relevant affiliation – but don't speculate about motivations.
8. Contrast with the credibility of the expert sources of accurate information.
9. Use humour (eg mock the source for any deliberate attempt to mislead) – a serious response may convey credibility on the source of a myth or fake news.

Matt Ridley: My life as a climate change lukewarmer

All the fury must mean that my arguments are hitting home, or efforts would be made to demolish them rather me

Matt Ridley
January 19 2015, 12:01am,
The Times



Times columnist Matt Ridley
DAVID SIEBER/THE TIMES

The 'lukewarmers'

“I am a climate lukewarmer. That means I think recent global warming is real, mostly man-made and will continue but I no longer think it is likely to be dangerous and I think its slow and erratic progress so far is what we should expect in the future.”

What are lukewarmers?

- **Accept that warming is happening and that human activities are at least partly contributing, but claim the impacts will be small and manageable, while mitigation is too difficult.**
- **Cherry-pick from both scientific and economic evidence.**
- **Often exploit small areas of uncertainty in the evidence or focus on new ‘outlier’ analysis.**
- **Implicitly differentiate their position from outright climate change denial to appear more credible, and claim to be ‘mainstream’.**
- **Contrast their arguments with so-called ‘climate alarmists’, attempting to marginalise those, including researchers, who call for urgent action.**

Prominent lukewarmers

- **Matt Ridley (UK lawmaker, columnist for ‘The Times’ and ‘Wall Street Journal, Global Warming Policy Foundation)**
- **Nigel Lawson (UK lawmaker, political and media networks, Global Warming Policy Foundation)**
- **Bjorn Lomborg (prolific media profile, “academic”, influences aid agencies and Bill Gates)**
- **Richard Tol (IPCC author, cited by economists, Global Warming Policy Foundation)**
- **The Manhattan Institute (Oren Cass articles, ExxonMobil)**
- **The Heritage Foundation (Nick Loris and Stephen Moore, White House)**
- **The Heartland Institute (Nongovernmental International Panel on Climate Change, ‘red team-blue team’)**

Why are 'lukewarmers' dangerous?

- Influential with some policymakers, commentators and media.
- Well-organised and well-funded.
- International networks (particularly in other liberal market economies).
- Use contributions to academic literature and affiliations with researchers to portray themselves as credible.
- Broad arguments beyond narrow science or economics expertise.
- Skillful communicators (backgrounds in media, law, politics).
- Seductive narrative (climate change is not an urgent problem, etc).

What is the 'lukewarmer' narrative?

- The Earth is warming, and human activities are contributing to it, but the warming and physical impacts from unmanaged climate change will be relatively small;
- Economic modelling shows that the economic impacts of unmanaged climate change may be positive for small amounts of warming, or slightly negative, but relatively small compared with the expected future growth of the global economy;
- Current alternatives to fossil fuels, particularly renewables, are prohibitively expensive and too unreliable to provide a secure and affordable source of energy;
- More research and development into alternative sources of energy are required and may eventually yield affordable and reliable alternatives to fossil fuels; and
- Mitigation, particularly national and international caps on greenhouse gas emissions, are ineffective and much less cost-effective than adaptation.

Win the argument

- **Just because you are right does not mean that you will win an argument.**
- **Don't aim to convince your opponents that they are wrong – aim to convince your audience that your opponents are wrong.**
- **Audiences usually do not know for themselves whether technical information cited in an argument about climate change is accurate – instead they will judge who is more credible.**
- **Climate change 'sceptics' seek to portray themselves as reasonable and scientists as 'alarmists'. When arguing with scientists, they will seek to focus on an area that is outside their direct expertise.**
- **You need to have broad knowledge of, but not research expertise in, climate change science, economics and policies – you cannot win an argument by confining yourself to subjects on which you have published or researched.**
- **Do not get bogged down in details – the aim is to inform not educate.**

Where to have the argument

- **In the scientific literature:** submit to journals critiques of papers that climate change ‘sceptics’ manage to sneak through peer review.
- **In policymaking:** meet with and write directly to Parliamentarians, Ministers and other policymakers if you know that they are being targeted by climate change ‘sceptics’.
- **In the media:** write to newspapers and, if necessary, complain to media regulators if audiences are exposed to unchallenged falsehoods by climate change ‘sceptics’.
- **On social media:** directly challenge on Twitter, blogs etc any false claims by climate change ‘sceptics’ – but only challenge important sources and important falsehoods.
- **In public:** if you have well-prepared and well-practised, go head-to-head against climate change ‘sceptics’, not just to present counter-arguments, but mainly to discredit them in the eyes of the audience.

Have an overall strategy

- Remember that debunking fake news and myths is a defensive tactic – the narrative is framed by the climate change ‘sceptics’ eg are scientists really certain that climate change is a problem, etc.
- A strategy for informing policymakers and the public must also create a compelling narrative eg how to manage the risks of climate change.
- A successful strategy helps policymakers and the public to recognise the scale and urgency of the risks, but also to recognise that the risks can be managed through appropriate action (ie the problem and the solution).
- A good place to start a conversation about climate change is by helping policymakers and the public to ‘join the dots’ for themselves – help them connect the evidence of a changing climate that they can see around themselves.
- People are usually more cautious about risks to their children and grandchildren than risks to themselves.