

FAKE news, FAKE science and real action

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Over the last year, the media has been transfixed by discussions about 'fake news' and the impact of this on our understanding of the world has been huge.



However, a big part of that conversation has been fake. The fake news allegation is often used against genuine news, truthful news, which one party feels is somehow biased in its reporting. It is crucial that we don't forget that – but news information has also gone through a radical overhaul since the era of social media. The consequence of this has been both an erosion of journalistic integrity, and also a growing incapacity for readers to distinguish fact from fiction.

Additionally, today we have many more news creators than we have journalists producing news. We have platforms that function as news distribution networks or aggregators, but which do not have any editorial oversight or filter. We are the filters and we are the editors, and we undertake such work each time we like or share something. We also have outlets that are in the business of generating false understandings, and we have companies who deliberately blur the distinction between truth and falsehood in an attempt to satirise our world.

These are the realities of today's 'information ecosystem' and they present big challenges for all of us, not least of whom are scientists. But before we even get into the problem of how to deal with it, we need to be really honest about something: facts are often temporary.

Science develops amidst uncertainty and being a responsible scientist means first acknowledging this, and recognising the need to communicate it, while always championing that our best possible answer to any question is the one that is based on the best available evidence.

We have to accept that we make decisions under a cloud of uncertainty, but that this does not mean that all opinions are equal, or all claims about facts are sincere. Often, things are labelled as 'alternative facts' simply because some individuals willfully disregard evidence, or the views of those institutions or individuals who are best placed to assert what is our best interpretation of the world.

We also need to stop pointing to failed predictions as evidence of no credibility. All of us make our best guess about what might happen given any situation, but it doesn't come with certainty. Life is dynamic. Circumstances change, often without our complete understanding as to what has taken place to have jeopardised the credibility of our predictions. In many cases, our comprehension of what changed is beyond our reach and we must learn to accept that, but still attach weight to the process of deriving the best prediction.

This is why consensus statements on matters such as climate change are crucial. It is only in the collective attribution of judgement that we can distinguish between competing uncertainties. That is also why science is, unavoidably, a political affair. We have to stand up and function as engaged citizens in the pursuit of our work.

So, when you think about your role as a young scientist and as a young citizen, this has to be taken into account. We all need to think about which issues we are going to stand for, in the pursuit of understanding and in the championing of evidence-based interventions. These decisions will take place with or without us.

This is why science communication must be a central part of science. It cannot just be done when science is finished, but has to be present from the outset. Science shouldn't begin until it is communicated.

There are risks associated with this. For example, a scientist engaging in controversial, experimental work may try to downplay the more radical, long-term implications of their work, so that the funding for their early exploratory research is not jeopardised.

Now, it may feel like, reading this, you have entered into the middle of a debate and that is because you have. The debate that precedes this position statement centres on a prior discussion about what our obligations are as scientists to communicate our work and my conviction is that simply communicating is not enough. We have to be prepared to advocate as well as communicate. They are part of the same process towards greater understanding.

So, how do we deal with the problem of fake news?

There is no easy solution but here are my top three routes towards being a more critically engaged consumer of information.

1 Support professional journalism

We are at a dangerous point in history, where newspapers are diminishing as media outlets. Fewer people are paying for print and the news industry is losing its contact with audiences, who are now spending far more time in social media than in newspapers. If we lose the investigative environment of journalism, we lose a crucial part of our democratic system and we need to solve this. So, identify those media outlets that you think are doing great work and support them, either in paying for them, or by sharing what they publish. Don't just read it, like it, share it, syndicate it for them within social media. But be aware also how your activity leads to a growing 'filter bubble' in what you see in your social media feeds. Remember that the algorithm that underpins your social media network draws on data from your behaviour within it. This is important to ensure you don't just see the things that support your world view point. You may be a Jeremy Corbyn fan, but the more you like his stuff on Facebook, the less you see of other stuff and you may develop a biased impression of what the public believe.

2 Become a critical 'prosumer'!

When Tim Berners-Lee developed the idea for the World Wide Web, he wrote: "this is for everyone". It is easy to forget that these times are remarkable. The digital world is remarkable. You can publish ideas, videos, essays, in ways that are now taken for granted, but which are extraordinary. This did not used to be possible. Television, print and radio, were all bound up in complicated licensing regulations and the technology was not there for us to share radical ideas. We can now and we can't forget that this is a huge opportunity to change the conversation. Being a prosumer – someone who becomes an author within this information world – rather than just a consumer is a big opportunity to correct the errors. It's also a great way for you to build confidence as a public figure. Standing up for an issue is the first step towards changing this data-driven world. Check out all the great stuff around March for Science this year as evidence of this.

3 Cross reference, then share

When you are writing your school work, always seek multiple sources for a claim, to ensure that it is accurate. Relying on just one source is a sure way to getting things wrong or failing to provide a balanced perspective. It takes time, but there is no way around it, if you want to ensure you are part of the solution, not part of the problem. If in doubt, don't share it or like it, just move on. Unfortunately, there is not yet any 'hmmm' button to click on Facebook, but we might also demand this kind of function. There should be a way to respond to a post in a way that conveys our uncertainty about its accuracy. Social media companies know this is a problem, so I think we can expect to see more help here in the future.

We live in tremendous times, where information is at our fingertips on just about anything, and where we can generate our own insights and share them with others. The problem is that all of this activity is now subject to financial interests and our data is the main currency. Each time we like something, we feed the machine and we have to think really carefully about when that's a good thing to do.