

Should scientists engage with pseudo-science or anti-science?

February 25 2016, by Rod Lamberts And Will J Grant, Australian National University



Credit: AI-generated image ([disclaimer](#))

The ABC's flagship science journalism TV programme, [Catalyst](#), has riled the scientific community once again. And, in a similar vein to Catalyst's controversial 2013 report on the link between [statins, cholesterol and heart disease](#), it has now turned its quasi-scientific

attention to a supposed new peril.

Its "[Wi-Fried?](#)" segment last week raised concerns about the ever-increasing "electronic air pollution" that surrounds us in our daily lives, exploiting a number of age-old, fear-inspiring tropes.

There are already plenty of [robust critiques](#) of the arguments and evidence, so exploring where they got the science wrong is not our goal.

Instead, we're interested in using the segment as inspiration to revisit an ongoing question about [scientists'](#) engagement with the public: how should the [scientific community](#) respond to issues like this?

Should scientists dive in and engage head-on, appearing face-to-face with those they believe do science a disservice? Should they shun such engagement and redress bad science after the fact in other forums? Or should they disengage entirely and let the story run its course?

There are many of examples of what scientists *could* do, but to keep it simple we focus here just on the responses to "Wi-Fried" by two eminent Professors, Simon Chapman and Bernard Stewart, both of whom declined to be a part of the ABC segment, and use this case to consider what scientists *should* do.

Just say no

In an interview about their decision to not participate, Chapman and Stewart [independently expressed](#) concerns about the evidence, tone and balance in the "Wi-Fried" segment. According to Chapman it "contained many 'simply wrong' claims that would make viewers unnecessarily afraid".

Stewart labelled the episode "scientifically bankrupt" and "without

scientific merit". He added:

I think the tone of the reporting was wrong, I think that the reporter did not fairly draw on both sides, and I use the word "sides" here reluctantly.

Indeed, in situations like this, many suggest that by appearing in the media alongside people who represent fringe thinkers and bad science, respected experts lend them unwarranted credibility and legitimacy.

Continuing with this logic, association with such a topic would mean implicitly endorsing poor science and bad reasoning, and contribute to an un-evidenced escalation of public fears.

But is it really that straightforward?

The concerns Chapman and Stewart expressed about the show could equally be used to argue that experts in their position *should* have agreed to be interviewed, if only to present a scientifically sound position to counter questionable claims.

In this line, you could easily argue it's better for experts to appear whenever and wherever spurious claims are raised, the better to immediately refute and dismiss them.

On the other hand, if scientific experts refuse to engage with "scientifically bankrupt" arguments, this could send a more potent message: that the fringe claims are irrelevant, not even worth wasting the time to refute. So this would mean they *shouldn't* engage with this kind of popular science story.

On the third hand, their refusal to engage could be re-framed to characterise the experts as remote, arrogant or even afraid, casting doubt on the veracity of the scientific position. So to avoid this impression,

experts *should* engage.

But wait, there's more.

Participation in these kinds of popular science shows could also tarnish the reputation of the expert. But not appearing means missing the opportunity to thwart the potential harm caused by fringe, false or non-scientific claims.

And what about an expert's obligation to defend their science, to set the record straight, and to help ensure people are not misled by poor evidence and shonky reasoning? Is this best done by engaging directly with dubious media offerings like "Wi-Fried", or should relevant experts find other venues?

Should scientists engage anti-science?

Well, this depends on what they think they might achieve. And if one thing stands out in all the to-ing and fro-ing over what scientists should do in such cases, it's this: the majority of proponents both for *and* against getting involved seem convinced that popular representations of science will change people's behaviour.

But there is rarely any hard evidence presented in the myriad "scientists should" arguments out there. Sticking with the [Catalyst](#) example, there is really only [one](#), far-from-convincing, study from 2013 suggesting the show has such influence.

If you really want to make a robust, evidence-based decision about what [experts](#) *should* do in these situations, don't start with the science being discussed. In the case of Catalyst, you'd start with research on the show's relationship with its audience(s).

- What kinds of people watch Catalyst?
- Why do they watch it?
- To what extent are their attitudes influenced by the show?
- If their attitudes are actually influenced, how long does this influence last?
- If this influence does last, does it lead people to change their behaviours accordingly?

Of course, we applaud the motives of people who are driven to set the scientific record straight, and especially by those who are genuinely concerned about public welfare.

But to simply assume, without solid evidence, that programmes like Catalyst push people into harmful behaviour changes is misguided at best. At worst, it's actually bad [science](#).

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