

Throwing science at anti-vaxxers just makes them more hardline

February 19 2015, by Tom Stafford



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Since the uptick in outbreaks of measles in the US, those arguing for the right not to vaccinate their children have come under increasing scrutiny. There is no journal of "anti-vax psychology" reporting research on those

who advocate what seems like a controversial, "anti-science" and dangerous position, but if there was we can take a good guess at what the research reported therein would say.

Look at other groups who hold beliefs at odds with conventional scientific thought. Climate sceptics for example. You might think that climate sceptics would be likely to be more ignorant of science than those who accept the consensus that humans are causing a global increase in temperatures. But you'd be wrong. The individuals with the highest degree of scientific literacy are not those most concerned about [climate change](#), they are the group which is most divided over the issue. The most scientifically literate are also [some of the strongest climate sceptics](#).

A driver of this is a process psychologists have called "biased assimilation" – we all regard new information in the light of what we already believe. In line with this, [one study showed](#) that climate sceptics rated newspaper editorials supporting the reality of climate change as less persuasive and less reliable than non-sceptics. [Some studies](#) have even shown that people can react to information which is meant to persuade them out of their beliefs by becoming more hardline – the exact opposite of the persuasive intent.

For topics such as climate change or vaccine safety, this can mean that a little scientific education gives you more ways of disagreeing with new information that don't fit your existing beliefs. So we shouldn't expect anti-vaxxers to be easily converted by throwing scientific facts about vaccination at them. They are likely to have their own interpretation of the facts.

High trust, low expertise

Some of my own research [has looked at who the public trusted](#) to inform

them about the risks from pollution. Our finding was that how expert a particular group of people was perceived to be – government, scientists or journalists, say – was a poor predictor of how much they were trusted on the issue. Instead, what was critical was how much they were perceived to have the public's interests at heart. Groups of people who were perceived to want to act in line with our respondents' best interests – such as friends and family – were highly trusted, even if their expertise on the issue of pollution was judged as poor.

By implication, we might expect anti-vaxxers to have friends who are also anti-vaxxers (and so reinforce their mistaken beliefs) and to correspondingly have a low belief that pro-vaccine messengers such as scientists, government agencies and journalists have their best interests at heart. The corollary is that no amount of information from these sources – and no matter how persuasive to you and me – will convert anti-vaxxers who have different beliefs about how trustworthy the medical establishment is.

Interestingly, [research](#) done by Brendan Nyhan [has shown](#) many anti-vaxxers are willing to drop mistaken beliefs about vaccines, but as they do so they also harden in their intentions not to get their kids vaccinated. This shows that the scientific beliefs of people who oppose vaccinations are only part of the issue – facts alone, even if believed, aren't enough to change people's views.

Reinforced memories

We know from research on persuasion that mistaken beliefs [aren't easily debunked](#). Not only is the biased assimilation effect at work here but also the fragility of memory – attempts at debunking myths can serve to reinforce the memory of the myth while the debunking gets forgotten.

The vaccination issue provides a sobering example of this. A single

[discredited study from 1998](#) claimed a link between autism and the MMR jab, fuelling the recent distrust of vaccines. No matter how many times we repeat that "the MMR vaccine doesn't cause autism", the link between the two is reinforced in people's perceptions. To avoid reinforcing a myth, you need [to provide a plausible alternative](#) – the obvious one here is to replace the negative message "MMR vaccine doesn't cause autism", with a positive one. Perhaps "the MMR vaccine protects your child from dangerous diseases".

Rational selfishness

There are other psychological factors at play in the decisions taken by individual parents not to vaccinate their children. One is the rational selfishness of avoiding risk, or even the discomfort of a momentary jab, by gambling that the herd immunity of everyone else will be enough to protect your child.

Another is our tendency to underplay rare events in our calculation about risks – ironically the very success of vaccination programmes makes the diseases they protect us against rare, meaning that most of us don't have direct experience of the negative consequences of not vaccinating. Finally, we know that [people feel differently](#) about errors of action compared to errors of inaction, even if the consequences are the same.

Many who seek to persuade anti-vaxxers [view the issue](#) as a simple one of scientific education. Anti-vaxxers have mistaken the basic facts, the argument goes, so they need to be corrected. This is likely to be ineffective. Anti-vaxxers may be wrong, but don't call them irrational.

Rather than lacking scientific facts, they lack a trust in the establishments which produce and disseminate science. If you meet an anti-vaxxer, you might have more luck persuading them by trying to explain how you think science works and why you've put your trust in

what you've been told, rather than dismissing their beliefs as irrational.

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