

The irrationality vaccine

We don't have one yet, but these three books will help, says **Chris Mooney**

The Panic Virus: A true story of medicine, science, and fear by Seth Mnookin, Simon & Schuster, \$26.99/£18.50
Deadly Choices: How the anti-vaccine movement threatens us all by Paul Offit, Basic Books, \$27.50/£18.99
Tabloid Medicine: How the internet is being used to hijack medical science for fear and profit by Robert Goldberg, Kaplan, \$25.90/£18.50

AT FIRST it may seem strange that a media reporter penned *The Panic Virus*, an essential new book about the modern anti-vaccination movement and its scientific poverty. Seth Mnookin's first book, *Hard News* (Random House, 2004), was about journalistic scandals at *The New York Times*. So what is he doing in the test-tube-strewn space of the vaccine war?

As he tells it, Mnookin was annoyed by the clueless intellectuals he encountered at New York dinner parties, who boasted about withholding necessary vaccines from their children. To these elites, these thinkers, giving children so many shots "just felt wrong". And though the science said it was safe, they reasoned, science is always incomplete.

The Panic Virus was born of Mnookin's outrage at these flimsy arguments, and fortunately so, because someone with his background is vitally needed on this topic: one cannot grasp how we became so dangerously irrational in our outlook on vaccines without first understanding the role of the mass media – now almost entirely shorn of its science journalists and increasingly driven by sensationalism and crass financial considerations.

Both Mnookin's book and Paul Offit's new volume, *Deadly Choices*, which complements it well, trace today's social resistance to vaccines in the US to a single media event in 1982, a television special called *DPT: Vaccine Roulette*. First aired in the Washington DC media market, and later the recipient of an Emmy, the programme raised fears about the diphtheria-pertussis-tetanus vaccine, fears that turned out to be baseless. The report had drawn on parental anecdotes and claims by dubious "experts", including one who called modern medicine "the most primitive weapon this world has ever seen" and another who was sceptical of the link between HIV and AIDS.

Though it didn't have its facts right, the programme terrified parents and galvanised an anti-vaccine movement that's still with us today. That movement has been

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strengthened by subsequent, and equally baseless, scares over the measles-mumps-rubella vaccine (MMR) and the mercury-based vaccine preservative thimerosal, both of which have been widely, and incorrectly, linked to rising rates of autism.

Each scare follows a broad pattern. Anti-vaccine activists and a few sympathetic scientists raise concerns that, although implausible, draw uncritical media attention. The medical and public health communities then respond with a wave of studies that refute the concerns, but these studies take time and

draw much less attention.

As the science mounts, the activists and their sidekick scientists are increasingly rebuked by responsible sectors of society, including the courts. (Indeed, US courts have ruled against claims about the link between vaccines and autism.) But the activists continue to draw followers and, if anything, only grow more extreme in their convictions. They continue to garner media attention, and so the irrationality the media let out

of the bag is never put back in.

Television remains a highly potent force in the anti-vaccine movement. Oprah Winfrey, for instance, has hosted anti-vaccine celebrity Jenny McCarthy, who used her time on *Oprah* to promote her irresponsible and dangerous claims. But there's a new media factor with us now that wasn't around in 1982: the internet. As McCarthy fittingly put it on *Oprah*, "the University of Google is where I got my degree from".

The internet serves as the antidote to what Mnookin identifies as a recurring theme for the parents of autistic children – their painful social isolation. They can't bond with or relate to most other parents. "There are no knowing winks when a child won't stop

screaming, no 'I've been there' grin when he defecates in public," Mnookin writes.

For parents of autistic children, the web is a godsend. They can find other parents who know what it's like. They can compare notes and say, hey, your story sounds like mine. But before long, they start believing all the like-minded anecdotes about, say, the correlation between their child's vaccination and the emergence of autistic symptoms. Not only are their experiences very real to them, but people like them, who understand them, are regularly reinforcing their ideas. "Sustained encounters with a small group of like-minded people almost inevitably lead to the conclusion that everyone thinks the way you do," writes Mnookin. The anti-science cascade begins there.

Reading *The Panic Virus* alongside another new book – Robert Goldberg's *Tabloid Medicine* – further underscores the sense that medical misinformation is thriving more today than ever before. Goldberg isn't fully convincing in his implication that the new media are radically worse in this respect than the old (after all, we had *Vaccine Roulette*). Yet he's right that there's something about online self-diagnosis, about rapid-fire medical rumour, and about the spread of scientifically meaningless anecdotes that adds a new impetus to misinformation and wrong thinking, helping falsehoods to travel farther, and faster, than ever before.

Sadly, in such a world, some will never encounter the very best antidote to vaccine-related misinformation: the writings of

vaccinologist Paul Offit. No one is better at reducing anti-vaccine claims to intellectual rubble. In *Deadly Choices*, Offit takes us through their weaknesses clinically, one by one. He's fond of a one-study-per-paragraph style,

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building his case incrementally, so that ultimately it turns into a mountain.

Offit already devastated vaccine deniers in his previous book, *Autism's False Prophets* (Columbia University Press, 2008), which in many ways launched the genre. Now, in its sequel, he widens his lens beyond autism to survey the whole of the anti-vaccine movement, putting it in historical and legal context – and significantly upping the ante.

Even more so than Mnookin, Offit drives home the gravity of where we now stand. This isn't a game anymore. Children are dying out there because of anti-vaccine misinformation and those who act on it. Offit states the matter starkly, referring to "the breakdown of herd immunity in the US at the beginning of the 21st century". It is a phrase that carries with it a terrifying implication: the body count is going to grow.

And the answer to that problem is far from ideal. Since we probably can't put an end to philosophical and religious vaccine exemptions, Offit says, doctors and hospitals may have to respond with increasingly severe and punitive measures against those who could infect others with deadly, vaccine-preventable diseases. That may include firing staff who won't vaccinate themselves and refusing to see children whose parents won't vaccinate them.

In the meantime, Offit hopes the press will tell the other side

Parents of autistic kids can convince each other that vaccines are to blame

of the story – about the harms caused by anti-vaccine advocates. And the real drama, he thinks, is to be found in the growing number of parents who are fighting back, defending vaccines and vulnerable children against the anti-vaccinationists.

We can expect to hear more of this valuable side of the story. But my sense is that taken as a whole, the dreadful tale told in these three books pushes us somewhere deeper still.

"Cognitive relativism", or "truthiness", as US talk-show host Stephen Colbert termed it, "has become the defining intellectual trend of our time", writes Mnookin. The most profound problem underscored by the anti-vaccine movement today is the terrifying implication that there is no longer any truth out there that we can all agree and act on – that in the end, subjectivity wins. Thanks to the modern media, the internet and the quirky architecture of our minds, writes Mnookin, we live in a world with "increasingly porous boundaries between facts and beliefs, a world in which individualised notions of reality, no matter how bizarre and irrational, are repeatedly validated".

For that, these three books are a wake-up call indeed, and not just regarding vaccine deniers and their threat to public health. Rather, they are a call to arms against the broader phenomenon of tilting against reality, or making up one's own version of it, and clinging to it fiercely despite all evidence and consequences – a condition also referred to as human nature.

Irrationality can be a very dangerous and communicable disease – and we still don't know how to adequately inoculate against it. ■

Chris Mooney is a science and political journalist and a host of the Point of Inquiry podcast. His most recent book is *Unscientific America* (Basic Books, 2009)



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