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BEHAVIOUR

Tackling harassment

Three real-life stories of online abuse — and how scientists got through it.

Researchers who study topics such as climate change and vaccines can become targets of online behaviour ranging from threatening e-mails to coordinated social-media attacks. *Nature* asked researchers who have been digitally harassed what they've learnt from the experience.

DAVID KEITH
Engage judiciously

Environmental scientist, Harvard University, Cambridge, Massachusetts

I do solar geoengineering experiments — notably, researching the chemical impacts of reflective particles that may be sprayed into the stratosphere to minimize incoming solar radiation interact with themselves and other compounds in the atmosphere. I make a distinction between harassers — people who send me more than 100 e-mails per year — and people in the mainstream environmental-science community who don't agree with my research.

I don't always engage with harassers. I mostly ignore the harassing tweets. The e-mails are harder to ignore — they seem more personal, so I do respond to quite a few, and sometimes I can change the senders' minds.

Over the past decade or so, I've been harassed by people who believe in the 'chemtrail' conspiracy theory — which proposes that long-lasting condensation trails left behind by aircraft are evidence that governments deliberately spray chemicals for nefarious purposes. Around 20–30% of the US population takes seriously the idea that these purported chemical releases might be for solar-radiation management, human-population control or chemical warfare. I estimate that about half of all tweets around solar geoengineering are in connection with chemtrails.

Routinely, I receive violent, sometime hideously anti-Semitic voicemails, e-mails and letters. A decade ago, I called campus security twice when the harasser became threatening, but nobody has ever been physically violent.

There is a huge gap between online rage and in-person rage. That said, security people at my institution routinely install office alarms, and they advised me to take common-sense steps — for example, to lock my door and pay attention to strangers. I also have conversations with conference organizers before meetings to make sure somebody knows the phone number for campus police in case there is a threat.

When someone sends a hateful thing, I'll ask if that made them feel good. I also ask why they think I'm evil and that I "murder kids". I remind them that I'm a human being, and that I have kids, too. I tell them that I think they've been fooled by some nonsense on ▶

the Internet, and that they are welcome to talk to me about climate change or geoengineering experiments designed to mitigate climate change. A couple of times, the aggressor has apologized.

The biggest challenge for democracy is learning how to lessen the number of people who believe things that are objectively wrong. I don't think that hiding from it and pretending it isn't there is a good idea. Vilifying people who hold those ideas is not a good approach either. We can't see them all as the enemy.

Instead of trying to change people's minds by telling them they are wrong because an expert says so, I try to question them in a way that shows I take their concerns seriously and reveals how their argument falls apart under scrutiny. In the case of chemtrails, I ask where the supply chains are for the poison, how the dispersal devices are engineered, how all of this has been kept secret for so long and, finally, what the motive is.

Approach debates with caution. They can be useful — but scientists are accustomed to ground rules of honesty and logic in debates, and it's tough to debate with people who are not using honesty and logic. Don't panic if you're being harassed online. The harassment ultimately is not about you, even if it seems personal. Be judiciously willing to respond.

Still, in the end you might have to make a decision. I have upfront conversations about this with postdocs and graduate students, and I encourage them to think through the pros and cons of working in this field. The upside is that it's a new, growing field. The downside is the criticism and polarization. I warn people that hard policy debates are part of this field right now, and that if students don't want to be involved, it might not be the right field for them.

JOANNA HAIGH
Play it straight

Atmospheric physicist, Imperial College London

Harassment, usually by e-mail or attacks through blogposts, comes in waves. I probably get about 100 messages a year. It usually follows statements I've made on the radio or in the press about climate change, or after something has appeared on a climate-change denier website. It can be a range of things — from "You've got it all wrong" and "You are making all of this up" — to extremely rude, offensive personal attacks.

Many of the comments about me have gendered overtones, referring to me as "priggish" or "that woman", or telling me to "stick with flower-arranging". The people who give their names — and many don't — are always men. The worst offender doesn't give a name and has sent about a dozen multi-page screeds.

I have rules of engagement. I try to engage — but only with people who haven't been offensive. I have a brief fact sheet on the truth about global warming. If they ask scientific questions, I take a stab at answering them. I never respond to anything personal. I have had one or two write back and thank me for clarifying. Responding to these messages takes a lot of time and energy. At times, it can be a whole day's worth of answering.

Because of the time it takes and the harassment, I am not on Twitter. I know people who do a great job on Twitter, and I'm pleased they take it on. I don't think we can ignore people without being labelled arrogant. I am paid by the public purse, and I have a responsibility to explain to people about the work I do.

I worry about younger scientists who can find themselves targets for attacks they are unprepared to handle. My advice is simple: play it straight. Don't rise to the bait. Explain politely what you understand and what perhaps they have misunderstood. If they are offensive, do not respond.

CHRISTINE LATTIN
Be transparent

Environmental physiologist, Louisiana State University, Baton Rouge

In 2017, while I was a postdoc at Yale University in New Haven, Connecticut, I started getting e-mails that claimed that my research was cruel and pointless. I use wild birds to study stress hormones and neurotransmitters. An organization made misleading claims about my work that led to hundreds of harassing messages. Some included death threats.

It has been stressful and challenging, but these harassers' efforts to shut down my research and to silence me have not been successful.

If offensive, do not respond, advises Joanna Haigh.

I was advised to let it blow over and not respond, but that didn't seem to make things better, and it might have made them worse. I decided to defend myself and get different information out there regarding these claims. So I started talking to journalists about my work and speaking up on social media. Taking ownership of my own story made me feel like less of a victim. It's crucial to be open and transparent about our work and advocate for its importance.

I address the false claims directly when possible. I make clear how and why I do this work and that those of us doing animal research receive a ton of oversight. I explain that a lot of people are in place to make sure the animals are taken care of, that suffering is minimized and that the research is justified. For example, every study I do is approved by a university Institutional Animal Care and Use Committee, and both universities I have worked for are accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International. All my research complies with the Ornithological Council's Guidelines for the Use of Wild Birds in Research.

The worst harassment I've had was on Facebook, so I unplug from social media and spend time with my family, friends and pets.

I also reassessed my professional web page. Although I thought I was being so open by making my papers available and creating a statement of my research, the language on my website was technical and not accessible to people at all. I got rid of the jargon and worked with a communications professional to explain clearly the reasons for my research.

I also have a 'frequently asked questions' section to address specific, often-repeated claims, such as 'animal research is unnecessary'. In my response, I point out that although non-animal methods such as cell culture or computer models can be excellent, they have limitations. I also share how I have pioneered less-invasive ways of studying stress as well as new imaging techniques for studying the brain and body. That is the most visited portion of my website. Now, if people Google me, they see two sides of the story.

Do not be afraid to ask for or accept help. I study stress. Exercise helps you to cope with stress. Tell people about what is happening to you and get support from family, friends, colleagues and current and former principal investigators. I have received a lot of messages of support, which has really helped.

There are also specific organizations — Speaking of Research, for example — that can offer support. That group helped me to put together rebuttals to the campaign organization's claims. And its director reminded me not to take the harassment personally, because it isn't about me. ■

INTERVIEWS BY VIRGINIA GEWIN

Interviews have been edited for length and clarity.

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