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What I learnt pulling a straw out of a turtle's nose

When my video went viral, I found that communicating to non-scientists is uncomfortable — and effective, says Christine Figgner.

Three years ago, I uploaded a video of a sea turtle in distress. While collecting data for my PhD off the coast of Costa Rica, my team decided to remove what looked to be a barnacle encrusted in the nostril of the turtle, which we had captured for a research study. The object turned out to be a 10-centimetre section of a disposable plastic drinking straw. We filmed the process. That upsetting video (see go.nature.com/2qfci6f) has now had more than 33 million views, and became an emblem of the anti-straw movement.

It also thrust me into a world of high-profile advocacy I never expected to enter. I became involved in a documentary project, and community activists who were launching plastic-free campaigns asked for my support; I've gone to schools, conferences and screenings to talk about a subject that is not my main research focus. Last month, to my surprise, *Time* named me a 2018 Next Generation Leader, alongside celebrities such as Ariana Grande and Hasan Minhaj. All this has taught me that communicating beyond academia is worth trying, but it demands constant vigilance and caution.

I always have to remind non-scientists that my video is, of course, not the first documentation of how plastic harms marine wildlife. A legion of scientific articles does exactly that. But, for many, it takes videos such as mine to make these articles less abstract. I'd spent years making videos that I hoped would encourage conservation by showing the beauty of nature. They had little effect compared with my video of a bleeding turtle and a spontaneous anti-straw tirade.

Many scientists shy away from the press — or from uploading videos that show emotion, especially anger and frustration. We fear the simplification and inaccuracies likely to be introduced into accounts of our research, which could cause us to lose credibility with peers and funders. Yet, these routes might be the most effective way of getting information to policymakers and citizens, and so promoting conservation.

This year, companies including Alaska Airlines, Disney and Starbucks announced programmes to phase out plastic straws. Seattle, Washington, and San Francisco, California, among other cities, have moved to ban or limit them. Of course, straws are just a tiny fraction of the plastics in the ocean. (Roughly, they make up less than 0.03% of the more than 8 million tonnes of plastic waste, largely consumer trash and fishing nets, that makes its way to the ocean every year, mainly from middle-income countries.)

I take care to explain that the straw is emblematic of unnecessary plastic items and how human activity harms oceans. The message is getting through. Last week, the European Union moved to prohibit several single-use plastics, including plates and cutlery.

Activists need scientists' input. When you're trying to preserve species effectively and have limited funds, you need to know which

life stages have the highest chance of survival and whether there is enough suitable habitat left for a species to even sustain larger numbers. Sometimes people are eager to undertake intense hands-on work (such as rescuing turtle eggs by digging them up and reburying them) even when less-dramatic efforts (such as establishing protected beach areas) would be sufficient and longer lasting.

Delivering compelling messages is difficult. I am used to obsessing over my data, not over how I look on camera. My research is dirty and smelly, full of long hours and unkempt hair. Conservation campaigns focus more on appearances, marketing and selling.

Thanks to my video, I have acquired a thicker skin and an eclectic set of skills ranging from copyright law, social-media marketing and unconventional ways of fundraising (I started a GoFundMe page for research). I learnt to ignore most rude and ignorant remarks: for instance, claims that I shoved the straw into the turtle's nose for self-promotion. If I respond, I draft an unemotional e-mail debunking accusations point by point with established facts.

What rankles more is when people try to take advantage of me. As in academia, philanthropy and advocacy are full of big egos that sometimes care more about advancing themselves than a cause. They are also less likely to buy into an ideal of citing and crediting others. I have learnt to be careful about how others use my work.

It might seem to other early-career scientists that I won the lottery by publishing a gruesome video rather than hundreds of scientific articles, but I am not even sure whether my modicum of celebrity makes me more or less employable.

My advocacy has taken time away from my

research. I still need to finish my dissertation on the migration patterns of olive ridley sea turtles (*Lepidochelys olivacea*). Yet I am scared that if I turn down speaking engagements or other chances to spread the message about plastics pollution, I'm letting down the creatures I'd hoped to help by studying them.

Although it might never feel entirely comfortable, I intend to keep straddling both academia and advocacy. After the straw-extraction video went viral, my colleague and I decided that we needed a conventionally citable publication, and so we wrote a piece that appeared in *Marine Turtle Newsletter* (N. J. Robinson and C. Figgner *Mar. Turtle Newsl.* 147, 5–6; 2015). That article exemplifies why doing outreach beyond academia is so important. Maybe a few hundred scientists read the peer-reviewed article, whereas millions of people saw the video. Which had the bigger impact? ■

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