

# Fact-free science communication

Jon Copley retreats from tinsel town

Communicating your research to the wider public is not, as the cliché goes, rocket science. You can learn its basic principles in half a day, although they can then be refined over a lifetime of practice. Those basic principles are all there in this book – albeit spread over 207 pages.

It's an easy and entertaining read, however. Olson's thesis is that, when conveying the bigger picture to non-specialist audiences, scientists need to let go of their usual pedantry. He doodles in the margins of that thesis with anecdotes from his own experience, first as a marine biologist and then as a film-maker – although the latter seems to include copious tinsel-town name-dropping.

## Mindswaps

Pedants aren't usually the most popular members of social circles. But in our day-to-day work, scientists need to be pedants, because accuracy and detail matter. So we have to swap between two mindsets: one for when we are communicating with our colleagues, and another for communicating with non-specialists. If there is a problem, it is because scientists have not been routinely trained in the latter. But that situation is gradually changing, and with that change the problem should diminish. When graduate students receive the basic tools to engage wider audiences, I'm delighted to see them excel at it.

Where the book excelled for me, however, was in the refutation of what armchair pundits of science communication call the 'deficit model' – the idea that public mistrust of a scientific idea can be simply cured by giving people more information about it. But most people moved on from that a long time ago, apart from perhaps Richard Dawkins. Don't get me wrong here: Dawkins is one of my science-writer and biologist heroes, but he does seem to have an unshakeable faith that creationists will eventually yield to an increasing intensity of beautifully-presented rational argument.

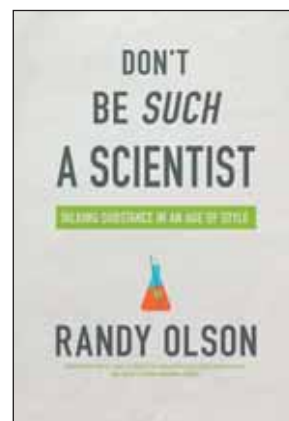
## In praise of facts

I wriggled with discomfort, however, over Olson's exhortations that we should let go of our attachment to facts. This is what is behind the imperative of the book's title. It's true that facts alone won't win your audience over, if you don't have any narrative structure or hook, for example. But when you do have those, you need to put the facts in, albeit very carefully.

Let's turn it around. From a screen-writing perspective, at what point does not bothering about factual accuracy destroy the suspension of disbelief among an audience? I've recently been advising a TV company producing a new drama series that features deep-sea science. They approached my institute for help because they were keen to 'get the science right'. Why? Because compelling drama alone isn't enough, if events in the plot are scaffolded at by anyone who has ever scuba dived, for example.

## Back to basics

The first rule of communication is 'know your audience', and an audience will contain some degree of pedantry. As Tim Radford, former Science Editor of *The Guardian*, sagely advised: never overestimate your audience's knowledge, or underestimate their intelligence. So you don't have to dumb down, and you don't have to sex up. You simply have to be very selective in deciding what people need to know, so that you can achieve your goal: getting across what you are doing and why it matters.



Randy Olson (2009),  
*Don't be such a scientist: talking substance in an age of style*  
Island Press, 207pp ISBN: 9781597265638

To engage, you also need to link to what your audience cares about, and use some good story-telling – and we can pick up some tips from Hollywood in that regard.

There, that summed up most of the basics in the last 114 words, complete with a name-drop. If you'd like another 207 pages expanding on that, read this book and enjoy it. There are gems here, among the movie-world glitter.



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# I whinge, therefore I am

We must understand emotion, says  
**Mark Stevenson**

I am irrational. And, I'm afraid, so are you. All of us are, including, those supposed beacons of rationality, scientists.

I've seen enough scientists crying into their beer/white wine because of a boy/girl to know that, shock! scientists fall in love. They also get drunk, sometimes sneak a peak at their horoscopes and buy records by The Pet Shop Boys – all, let's face it, irrational acts.

George Church, professor of genetics at Harvard Medical School recently told me, 'You can move mountains with emotion, but with rational thought you just get people to change the channel.' The problem with emotions is that not only do we have them, we get had by them – and we let ourselves.

My response to this fact, when trying to enthuse people about the opportunities of science and technology, is to run with it, but I try to run in the opposite direction to a good deal of the popular press and Hollywood (two institutions that know that emotion outsells hard truth by a knockout).

## Emotion sells

There is a popular perception that bad news sells. My own experience tells me this is half true. Actually, emotional news sells. In researching my book, *An Optimist's Tour of the Future*, I discovered things that made me feel impossibly happy, and when I shared these with my friends they too were infected with a sense of joy. 'Why isn't this front page news?!' some asked. For every apocalyptic prediction of our future, there is a balancing optimistic and uplifting one. For every *Terminator* (Hollywood) there's a Cynthia Breazeal (MIT) making teddy bear robots that can comfort sick children and act as early learning aids.

My worry is that the future we're being sold (and are beginning to accept) is that of a damage limitation exercise, instead of a renaissance. This doesn't help, for instance, in the project to combat global warming. I fear our psyches and institutions becoming riddled with cynicism (and I find it more prevalent in the UK than many other countries). We do not collectively hope for a better future. As the old Chinese proverb reminds us, 'If we don't change direction soon, we'll end up where we're going.' Cynicism is seen as 'rational', 'sensible', 'pragmatic'. I'm arguing it is the exact opposite. But we're infected. Me too. I say 'enough'.

## Win naysayers round

My answer (and it's a common one) is to recast all that cynicism as valuable 'critical friendship'. Every time I'm up against a naysayer, it's easier to win them around by saying something like, 'That's such a good question,' or, 'What you've said is enormously important,' and soon they'll begin to answer their own objections, often with a sense of achievement. Why? Because they're emotional creatures and, like you and me, love to be told how smart they are. If emotions can shift people to predict the apocalypse, they can certainly shift them work for the renaissance. Which side then do we want to fight for?

The difficult bit, of course, is rooting out the nay-saying and cynicism in yourself, but the rewards are manifold. Optimism, tied to empiricism is a killer competitive advantage.

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Scientists, of course, know this. Very few who discovered anything of value wandered into their laboratories each morning and said, 'Well, there's no point in me doing this, it'll probably come to nothing, so I'll just go the pub and whinge.'

The irony is that the 'optimist empiricists' (scientists) have been losing out to the 'cynical emotionalists'. It's time to use an empirical understanding of emotion to turn the tables.

But you knew that already didn't you, you clever thing?



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