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FROM 'POST TRUTH' TO E-PERSONS, CONTEMPORARY ISSUES IN SCIENCE COMMUNICATION

Science communication: process, power and politics

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Abstract

The "post-truth" age of "alternative facts" suggests both the urgent need for effective science communication and also its failure over the past thirty years. Two sessions at the Science in Public conference explored what could be done. Responsible Research and Innovation is presented as one possible way forward with the NUCLEUS project offered as an example. The result would be to transform "science communication" so that public engagement shares not only knowledge but the power that goes with it.

Keywords

Participation and science governance; Public engagement with science and technology; Science and policy-making

"Science communication has failed."

This caused a little stir when I posted it on my blog earlier this year, enough of a stir for a number of those who responded to say we should organise a meeting to discuss what we should do about it. There was an exchange of emails and offers of possible venues but the energy seemed to fizzle out. When the call for panels came out for Science in Public it seemed the perfect (and most appropriate) opportunity to re-engage with the issue.

The result was a lunchtime fringe meeting on day two of the conference "Sci-comm: what is to be done?" The idea behind the meeting was to organise, or at least consider, possible ways in which science communication could be transformed. It was not arranged as a panel or a presentation. The hope was that debate would be guided by those who turned up so that any outcome from the meeting would be generated by a sense of collective action. The title was pinched from one of Lenin's pamphlets which argued for the need to shift from seeking gains within a system to making changes to the system.

I also expected that in the meeting I would have to placate angry sci-commers carrying pitchforks and flaming torches wanting to burn the monster that had called them failures. How had science communication failed? Why must something be done?

The original post was written in the early days of the Trump presidency. After decades of intensive sci-comm activity we now have a U.S. President that claims

climate change is a Chinese hoax, a Vice-President who does not accept the theory of evolution, and an administration that is dismantling environmental protection and pulling out of the Paris Agreement on Climate Change.

We cannot blame science communication for the election of Trump, but this clearly does not look like success. We have spent years trying to "get the message across" only to end up with an administration that has the science community clutching at its pearls and reviving the rhetoric of a "war on science".

In this "post-truth" age of "fake news" and "alternative facts", the need for good science communication has never been more urgent, but facts are not enough. Science communication is not enough. More importantly, we need to ask "what is the point of science communication?" If the public do indeed "engage" with science, what do we want them to do, what do we expect will happen?

In short, if you think that science communication is the solution then you probably don't understand the problem. Indeed, science communication may even be part of the problem especially if science and technology are seen as complicit in creating the distress and alienation that people are experiencing.

Matthew Nisbet [2017] has described a "culture of complacency" in the scientific community and "a long-standing reticence to confront the profound, dire problems we now face." More than that, he says, the very success of science and engineers has contributed to the deeper trends that brought Trump to the Presidency: in particular increased inequality and rapid technological change. Improving the communication of science will not help solve the problems that science helped to create. Communication tools and insights will remain as just "tactics", argues Nisbett, "if they are not applied and coordinated on behalf of a larger vision of social change."

The more we congratulate ourselves about the effectiveness of our science communication, the greater the danger that we may blind ourselves to society's deeper ailments. The more we allow science communication to maintain a status quo of inequality and exclusion the more it becomes part of the problem. We need to go beyond PE as PR, and outreach as a recruitment tool. We should think not only of the contextualisation of science but also of the contextualisation of science communication. Who is it for? Who benefits?

This took me from the fringe meeting on "What is to be done?" to the panel which followed immediately after, "NUCLEUS: making upstream mainstream".

After the shift from PUS to PEST, from Public Understanding of Science to the Public Engagment with Science and Technology, there was much talk about moving that engagement "upstream" towards, as it were, the source of science and innovation. The role of science communication was no longer simply to sell science and its products but rather having the public involved in the process.

The first steps in this upstream engagement might be seen in the development in the 1990s of ELSI (Ethical and Legal and Social Implications of science) and ELSA (where *Implications* became *Aspects*). The idea was to institutionalise the normative assessment of science and technology in policy processes. In this way, it was hoped,

downstream public resistance could be avoided and some degree of accountability could be introduced in the allocation of public funds. Starting in the 1990s, the golden years for ELSI (in the U.S.) and ELSA (in Europe) were 2002–12.

More recently there has been a further shift, particularly with EU funding, from ELSA to RRI (Responsible Research and Innovation). As Zwart, Landeweerd and Rooij [2014] have argued, RRI is not a new discipline or research field but rather "a basic strategy to change the way in which research and innovation is usually done." [p. 12]. There is, as yet, no agreed definition of what RRI is (or how it is done) but for the European Commission, which has poured millions of Euros into the idea, RRI is the means by which

> "...societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of society." [Horizon, 2020]

RRI Tools, MoRRI, EnRRICH, RES-AgorA, RESPONSIBILTY, GREAT and RRI-Practice are just some of the RRI projects and initiatives that have received European funding.[1]

In Sheffield my panel introduced NUCLEUS.[2] This is a four-year project working in Europe, China and South Africa, and which aims to design and implement new ways to embed RRI into the governance and culture of universities and scientific institutions. In other words, NUCLEUS aims to make upstream engagement so normal that it can be regarded as mainstream.

After an initial phase of research and capacity building the project is about to move into an implementation phase introducing new policies and programming in 30 international test sites. RRI may not be the answer we are looking for but, as I explained in the session, maybe, just maybe, it offers a glimmer of hope of doing things differently.

It certainly forces us to address fundamental questions not only about what we are trying to do with science, technology and innovation but also about the role and purpose of the public's engagement with these. For example, take that line about aligning science with the values of society. It sounds great at first glance, but whose values and whose society? Do we really want to align our science with the values of the current Trump administration? To get the RRI we want we might have to say "No, not those values, *these* values". Also RRI is a very European idea based on European values. What happens if we export RRI beyond Europe, do we also have to export those European values as well? Would not that be a form of neo-colonialism?

[1] EnRRIch, http://www.livingknowledge.org/projects/enrrich/ (last accessed 06/09/17);
GREAT, http://www.great-project.eu/ (last accessed 06/09/17);
MoRRI, http://www.technopolis-group.com/morri/ (last accessed 06/09/17);
RES-AgorA, http://res-agora.eu/about/ (last accessed 06/09/17);
RESPONSIBILITY, http://responsibility-rri.eu/ (last accessed 06/09/17);
RRI-Practice, https://www.rri-practice.eu/ (last accessed 06/09/17);
RRI Tools, https://www.rri-tools.eu/ (last accessed 06/09/17).

[2] NUCLEUS, http://www.nucleus-project.eu/ (last accessed 06/09/17).

There are no easy answers to these questions but they do invite us to reconsider the role of science (and science communication) within society. They invite us to have a vision of society — free, open, equal and inclusive — that science can help us create, a vision that comes before the science not in response to it.

As Jack Stilgoe [2007] has argued, public engagement around innovation is good at asking about how much or how fast, but is not so sophisticated in talking about what direction innovation should take. We need to find new ways for the public to set the agenda. The goal, he says, "should be a renewed politics of science".

> The politics of science are subtle. There are questions about the science we need and the science we want; questions about uncertainty, evidence and burdens of proof; questions about ownership, access and control. We need to learn how to open up and debate these questions in public. [p. 81]

RRI presents us with an opportunity to turn the tide of depoliticisation and to renew the links between policy-makers and publics [Hartley, Pearce and Taylor, 2017].

And what is the role of science communication in all this?

We need to change our approach, not just a better version, or an upgrade. What is needed is not just pumping up the volume, but a radical shift; not greater understanding of science as product but a greater involvement in science as process. There is more to the scientific process than seeing it as an approach to the world. The scientific method is only one part of the scientific "process" and we need to understand that process as something which is social and political.

Science needs to be democratised such that the public engagement with science shares not only knowledge but the power that goes with it. This is not just acknowledging that power comes as a consequence of sharing knowledge. It is saying that power should be shared as part of the process of science; that power should be shared *before* the knowledge is created (or even co-created).

This would transform the role of the science communicator. The concern now would not be the transfer of information but explicating contexts, mediating between actors, and brokering relationships. In the end, it may involve little (if any) "science" or "communication". This would indeed be a radical change (even a revolutionary one), or perhaps we should simply see it as the start of a new chapter not just for science in public but for the public in science.

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