

'I'm a Scientist'

'I'm a Scientist get me out of here!' is an online event¹ in which participants evict experts from the group until only one winner survives. It shared first prize (with Involve) for the first Sciencewise Expert Resource Centre's People's choice award.

Use it for funding too

It's only democratic, argues **Sophia Collins**

'Interesting but badly paid work on offer', said the email. As an out-of-work TV researcher, paid work sounded good and interesting was even better. I signed up for two weeks as an online moderator for a youth engagement project called 'I'm a Councillor, get me out of here!'

The event got young people talking to and voting for their councillors, and it took me by surprise. The young people were honest, earnest, sparky, warm – and frustrated. I began to see that our society scapegoats and marginalises young people, and that this wasn't the way to help them grow up happy, sane and integrated into society.

During the event I saw councillors and teenagers making connections. I saw young people blossom as we gave them a voice that was listened to. 'Why don't we do this for science?' I thought.

Several years later, we have. We've run two 'I'm a Scientist' events, and they've worked even better than I'd hoped. I firmly believe we should go further and use events like this to give young people some real input into funding decisions in science.

Learn by doing

I think there are several moral arguments for this. First, young people are adults of the future. They will be affected by the decisions made now far more than most adults, because they will live with the results for longer. Shouldn't they have some say in the world we make for them? Second, they are

today's young people. Even when they are grown up, there will still be new teenagers. If there are ways that teenagers are particularly affected by science and technology then isn't it only democratic to have some input from actual teenagers? And third, engagement just has to be two-way. If we want people to engage with science, then it can't be a one-way street. If we want their attention and their money, we need to give them a say too. This argument applies to young people as much as the rest of the population.

I think there's a pragmatic argument too: people engage much better if they are included, not lectured at. They take more of an interest in things they can affect, they feel ownership over things they've been involved with, and they learn by doing more than they learn by rote.

Road deaths or anti-cancer drugs

So are there risks of giving young people some input into funding decisions? Well, some would suggest young people might make the 'wrong' decisions. I'm not sure how we know what the 'right' decisions are though. If wrong means 'not the same as the experts', then surely all arguments for public participation fall at the same hurdle?

Another objection I've heard is that it would trivialise the funding process (and by extension,

science). People who have taken part in the event don't think this.

I've stood in a classroom observing an 'I'm a Scientist' lesson, eavesdropping on a group of young people fiercely disagreeing about which scientist to vote for. One scientist was trying to reduce road deaths, another developing anti-cancer drugs. The students earnestly argued back and forth about the numbers killed on the roads or by cancer, whether that was all cancers or just specific ones, how many a given treatment might save, how to factor in people not killed but maimed.

Most young people take the responsibility they've been given very seriously. They appreciate that they've been trusted with something, which is not the way they are normally treated by the adult world. Given the chance, young people are very capable of making informed and considered decisions. So let's give them the chance.

¹ See <http://imascientist.org.uk/>



Sophia Collins is the Producer of the 'I'm a Scientist' event
sophia@gallomanor.com



Better for girls than boys

William Gosling ponders gender difference

Science has been growing for four centuries, ever expanding its activities and the resources it commands, while the number of people in science has doubled every fifteen years. The benefits to humanity have been immeasurable. However, science and engineering numbers are falling short of the desirable in many areas. Science talent goes to waste in underdeveloped areas, but this is only half the world population now, so cannot rescue us.

The 'I'm a scientist' website is a good idea, nicely carried through. Initiatives to help young people into scientific careers are always welcome. However, science itself can tackle this problem too. Psychologists research what motivates young people to study science, and some results were presented at our own Science Festival.¹ What do they tell us?

Different motivations

There is a significant, subtle gender difference: girls go into science for different reasons from boys. There are many misconceptions. At school, boys are better at science than girls. Right? No, wrong: in UK GCSE and A-level examinations, girls consistently outperform boys in science — yes, even physics — and that seems true world-wide. Sure, girls have some bias toward life sciences and boys toward physics and engineering, but it is neither overwhelming nor globally uniform.

What does differ is motivation at point of entry. Boys are optimistic that challenges have potential

technical fixes. For them, solutions to environmental problems lie less in social change than in more efficient vehicles, less waste of energy, practicable low-carbon renewable resources. They want science so they can make things work better, the classic engineer's impulse toward 'helping more people fry more sausages'. Beyond that, ethical issues seem secondary — let's get this damned thing working, then decide the right way to use it. Boys are more 'earthed'.

In contrast, what contributes to the health, prosperity and happiness of humanity is what excites girls. Seized by social and health issues, they care about the environment, both physical and psychological, and fear bad futures without preventive action based on scientific insight. They distrust excessive rationalisation of problems, wanting feeling and intellectual processes to be evenly balanced.

Science and feeling

Part of our trouble is that in our patriarchal culture we hate to admit how much science and technology is based on feelings, not calculation. Kuhn² revealed irrationality in scientific 'progress' and was heavily attacked for it. In engineering, deep design³ matters as much as technology, yet can never be wholly rationalised. We know, but treat it as a dirty little secret. If we came clean, girls might take to hands-on engineering like ducks to water.

Of course, this is just point of entry stuff. Once in science careers, both

I have a twitchy feeling that maybe a website, great for now, could turn out, longer term, to be the wrong medium

sexes face concrete challenges and become aware of ethical dimensions to what they do. Yet it does matter when you are recruiting.

In 'I'm a scientist', participants evict experts from the group until only one winner survives. How is the choice made? All sorts of things must come in, but my guess is that the simple human worthiness of what a scientist is doing has to be in there, a moral judgement in fact.

If so, the site may have 'girlie' appeal but will do less for boys. Also, I have a twitchy feeling that maybe a website, great for now, could turn out, longer term, to be the wrong medium. Future learning may lean more and more on electronic games, used avidly by both sexes. They enable participation in the process in a democratic kind of way, maybe overcoming the sense of a scientific 'them and us'. Very challenging for 'them' that would be.

Ask the people at MIT; they are working on it.

1 H Haste, C Muldoon, A Hogan and M Brosnan (2008). *If Girls Like Ethics In Their Science And Boys Like Gadgets Can We Get Science Education Right?* British Science Association, Science Festival

2 T Kuhn (1970). *The Structure of Scientific Revolutions*, University of Chicago

3 W Gosling (2007). *Realising Dreams: strategies for deep design*, White Hart Books



William Gosling is Emeritus Professor of communications engineering at the University of Bath
wil@gosmob.eu

Public engagement in Denmark

Richard Wilson is one of many foreigners enthused by Denmark's track record in public engagement. But a closer look leaves **Maja Horst** and **Alan Irwin** less impressed.

Let's follow the Danes!

Richard Wilson has been inspired

We are at a cross roads in the Great British science and society journey. After a decade of unprecedented investment and experimentation, we must focus on which approach best suits Britain's unique science and society culture. Fewer funds will be available in future, but science-driven controversy will not abate. We need to decide how we can deliver the 'more mature relationship between science and society' which John Denham called for in 2008.

As it stands, Britain has emerged with a unique, vibrant and increasingly mature science engagement sector. We have the Beacons Programme supporting academic institutions to engage better. We have ScienceWise for national government. Most of the research councils are reaching out to the public and even the Royal Society has recruited serious engagement advocates to senior positions.

So how come it doesn't feel as though much has changed? Science has not become see-through as Demos proposed it might. Leaving to one side the resident elephant in our room – opening up private sector R&D – our biggest failure has been our inability to create a professional and credible science and society sector. And the first step is to set up the institutions which support the creation of respected science and society professionals.

The Danish experience

I have spent time this year in Copenhagen, working with the Danish Board of Technology (DBT), the celebrated Scandinavian interface between science and technology development and its parliament and public. It's a bit like the Parliamentary Office for Science & Technology with a multi-million kronor budget (although the DBT is part commercial). It boasts a 20-year history of leading-edge public engagement innovation. Its boss, Lars Klüwer, marks a striking and stylish figure in his trade-mark black suit, boots, shirt, hair and no tie.

Klüwer says that the key is to create permanent institutions which produce experts in both science governance, public engagement and practical politics: 'It's no good just knowing about policy or engagement; you must have experience in both and the ability to combine them.' He says in Denmark before the DBT they either had civil servants or academics doing the work, neither of whom had the practical skills necessary.

The other reason Klüwer recommends an institutional solution is to provide a focus for national attention with an explicit networking function. When Involve was set up four years ago we wanted to network the participation sector, but without centralised resources for the task it's hard to deliver. According to Klüwer, this networking function, underpinned by central government funds, has been central to the DBT's success.

British Board of Technology

Where does that leave us in Britain, with our plethora of government programmes but no institutional focus? We need our own British Board of Technology (BBT), or something like it, staffed by full-time professionals, with explicit government links.

The staff must have a deep understanding of science policy and public engagement, as well as the key academic discourses – social science and science policy – which underpin this work. We have incredible academics working in these fields in the UK, but too often the practitioners are completely isolated from their debates. The important academic thinking rarely shapes practice.

It is also essential that this body must not outsource all its work to others, but have the in-house capacity to do it itself. This is not just much better value; it creates a training ground for future science and society professionals and an institutional memory for best practice.

When I left university, with a science policy Masters and an enthusiasm for engagement, there was no obvious route for my enthusiasm. We must create this professional path for future generations.



Richard Wilson is Head of International at Involve
richard@involve.org.uk



A cautionary tale from Denmark

Maja Horst and Alan Irwin assess the state of public engagement

In international discussions of public engagement, one country has been especially prominent. 'Danish style' engagement exercises – especially consensus conferences – have been an inspiration world-wide. One US website currently lists 20 countries as having engaged in 'Danish-style, citizen-based deliberative' consensus conferences on science and technology issues.

Living and working in Denmark, we take pride in this rich national heritage. However, we cannot avoid the fact that public engagement Danish-style can look a lot less encouraging when viewed close up. Put more bluntly, the international acclaim for the Danish engagement with science and technology is finding voice at just the time when such activities risk being marginalised in their supposed home.

'Arbiter of taste'

A quick trip back in time will illustrate our point. In January 2002 a group of social scientists from eight European countries met in Copenhagen for the start of an EU-funded project on Science, Technology and Governance in Europe – or STAGE as it was known. One of the key speakers was the CEO of the Danish Board of Technology, Lars Klüwer. The Danish Board is respected internationally for its championing of consensus conferences. Who better to inspire the meeting?

To the great surprise of his audience, Lars Klüwer abruptly got up and announced that he had to leave

the meeting before speaking, since the government had just announced that the Board was on a hit list of bodies for closure. This list was the result of the now (in)famous New Year's speech by the prime minister, Anders Fogh Rasmussen. Rasmussen, in charge of the recently elected right-wing government, had called for a 'showdown with the arbiters of taste' and said the new government intended to close a number of expert organisations: 'Many of them have evolved into state-authorised arbiters of taste, who decide what is good and right in different areas. There are tendencies towards a tyranny of experts, which threatens to oppress the free *folkelig* [popular, belonging to the ordinary people] debate.'

No consensus conferences

The irony here of course is that a body widely seen as opening up expert judgements to democratic scrutiny now found itself portrayed as elitist and out of touch with *folkelig* discussion. Meanwhile, the shock and outrage of STAGE participants found only a thin echo within Danish discussions about the Board's future.

Although the Board of Technology survives, its funding has been cut and it is increasingly dependent on funds from private organisations. The last consensus conference held in Denmark was back in 2005 as part of an externally-funded European project. There are now no consensus conferences planned and the

Board makes it no secret that it is struggling to make ends meet. When the Danish government initiated a report on the 'public understanding of science' in 2003, the Board of Technology was not in the advisory group, nor did its activities feature prominently in the final report. Dialogue is still on the agenda, but Denmark may be in danger of forgetting its own heritage.

Beware political changes

So what lessons does the Danish experience suggest for public engagement elsewhere? Although we might imagine public engagement to be deeply-rooted, it can prove very vulnerable when shifts in the national political climate occur. Meanwhile, support from influential groups can be hard to find when times get tough.

A more positive story can also be told. Faced with government indifference, the Board has been working hard to make wider links and to generate new forms of dialogue and mediation around science and technology. Public engagement cannot depend solely on government support or approval but must build wider, more resilient networks and alliances. In this, the Board is yet again offering an example and inspiration to other countries.



Dr Maja Horst is an Associate Professor in the Department of Management, Politics and Philosophy at Copenhagen Business School
mh.lpf@cbs.dk



Professor Alan Irwin is Dean of Research at Copenhagen Business School
ai.research@cbs.dk