Fairness in knowing: How should we engage with the sciences?

Other

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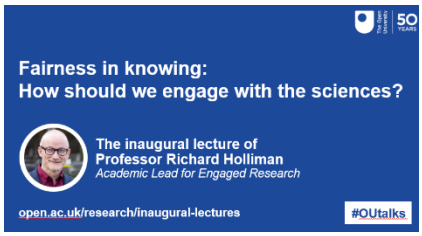
Professor Richard Holliman, 12 March 2019

Fairness in knowing: How should we engage with the sciences?



Good evening; I'd like to start by thanking everyone for coming along today.

It's amazing to see so many friendly faces.

Introduction and thanks

I'd like to thank Kevin for introducing me, the OU Communications Team and my family (in particular Jane, Ellen and Fred) who have been great in supporting me over recent months as this event has come together.

Thanks also to those who helped with the displays outside the theatre. You'll see their work represented here on this slide.

It's lovely to be able to showcase some examples of the work that OU colleagues are undertaking in science communication and engagement.

As noted by Kevin, the Audio Visual team are live livestreaming this lecture (Eisenstadt et al. 1996).

I'd therefore like to say hi to family, friends, OU students and colleagues watching this lecture across the four nations of the UK, and beyond.

G'day Australia; Guten Abends Deutschland; hi & bon jour Canada; Kia Ora New Zealand.

Happy Birthday! 50 years and counting

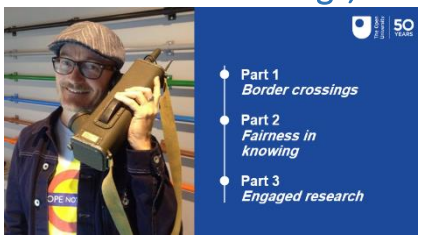
It's a real honour to be part of this year of celebration, the 50th anniversary of the Open University.

By happy coincidence this year also represents a half century for my twin brother and me.

We are not just twins, however. We are twin Professors; which has to be up there with the best 'Buy One Get One Free' Deal you can find.

Happy 50th Birthday to the OU *and* Professor Peter Holliman!

Part 1 Border Crossings; Part 2 Fairness in Knowing; Part 3 Engaged Research



So here I am, basking in the light of the 40 fame-filled minutes of the academic writer.

Tonight, I'm going to talk about the changing relationship between publicly-funded research and wider society.

In part, this is because the politics of research has changed in profound ways over the course of my career. Public funders for research, in the UK at least, now require that universities and researchers routinely plan to generate social and/or economic impact from research (Holliman et al. 2018).

Other changes have been driven by social technologies (Curtis, et al. 2017). The photo on the right is of me at Milton Keynes Museum, a great place to visit. I used a 'handheld device' like this in the 1980s on various military exercises. Try putting that on the end of selfie stick!

In 2019 citizens use technology to participate in research across distance and time in ways that would have been unimaginable 30 years ago (Curtis, et al. 2017).

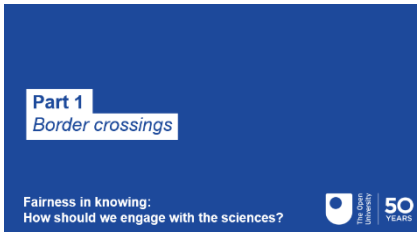
Tonight I want to explore how we are responding to this changing context. I'm going to do that in three parts.

First, I will introduce the concept of border crossings (Aikenhead, 1996).

Second, I will review some key ideas about 'fairness in knowing' (Medvecky, 2017).

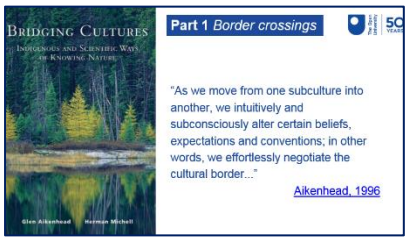
Third, I will introduce the concept of engaged research (Holliman et al. 2015; Grand et al. 2015).

Part 1: Border crossings



Part 1 explores ideas about border crossings from a socio-cultural perspective. What do I mean by the term border crossings in this context?

Part 1: Border crossings



To be clear, I'm not talking about the types of borders that we cross when we move from country to country.

I'm interested in something more subtle, cultural borders that have the power to shape our identities, world-view, ability to act, and so on. This is culture as both an enabler and a barrier.

We cross borders all the time in our everyday lives, from one subculture into another as Glen Aikenhead argues here on this slide:

> "As we move from one subculture into another, we intuitively and subconsciously alter certain beliefs, expectations and conventions; in other words, we effortlessly negotiate the cultural border..." (Aikenhead, 1996).

Aikenhead (e.g. 1996) was interested in how to support border crossings when people move into a *different* subculture, one where the beliefs, expectations and conventions are partly or wholly new to them.

My argument here is that this will be the case when citizens engage with a new academic subculture for the first time. In Part 3 of the lecture I will explore how university staff can help to support border crossings.

Crossing borders: navigating unknown territories

First, I'd like to offer an example of a subcultural border crossing.

I left school when I was 16. I had no interest in going to university, much less so in becoming an academic. Rather, I joined the Army Catering Corps. In army slang, I became a 'cabbage mechanic'.

The first six weeks or so of my new life involved Basic Training. It was somewhat of a culture shock. Fellow members of my squad and I had to learn a whole new subculture.

To a large degree, we either sank or swam. To illustrate the point, half of my squad left or been discharged by the end of two years training.

This illustration of a subcultural border crossing should, I hope, be obvious from this example. A civilian, me, learnt how to be both a soldier, and a chef.

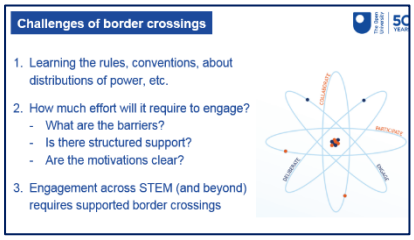
That's not the end of my sub-cultural learning journey, however. Further, more subtle border crossings were to follow.

Following my training I was posted, roughly every two years, to different units. I was an 'attached' member of each unit.

Each time I was posted, I had to re-learn the rules and conventions of that new unit; the cavalry (who drove heavy tanks), the light infantry (who issued drill commands by bugle call), and the Scots Guards (who were often on ceremonial duties).

Each unit was part of the British Army, and there were many similarities between them. At times, however, these units also worked in different and sometimes mysterious ways.

Challenges of border crossings



Why am I telling you this?

First, the army is both one culture and many subcultures. Each unit has both similarities and differences in how they live and work.

Science, also, is one culture and many subcultures. Biologists, Earth scientists, physicists, chemists, astronomers, and so on, have both shared and distinctive ways of working.

Scientists need to be aware of how different and intimidating their academic subculture can look to those engaging from beyond academic subcultures. Like all academics, when they engage, they should seek to meet people in shared territory.

Second, the act of crossing borders from one culture to another can range from being straightforward to deeply challenging. It can require considerable effort.

We should not underestimate the challenges of those making border crossings into and out of academia.

Citizens engaging with the sciences require *tailored support* each time they engage with a new scientific subculture.

Third, there are obvious differences between the army and academia. There are also similarities.

Like many academics working in science communication and engagement, I am effectively an 'attached' member of another academic unit.

To work together, I've needed to learn more about how Earth Scientists and ecologists think, whilst my departmental colleagues have delighted in occasional sojourns into the social sciences.

To work effectively beyond our own subculture requires a commitment to lifelong learning and engagement.

The importance of boundary creatures

Lots of academics conduct disciplinary-based research. Others explore at the borders between academic disciplines, solving problems through multi-disciplinary work.

Both approaches are fine, of course, as long as there is clear thinking to back the selection.

I'm interested in another group, those living and working at the boundaries of subcultures; those who see value in exploring the interface between academia and wider society.

Those who spend significant amounts of time engaging beyond the confines of their discipline, professional practice or civic life can take on the role of 'boundary creatures' (Adams et al. 2013). I am a boundary creature.

Boundary creatures straddle the borders of subcultures, between academic knowledge, professional practice and other forms of expertise and experience.

As Anne Adams and colleagues argue:

> "We can become explorers, and bring home to Human Computer Interaction, through boundary crossing, experiences from foreign lands […] To do this, however, we have to take on the mantle of being considered both horrific and empowering." (Adams et al. 2013: 22)

The point these authors are making is that, in acting as boundary creatures, they are, to some degree at least, challenging conventions in their professional subculture, both in how they work, but also potentially in redefining the outputs from research.

Working as a boundary creature can therefore be an unsettling experience at times, in particular when an academic, professional or institutional subculture does not value engaged practices.

Why then should we bother?

What's my motivation for this?

I've done a good deal of training and teaching over the years (e.g. Holliman and Warren, 2017; Holliman et al. 2009a; 2009b).

Those involved have been interested in different rationales for engagement. Put simply they want an answer to the question, "What's my motivation for this?"

At times, they've been looking to justify their personal commitment to engagement. More often than not, however, they've been looking for arguments they can make to their Line Manager or PhD supervisor to justify their commitment to engagement on a longer-term basis.

I wrote about this issue recently (Holliman, 2017; Duncan and Oliver, 2017; Stirling, 2008), describing three broad motivations to engage:

- You can make a normative case; e.g. to address an injustice (Holliman, 2017). A simple example of this would be a desire to engage to increase diversity in the scientific workforce.

  As an example of a normative justification for engagement, I was part of a team that conducted engaged research with young people on a project called *Invisible Witnesses*. Through this work, we explored some of the cultural barriers that discourage young women and girls from studying the sciences (e.g. Carr et al. 2009; Whitelegg et al. 2008).

- You can make a substantive case: e.g. to improve the quality of research and/or its outcomes (Holliman, 2017).

  I led a team conducting engaged research with science engagement practitioners and scientists on a project called *Isotope*. Through this action research project we co-developed a community website for sharing best practice in engagement (e.g. Holliman et al. 2009).

- You can make an instrumental case, e.g. what's in it for me or for us (Holliman, 2017)?

  I've delivered training workshops alongside a geologist, film-maker and various experienced postgraduate researchers to deliver training to those new to science communication and engagement (Holliman and Warren, 2017).

> We supported postgraduate researchers in mapping the skills gained through engagement and communication on to job applications (Ibid.).

The point I'm making here is that we can choose to engage for different reasons.

But we should do it for clearly justified reasons.

The people with whom we engage deserve nothing less than clear intentions.

Developing an engaged career profile

Whilst I'm focusing on the need to improve fairness in knowing in this lecture, a normative justification, I argue that we also need to consider both instrumental and substantive motivations.

Much of my work in recent years has been based on the principle that, if you want people to get better at something, support them to develop a track record of sustained excellence, and then recognise and reward that excellence.

This may seem blindingly obvious to many of you. It's important to note, therefore, that for the first 15 years of my academic career at the OU, there was no clear career pathway for engagement.

That changed in 2015.

Recognition and reward

I'm obviously not the first OU academic to successfully conduct engaged research over a sustained period. I am, however, the first Professor to be promoted at the OU through the Knowledge Exchange Profile.

This new profile was partly informed by the OU's Public Engagement with Research Catalyst Project, *An Open Research University* (Holliman et al. 2015).

Funded by Research Councils UK, the OU project was one of eight tasked with embedding the principles and practices of engagement within our respective university's research cultures (Duncan and Manners, 2016).

We drew on earlier work managed by the National Coordinating Centre for Public Engagement, NCCPE for short, through an initiative called the Beacons for Public Engagement.

That initiative had identified a number of drivers for change in universities (NCCPE, 2012), including the need to recognise and reward excellence (NCCPE, 2010).

As the OU's Pro Vice Chancellor for Research, Scholarship and Quality at the time, Professor Tim Blackman saw the value in exploring a new route to promotion.

Sally Dibb led a Working Group to develop and test the new profile.

As the quote on this slide shows, Tim and Sally reflected on the reasons for introducing a new promotion profile in the final report of the OU project.

Part of my role here in delivering this inaugural lecture, therefore, is to say thanks to Tim, but also to Paul Manners and Sophie Duncan for their leadership of the NCCPE. They have been tireless in raising the profile of engagement in higher education in the UK.

My role is also to validate knowledge exchange as an academic career profile, and to offer some insight into how I think we can work together to support further excellence in engaged research (Holliman, 2017).

There is still work to do. I therefore want to highlight that the university sector needs to ensure that professional staff working in university engagement also have aspirational career profiles. A recent paper in the journal *Research for All* highlights some of the challenges facing publicly-engaged research managers (Dunleavey et al. 2019).

That's a very important issue to resolve, but it's one for another day. I'm here to demonstrate to academics who will come after me that, if you can demonstrate sustained excellence in engagement at the OU, your work will be celebrated.

Like Mark Brandon and Lesley Hoggart, both recently-promoted Knowledge Exchange Professors, I am here to act as a source of advice for, and as a potential collaborator with, OU research and teaching-focused colleagues.

The OU as a boundary organisation: a mission with foresight

Continuing the theme of recognising excellence, I want to celebrate the social justice mission of the OU.

The OU has a long tradition of boundary crossing, opening up educational opportunities without fear or favour. Three inaugural lectures precede mine that exemplify this tradition (Brewis, 2009; Kodwani, 2009; Weller, 2019). They're recorded and archived online; go have a look.

I hope by now that it will be clear that my focus is slightly different. I want to explore how we embed a culture of engaged research at the OU.

Put simply, my recent work has sought to both explore the requirements not just of 'boundary creatures', but also of 'boundary organisations' (Humphreys, 2009).

When the OU was founded, our founders demonstrated remarkable foresight as a 'boundary organisation', by establishing a mission for social justice that still informs everything we do.

- We are open, first, as to people.
- We are open as to places.
- We are open as to methods.
- We are open, finally, to ideas (Crowther, 1969).

My argument here today is that the OU was invented to deliver 'fairness in knowing' as a 'boundary organisation', both to improve the life-chances of our students through our formal curriculum, but also citizens through opportunities for informal learning.

That work clearly continues. The issue I want to focus on here, is how a programme of organisational and cultural change can be used to create the

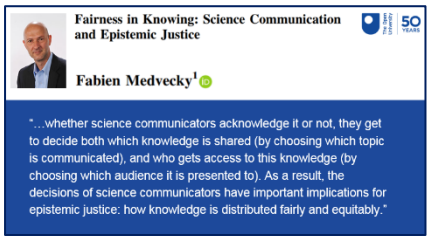
conditions where engaged research can also thrive (Holliman et al. 2015; Dorey, 2016).

For me that involves a commitment to 'fairness in knowing' (Medvecky, 2017).

Part 2: Fairness in knowing

In Part 2 of the lecture, I will briefly introduce the concept of 'fairness in knowing', and offer an example to demonstrate why I think it is important.

Fairness in knowing



Academia thrives on the free movement of people and ideas. I've met lots of amazing people through the free movement of people and ideas (ENSCOT, 2003; Holliman et al. 2002; Holliman, 2002).[1]

It's through these networks that I met Fabien Medvecky, who introduced me to the concept of 'fairness in knowing'.

On this slide, he argues:

> "…whether science communicators acknowledge it or not, they get to decide both which knowledge is shared (by choosing which topic is communicated), and who gets access to this knowledge (by choosing which audience it is presented to). As a result, the decisions of science communicators have important implications for epistemic justice: how knowledge is distributed fairly and equitably" (Medvecky, 2017: 1393).

The implication of Fabien's work is that the decisions academics make, shape and frame the possibilities for who has a voice in research, and how those voices are enabled to be heard.

What happens then, when we limit those choices?

And should we leave these choices solely to academics?

[1] The Public Communication of Science & Technology (PCST) Network https://www.pcst.co; accessed 11/03/19.

Evidence-based approaches to change

I mentioned the Isotope project earlier in the lecture when I introduced substantive motivations for engaging, that's when we're looking to improve quality.

Isotope, like almost all the projects I've led, was underpinned by action research, which is represented by the graphic on the right (Holliman et al. 2009).

At the beginning of the Isotope Project, we drew on earlier research to identify an initial set of questions.

We were looking to create ways of sharing best practice in engagement. To start this process, we sought views and perspectives from those who we through might want to share best practice (Jensen and Holliman, 2009).

We used the information we gathered to help put our planning into action. We observed the results of those actions, made relevant revisions following reflection, planned new interventions, and so on. It's an iterative process.

As part of the planning stage, we invited scientists and professional science communicators to plan an engagement activity (Jensen and Holliman, 2009).

What follows are some of the key results, which are published in the book shown on the left (Holliman and Jensen, 2009).

And the book cover on the left is why someone greeted me at an event with—"You're the pig man!"

To which, of course, the only reasonable reply was, “Oink”.

Back to Isotope; we found that the scientists, in particular, were constrained by a series of default settings: 1) in how they selected people to engage with; 2) the purposes for conducting these activities; and 3) the methods for engaging.

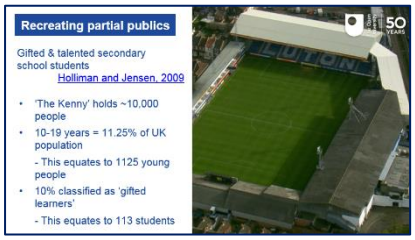
Given the time constraints, I’m going to focus on the selection of people to engage with.

The scientists knew exactly who they wanted to be involved. They wanted to engage with ‘gifted and talented’ secondary school students (Holliman and Jensen, 2009).

I’m not going to dwell on whether it’s a good idea to label children as gifted and talented, other than to note that many teachers disagree with this policy requirement. I’ve scheduled a tweet that includes a link to a paper that goes into detail (Koshi et al. 2012).

Rather, I want to illustrate what this meant in practice for planning engagement when we conducted our research in support of Isotope; that was in 2007-2008.

Recreating partial publics



To do this, I have selected, at random (ahem), a football stadium.

This is the measure of my sporting dreams; Luton Town Football Club.

The capacity of ‘The Kenny’ is just over 10,000. Let’s call it 10,000.

I want you to imagine that the stadium is filled with a representative sample of the UK population.

Let's apply the decision making used by the scientists in the Isotope project.

First, we'll focus on secondary school children.

2017 demographic data from the Office of National Statistics tells us that those between the ages of 10 to 19 made up 11.25% of the UK population.

11.25% of the stadium equates to 1,125 secondary school students.

Let's apply the second filter, that of gifted and talented children. In 2008, the government policy required schools to identify between 5 to 10% of the secondary school students as 'gifted and talented' (Koshi et al. 2012).

Let's use the more generous figure, that's 10% of 1,125.

Rather than split a student in half, I'm going to take the liberty of rounding this up to 113 students.

Hence, if we have a football stadium filled with 10,000 people who represent the UK population, 113 people would be selected to engage.

That's just over 1% of the UK population.

However, if teachers used the lower threshold of 5%, the number of gifted and talented students selected to engage could be as few as 57 out of 10,000, that's just over ½ a % of the UK population.

Now imagine that scientists repeat this decision making process again, and again, and again. Almost all of the stadium is excluded.

The STEM Skills Gap and the 'leaky pipeline'

It seems reasonable to ask why the scientists we interviewed consistently limited their selection.

I'd argue that a key reason is that they'd be told repeatedly by successive governments and senior scientists that they should be really concerned about the STEM Skills Gap. STEM stands for science, technology, engineering and mathematics.

The STEM Skills Gap is defined as the shortfall in the number of skilled workers required by the economy. This gap is caused, at least in part, by 'a leaky pipeline'; see the schematic on the slide (Lindhurst et al. 2017).

What that schematic shows is people moving through the formal education system and beyond. People, in particular women, leak out of the pipeline when they choose not to study or work in STEM (Ibid.).

This is a serious issue. I get it. Through the *Invisible Witnesses* Project I mentioned earlier, we sought to highlight cultural barriers that inhibit self-efficacy among girls and young women in relation to the sciences (Carr et al. 2009; Whitelegg et al. 2008).

Even with this caveat I argue that there is still a problem. If we consistently use the need to reduce the STEM Skills Gap as the only rationale for engagement, huge swathes of the public will be excluded.

And here's why…

My dad was a heating engineer for 51 years, and he really likes to talk about plumbing. As a result, I know more than is strictly healthy about pipework.

So, in spite of the fact that I've never so much as changed a washer on a tap, I know that you need to check the whole pipeline for leaks before you try to plug any of them.

The point is that, if scientists use 'default settings' to plan for engagement by routinely selecting gifted secondary school learners as their preferred audience, 99% of the population are likely to be excluded.

Put simply, there'll be a much bigger leak in the pipeline.

Caveats

My argument is that academics need a strategy to inform their planning for engagement, and this requires a fairer way of selecting publics.

My work over the past 10 years has focused on this, with the aim of promoting 'fairness in knowing' through forms of engaged research.

I want to note, therefore, that since the work on Isotope I've encountered some amazing activities that seek to promote 'fairness in knowing' *beyond* gifted secondary school learners.

I've also encountered plenty of examples where this type of 'default thinking' still dominates (e.g. Holliman et al. 2018).

There is still a job to be done to promote engaged ways of working that promote 'fairness in knowing'.

Part 3: Engaged Research

Which brings me to Part 3 of the lecture.

First, I want to acknowledge that university staff can't engage with everybody.

I still think we should promote fairness in knowing. To do that, we need to be strategic.

My strategy for promoting fairness in knowing is through engaged research (Holliman, 2017).

'Engagement Club'

To illustrate key aspects of this work, I'm going to introduce the idea of 'Engagement Club'.

What is the first rule of 'Engagement Club'? We do talk about engagement club. Share the love, people.

What about the second rule? I propose that the second rule should be that we think strategically about who is encouraged to join the club.

To do this, we need to accept that there is no one public. Like the sciences, we need to acknowledge subcultures with different values, expectations, beliefs, reasons for engaging, and so on.

Colleagues and I did this when we explored academics' understanding of public engagement with research. One of the key findings was the academics have different conceptualisations of the term 'public' (Grand et al. 2015). This lack of shared terminology has knock-on effects for who has a voice in research.

Two key interventions resulted from this research.

First, we co-developed a principled definition of engaged research (Holliman et al. 2015).

We argued that:

> "Engaged research encompasses the different ways that researchers meaningfully interact with **various stakeholders** over any or all stages of a research process, from issue formulation, the production or co-creation of new knowledge, to knowledge evaluation and dissemination" (Ibid: 3).

Crucially, we added the clarification that:

> "Stakeholders may include user communities, and members of the public or groups who come into existence or develop an identity in relationship to the research process" (Ibid: 3).

In other words, all members of the public are equally valid. Engaged research at the OU is open to all 10,000 people in the stadium. What we then need is a strategy for selecting publics. I'll come to that in a moment.

For now I want to note that we gained support from senior OU research leadership for this definition.

Why is this important? To drive change, I argue, we need shared understanding of key terms.

Once you can agree on a definition, you can explore what's in an out of scope. You also have a definition against which you can explore questions of excellence, and so on.

The point is that to drive sustainable change requires not just that we change individual practices and develop more 'boundary creatures'.

We also need to develop 'boundary organisations' by influencing the culture of research in universities.

A strategy for creating publics

What then was the second key intervention that resulted from this research?

As part of the same culture change project, we drew on the research expertise

two social scientists to develop a strategy for creating publics for engagement.

One of them, Nick Mahony, produced the open access pamphlet shown on this slide.

In it, Nick introduces the three dimensions for creating 'publics' that are listed on this slide (Mahony, 2015).

In demonstrating what the dimensions mean in practice, I'm going to use the OU's inclusive definition of 'publics', i.e. to include stakeholders, user communities, etc.

Representing publics

First, let's consider questions of *representation* (Mahony, 2015).

Addressing this dimension requires us to consider who should have a voice in research, who is excluded and why?

I'm part of a team, led by Jane Seale, who are co-supervising Jess Carr's PhD research (Carr, 2017).

Jess is working with people with learning disabilities and the self-advocacy charity My Life My Choice to co-produce advice and support in capacity building

for citizen science. These are citizens who have been routinely excluded from making decisions about research. In the past, these are people who have been the objects of research.

Jess's research is informed by the principles of inclusive research (Seale et al. 2014: 347). In practice, this means that Jess's approach is not just about selecting who should have a voice in research.

Her work requires considerable foresight to explore the different possibilities for how the research could be conducted (Guston, 2014). The research process needs to be flexible and adaptable to offer participants with different needs and capacities genuine opportunities to contribute in ways that work for them.

Expertise and experience

The second dimension focuses on the types of expertise and experience that can enhance the engaged research process (Mahony, 2015).

This dimension requires us to recognise that intelligence is not the preserve of academics (Stilgoe et al. 2006). Knowledge too comes in different forms; academic papers are not the sole repository of useful and relevant knowledge.

Helen Brown, Assistant Headteacher at Denbigh School in Milton Keynes, shows in her quote on this slide how we applied this dimension when we collaborated

in the co-design of the *Engaging Opportunities* Project (Holliman, Davies et al. 2018).

The teaching expertise of Helen, alongside Andy Squires, Anthony Steed and Mark Russell, was crucial to the success of this school-university partnership (Holliman, Davies et al. 2018).

In putting this project together, we sought to implement ideas from influential work published by the think-tank Demos in the early 2000s (e.g. Wilsdon et al. 2005; Stilgoe et al. 2006).

Key among these ideas is the concept of upstream engagement (Wilsdon and Willis, 2004).

As examples, we conceptualised and wrote the grant proposal collaboratively. We then worked as a team across subcultural borders over four years to plan, implement and evaluate the relative success of different types of activity (e.g. Holliman et al. 2017).

Public self-organisation

The third dimension invites us to consider how we provide opportunities for public self-organisation (Mahony, 2015).

As an example, I co-supervised Vickie Curtis' (2015) PhD research that resulted in the book shown on this slide (Curtis, 2018).

Vickie's research explored motivations to join, and then maintain active participation, in three online citizen science projects.

She found that people joined these projects for various reasons, the dominant one being to make a contribution to science. Their motivations to continue participation shifted over time, however, with the social aspects of participation becoming more prominent.

In effect, at least some these citizen science volunteers saw value in forms of self-organisation and self-governance.

They were increasingly seeking a voice in these projects were shaped and organised.

As the quote from Vickie on this slide shows, it falls to those who originally organised these initiatives to ensure that volunteers can take greater control over aspects of the project (Curtis, 2015: 287-8). Ideally, of course, citizens should be involved in co-designing these projects in the first place (Holliman et al. 2017; Wilsdon and Willis, 2004).

Building capacity in open and engaged research

We've covered quite a bit of ground. I want to finish by reviewing the key themes of my talk.

At the level of the individual, I argue that effective planning, involving relevant people, is key if we want to support excellence in engaged research (Holliman, 2017). Academics should not be the only voice in the planning for engaged research.

We need to plan upstream on shared terms and in tailored ways with representatives from relevant subcultures (Holliman et al. 2017).

We then need to work collaboratively and cooperatively to achieve shared or complementary goals (Holliman, et al. 2018; 2017; 2015).

A good number of researchers already do this through forms of engaged research. Can we extend the practices of engagement to further enrich aspects of our research culture? I argue both that we can and we should.

At the institutional level, support needs to be in place to help those who are new to engaged practices (Holliman and Warren, 2017); further, the incentives and rewards for making border crossings need to be clear. If we truly want to engage fairly, these activities need to be appropriately recognised in similar ways to teaching and research (Holliman, et al. 2015).

Finally, I argue that for engaged research to be sustainable, requires a commitment at the level of sector-wide agencies with a responsibility for publicly-funded research.

The final piece of work that I want to highlight demonstrates a commitment to evidence-based change on the part of a public funder of research.

I Chaired the Working Group that produced the STFC Report shown on this slide.

This report documents evidence about the current state-of-play in the peer review system that underpins the allocation of funding for public engagement with research.

In summary, the report calls on us to improve our planning, assessment, monitoring and reporting of these activities (Holliman, Hollingworth et al. 2018). There is still work to be done.

This is the piece of work that I'm most proud of, because if we get this right, and I'm not underestimating the challenges that lay ahead, this work has the potential to drive organisational and cultural change across the physical and engineering sciences.

It has the potential to prioritise and promote 'fairness in knowing'.

As I draw to a close I want to note that, like the OU, I am a product of the 1960s. Alongside my twin brother Pete, I arrived into the world on an existential and feminist-inspired wave of optimism. I therefore want to finish in that spirit; on a personal and a political note.

I argue that our role as academics is not just to interpret the world around us. It should also be to improve 'fairness in knowing'.

I have argued tonight that the imperative to improve fairness in knowing is embodied in our 50-year-old mission.

Whilst I salute the foresight of those who founded the OU 50 years ago, I argue that part of our role as academics and professionals should be to reimagine the possibilities for meaningful engagement across subcultural borders.

How then should I finish this lecture?

If you know me well, you won't be too surprised to know that I'd like to finish with a joke…

Penultimate slide: from a soldier to an academic

"A soldier walks into a bar…"

He stops for a moment to look in the mirror and realises that, this joke isn't going to end well.

He pops into the toilet where he changes his uniform from a military one to an academic one. He's now wearing a fairly-traded tank top, corduroy trousers, and a pair of sandals.

As he walks back into the bar, he realises that everything, and I do mean everything, looks a lot more complicated.

He's crossed a subcultural border; the soldier is now a sociologist.

Okay, let's try that again…

A sociologist walks into a bar, this time with a journalist and an inorganic chemist.

Final slide: research with people at the centre

He's joined by an educational technologist, a public engagement professional, a project manager, a graphic designer, a librarian, a film-maker, a public relations professional, a teacher with a group of students, an evaluation researcher, an impact manager, several fleece-clad environmental scientists causing a real stir with the static electricity they're generating, and a group of PhD students asking whether there's any free food.

Just as the group are starting to engage productively, a representative from UKRI turns up. UKRI stands for UK Research and Innovation.[2] Among other roles, they have a key role in allocating public funding for research.

The UKRI representative points out, somewhat apologetically, that if the group had only followed a different pathway to the comedy club next door, the punchline to this joke could have been world-leading in terms of its reach and significance.

If nothing else, this only goes to show that the Research Excellence Framework is no joke.

More seriously, these are some of the amazing people with whom I have crossed borders as we've engaged.

I want to emphasise that some of these people are academics, a good proportion are not; some are 'academic-related', working in a range of support roles; some are professionals, stakeholders or end-users, in a variety of roles; others still are students.

All of them are citizens, engaging through multiple subcultures as they look to make sense of knowledge and its impact on society.

As the OU's first professor to be promoted through the Knowledge Exchange profile, I want to take this opportunity to thank them for their support.

It has been said that successful academics stand on the shoulders of giants.

Engaged research is different. To promote 'fairness in knowing', we need to stand shoulder to shoulder.

We need to recognise that to cross borders requires empathy in purpose, pragmatism in process, and generosity in acknowledging different contributions.

[2] UKRI: https://www.ukri.org; accessed 27/02/19.

We need to recognise and support different career pathways to excellence in universities, both academic and professional.

We need to value all citizens, proactively seeking out and addressing forms of injustice.

In summary, we need to acknowledge that, whilst we enjoy the privileges of academic life, we also have responsibilities to give voice to members of different subcultures.

Thank you for listening to this lecture tonight, but more importantly a huge thank you to those with whom I have engaged.

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