Achieving public dialogue

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Contents

Introduction

There are a wide range of different interactions between 'science and the public'. Examples range from visiting a museum, or indulging in a science-related hobby, to reading a newspaper article about a breakthrough in the technique of therapeutic cloning, to attending a protest meeting about plans to build a waste disposal unit near to a residential area. Some such interactions are largely one-way; being a member of the audience for a 'go-hear' lecture, visiting a museum or"listening-in' on the workings of a policy-making committee. However revealing an experience, such events very often the public as a largely passive recipient of information. This course looks at more active forms of involvement by the public; how is the public voice heard and understood? What is public involvement of this type for and is the outcome in some way 'better' than traditional methods of policy making?

Our interest therefore is with 'two-way' interactions – dialogues between science and some part of 'the public', particularly in the context of imminent policy making. Dialogue in this sense is closely allied to what is called public consultation. Indeed, a great many such terms (engagement is another) are used rather loosely to describe interactions of this type and there'll be more to say about terminology later in the course.

This OpenLearn course provides a sample of Postgraduate study in Science.

Learning Outcomes

After studying this course, you should be able to:

● demonstrate a greater awareness of science-based issues of public importance

● demonstrate a greater insight into the phrase 'the public understanding of science'

● demonstrate a raised awareness of the ways in which the public can be consulted in relation to science policy issues

● think of ways in which the public might in future become more engaged in decision-making about science that has social impact.

1 How did the notion of public dialogue arise?

There is a good case to be made that the emphasis on 'dialogue' in relation to science and the public in the UK coincided with the publication in 2000 of the House of Lords report on *Science and Society*. But the impact of that report has to be seen in the context of what was happening under the 'public understanding of science' (PUS) banner in the years between the publication of the Bodmer report (1985) and the House of Lords report 15 years later.

In the UK, this period of time marked the hey-day of promotional events, many of which reflected Bodmer's stated ambition of raising the levels of 'scientific literacy' to ensure a public that was more supportive and appreciative of science. Nowadays that simplistic aim seems naive and inappropriate, given what is now known for example about how non-experts weigh the risks and benefits that science offers. Reading 1 is concerned with how an apparent transformation in attitude and in PUS intent came about over the 15 years or so in question.

Reading 1

Click to read Steve Miller's article on 'Public understanding of science at the crossroads'. Some of the events he describes may be familiar, as should the work of influential researchers such as Brian Wynne and Alan Irwin. From your own experience, have you sensed that, in Miller's words, 'a new age of public understanding of science' has been entered?

Bodmer's deficit model approach, though now largely superseded, put particular emphasis on imparting science information to the public. Part of the reason this model was increasingly challenged was that no measurable increase in scientific literacy was evident from the post-1985 flurry of activity involving scientists talking to the public. Now, as the PUS pendulum swings more towards notions of dialogue and debate about science, questions that come to mind include, first, whether one-way deficit PUS is indeed a thing of the past (and if so, should it be?) and second, how dialogue with the public might be achieved and what is its purpose.

2 What should dialogue with the public aim to achieve?

The publication *Public Dialogue on Science and Technology*, published in 2002 by the Parliamentary Office of Science and Technology (POST), states:

Proponents put forward two basic arguments in favour of dialogue. The first is that traditional consultation tends to be unattractive to many people and draws only on 'predictable' sources. They argue that dialogue can provide new opportunities for people who may be affected by decisions on new S&T to have their voices heard – particularly in shaping decisions in their own terms, establishing two-way relationships with policy makers and specialists, and fostering learning.

Second, as scientific knowledge is subject to inherent uncertainties, science-based decision making involves making subjective judgements such as the original framing of the issue, the questions to ask, and the assumptions made in carrying out the work. Many argue that exposing these assumptions to open and critical public scrutiny will lead to more rigorous science.

(POST, 2002)

Activity 1

With these hopes in mind, which of the following do you think is a legitimate aim for dialogue, in advance of policy making? Are there factors that you feel are missing from the list?

1   To decide whether particular scientific initiatives ought to be pursued, by opening up scientific progress to democratic public control.

2   To determine government policy on socially divisive issues.

3   To spread responsibility for decision making, such that if there were problems at the implementation stage, responsibility would be shared between government and the public.

4   To increase the authority of science and scientists, for example by explaining the importance of processes such as peer review and encouraging the public to adopt more 'rational' ways of evaluating risk.

5   As a counter to the opinions of experts in the field, by taking on board 'local' factors and 'feelings' that experts are likely to overlook.

6   To allow a full range of experts – for example, scientists, social scientists, students of ethics – plus non-experts, to debate issues of common concern.

Answer

Perhaps there would be ready consensus about rather little of this and we're wary of leaping to premature conclusions! However, we suspect that aim 6 would attract the widest support, though if the object is restricted to debate alone, dialogue events could be little more than 'talking shops'. Aim 5 would also surely get support, though dividing the parties into 'experts' and 'non-experts' risks unnecessarily polarising views and debate. Aims 3 and 4 strike us as inappropriate objectives for dialogue; aim 4 seems to set up a one-way conversation – the deficit model of PUS by another name. Aim 3 suggests that getting the public 'on board' might absolve decision makers of responsibility if things were to go wrong. Indeed some critics fear that dialogue could prove to be an excuse for delaying decision making, or be used as a means of 'out-flanking' potential opposition and perhaps deflect blame onto participating citizens if things go wrong; all such dangers have been disparagingly termed 'the deliberative fix'.

Aim 2 might be the objective of some participants, but while most agree that it would be an unwise government that flew in the face of public opinion, the official line is that rather than determine policy, dialogue aims to inform it. To some, aim 1 suggests that dialogue is to be used as a means of democratic **control** of the work that scientists do or do not do; for others, making science **accountable** is the key point – part of what some see as a welcome 'democratisation' of science. Most scientists would be wary of any such step although others might ask if there is no prospect of 'minds being changed' – to the point perhaps where a piece of work or its application is discouraged or prevented – what is the point of discussion of this type?

So who gains from dialogue? Perhaps there is an underlying moral imperative for scientists to commit to the notion of dialogue. Sir Aaron Klug, President of the Royal Society, in 2000, puts forward just such a point of view:

> Dialogue is about science's licence to practice. Science is, necessarily, run by scientists but it is ultimately society that allows science to go ahead and we need to make sure that it goes on doing so. So we need input from non-experts to make sure that we are aware of the boundaries of our licence; and conversely, we need good channels of communication if we want to extend those boundaries, for example into new areas of research such as embryonic stem cells or new research methods, such as GM plants and animals.

> (Klug, 2001)

The idea that the work of scientists is in some sense 'validated' by public consent is a lofty ideal, but the more pragmatic motives are apparent too in the latter part of Klug's quote. It's possible to read into his words that the public has to be 'with us', or 'on our side', if new research and applications are to go ahead without significant public disquiet. And what of government? If research programmes have strong commercial repercussions, then government (and academia) within the UK is likely to have a particular interest in public support, as commercial opportunities risk being lost. In the UK, for example, the government is currently looking for returns on its 2004 *Science and Innovation Investment Framework*; in the words of the Council for Science and Technology, March 2005, these returns will be 'at risk if there is not broad public support for its policies in areas related to science and technology'. Professor Mark Welland, a leading academic researcher from the University of Cambridge, has expressed sentiments of just this type in relation to nanotechnology – the science of the very small – announcing that a 'citizens' jury' is to be established, which offers an opportunity to 'rule' on benefits and risks of nanotechnology:

> In this race to exploit the technology, it is crucial that potential risks, hazards and consequences are addressed in a timely and comprehensive fashion. We have learned lessons from other areas such as GM, where science, exploitation and public concerns have been disconnected from each other.

> (Welland, Guardian, G2, 19 May 2005)

Of course, addressing risk and benefits in a methodical way is an attractive proposition – partly because dialogue events would thereby acquire a clearer although still problematic focus. But public concerns go beyond issues of risk alone – raising questions such as who benefits, whether such innovations are 'needed' and whether changes seem 'right'. We'll look at these broader issues again later in the course, but first it will be helpful to look at some other examples of dialogue initiatives.

3 Consensus conferences

3.1 Introduction

On an autumnal morning in November 1994, a group of people gathered at Regent's College, London, conscious that they were making history. The purpose of the meeting was to discuss an important issue: plant biotechnology and how it should be regulated in the UK. At the time, the genetic engineering of plants was emerging as a technology of great potential for the development of new pest-resistant, higher yield crops, although the technique hadn't attracted the degree of media attention and public disquiet that characterised the debate in later years. What was unusual was that this 1994 meeting did not consist of the typical mix of policy advisers – politicians, scientists, interest groups and industrialists. Here, the key participants included a road sweeper, an airline pilot, an A-level student and a retired engineer. These were all members of a 16-member strong 'lay panel' for the UK's first national consensus conference (UKNCC).

This consensus conference is worthy of our attention for a number of reasons. The initiative was one of the first in a movement in the UK that sought to involve (rather than merely consult) the public in decision making about science and technology. The conference was seen as an experimental, practical alternative to initiatives based on the deficit model of public understanding of science. The UKNCC is also a useful subject of study because the process and outcomes were thoroughly evaluated (Joss, 2002). In addition, it provides a useful point of comparison with other participatory mechanisms mentioned in this course.

Consensus conferences are a form of 'participatory technology assessment', a term that has gained currency since the 1990s in policy-making circles. It recognises that, in democratic society, citizens should have a say in the regulation of technologies that have social consequences and the development of which is often publicly funded. The subsections that follow will examine the first two UK national consensus conferences, as examples of participatory mechanisms. How effective were they at involving lay voices in decisions about the regulation of new technology? Is the consensus conference a practical means of achieving public engagement in science and technology policy?

3.2 Public consultation vs public engagement

'Public consultation' is not a new concept in policy making. For society to function effectively, laws and policies must have public support. It is desirable, therefore, to have some idea of what the public thinks about an issue before regulation is finalised. Consultation is based on establishing the nature of a socially collective view that we call 'public opinion'. The main means of establishing public opinion with at least some degree of confidence is the opinion poll, the methodology for which has become increasingly sophisticated. Polls deliver useful quantitative data, but they cannot tell us much about the nuances of the views of individuals or why people hold certain opinions. For more qualitative (descriptive) data, the government or a local authority might declare a consultation period, for the duration of which the public is invited to send in representations to be considered during the decision-making process.

Although public consultation is in keeping with the spirit of democracy, the consultation model is still essentially deficit in its approach. In general, the respondents play no part in framing the questions or in subsequent discussions about policy. The concept of **public engagement**, on the other hand, describes a mechanism that attempts to be much more inclusive. Engagement aspires to incorporate lay views – and specifically lay values – in the decision-making **process**, thus giving citizens more of an active, participatory role.

A concern expressed by many experts is that public opinion, in its broadest sense, is not sufficiently 'informed' to be accorded a meaningful role in decision making. Common sense dictates that some familiarity with the processes, prospects, risks and benefits of new technology is a prerequisite for participating in decision making about policy. It is thought that lay people also feel more comfortable in making recommendations if they have an understanding of the issue under consideration (Klüver, 1995). Consensus conferences are mechanisms of public participation that seek to address some of these concerns surrounding input of lay voices in policy making.

3.3 The consensus conference concept

Consensus conferences were developed in the USA in the late 1970s. Originally called 'consensus development conferences', the National Institute of Health used these conferences as a means of fostering social acceptability of medical practices for which scientific expertise could not provide unequivocal answers to questions with a social dimension (Jørgensen, 1995). The success of consensus conferences in the USA meant that they were soon adopted in Europe. They have proved particularly useful in the medical sphere where decisions have to be made about how to allocate resources or about preferences for alternative treatments. The agenda-setting function of the lay members involved is critical, helping to frame the questions to put to experts. Lay members also select the experts to give evidence, and there is a strong emphasis on the independence of the lay panel.

Activity 2

The line between 'lay' and 'expert' is often less clear cut than first appears. If the lay members acquire expertise in order to participate in the consensus conference, on what grounds could they still be considered 'lay'?

Answer

Although consensus conferences do influence lay-panel participants in that their knowledge of the topic increases and their opinions may change as a result of the process, it is presumed that the fundamental **values** of lay-panel members will not alter as a result of the process (Klüver, 1995). It is thought that lay-panel members can legitimately act as advocates for public values because they have no political or professional axes to grind. You will appreciate, however, that those values are difficult to assess. It is sometimes hard to distinguish opinions from values (think of debates on abortion or the 'right-to-die'), and there are methodological difficulties in measuring how and to what extent people's values change over time. As you read through the next two subsections which describe consensus conferences, consider which aspects might strengthen or undermine the claim often made for these conferences, that panel members 'use the acquired knowledge in a way that allow them to form opinions that are coherent with their basic values' (Klüver, 1995).

3.4 Consensus conference on plant biotechnology

The first UKNCC (at Regent's College) was hosted by the Science Museum and funded by the Biotechnology and Biological Sciences Research Council (BBSRC). The conference was based on a procedural model developed by the Danish Board of Technology. In Denmark, consensus conferences are held regularly and can be seen to have had unequivocal effects on policy making. Indeed, in a number of instances, Parliament has explicitly incorporated lay-panel recommendations in legislation. For example, lay-panel reports on food irradiation and genetic modification suggested that government funding should not be allocated to these technologies. These recommendations were subsequently endorsed by the Danish Parliament (Grundahl, 1995).

The UKNCC lay panel was recruited through advertisements placed in regional newspapers. Although the lay panel in a consensus conference obviously is not statistically representative, participants are selected to form a cross-section of the population based on factors such as age, gender, education, area of residence and interest. There were over 400 applicants to serve on the panel for the first UKNCC, of which 16 were selected by a steering committee.

The lay-panel members became 'informed' about plant biotechnology through written information and preliminary meetings prior to the conference itself. The panel then framed the questions they wanted to pose to experts whom they nominated to attend the consensus conference. The conference itself was run along judicial lines: experts were called to provide evidence and were cross-examined by the panel in front of an audience. The final phase involved the lay panel writing a report which was subsequently published and distributed to politicians, scientists, industrialists, journalists and anyone else likely to be interested.

Reading 2

Click to read Geoffrey Lee's account of the consensus conference. The author was a lay-panel member for the first UKNCC and chaired the report-writing session. As you read through his account of the process, make a note of what he felt the priorities of lay-panel members were. How might these differ from other participants in the conference (e.g. steering panel, experts, media and evaluators)?

The lay-panel's consensus statement gave short responses to the seven questions posed by the panel at the start of the process (examples of these questions include: what impact could plant biotechnology have on the consumer?; what moral problems are raised by plant biotechnology?; what are the prospects for effective regulation?). A consensus statement is, by definition, a position on which the panel reaches agreement. A drawback of this approach is that the statement often turns out to be rather bland and lacks bold proposals, given that the panel is unlikely to be able to reach agreement on radical or controversial suggestions. And this proved to be so with the UKNCC; the lay-panel report was informative and contained several recommendations for policy, but did not propose anything particularly innovative.

Although the lay-panel report was widely circulated to politicians, the impact in terms of influence on policy of this conference was negligible (Durant, 1999). However, some valuable lessons were learnt, including:

- the necessity for a political commitment to take lay-panel recommendations seriously;

- the importance of choosing a topic where a debate is timely and opportune. However, setting up the first UKNCC at that time reflected an interest in the idea of consensus conferences, rather than a pressing need at that time to intervene in policy making on plant biotechnology;

- the need to consider how to manage more effectively the process of consensus conferences in the UK context (perceptions about the independence of the steering committee and the lay panel, media influences, timescales, etc.).

Although the first UKNCC seemed to have little measurable long-term impact, there is no doubt that the second one on radioactive waste addressed some of the key lessons learned from the first UKNCC, the result of which had a much more substantial impact on policy.

3.5 Consensus conference on radioactive waste

A second UK national consensus conference was held in May 1999 as part of a wide-ranging public engagement process on managing radioactive waste safely. The remit of the citizens' panel (the term was adopted in preference to 'lay panel') was as follows:

> The Consensus Conference is to focus on the effective and publicly acceptable long-term management of nuclear waste in the UK, both civil and military, concentrating particularly on intermediate and high level waste. This will be considered by the Citizens' Panel in their capacity as members of the public, taking into account what they see as the relevant issues.
>
> (Palmer, 1999)

The conference was organised by the UK Centre for Economic and Environmental Development (UK CEED) and funded by the Office of Science and Technology, the Natural Environment Research Council, and NIREX – the company responsible for implementing policy on disposal of intermediate-level radioactive waste.

Twenty-two experts selected by the citizens' panel gave 5-minute presentations before debating the issues with the panel. The conference was open to the public and the audience was invited to submit questions for consideration.

Reading 3

Click to read the preliminary pages from the report of the UK CEED Consensus Conference on Radioactive Waste. How does this conference differ in the way it was organised and facilitated compared with what you now know of the first UKNCC? If you were organising a consensus conference, what improvements would you make?

The citizens' panel report was well received by politicians, environmentalists and industrialists, who were invited to respond – a welcome development which enhanced the authority of the report. The Minister for the Environment pledged to take note of its findings:

I would like to assure the Panel that there is no question of this report disappearing into oblivion. I think it's going to be listened to extremely carefully. I want to pay a credit to UK CEED for putting on this Consensus Conference which I think is an excellent idea. This is an issue which has bugged this country for decades and I think opening it out, getting citizen involvement, is exactly the right way to try and resolve it.

(Meacher, 1999)

The consensus conference report was fed into a wider process of public and stakeholder consultation which culminated in a consultation paper, *Managing Radioactive Waste Safely*, in 2001 which incorporated several recommendations arising from the consensus conference. On 29 July 2002, for example, the government announced the setting up of a new independent body, the Committee on Radioactive Waste Management (CoRWM), which was a key recommendation of the citizens' panel report. Part of that Committee's remit was to gain insight into the public's priorities and concerns about the long-term management of radioactive waste in the UK. With the publication of a 'discussion guide', written for non-specialists, CoRWM sought to set up throughout the UK a number of discussion groups, which would help inform the recommendations that the Committee would make to the UK Government. At the time of writing more than 500 discussion groups are being set up across the UK, many involving school groups, which aim to feed back views via the reply forms that are included within the discussion guide. Participating groups are largely already established (for example Women's Institute groups) and their discussion will be self-managed. CoRWM's discussion guide includes both background information on nuclear waste and guidance on how organisers might set up group discussions. The outcomes from discussion are to be fed back to CoRWM using a largely open-text questionnaire, which focuses on the ethical (as opposed to economic) issues associated with radioactive waste disposal. Such inputs feed into the construction of the website , which is intended to capture public views in a readily accessible and transparent form. These views should feed into future policy as CoRWM's recommendations take shape.

3.6 How valuable have consensus conferences proved to be?

From the two case studies just considered, certain factors seem critical for the success of lay input into decision making. First, both the choice of topic of the conference and its presentation is crucial. If the plant biotechnology conference had been billed as 'genetic modification' (as opposed to plant biotechnology), it might have had more resonance with the political and popular perceptions and hence had greater impact. Independence of the lay or citizens' panel is another key point. To avoid influence from organised lobby groups, participants need to be carefully selected. Participants with entrenched views on the issue are not suitable candidates for the lay or citizens' panel. Similarly, organisers and organising authorities should be neutral on the issue under discussion to safeguard the credibility of the process (Palmer, 1999).

What these case studies also reveal is that public engagement by this means does not guarantee input into decision making. A complex combination of practical and contextual issues influences the outcome. However, the consensus conference on radioactive waste

promises to have a demonstrable impact on policy making, largely owing to the stated willingness of policy makers to take citizens' panel advice on board.

Consensus conferences, and variations on them, continue to be used internationally to involve the public on issues in science and technology. Australia held a consensus conference in 1999 on gene technology in the food chain, but whether this had an impact on subsequent policy could not be unambiguously determined (Mohr, 2002). New Zealand, Switzerland, South Korea, Canada and Japan are amongst a long list of countries that have held consensus conferences on topics relating mainly to policy on biotechnology (for example, cloning in the case of South Korea) and telecommunications technologies. However, Denmark remains the only country in which there is an established, long-running tradition of using public engagement mechanisms of this type on a regular, national basis. Although consensus conferences (and other participatory methods) are not used as a means of delegating legislative authority to the lay panel, their reports continue to inform Parliamentary decisions in Denmark. Indeed, the process is institutionalised rather than *ad hoc*: the Danish Board of Technology is an overarching body that oversees a variety of public participation mechanisms and has clear links to Parliament without compromising its perceived independence.

Of course, many questions remain about the value of consensus conferences. Can a small lay panel be truly representative of public values? If conferences are funded by bodies that have a vested interest in the outcome, can they remain independent? Do consensus conferences really represent public engagement in policy making if there is no obligation on behalf of decision makers to take their findings into account? The answers to these questions are far from clear cut and perhaps mitigate against a wider uptake of the consensus conference model as a means of public engagement in policy.

4 The GM Nation? debate

The UK's GM Nation? debate took place in the summer of 2003 – a time when both the political mood and scientific innovation had moved on a good deal in the eight years since the first UKNCC. Despite the relatively non-controversial introduction of the first GM products (notably a GM tomato paste and GM cheese) in the shops in the mid-1990s, public concerns grew in subsequent years. One particularly influential event was the arrival in the late 1990s of US and Canadian soya beans in Europe, as a mix of conventional and GM product. After that, growing public concern – about practical issues such as labelling, and more general anxieties about possible risks to human health and the environment – was largely instrumental in the introduction of an extended moratorium on commercial growing of GM crops. Now the major biotechnology companies have for the present abandoned hope of growing such products in Europe; by contrast, the area of cultivated GM crops worldwide has grown significantly over that period, with GM crops of major importance in China and the US, for example.

In anticipation of a new regulatory process being put into place EU-wide, the UK Government set up the GM Nation? public debate on what was generally agreed, in retrospect, to have been an over-ambitious timetable of a couple of months. It formed one of three Government-instigated components, running in parallel, the others being an assessment of the 'science' of GM, conducted under the guidance of the UK's Chief Scientist, while the other was a review of the economic costs and benefits.

The public debate element involved six major 'regional' debates, designed to be the stimulus for a cascade of 'second and third tier' open access meetings, of different degrees of informality. Estimates of the number of such meetings range from 400–700 throughout the UK. 'Stimulus material' was provided to initiate debate at such meetings, together with what was generally regarded as an uninspiring (and hence largely ignored) videotape, consisting in the main of conversations between farmers, scientists and consumers. Feedback forms, allowing recipients to record their views on GM crops, were provided within the booklets, and in an electronic form on the GM Nation? website. Overall, about 37,000 feedback forms were submitted, with almost 3 million 'hits' recorded for the website. A parallel group of 10 'narrow-but-deep' (NBD) focus groups was set up, excluding individuals with significant prior knowledge of or involvement in the GM controversy. Each of the 10 NBD groups met twice, at the beginning and end of the public consultation, with the expressed hope that their deliberations could be compared with the self-selecting, and frequently 'engaged' participants involved in the public meetings. These discussion groups were seen as providing a research dimension, acting as a 'control group', or a 'measure of reliability', to establish to what degree those who actively sought to be involved in GM Nation? open debates might or might not be 'representative of the general population'. Also, grass-roots discussion workshops, for the most part with individuals not actively involved in GM issues, played a key role in setting the agenda for the ensuing debate – identifying issues such as choice, need for information, uncertainty and trust and helping to shape the focus of questions on the GM Nation? website.

Activity 3

You'll appreciate that the GM Nation? debate is different in intent and approach from the consensus conferences just described, but is there evidence that some of the lessons learnt had been taken on board with GM Nation?

Answer

Ensuring that the lay-person-dominated workshops set the framework for the debate was a sensible approach. Also, some argued at the time that the timing of the GM Nation? debate was highly appropriate, given that policy on the commercialisation of GM crops was urgently required; however, in reality, the timescale for the debate proved very rushed and too 'late-in-the-day'.

The general conclusion of the final GM Nation? report, published in 2003, was that while the debate was widely welcomed and valued, 'people are generally uneasy about GM', 'there was little support for early commercialization' and that many more people are 'cautious, suspicious or outright hostile (to the use of GM crops) than are supportive towards them'. What was also revealed was widespread mistrust of government and multinational companies, with participants expressing a very strong interest to be 'better informed' about GM issues, particularly with regards to generally agreed 'facts' that are 'accepted by all organizations and interests'.

By many measures, the level of 'engagement' with the GM Nation? debate was impressively high, but many commentators took issue with what they took to be the strong, GM-sceptic tone of the open meetings. Many such critics argued that the views emanating from such meetings were not representative of the population as a whole. Debates were seen as adversarial and at an inappropriate level of technicality. But in one major respect, one of the confusions associated with the first UKNCC remained. This was a lack of any clear or agreed link between this process of public engagement and the UK

Government's emerging policy on the commercialisation of GM crops. This contributed to a sense of cynicism amongst participants about the purposes of the exercise. The separation of the 'social aspects' of the controversy from the scientific and economic dimensions was seen as especially unhelpful. So, the purposes of the exercise were unclear, especially how it fed into policy making. Some took the view that the government had already decided a policy on the commercialisation development of GM crops and this was a convenient smokescreen. As mentioned, the timescale of the exercise was regarded as excessively compressed; many thought that the budget for the exercise (£500,000) was too modest – a view that the UK Government contested.

Reading 4

Click to read Scott Campbell's and Ellen Townsend's letter in Nature, entitled 'Flaws undermine results of UK biotech debate'. Take particular note of the grounds for querying the validity of the GM Nation? report's key conclusions. Do you have any sympathy with the points they make?

Campbell and Townsend draw attention to the measures that the designers of the GM Nation? debate took to try to ensure that those involved in the open debate were representative of broader opinion.

As mentioned before, the NBD groups were portrayed as a control group, allowing the authors of the report to claim that the general public is not 'a completely different audience with different values and attitudes from an unrepresentative activist minority'; it is this supposition that Campbell and Townsend are querying.

Faced with such accusations, the organisers of the GM Nation? debate sought to re-affirm the value of the NBD group, but played down their claims that their opinions affirmed the representativeness of the open participants. Rather, they stressed the value of using the NBD group to track the evolving views of participants over the two-week period they were required to engage with the GM issues. Indeed, they report that the NBD group differed from the open group in a number of ways. First, they tended to have no fixed position on GM. Second, they displayed greater levels of uncertainty – 'although they shared many of the same views of the people in the open debate, there was more doubt in their views'. The NBD group resembled the open group in that they did not want to see the early commercialisation of GM crops, but they favoured delay rather than the abandonment of GM technology evident in the open group, where just over half wanted to see no GM crops grown in the UK under any circumstances. In addition, there was a greater preparedness in the NBD group to recognise what were felt to be potential benefits from GM – for example new and/or cheaper pharmaceutical products. What was also striking was that the views of the NBD group changed over their two weeks of exposure to the GM issue – in other words, attitudes hardened. Even on this short timescale, they became more convinced about some aspects of the claimed potential benefit of GM – notably medical benefits – whereas they expressed greater levels of concern about what were assumed to be the risks of GM and developed 'an almost total uncertainty about its long-term effect on human health'. This reflects a phenomenon that other PUS researchers have encountered; with greater scientific awareness, concerns about risks and unforeseen consequences can increase with greater knowledge, which of course runs counter to the logic of deficit modellers.

The more general point to emerge from Reading 4 and the responses of those who designed GM Nation? is the methodological difficulty of capturing public opinion and of

bringing about engagement on a grand scale. Methods that try to capture the opinions of very many individuals often tend to be imprecise and unwieldy; those (such as consensus conferences) that operate on a smaller scale often have to struggle to ensure that opinions are representative. With the GM Nation? debate, participants were not selected at random – they were a motivated and self-selecting group, often distinguished by virtue of strong opinions that set them apart from what may well be the more ambivalent attitudes of fellow citizens. An independent assessment of GM Nation? consultation (Horlick-Jones *et al.*, 2004) pointed to its failure to 'engage with the broad mass of hitherto disengaged members of the lay public' and presented convincing evidence that the shortcomings of the exercise were such that 'the extent of outright opposition to GM foods and crops amongst the UK population is probably lower than indicated in the GM Nation? findings'.

5 How might dialogue move on from GM Nation?

There is a widespread optimism that 'lessons have been learnt from the GM Nation? Debate' – indeed the government's response to the exercise was couched in just those terms (DEFRA, 2004). One concern has been touched on already – many felt that the debate took place too late, on a rushed timetable, at a time in the controversy when the debate had become highly polarised and divisive 'pro' or 'anti' stances already embedded. This late in the day, questions for public discussion tend to be restricted in scope, often focused on issues of risk assessment and 'too late to alter the developmental trajectories of a technology' (Wilsdon and Willis, 2004). Some of the bigger questions, such as the **need** for particular technologies, what vested interested are at work and what 'value' might be attached to particular scientific and technological innovation, remain unexplored. Post-GM Nation? the call is therefore for more 'upstream' engagement of the public in policy making – at a stage where key, early decisions are yet to be made. Many feel that recent establishment of a citizen's jury to consider the path of future development in nanotechnology shows a promising way forward. Indeed, this venture is currently being held up as an admirable upstream model of public engagement and it will be fascinating to follow whether the high hopes that are now being expressed are realisable in the light of hard practice.

The next reading articulates one vision of how public engagement should move on in future, looking far beyond the experience of the GM Nation? debate and the current nanotechnology consultation. It looks forward to an era of policy making where public involvement does not just inform policy decisions – 'it helps shape them'. Rather than seeing public involvement as a means of closing down debate (as some saw its role in GM Nation?), it is envisaged as a key role in 'opening up' debate, by framing questions that go beyond the usual 'is it safe?' scenario into the more problematic arena of non-expert value judgements, such as necessity and desirability.

Reading 5

Read Chapter 3 of *See-through Science* by James Wilsdon and Rebecca Willis, which is downloadable (in PDF format) from http://www.demos.co.uk/

files/Seethroughsciencefinal.pdf (pp.37–47), accessed 13 March 2007. The authors are affiliated to DEMOS, which is an independent 'think-tank' and describes itself as a 'greenhouse for new ideas which can improve the quality of our lives'. The early parts of the article add to comments already made about the GM Nation? debate. There is a useful section (in 'How to engage') on different methodologies of consultation, which you're likely to be familiar with already. Do you find the arguments put forward in support of the notion of 'deliberative democracy' via upstream engagement (pp.46–47) convincing?

In the wake of the publication of *See-through Science*, with, as you've just read, its championing of upstream engagement; the same organisation published a second publication (Wilsdon *et al.*, 2005). The idea of the **public value** of science is crucial here – the idea of some form of assessment or debate about the desirability and benefits of particular facets of science. In the authors' words:

> … viewed through a public value lens, engagement might no longer be seen as a 'brake on progress' but instead as a way of maintaining and renewing the social contract that supports science. Upstream engagement enables society to discuss and clarify the public value of science. It encourages dialogue between scientists and the public to move beyond competing propositions, to a richer discussion of vision and ends. And it reminds scientists of the contribution that public values can make to the setting of research priorities and trajectories.

> (Wilsdon et al., 2005)

The DEMOS *Public Value of Science* booklet was politely welcomed in many quarters (including the pre-eminent science journal *Nature*) but the normally sober research publication *Research Fortnight* (Bown, 2005) presented a hostile response that some saw as articulating the silent fears of many mainstream scientists. Their editorial claimed the DEMOS proposals were 'Stalinistic' or indeed worse, given that such political organisations are (in their words) 'always explicit about questions of power, whereas in engagement studies power is never mentioned. It is evident that scientists are supposed to lose power, but who is supposed to gain it? After years of promotion, it remains unclear what the muddle of engagement actually is. If we go back, it is clear that the old Public Understanding of Science agenda was hopelessly patronising. At the same time, it was clear that the story of GM crops in this country was a disaster. We need to do something, but in choosing engagement we took a wrong turn.'

For some, the ferociousness of the criticism from *Research Fortnight* marks the beginning of what has been dubbed the 'New Science Wars'. DEMOS pointed out in their reply that 'the argument for more public engagement has been won', drawing attention to the undeniable fact that the Office of Science and Technology, the Research Councils and august organisations such as the Wellcome Trust 'are all experimenting with new approaches'. But what, of course, is still uncertain is how the processes of engagement are viewed and experienced by the different parties involved, and how the differing perspectives and expectations might be brought together. By this measure, the mention of power in the comments in *Research Fortnight* seems highly appropriate. But for DEMOS:

> … this agenda is not about imposing cumbersome bureaucratic structures on science, or forcing lay people onto every research funding committee. Questions about structures do need to be considered, but are a sideshow compared with the far more important – and exciting – challenge of building

more reflective capacity into the practice of science. As well as bringing the public into new conversations with science, we need to bring out the public *within* the scientist – by enabling scientists to reflect on the social and ethical dimensions of their work.

(Wilsdon et al., 2005, p.35)

What is certain is that engagement will only be effective if sound and attractive means of engaging the public are developed. There is a high premium therefore on developing new means of engagement and we'll end this course by looking at just one novel example that reflects the innovative thinking and bold experimentation currently underway.

6 DEMOCS: 'The game to play to have your say'

6.1 Introduction

Reading 5 ends with a call for a move towards a more 'deliberative democracy' in which public engagement takes place in parallel with the development of new technologies, so that opportunities are provided for ongoing dialogue and influence between the two. To help to achieve this, the authors argue, '… now is the right time to start experimenting with new forms of democratic debate'.

One such innovative approach, developed by the New Economics Foundation (nef), with support from the Wellcome Trust, are DEMOCS (<u>De</u>liberative <u>M</u>eetings <u>O</u>f <u>C</u>itizen<u>S</u>): 'conversation card games' to enable small groups of people to find out about, discuss and work towards consensus on policy in relation to a range of science (and other) issues.

6.2 How DEMOCS works

DEMOCS games involve groups of around six to eight participants and take a couple of hours to play. They come as self-contained kits, which can be downloaded from nef's website. To register and log in for access to DEMOCS games, see http://www. neweconomics.org/gen/z_sys_DemocsRegister.aspx?destination=/gen/democsdown-load.aspx, accessed 13 March 2007. Topics covered so far include stem cell research, over-the-counter genetic testing kits, xenotransplantation, pre-implantation genetic diagnosis, GM food, animal experiments and nanotechnology.

Each DEMOCS session begins with a briefing on the game process itself and on the background to the topic under consideration. Discussion and deliberation is then stimulated using several sets of playing cards, employed as shown in Box 1, working towards the conclusion of the game in which participants vote on possible policy options.

Box 1: Anatomy of a DEMOCS game

The following sets of cards are dealt to all participants, in different 'rounds' that build on one another.

1   **Story cards** – used to provide a way into the topic, helping participants to understand the impacts on people and the environment of the issue at hand.

2   **Information cards** – to enable participants to begin to gather information they consider most pertinent to potential policy positions on the topic. Participants reflect on the cards and choose the ones they feel are most important, taking turns to read them out and explain why they have chosen them.

3   **Issue cards** – which aim to stimulate discussion on key questions relevant to the topic. Participants are invited to group these cards together as they identify common themes in their deliberations.

In addition, **Challenge cards** may be used optionally (and for fun), to challenge individual participants to state and/or critically evaluate their own views. Some examples of Challenge cards are:

●   Who is going to benefit? Who will lose out? Share your thoughts and feelings with the group.

●   Imagine what your grandparents would say about this topic! Share it with the group.

●   Tell the group about a personal experience that relates to the topic.

Forms called **Cluster cards** are then used to help the group as a whole to organise story and information cards alongside the groups of issue cards and, from this, to identify areas of agreement and disagreement on the key themes that emerge, with the aim of working towards consensus.

As a participatory method, DEMOCS aspires to go both deep **and** wide (New Economics Foundation, 2005): to bridge 'the gap' between traditional consultation methods that involve many people but include little or no dialogue (e.g. opinion polls) and other methods that involve in-depth deliberation, but are accessible to only a few people (e.g. consensus conferences, citizens' juries). Games are therefore designed to be used by anyone aged 14+ who wishes to participate (the hope is that they will 'appeal to not-the-usual suspects'), anywhere (e.g. at home, in school, as part of wider public consultation) – and to require no expert input (but preferably involve a trained facilitator).

In developing DEMOCS, nef seeks two key outcomes:

1   to make complex topics easily accessible and encourage people to form an opinion, 'not off the top of their heads, but after they've thought and deliberated about the issue' – in short, to 'do' democracy';

2   depending on the topic and the context in which the game is played, to provide feedback that is useful for policy makers.

DEMOCS have already been used as public engagement tools in a variety of science policy/decision-making contexts. For example, the GM food DEMOCS was played in Edinburgh as part of public debate within the GM Nation? initiative; the game on over-the-counter genetic testing kits was developed and played as part of a Human Genetics

Commission inquiry; and a game was specially developed and used as part of the Mayor of London's public consultation on ambient noise reduction.

As well as games specifically linked to policy initiatives, DEMOCS have been played at 'public events' such as science festivals, BA meetings, and at the Dana Centre at the Science Museum in London, and less formally in a wide range of venues; kits are now being adapted for use in schools. In an attempt to further widen opportunities for participation, online versions of the games are also being developed.

6.3 Some issues for consideration

DEMOCS offer a novel, and perhaps unique approach to public participation on contentious science issues. But how far is the process capable of dealing with the difficulties and uncertainties raised in the examples of engagement processes already considered in this course, and what benefits might it bring? For example:

1   How far is this process of group discussion likely to lead to outcomes that are representative of 'public' opinion?

2   Is the process designed to ensure 'balance' in the dialogue?

3   Does the process address the 'whole' picture, by, for example, explicitly addressing social, ethical and economic as well as scientific aspects of the topic under consideration?

4   What steps will be taken to ensure that the outcomes of the process are both valued and used to maximal effect, e.g. within policy making?

Bearing these (and most likely more!) points in mind, a number of more specific questions emerge, which are explored in the following activities. Though they arise from the DEMOCS activity, they could be asked about any dialogue initiative.

Activity 4

DEMOCS may be used in a range of different contexts, only some of which are linked with science policy making. Do you think that an approach such as this can have value even if not linked to policy making? If so, what kinds of benefits might it bring?

Answer

Even without a direct link to policy, it is possible that the games might help people to feel more informed and empowered within the democratic process (see concluding remarks in Reading 5), and therefore better able to evaluate competing claims made in the media and by politicians in relation to contentious areas of science. Indeed, feedback obtained during the early development phase of DEMOCS (Walker and Higginson, 2003) and a later independent assessment carried out by University College London (PUEC Group, University College London, 2004) suggests that the games do provide 'a way into' new and complex topics, 'while at the same time discouraging over-simple or dogmatic conclusions'. The PUEC evaluation suggests that the group discussion process helps in developing relevant, transferable personal skills related to decision making, such as constructive discussion, negotiation and consensus building. Set against this, there are also some concerns that the game process itself is complex and that this might on occasion divert from the issues at hand and limit what can be achieved in the time available. Moreover, although nef collates and publishes the results of games that are reported back, DEMOCS will need to

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reach a much larger audience if a more ambitious goal of generating wider public interest and involvement in developing science policy is to be met.

Activity 5

Given that the conversations prompted by DEMOCS are both informed and driven by materials provided in the kit, should this be considered a 'top down' or a 'bottom up' approach (see Reading 5 again)? Here you might like to consider who should, and in practice actually does, set the agenda – those producing the kit, or the people participating in the process?

Answer

nef is particularly concerned to ensure that the games offer a truly 'bottom-up', citizen-led approach, takes great care to try to ensure 'balance' in the materials provided, and is keen to respond to feedback that suggests otherwise. Using cards, rather than having 'experts' present their perspectives face-to-face, might help to maintain that 'neutrality'. However, keeping steady feet on the balancing beam is not a straightforward matter and, as you'll have noted, like all engagement processes, it is still possible to bias proceedings inadvertently.

One option is that both the game-makers and the game-participants should set the agenda – which is indeed what has happened in practice. The process has to include sufficient briefing (factual background and identification of the issues) to enable participants to get to grips with often complex issues, whilst at the same time providing sufficient flexibility to enable participants to go beyond the material provided in the cards and make the discussions 'their own' – exploring their own responses. This takes time, and requires careful management. It would be fascinating to compare participants' responses in games played with, and without, facilitators and also to compare DEMOCS with the wide-scale, self-facilitated discussions initiated and supported by CoRWM.

Activity 6

In light of the difficulties of avoiding bias, you might like to:

1   Think about how you would go about developing a set of information and issues cards for a DEMOCS game, in order to capture the essence of the topic in a balanced, jargon-free manner, picking up on the key points of interest for (lay) citizens.

2   Consider possible means of ensuring that 'deliberation' (rather than polarised 'debate') takes place during the DEMOCS game, so avoiding the prospect of hijacking by those with particularly strong views. In this context, DEMOCS provides 'conversation guidelines' aimed at generating a supportive environment for discussion. (It's helpful to reflect on what deliberation means in this context; a standard definition talks of 'careful consideration with a view to decision; the consideration and discussion for and against a measure'.)

Finally, imagine that you have been asked to evaluate the success of DEMOCS as an engagement tool. Let's explore the measures and methods that might prove useful. Note

that it will be important to examine both the quality of the process itself and the value of its outcomes.

Establishing criteria for evaluation is far from easy! Section 3.3 of *Open Channels*, a review by the Parliamentary Office of Science and Technology (POST) of developments in public dialogue published in 2001, lists possible criteria for evaluating the quality and impact of dialogue. It would be helpful to read through that list, seeing how the points match up to your thoughts on evaluating DEMOCS, and to make a note of any difficulties or questions that you think could arise in carrying out such an evaluation in practice. A more extensive and highly relevant discussion of difficulties in evaluating public engagement initiatives, with special reference to GM Nation?, is provided by Rowe *et al.* (2005).

7 Final thoughts

We deliberately chose a wide range of different initiatives to explore, to reflect the broad range of initiatives underway. And yet, as you have seen, there are common threads that run though all our examples, such as the representativeness of 'public' opinion and how outcomes input into policy making. A key issue that Reading 5 highlighted was the case for 'upstream' engagement, likely to involve a more all-encompassing and ambitious form of public consultation, able to influence far more than public safety issues alone.

What is certain is that public consultation, in this and other areas of policy making, is already a reality that has considerable political backing. Will a 'tool-kit' of reliable and proven techniques of consultation gradually emerge? Will scientists prove enthusiastic supporters of such exercises? Some scientists are concerned that with the passing of the 'deficit model', there is less emphasis on the contribution that scientific knowledge can and should make to decision making. Communicating accurate and readily-comprehensible information, in a non-partisan and sometimes one-way mode, be it from journalist or scientists, will surely continue to be crucial to the process. But the most exciting prospect, and one we hope you will follow well after your study of this course is ended, is how dialogue issues of this type play out in the years ahead, as part of evolving notions of science and citizenship.

Conclusion

This free course provided an introduction to studying Science. It took you through a series of exercises designed to develop your approach to study and learning at a distance and helped to improve your confidence as an independent learner.

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