

## Making public consultation more "user-friendly" by turning "Technology Foresight" into just "Foresight": But who are the users? <sup>1</sup>

Josephine Anne Stein

---

### Introduction

Public consultation on science policy began in the UK under the Conservative Government of Margaret Thatcher. Prior to that, science policymaking had largely been the arcane province of "boffins" within the Research Council system, advised by The Royal Society, other professional bodies, committees and co-opted individuals on an *ad hoc* basis. Policy for basic science was determined through traditional, elite Research Council structures, professional networks and practices; that for applied R&D focused on data and expert-driven processes<sup>2</sup>. Science and technology policymaking was a highly devolved, expert-led, and secretive process, operating under the strictures of the Official Secrets Act. The Cabinet did not ordinarily get involved, let alone the Prime Minister.

Thatcher changed all that. She regularly summoned scientists to No. 10 Downing Street to give her briefings on the latest scientific developments. According to one such scientist, a young physicist at Imperial College, politics did not enter into the discussion<sup>3</sup>. The Prime Minister, who prepared for these meetings in advance (and had a background in chemistry), subjected the scientists to her famous questioning and took an active interest in the substance of their research. These briefings were private; although the scientific community and the press were aware that they took place, there was no public interface -- just as was the case for the scientific advisory system. But that too was about to change.

In 1992, a new Office of Science and Technology (OST) was established within the Cabinet Office, headed by a minister with Cabinet rank (with the colourful title of Chancellor of the Duchy of Lancaster, who was also responsible for the Civil Service). William Waldegrave, the first to inhabit this post, launched a major, open public consultation on the future of science policy in the UK, inviting evidence from the scientific community and the public. Some 800 submissions were received from professional bodies, universities, associations and individuals. Not all of them were read.

---

<sup>1</sup> Discussion of Technology Foresight and the UN National Consensus Conference on Biotechnology in this section is based largely on J.A. Stein's chapters in P. den Hertog, J.A. Stein, J. Schot and D. Gritsalis (1996), *User involvement in generating and applying RTD: Concepts, practices and policy lessons*, project report to the European Commission (DG XII), TNO report STB/96/011, Apeldoorn, The Netherlands, April 1996, also published by the European Commission, DG XIII/D2, as a report of the Interfaces: Science - Technology - Society programme.

<sup>2</sup> J. Irvine and B.R. Martin (1984), *Foresight in Science: Picking the Winners* (Pinter, London).

<sup>3</sup> J. Hassard, personal communication.

The consultations fed into the development of the first major science policy document to emerge from Government in decades: *Realising Our Potential*<sup>4</sup>, in 1993. This White Paper signalled the start of major reorganisations of the UK science base and policy shifts, amongst them a commitment to public understanding of science and to expanding expert consultation on science and technology policy.

This section examines six key consultations that took place in the decade following the publication of the White Paper: two foresight exercises (expert led and expert-dominated), two consensus conferences (with experts defining the scope and content for lay panel deliberations) and two more elaborate exercises in which the public had a more influential role in determining their own way of working and thus their own conclusions.

### **(Technology) Foresight**

The first Technology Foresight exercise was initiated by OST in 1993 with the aim of identifying technologies likely to emerge by 2015 that would have a significant impact on wealth creation and the quality of life. It was, at the time, the largest and most complex exercise of this type ever undertaken in Europe, and it was accompanied by extensive commentary and some degree of controversy<sup>5</sup>.

Technology Foresight was designed to marshal the intellectual resources of UK experts in research, technology and “exploitation”, significantly broadening the range and degree of input by the expert community into innovation policymaking. As such, it was not intended to include, in a substantial way, consultation with end users or representatives of the general public. There was minor involvement of user groups and the public on an incidental or discretionary basis. However, the main thrust of Technology Foresight was an interactive process of eliciting expert opinion. It was based on a major “Delphi” survey, a set of regional workshops with invited participants, and a set of fifteen expert panels intended to cover most sectors of the British economy, under the leadership of a Steering Group.

The Steering Group selected about 60% of the members of the 15 sector panels using a co-nomination process that was also used to identify a wider expert pool that could be consulted by the panels<sup>6</sup>. The remainder were identified more informally, on a discretionary basis, in order to achieve broader representation (for example, each of the sector panels typically had one or two women members, although none of the panels was chaired by a woman). Participation in Technology Foresight was dominated by well-established experts in technology and its exploitation (indeed, a “grading”

---

<sup>4</sup> Office of Science and Technology (1993), *Realising Our Potential: A Strategy for Science, Engineering and Technology*, (HMSO, London).

<sup>5</sup> P. den Hertog, J.A. Stein, J. Schot and D. Gritsalis (1996), User involvement in generating and applying Hertog RTD: Concepts, practices and policy lessons, project report to the European Commission (DG XII), TNO report STB/96/011, Apeldoorn, The Netherlands, April 1996, also published by the European Commission, DG XIII/D2, as a report of the Interfaces: Science - Technology - Society programme.

<sup>6</sup> D. Loveridge, L. Georghiou and M. Nedeva (1995), *United Kingdom Technology Foresight Programme: Delphi Survey*, report to the Office of Science and Technology, PREST, University of Manchester.

system was used to select experts). A few representatives of consumer organisations and other non-governmental organisations were involved. For example, John Dawson of the Automobile Association was on the Steering Group, and members of Transport 2000, a voluntary organisation promoting public transport and the use of bicycles, took part in the Delphi survey. There was also some degree of wider participation in the regional workshops. Those involved in running the workshops said that invitations were easy to acquire, though only those close enough to the process to be aware of this were in a position to request an invitation.

It was a stated objective of the Technology Foresight exercise to bring together users and producers of R&D. However, in the parlance of OST, the term “user” was understood to refer to industry and other organisations (such as hospitals) which take up the results of R&D in order to produce goods and services for public consumption by end users. In other words, “users” took the role of intermediaries between knowledge producers and the public, who were conceptualised as consumers (as distinct from citizens).

The limitations of Technology Foresight to address the “crisis in competitiveness of British industry” through inadequate embedding of the process in the social context were recognised by critics and acknowledged even by those responsible for the design of the exercise (Loveridge, Georghiou and Nedeva, 1995). This led to a number of NGO initiatives which extended the consultation to, for example, young people (e.g. Visions of the Future, organised by the British Association for the Advancement of Science).

In the second round of UK Foresight, the word “technology” was dropped altogether, in an effort to broaden the discussion, and explicit efforts were undertaken to broaden “stakeholder” participation. Like the Technology Foresight exercise that preceded it, Foresight was constructed around a set of sector panels covering the range of economic activity in the UK. Unlike Technology Foresight, however, the second round was a much lower budget and generally lower-key exercise. Public involvement, as before, was left to the discretion of the panels, and according to one panel member familiar with the exercise as a whole<sup>7</sup>, the degree of public consultation was not significantly greater in practice than had been the case for Technology Foresight.

The new Foresight exercise succeeded in broadening stakeholder participation in the panels to some extent, by including more representatives of NGOs such as consumer groups and environmental organisations, and representatives of the voluntary (charity) sector. However, the Foresight panels remained dominated by the more traditional expert communities that constituted almost all of the Technology Foresight panel memberships.

Not only was there greater fanfare surrounding the first Technology Foresight exercise, the policies that followed provided the means to implement the results. A “Foresight Challenge” fund for R&D conforming with the recommendations of the panels, accompanied by funding cuts more generally for the science base, ensured that Technology Foresight would be “successful” in steering British innovation processes. However, the general consensus of participants in Technology Foresight was that its importance lay less in the policies and changes in funding structure that followed than in

---

<sup>7</sup> S Hewer, personal communication.

its construction of new networks of knowledge producers and (predominantly) industrial “users”.

(Technology) Foresight was designed and implemented as an expert-led advisory process; public involvement was heavily circumscribed during the deliberative phase. The Delphi exercise was confined to co-nominated experts; the panel members were selected, and invitations were required to attend the workshops. It was only with the publication of the sector panel reports in both exercises that the discussion was effectively transferred to the public domain, by which time the outlines of policy initiatives deriving from the exercise were already in place.

### **Consensus conferences**

The first of two national consensus conferences in the UK, on Plant Biotechnology, took place in London in November 1994. It was organised by the Science Museum and funded by the Biotechnology and Biological Sciences Research Council (BBSRC), largely at the instigation of Tom Blundell, the Chief Executive of the BBSRC. Modelled on the consensus conferences in Denmark organised by the Danish Board of Technology in the 1980s, this conference brought together research specialists, other experts and members of the lay public to engage in dialogue on scientific and policy aspects of plant biotechnology research.

The UK consensus conference was based on the questioning of experts in biotechnology and related areas by a panel of lay members of the public, selected to be broadly representative of the general public. However, in the UK (as in the case of Dutch consensus conferences) the primary purpose of the consensus conference was to stimulate debate and to inform the public about plant biotechnology and the issues surrounding its research and application. According to Blundell,

*“We have a responsibility to communicate the new science in a way that is understandable to the public. Ultimately, it must be the public that makes decisions about biotechnology on the basis of its social, legal, economic and other repercussions for the future.”*

Plant biotechnology was chosen as the topic of the conference as there was both great scientific and public interest in genetic manipulation. Animal biotechnology was ruled out as it is a highly contentious area in the UK: so much so that laboratories and individual scientists have come under attack by animal rights groups.

A Steering Committee was constituted to oversee the consensus conference, chaired by John Durant, the UK’s first Professor of Public Understanding of Science, who holds a joint appointment by Imperial College and the Science Museum. Other members included the research director of a large biotechnology company, a journalist, an academic from a different scientific field, a senior official of the Consumers’ Association and the Director of the Parliamentary Office of Science and Technology (serving in a personal rather than an official capacity), along with the conference project manager

and the lay panel facilitator. Steering Committee meetings were also attended by a representative of the sponsoring BBSRC and the conference evaluator<sup>8</sup>.

The independence of the panel was considered to be of paramount importance, which was why government policymakers either had indirect involvement, participated in a personal rather than in an official capacity, or appeared only at the conclusion of the process when the results were presented. Although scepticism abounded and it was initially difficult to persuade experts to participate, the exercise gathered momentum and in the end was felt that the experiment had been a success, although not without attendant risks. According to one lay panel member, who was elected as the chairman for drafting the report, "industry representatives present... breathed an audible sigh of relief," while "some environmental lobbyists were not so pleased with the lack of bit in some of our recommendations."<sup>9</sup>

A second consensus conference, on nuclear waste management was held in 1999, on a similar basis to the previous conference<sup>10</sup>. It followed, and made extensive reference to, the results of a recent inquiry by the House of Lords Select Committee on Science and Technology on the same topic. The government initially agreed to take the conclusions of the consensus conference into account in formulating a response to the House of Lords report, but its response was written before the consensus conference was completed.

There were three basic elements of public involvement in the UK consensus conferences. First of all, the panels themselves were comprised of lay members selected to be broadly representative of the public at large. Secondly, the presentation of the panels' findings were conducted in well-publicised and well-attended public meetings at which there were also presentations by experts and stakeholders associated with the process, plus extensive opportunities for questions and discussion. Finally, members of the public were informed of the outcomes through a series of publications and press reports.

In the case of both consensus conferences, the topic under discussion had already been investigated by the House of Lords Select Committee on S&T. In both cases, the outcomes of the lay panels deliberations were not dissimilar from the conclusions reached by the Lords. This has prompted some critics to question the utility - and cost - of the consensus conference exercises (the first one had a budget of £86,000). According to the POST report<sup>11</sup>, the results of the first consensus conference had "nowhere to go". As the government's response to the House of Lords' report on nuclear waste management was written before the second consensus conference was completed, and the outcome was not discussed in the Parliamentary debate on the report, it would appear that the influence of consensus conferences on policy in the UK has been minimal.

---

<sup>8</sup> S. Joss and J. Durant (1995), "The UK National Consensus Conference on Plant Biotechnology", *Public Understanding of Science*, Vol 4. pp 195-204.

<sup>9</sup> G. Lee, "A consensus conference from the point of view of a lay-panel member", in S. Joss and J. Durant, Eds. (1995) *Public participation in Science: The Role of Consensus Conferences in Europe* (Science Museum, London).

<sup>10</sup> UK Centre for Economic and Environmental Development (1999), *UK National Consensus Conference on Radioactive Waste Management*, Final report, (<http://www.ukceed.org>).

<sup>11</sup> Parliamentary Office of Science and Technology, *OPEN CHANNELS: Public dialogue in science and technology*, Report No. 153, March 2001.

Most commentators, both independent and associated with the consensus conferences, felt that the main value in the exercises was in raising quality, informed public debate and in building public confidence in the outcomes of public policymaking in these highly contentious areas.

## Public consultation on the biosciences

John Battle, Minister for Science, launched the Public Consultation on the Biosciences in November 1997, on behalf of the Office of Science and Technology, which by then had been transferred from the Cabinet Office to the Department of Trade and Industry. The terms of reference and the methodologies to be employed were finalised by the new Minister, Lord Sainsbury, in the summer of 1998 with the support of an advisory group comprised of experts and stakeholders.

The consultation consisted of six citizens' juries and a larger survey involving 1,000 people from the Cabinet Office People's Panel (see section on Government Initiatives). While explicitly set up to seek the public's views and to promote informed debate, according to Lord Sainsbury the consultation also aimed to "encourage public confidence in the Government's use of scientific information."<sup>12</sup> Run by MORI, a major public opinion research company, the exercise exhibited characteristics of mainstream market research as well as the more consultative, interactive approach in the citizens' juries. According to Irwin (2001)<sup>13</sup>, who observed some of the citizens' jury meetings, participants were seriously engaged in the process and the citizens were effective in shaping conclusions. However, the influence of their findings was limited. Irwin traces how the discourse shifted from the initial participatory formulation used by John Battle to the ultimate reception of the results by Lord Sainsbury, as clearly subordinate to the mainstream scientific advisory mechanisms informing government policy.

## Citizen Foresight

Technology Foresight was heavily criticised by those who felt that the exercise was too remote from societal needs assessment to form the basis of democratic decision-making. One initiative organised by the University of East London and The Genetic Forum, on "The Future of Food and Agriculture", experimented with a different, citizen-led approach in which the lay panel was able to refine its own terms of reference in addition to contribute to the selection of expert participants.

The twelve members of the Citizens' Panel were randomly selected, in a constituency that had voted consistently in accordance to the UK as a whole in national elections for over 40 years. The panel met weekly in the function room of a local pub over a period of

---

<sup>12</sup> T. Wakeford *et. al.* (1999), *Citizen Foresight: A tool to enhance democratic policy-making*, report of the London Centre for Governance Innovation and Science and The Genetics Forum, London.

<sup>13</sup> A. Irwin (2001), "Constructing the scientific citizen: science and democracy in the biosciences", *Public Understanding of Science*, Vol. 10, pp 1-18.

ten weeks. The process was overseen by a Stakeholder Panel comprised of representatives of key interest groups, in order to present the panel with an initial set of briefings that could be considered balanced, well-informed and fair. The panel considered evidence presented by a wide range of experts and stakeholders, refining their own terms of reference as the exercise progressed, and requesting that the organisers provide additional information and invite additional, specific types of witnesses. With the help of a facilitator, the panel drew up a final report with a set of findings, most of which were by consensus. Where there was disagreement, the report used italic text and identified how many of the panellists were in agreement or disagreed.

The report of the Citizens' Panel was presented at a public event/press conference in Central London, at which the exercise was presented by the organisers and several panellists read out selected portions of their report (being unaccustomed to speaking in public). The final report of the Citizen Foresight exercise included background context, a description of the methodology, and short responses by members of the Stakeholder Panel in addition to the Citizens' Panel report itself. It was launched at a meeting in the Grand Committee Room of the Palace of Westminster, which was attended by Members of Parliament (both Houses of Commons and Lords), NGOs and the general public, as well as members of the Stakeholders Panel.

Interestingly, members of the Citizens' Panel chose not to attend the Westminster meeting. The report was instead presented as part of a more comprehensive document (Wakeford *et al.*, 1999). Members of the Stakeholders Panel, who were more comfortable in speaking in public in such an imposing setting, were given the opportunity to present their responses to the citizens' findings. Nevertheless, serious points were raised by members of the public who were in attendance, and discussion took place that might not have been possible in any other context. For example, a member of an environmental organisation was able to ask a representative of an agricultural chemicals company why the company opposed a proposed European directive assigning liabilities to manufacturers, if use of their products posed no threat to human health. Members of Parliament mingled with scientists, journalists and citizen activists, and the debate was to a high standard.

## Conclusion

This section focuses on three major types of citizen consultation: expert-led Foresight exercises, consensus conferences and more interactive, citizen-based examples of consultation. Of the six examples presented, it is Technology Foresight, in which the public was for the most part excluded, that had the clearest influence on British innovation policy.

The two consensus conferences, for which the terms of reference were tightly defined, broadly replicated the results of expert-led, House of Lords inquiries, which directly informed Parliamentary debate. The degree of influence these consensus

conferences had on policy may have been limited<sup>14</sup>, but they are likely to have played as much a role in building public confidence as in reinforcing the outcome of the more traditional Parliamentary science advisory process.

The influence of the public consultation on the biosciences is similarly difficult to assess; like the consensus conferences it may have played a dual role (communicating informed lay opinion to policymakers and to the public at large). Citizen Foresight, the most radically citizen-led example, was highly effective in bridging the gaps between Parliamentary, expert, corporate, scientific, civil society and ordinary public citizen to engage in interactive dialogue. While welcomed by all involved, the impact of the specific findings on British agriculture is difficult to assess and Citizen Foresight may have been the least influential of all of the consultations described in this section. The main interest in Citizen Foresight appeared to focus rather on its approach to public consultation more generally. While considered an interesting experiment, the Citizen Foresight approach has not taken root in the UK. The traditional scientific advisory system serving Government, the Parliamentary Select Committee inquiries, expert-based public inquiries of other types, regulatory systems and special expert-led consultations are firmly embedded in public policymaking structures, while the more citizen-led consultations would appear to have limited scope for interaction with policymakers and even more limited influence on the democratic process.

One could raise the question of “why bother”? Why go to a great deal of trouble to assemble a citizens’ panel that is broadly representative of UK society to consider highly technical issues, when Parliament is itself constituted as a representative body and has the resources and responsibilities at its disposal to deliberate as well as to deliver? Why not seek to improve Parliamentary democracy itself? We do not propose an answer, but only to raise a more fundamental question about the capacity of any single representative body to responsibly engage with the full range of highly complex issues that face British society today.

In general, those who organise consultation exercises express satisfaction with the outcome; some have also expressed concern that future exercises remain under careful control to prevent their “capture” by special interests. Others express concern that they have already been captured -- by those who already control science and technology in the United Kingdom: industry, government and the research community.

---

<sup>14</sup> J Seargeant and J Steele (1998), *Consulting the Public: Guidelines and Good Practice*, (Policy Studies Institute, London).