

## Science and Society Forum: Brussels, March 2005

### Towards a culture of science communication: Core theme 3

Chaired with Gallic charm and panache by Patrice Lannoy, a journalist from Le Figaro, the day was structured around three themes – the public, the media and scientists. Contributions from the audience enriched and extended the debate and came together in some strong messages. In this report the speakers will be introduced, and rather than summarise each presentation, the key themes of the session will be presented.

### The presentations

- *The perception of science by the European citizens: lessons from the Eurobarometer.* Michel Claessens, DG Research
- *Reaching the public: the Science Week concept:* Sophie Tocreau, Coordinator of the French Science Festival, French Ministry for Research and Technology
- *The European dimension of scientific communication: the European Science Week concept:* Claus Madsen, European Southern Observatory

- *Meeting the needs of media: why a science story is covered by media:* Alicia Rivera, Journalist, El Pais
- *The key role of mass media: when television communicates science to the young public:* Frederic Courant, Author, chief editor and presenter of “C’est pas sorcier”, TV scientific magazine laureate of Descartes Prize for Science Communication
- *How do scientists communicate today?* Christoffel Waelkens, University of Leuven
- *When a scientist wants to be listened to:* Catharina Ottestam, ECOTARGET project, Communication prize at CER 2004
- *Awarding communication activities in scientific careers:* Thomas Tyden, Director, Professor, Dalarna Research Institute

### **Reflections on the common themes**

Two words in the title of this session ‘Towards a culture of science communication’ deserve some commentary. When we think of culture, we think of something that is pervasive and stable. Of course culture changes

over time but like a super tanker, this is a rather slow process. Yet, what is remarkable is how the science and society agenda has been taken on board in a relatively short time span. It seemed a rather radical idea in the 1990s, but with its articulation in the Science and Society Action Plan and implementation in the 6<sup>th</sup> Framework Programme, we have seen the beginnings of a sea change in the scientific culture. For many scientists today, taking science and technology to the public is now becoming a recognised and valued activity, even if benchmarks and best practice are still in the making. And it is not just amongst a minority of scientists. On the 21<sup>st</sup> November 2004 a full page in Nature extolled the virtues of 'going public', and in Science 11<sup>th</sup> February 2005, Alan Leshner, the Editor and CEO of the American Academy for the Advancement of Science, articulated a similar vision about 'where science meets society'. From small beginnings in a few EU member states, notably in the Scandinavian countries, a new culture has emerged, with positive and far-reaching implications for the relations between science and society.

Communication is another word that needs some thought. Generally speaking we think of communication as the transfer of information from a source to a receiver – a one directional flow. Humans are not alone in their capacity to communicate in this way. Animals do it, for example a dog barking and even physical objects do it, for example traffic lights. However, if science communication is conceived in this light – scientists sending out

messages to inform an anonymous and unknown public, then this will not live up to the ambitions of science in society. We need to recognise that the public is a key part of the thinking society, with particular interests, concerns and questions about science and technological innovations and how these will shape the future of societies. Increasingly science and technology intersects with people's beliefs and values, in part because science and technology is becoming involved in issues with ethical and value dimensions. As a result the public want their voice to be heard in decisions shaping research agendas, in regulation and in choices about the options that science and technology offers for the future of societies.

To address the new public of science the idea of a one-directional flow of information should be replaced by dialogue, engagement and participation. And this means questioning some of the bland and often pejorative stereotypes of the public, finding out more about the public and developing ways of talking with and to them more effectively.

Moving on to the more specific messages of the session, a number stand out for particular attention.

*Scientists have a duty to engage with the public*

**The proposition that scientists have a duty or obligation to engage with the public was emphasised by speakers and the audience alike.** It is a duty in the narrow sense of public accountability for research funded by the tax payer, but also in the wider sense of citizenship in democratic societies. Those with the power to shape the future of society through science and technological innovation should, like politicians, the judiciary and others, be contributing to the public sphere, demystifying the esoteric and helping the public to understand the implications. At the same time, public engagement may benefit science itself. Visible role models may encourage students to take a greater interest in science and to enter careers in the area. Equally of value is the contribution of the public as experts on particular issues. For example, we heard that the 'lay knowledge' of patient groups brought a particularly useful dimension to bio-medical research.

*Emphasise the pleasure, prospects and excitement of science.*

There are many stereotypes associated with science and scientists, often drawing on people's school experiences; it is difficult to understand and those that do are boffins with their heads in the clouds. But science does not need to be boring. **Communicators, we were told, should try to be up-beat; they should stress the excitement of discovery in the scientific process and the intrinsic pleasures gained from research.** At the same time **scientists should not frighten the public with complex or arcane terminology,** or make the

public feel guilty about being ignorant. Good communicators **write and speak in a simple and accessible language attuned to their audience**. They do not present a synopsis of their latest paper, but start by summarising the problem and the key findings. Good communicators briefly explain what was done and what are likely to be the benefits. They also capture the imagination of the audience with some flair and ingenuity in the presentation, thereby arousing positive emotions.

There was also a call to go beyond the presentation of science as merely findings and new discoveries, of the style – ‘we have just found a solution to X’. Scientific research is a process of confronting challenges with varied levels of success until a tentative solution is secured. **Presenting what scientific research really is would help the public understand the uncertainty inherent in much scientific knowledge**. For example, it is no good scientists complaining that people give too much significance to genetic information, when they, the scientists, spent the latter part of the 1990s announcing that they had found a gene for this, that and the other.

*Active support for younger scientists.*

The meeting heard that some younger scientists are committed to public engagement and with the support of the EC are working to spread the message and good practice. They are eager and enthused by the idea of

taking science into the streets. While this initiative was widely applauded, the meeting was concerned to hear that they were not receiving much support due to the competitive, publish or perish culture of laboratories. There was **strong support for measures that lift such disincentives confronting younger** scientists who are clearly taking the science and society agenda seriously. Surely those in the vanguard should not be penalised.

In this context, Sweden is an interesting case for younger and older scientists alike. Challenging the problem of low, even no, incentives for scientists to engage with the public, dissemination activities are up-streamed. This in contrast to the usual practice of treating dissemination as an after-thought when the research has been completed. Those successful in grant applications receive an information pack on how to plan and prepare communications, with consultants on hand to give advice

*There is no one best method*

The session was introduced to a number of very successful science communication initiatives; science cafes, national and regional science fairs and fetes, the European Science week and a global event structured around the transit of Venus in 2004. Collectively these have attracted millions of participants. Clearly, **there is no single formula for success**, the trick is to **capitalise on available resources and be opportunistic on the choice of topics and related activities**. In different settings success was attributed to

some or all of the following characteristics of events - based on a good story or an interesting theme; ease of participation and requiring little previous knowledge; practical activities with appropriate support leading to a sense of achievement and accomplishment, and finally, without a hint of 'education' which has for some negative connotations.

An organisational feature that unites many of these efforts is a strong political and philosophical commitment to science communication, groups and networks for whom science communication is a key objective.

**While it was noted that scientists can be hesitant about participating in such events, once caught they are converted.**

*The printed press is not the mouth- piece of science.*

Newspapers and the printed press are often taken to task for failing to popularise science in the way that scientists think they should. A number of misunderstandings create tensions between journalists and scientists. These include what constitutes accuracy, the level of the prose and sensationalism. For example, newspapers want a summary of the key points of interest, they are not interested in the same material as a journal article, and they need to write at a level appropriate for a general readership, not the readers of scientific journals. Both journalists and scientists can fall into the trap of sensationalism, making extravagant claims for differing reasons.

**We heard from a science journalist that it is not the primary role of the press to act as popularisers of science** and neither is their role to act as a lobby group for scientists. **The role of the daily press is to be a reliable source of relevant news, the compulsory news events for the well informed.**

By contrast to such daily news, the weekly supplements carried by some of the heavy press offer the more detailed stories on scientific developments that include the background, a description of the current work and indications of future trends.

**Recommendations for scientists included thinking more about the social relevance of their research and being more assiduous in cultivating contacts with journalists, keeping them informed about recent and prospective developments.**

*Science has no place on television, or does it?*

The Eurobarometer surveys on the public understanding of science show that, for the vast majority of the public, **television is the major source of information about science and technology.** But with television news dominated by the sound bite and programming following the agendas of the entertainment, soap opera, crime story etc, is there any room for the serious business of science and technology?

**The answer is an unequivocal “yes”** if the formula is right. Across Europe there is a number of examples of **highly successful TV programmes** on science and technology. The session heard of one in France, “C’est pas sorcier” (it’s dead easy”) that has achieved remarkable and spectacular results bringing the scientific discovery of the outside world to the public. Originally designed for children aged 10 to 15 years this show goes out twice a week, in a peak viewing periods, **reaching a large audience covering all age groups.** The programmes also cover a wide range of subjects from the exciting and innovative discoveries to the more mundane topics such as detergents. **Crucially, whatever the content, if it is portrayed in the right way, the public are interested.** The programme is fast moving, fun to watch and **translates science into popular language.** A scientific ‘boffin’ in a mobile laboratory is complemented by an innocent, Candide like character, who cheerfully **asks naïve questions, reassuring the audience that ignorance is not nothing to be ashamed of.**

### *Communication ethics*

Science communication always has a purpose and some purposes may raise ethical issues. Those communicating results that promise a better tomorrow, for example a new cure for a disease, may serve the interests of their funding agencies. What better outcome to a piece of funded research than some contribution to the improvement of mankind? Yet the reality may be a little less spectacular; taking for example but a small step towards the understanding of an illness and the possible development of a cure in the

distant future (after the funding agency has agreed to support further research). Such over ambitious announcements may well raise unrealistic expectations among vulnerable groups; this is surely unethical.

### *Science education in Schools.*

While recognising that education syllabuses are the responsibility of the Member States, **there was a consensus in the session that the EC should play a pivotal and catalytic role supporting best practice and innovation in science education.** The session did not have the time to discuss how best to support teachers, but support **they do need support to keep up to date with new developments, to have access to high quality teaching materials and to meet and exchange ideas for best practice.**

### *Conclusion*

Overall, the session illustrates the progress made in bringing science and technology to the public in recent years and in laying the foundations of a culture of science communication. But at the same time it is apparent that there is still a very long way to go. While there are now many innovative and successful examples of good practice ready to be emulated elsewhere, there are relatively few skilled science communication practitioners, political and institutional support is variable and funding across the range of activities is limited. Now is the time to re-double efforts to sustain the momentum. This will require leadership from the EC, National Governments, Regional

authorities, scientific academies and funding agencies and, above all, the  
commitment of the scientific community itself.

George Gaskell: LSE April 2005