

Shackled to stereotypes

Scientists know that their image is poor and accept that they need to do something about it.

Catherine Hughes

In recent years, policy-makers, the government and the media have increasingly encouraged scientists to take a more active role in discussions with non-specialist audiences about their work and its implications.

The 1985 Bodmer Report called on scientists to “learn to communicate with the public, be willing to do so and consider it your duty to do so.”¹ Last year, the House of Lords Select Committee report on Science and Society called for “a new culture of dialogue between scientists and the public.”² Although there is widespread agreement that significant steps need to be taken to achieve such aims, the nature of these steps remains in debate.

If new or modified strategies are indeed required, an essential prerequisite is a fuller understanding of the current picture of public dialogue. Recent research commissioned by the Wellcome Trust and the OST³ has mapped public attitudes and science communication activities.

A complementary strand to this research has been the commissioning of MORI by the Wellcome Trust to undertake a large-scale survey of scientists’ attitudes. The research hopes to shed light on how practising scientists perceive their role in science communication, and how they contribute to public debates on the social and ethical

implications of the research they carry out.

A survey of scientists

The survey interviewed a randomly selected and nationally representative sample of over 1600 scientists based in universities and research institutes in Great Britain. The scientists were from both biological and non-biological backgrounds, and their research was funded by a variety of sources, including research councils, industry and charities.

The findings reveal that scientists appear to have a highly positive attitude towards communicating research to the public. Seven in 10 scientists believe their research has social and ethical implications, and they overwhelmingly agree that the non-specialist public needs to know about these implications (93%). They also agree that scientists have a duty to communicate the results of their research and its implications to the non-specialist public (84%). In fact, most believe that scientists themselves should have the main responsibility for communicating the social and ethical implications of their research to the public (69%).

MORI then asked scientists to consider how they had personally been involved in such efforts. Just over half of those surveyed had participated in the previous year in activity designed to communicate their

research to the public (56%). These activities included giving talks to non-scientific audiences (32%), speaking to the media (29%), participating in open days for the general public at institutions (24%), and writing about or publishing their work for non-specialist audiences (13%).

Who does the talking?

Although these findings imply a reasonably high level of activity in science communication, profiles of those interviewed show that there is less participation at the ‘grassroots’ – the younger and less experienced scientists. Involvement in communication activity is skewed towards those in senior academic positions and on permanent contracts, and towards those whose work involves teaching as well as research.

Analysis also shows that the communicators are far more likely to feel equipped to convey their research and its

1. The Public Understanding of Science – Report of a Royal Society ad hoc group chaired by Sir Walter Bodmer, F.R.S. 1985

2. ‘Science and Society’, February 2000. Can be found at www.parliament.the-stationery-office.co.uk/pa/ld199900/ldselect/ldscstech/38/3801.htm

3. These reports are: OST and Wellcome Trust, ‘Science and The Public: A Review of Science Communication and Public Attitudes to Science in Britain’, October 2000; and Research International, ‘Science and The Public: Mapping Science Communication Activities’. These can be found at www.wellcome.ac.uk/publications

@ a glance...

■ MORI conducted a large survey among scientists, to understand how they perceive their role in communicating their research to non-specialist audiences.

■ Seven in ten scientists surveyed believe their research has social and ethical implications, and most believe scientists have a duty to communicate research and its implications to the public.

■ According to scientists, the two greatest barriers to improved communication were the public’s lack of knowledge of, education about or interest in science, and the media.

■ The Wellcome Trust has reaffirmed its commitment to public engagement in its recently published Corporate Plan which describes its future five-year funding strategy.



The Wellcome Trust

scientists still have a low opinion of the public's ability to understand science, are distrustful of most of the media, and believe they themselves are viewed in an equally negative light by the public.

Respondents were asked to choose from a list of personal and professional characteristics: those they believe apply to themselves, and those they think the public would apply to scientists. While scientists are most likely to view themselves as enquiring, intelligent and methodical, they typically believe that the public sees them as detached, poor at public relations, secretive and uncommunicative.

The most significant barrier to improved understanding of science among the public was seen to be the public's lack of knowledge of, education about or interest in science (74%). Just over one in three scientists also considered the media to be a barrier (35%). Only one in five considered the lack of communication skills among scientists themselves to be a barrier to improved understanding of science among the public.

Although the non-specialist public is believed to rely most heavily on the mainstream media to keep themselves informed about scientific issues and their implications,⁵ scientists themselves place extremely limited trust in the popular media to provide accurate information⁶. This applies both to scientific facts and their social and ethical implications (and scientists are apparently unaware that the public also has very limited trust in journalists)⁷. Scientists in fact

A 'LifeLab' demonstration by GCSE students in the demonstration area of the 'Science For Life' exhibition at the Wellcome Trust.

implications to the public, and to be trained to do so. Such results indicate that training can play an important part in fostering confidence to communicate with non-specialist audiences, while recognising that age, seniority and personality are also important factors.

However, awareness and uptake of support services, such as training, to help scientists communicate their research to the public is disappointingly low. Very few of the scientists interviewed had ever had training in communicating their research to the public (16%) or

in dealing with the media (10%). Many were also unaware whether their institutions or departments provided mechanisms for public communication – such as access to expert staff, guidelines on communicating with the public or training courses. The picture is bleaker still with regards to funders of research – nearly seven in 10 scientists are unaware of the availability of these services or believe their funder provides no assistance to help them communicate.

Scientists and the public

The results indicate that many

4. Detailed breakdowns of all findings discussed here can be found in the full report.

5. 83% believe the public uses national newspapers for this purpose, along with documentaries and current affairs programmes (81%), TV news (72%) and radio news (49%).

6. E.g. Journalists writing for national newspapers are trusted by only 6% of scientists to provide accurate information on scientific facts, and by only 11% to be able to discuss the social and ethical implications.

7. MORI has undertaken considerable work over many years in the area of public trust in various groups, and has found that journalists receive consistently low ratings. E.g. See MORI/The BMA, February 2000. Press release: 'Public Still Regards Doctors as The Most Trustworthy Group,' available from www.bma.org.uk or www.mori.com/pollsarchive/february2000

place little trust in any information source other than those provided by their peers (university scientists, scientific books and the scientific press).

Nevertheless, the media was seen to be something of a necessary evil – 73% percent of respondents considered it to be the most effective method of communication with the public.

These results suggest that scientists' views on the public and the media are themselves proving something of a barrier to communication with the public. They believe their profession and their work is viewed inaccurately and negatively, yet they have a poor regard for the public's knowledge of and ability to understand scientific issues, and the media's role in reporting science.

Improving relations

One of the clear conclusions to be drawn from the MORI survey, then, is that there is a need for improved relations between scientists and the public, and between scientists and the national media. The Wellcome Trust/OST survey 'Science and the Public'⁸ discovered that the great majority of the non-specialist public is 'amazed' and fascinated by science, and that only a relatively small proportion is truly uninterested. Scientists need to be aware of this interest in their work. Wellcome's public consultation programme has also shown that the public needs to know very little of the technical scientific detail to be able to comprehend and engage in sophisticated discussion about the social and ethical implications of scientific research⁹.

Opinions on communicating science through schools are comparatively positive. Nearly three quarters of scientists mentioned giving talks at schools and colleges as an effective method of communicating their research and its implications, and one in five scientists had done so in the previous year. Nearly half of those surveyed are also aware that their institution or department provides science-schools collaboration opportunities (45%). Initiatives such as the Researchers in Residence bioscience scheme¹⁰ encourage young scientists to develop both communication

skills and links with the community early on in their careers, and provide effective models of drawing together groups with a stake in improving science communication. Evaluation of funder-provided schemes such as these have proven them to be valuable, yet few scientists are aware of them.¹¹

There are other important messages here for institutions and funders. When scientists were asked to mention the things they believed would most contribute to improved communications with the public, the majority called for something that is apparently lacking – encouragement from their institutions and funders to spend more time communicating with the public (78%).¹² Certainly, the flow of information between funders, institutions and scientists needs to be improved, at the very least so that scientists are aware of the support and services that are available to them for this purpose.

Recent high-level commitments to building a genuine dialogue between scientists and the non-specialist public require practical support and encouragement. Most scientists accept that the social and ethical issues raised by their research deserve wider discussion and some have indeed reached out beyond the laboratory. But just as popular stereotypes of the mad scientist persist, so do many scientist's own views that the major barriers to dialogue are an untrustworthy media, a lack of support from funders and a public unable to grasp complex questions. The building of confidence on either side will need careful handling if the shift from a rhetoric of 'public understanding' to 'public dialogue' is to be realised.

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The report *The Role of Scientists in Public Debate* is available to download at www.wellcome.ac.uk/publications

The Wellcome Trust Medical Photographic Library



Stage character, depicting the human central nervous system, in the Wellcome Trust funded educational comedy *The Brain*, produced by the Forkbeard Fantasy Company.

8. e.g. OST and Wellcome Trust, 'Science and The Public', as before

9. This is also borne out by MORI's work for the OST among the public. See 'The Public Consultation on Developments in the Sciences', 1998/9. Available from www.dti.gov.uk/ost/ostbusiness/index.htm

10. Jointly sponsored by the Wellcome Trust and the biosciences Research Councils (NERC, BBSRC, MRC)

11. 11% of scientists said they were aware of their principal funder of research providing participation in science-schools collaboration. Evaluations: see, e.g., An Evaluation of the Researchers in Residence Biosciences Scheme, National Centre for Social Research, 1999.

12. This is a net figure. Specifically, 60% requested incentives from Funding Authorities to encourage time spent on science communication, and 53% called for institutions to encourage time spent on science communication.

13. 'Planning for the Future 2000-2005', Wellcome Trust, October 2000. Available at http://www.wellcome.ac.uk/en/images/planforfuture_3249.pdf