THE FOUNDATION FOR SCIENCE AND TECHNOLOGY

DINNER/DISCUSSION SUMMARY

"Science Communication: How well are we doing?"

Held at the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG
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In the Chair: **The Rt Hon The Lord Jenkin of Roding**
Chairman, The Foundation for Science and Technology

Speakers: **Professor Malcolm Longair CBE**
Jacksonian Professor of Natural Philosophy and
Head of the Cavendish Laboratory, University of Cambridge
Pallab Ghosh
Science Correspondent, The BBC
Simon Pearson
Executive Editor, The Times
Sir John Maddox FRS
Editor, *FST Journal*

PROFESSOR LONGAIR said that achieving a better public understanding of science meant increasing public awareness of science; encouraging young scientists; countering the negative image of science; advocacy; and improving the lot of scientists. The crucial aim was to achieve a wide acceptance of science as part of the necessary culture of every citizen. There were successes, aided by the use of technology (of which the speaker gave some exuberant examples) – the scientific agenda now included public understanding; major efforts were being made to communicate the essence of science; the Science, Engineering and Technology (SET) weeks were a great success. But there were concerns – were we really improving scientific literacy? Was the message that science is about understanding the world getting across? Do people understand what scientific research means? He was greatly disturbed by science education in schools – students lacked an understanding of precision, gave potted answers instead of thinking, and were restricted by narrow syllabuses and inexpert teachers. Many would think a science profession not worth the effort. The best cure for all this would be good science teachers, and lectures and visits to schools by young and committed scientists. But the former was at the best long term, and the latter impossible given the demands of research and teaching. There was a gross underfunding of some 40 to 50% for science research and teaching. Much more must be done to persuade people that science research is for the benefit of all; that it is exciting and that the pleasure of mathematical exactness is something many can share. The press, within the limits of accessibility, did a good job.

MR. GHOSH explained that his job entailed making snap decisions on what to report and how. He had to balance his own knowledge, the authority of the alleged facts being publicised and the public interest in the information, all within in a very short time. He found the guidelines did little more than reiterate good journalistic practice, and did not often help in the situations with which he was faced. But scientists often did not understand the pressures he was under, nor accept the fact that once allegations or reports had been made, say, on the front page of the Daily Mail, they were news, and could not be wished away. He tried to set the material in context, but scientists often missed the chance to help him and others to widen debate. Putzai was an example. Scientists did not seize the chance to create better understanding of GM foods, and the risks and advantages of using them. Instead they concentrated on the narrow task of refuting Putzai's research. A good example of how to deal with an issue of public interest was the Stewart report on mobile phones. Science weeks, and conferences are all very well, but they are basically the elite talking to the elite – few readers of the Daily Mirror would be found at them, but they were the people scientists needed to reach. To do that, scientists had to be much more open, understand how the media work, and use PR staff effectively both for training themselves and dealing with the media (and pay them more). Scientists also had to maintain standards themselves – how many charities and companies had used scientists to puff their appeal; how many scientists had run beyond objectivity because they passionately believed in a cause?

MR. PEARSON also explained the way journalists had to work. He said his role was to help his paper produce on a daily basis a balanced package of informative or entertaining (preferably both) news and stories which would sell it. Science news and stories were only one - although a very important one - of a number of issues fighting for space and attention. Journalists believed that no story was too complex to deserve more than a single paragraph. There had been much progress on "soft" issues – e.g. giving the public a wider knowledge of basic scientific processes – but there was still a long way to go on news stories. Scientists too often failed to see the need for an immediate response; for a graphic

line, which would guide the news and lead a story away from rogue issues. They had not accepted – to use Professor Longair's phrase – that science must be part of the daily culture; be mainstream; and adopt the same techniques as others to launch and command rigorous debates.

SIR JOHN MADDOX said that, while all professionals hated guidelines, journalists should accept that their exaggerated reporting could lead to unnecessary public anxiety. There was often a failure to fit a story into context, which would enable the public to understand the risks. A recent example was the reporting of MMR. There was little attempt to explain what autism was and what the risks and effects of it were. No effort to lead a campaign to compensate those, if any (and there may be very few) who might have suffered, where a link between the vaccine and autism might be shown. He accepted that the guidelines could be felt to be too patronising, but stressed that scientists too often did not do their part. They should feel a duty to answer questions about science and communicate the vision of how science could improve life. Too often they let their academic colleagues get away with hostility to science without seeking to rebut their arguments and preconceptions. In short the answer to the question "how are we doing " was some improvement, but a long way to go.

Much of the following discussion revolved around the inability of scientists to understand the problems of the media who, in many cases, were only responding to what they felt to be public concern and interest. The result was ineffectiveness in putting over their case. Some felt that scientists, as did journalists, could legitimately complain that the Guidelines were condescending and did no more than tell them to do what any good scientist already did. But others argued that, if the object of the exercise was to get a real dialogue going between the media, who were a surrogate for the public and scientists, they missed the point. Scientists needed to start from an understanding of what were the issues the public cared about. Who had done the market research to show that? They then needed to think about how to deal with it – and not in terms of learned articles, but in language and style that someone who had a small attention span and no scientific background would want to read. Remember – once a science issue becomes front page, it ceases to be a scientific story, and becomes a news story. The scientist is no longer dealing with the knowledgeable scientific correspondent, but the ordinary journalist. So the scientist needs to know to know about the status and problems of the journalist with whom he deals. Who is he? What is his deadline? Who has he been speaking to? Am I being honest if I say I will ring him back in ten minutes? All this is particularly important when dealing with matters where NGOs are conducting strident campaigns. Their spokesmen can be irresponsible in alleging facts and raising fears, (they are not bothered by being peer reviewed) and it is vital to be aggressive in rebutting them and getting the scientific issues clear. Not easy, because they will leap on any slightest inaccuracy on your side, and you will have to make your point in such a way that the Daily Mail will want to report it. PR support and training is vital, and scientists are woefully short of it, partly because they don't see the importance of it, and partly because they are not willing to pay for it. Look at the effort NASA put into PR over the Hubble telescope – and how it paid off. PR training and advice can also help one avoid traps, such as selected comments from an interview designed to rubbish the speaker. But even with all these problems, there was perhaps more commonality between responsible journalists and scientists than was apparent. Both should be aiming to get more information to the public so that individuals could make rational choices for themselves: empowerment. Take the MMR case. No doubt there had been some wild reporting, but who, on the science side, had tried to widen the debate to show the public what the genuine areas of choices might be, so that they could would mean others would suffer, and no evidence that single injections were safer); (MMR vaccine, and disputed evidence that it has any relation to autism). Scientists must not rest on the comforting MORI finding that they were more trusted than journalists (or politicians); they must accept that they had lost the confidence of the public over BSE and other scares, because they had not been straight about all the facts, and had not acknowledged ignorance. Behind learning the techniques of dealing with the media (important though these techniques were) was the crucial need to observe scientific rigour, to be honest with oneself and ones paymasters, and sufficiently independent to then be honest and transparent with the outside world – and risk being seen as pedantic, cautious dogmatic, and, worst of all " a loose cannon". None of this would be easy in the face of political and commercial pressures, ones own ambition and belief in social or environmental activity.

Another theme was the concern about scientific education, and the lack of enthusiasm in students for science. There were a number of reasons for this, ranging from fashionable theories about the illusion of objectivity, the realisation that scientific learning could be hard work and mathematics could prove you wrong, to the inflexible nature of the science curriculum in schools, and the poor quality of much science teaching. No doubt something could be done about the latter, with due long term commitment and money from the Government (not noticeably evident), but the former could only be dealt with by much greater commitment from the scientific community. All experience was that the most effective way of motivating students to take up science subjects – whether or not they intended to become professional scientists – was to expose them to young and enthusiastic scientists; doing research or development on exciting issues. But Professor Longair's point was valid: how could heavily pressed researchers and teachers find the time to go out to schools or give public lectures? Within the present situation it was impossible. But there were US examples, which might help. If you got a scientific scholarship there you were put under an obligation to spend some time out in schools proselytising: there was a striking case of the effect of such work in schools in Chicago's South Side.

Both themes raised the question more of the duty of scientists than of the media. There was strong support for the view that it was part of the duty of a scientist to communicate with the outside world. This was true both in the narrow sense of making sure his work is on the public record and in the wider sense of ensuring that his work is understood, where necessary, by the wider public. "Where necessary" is not for him to decide; rogue scientists, media interest, political pressure and public concern will decide that for him. It is his duty then to deal with the interest – aggressively, in dealing with misconceptions, but also sympathetically, where it involves people having to make choices about their lives. Few scientists will be automatically good at this; their first duty is, therefore, to know their limitations and get training to help overcome them. A particular element of this duty is towards students in schools – getting over the excitement of science and the need for all to understand the scientific process. Only if this duty is fully accepted will the necessary pressure be exerted to get the funds and time to do it.

Sir Geoffrey Chipperfield