

‘A Vision for Science and Society’ consultation

*Response by Scientists for Global Responsibility (SGR)
(October 2008)*

About SGR

- Scientists for Global Responsibility (SGR) is an independent UK-based membership organisation of approximately 1000 natural and social scientists, engineers, IT professionals and architects. We promote science, design and technology which contribute to peace, social justice, and environmental sustainability.
- This response was compiled by those members of SGR’s staff and National Co-ordinating Committee with expertise in science policy and science communication.
- For more information on SGR, see <http://www.sgr.org.uk/>

General comments

We believe that there is a serious conflict at the heart of the UK science and society agenda, and this strategy document exemplifies this starkly. On the one hand, the aim is to increase public confidence, encourage more students to take up science, and generally “excite” society about the benefits of science and technology. Such aims are based on the presentation of a positive role of science and technology in the world. On the other hand, the strategy includes a commitment to “public dialogue” on science and technology issues. By definition, such a dialogue must also involve a serious and thoroughly two-way discussion about the negative as well as positive aspects of science and technology. For example, this should include the way in which their misuse has contributed (and continues to contribute) to major global problems, such as climate change, warfare, depletion of natural resources, social injustice etc.

SGR’s concern – which is exemplified by the way the consultation document is written – is that the government (and many sections of the scientific establishment) are not willing to acknowledge the degree to which current global problems are related to the continuing misuse of science and technology and are consequently not able to engage in a balanced dialogue in this area.

Given the real conflict between the *promotion* of science and technology and *dialogue* on the pros and cons of science and technology, we strongly recommend that the science and society strategy be split and each of these sections run by completely independent teams. Such a course of action will, we believe, increase the opportunity for necessary changes to be made to science policy to reduce the damage that misuse of science and technology is causing. By so doing, public confidence and trust in science and technology would be increased.

We should emphasise that that we do support the argument that the government should promote science – by, for example, encouraging more school children to study it or encouraging more people to opt for a scientific career. As members of the science, design and technology professions, we obviously want to encourage such activities. We do, however, believe that if dialogue is not clearly separated from promotion then the former will suffer. Indeed, we believe this has happened and continues to happen.

Our other major concern with the strategy reflects a concern we have with the science and technology sector more broadly: the degree to which powerful interests can exert undue influence and so undermine the potential benefits to society. Our particular concern relates to the role of large corporations and the military, especially in view of the high levels of funding that these interests put into science and technology and the controversial nature of many of their activities.

In relation to this, it should be remembered that trust in science and technology is strongly related to trust in the institutions which fund, carry out or use science and technology. If a particular corporation or government department loses trust due to its activities, then the science and technology with which it is associated will be less trusted. In trying to improve trust in a given area of science and technology, two factors are critical. Firstly, there needs to be a tangible distance between the scientific work and any powerful interest groups. Secondly, the scientific claims need to be open to scrutiny, criticism, repetition and refutation (all essential to the scientific method). Failure to fulfil these criteria will, we believe, prevent trust from being improved.

Overall, we believe that trust in (and the benefits from) science and technology would be significantly improved with a rapid transition to a low carbon economy – one in which the fossil fuel and military industries, for example, were much smaller than today.

We would also like to highlight a number of positive aspects of the strategy document that we especially welcome:

- A greater emphasis on the role of ethics and responsibility in the professions;
- A greater emphasis on the need for public dialogue;
- Acknowledgement that communication activities need to highlight that science is “not just a body of facts” and scientific uncertainty should be more fully acknowledged;
- That public engagement needs to receive greater recognition and respect within the professions.

Specific comments

Chapter 1: Our challenge

Para 1.2 (p6)

This paragraph is an important example of the selective way in which the science and technology issues are presented by the government. It highlights that rising populations can cause pressure on natural resources, but there is no mention of the (arguably greater) pressure caused by rising consumption, driven by growing economic activity that harnesses science and technology. Indeed, this paragraph also mentions the problems of climate change and global security, but does not acknowledge that the misuse of science and technology is a fundamental component in causing those problems.

The key point here should be that we need to do more to change the role of science and technology so that the negative effects are much reduced and the positive effects are much increased.

Chapter 4: A society excited by and valuing science

How can scientists further improve and professionalise engagement with the public? (p21)

How can the scientific and policy communities make science more interesting for the public and particularly for those difficult to reach groups? (p22)

SGR has long experience in engaging with civil society organisations, campaigners and others who (like us) believe that the practice and use of science and technology need to contribute more to

peace, social justice and environmental sustainability. There is great scepticism within such communities about how that this can be achieved when the careers of so many scientists are enmeshed with the interests of big business or the military.

In order to engage meaningfully with such groups, we recommend the following:

- Open acknowledgement that science and technology has been and may continue to be misused;
- Discussion of the role of different interests (i.e. government departments, business, civil society organisations) and their unequal power to influence the science and technology agenda (and indeed scientific research itself);
- A willingness by government to re-examine whether the current strategy – which puts a very high priority on the economic dimensions of science and technology – is best for society as a whole.

It should also be remembered that civil society organisations often include a high proportion of women (both as members and employees). Hence pursuit of these recommendations would, we believe, encourage greater engagement with women.

However, it should also be recognised that many groups and individuals will continue to be unsympathetic or even hostile to the science and technology sectors until they see concrete changes to the way they are governed and used.

How can policy makers better engage with society about the development of science? (p24)

The recommendations immediately above can also be applied to this question.

How can we capture emerging issues effectively and feed into the communication and engagement process? (p25)

Much more public dialogue needs to take place over the *governance* of science and technology. Our view is that governance is at the heart of many (and probably most) controversies in science and technology. Given the government's current policies – which allow powerful narrow interests such as big business and the military so much say over emerging technologies – it is likely that attempts to engage the public will continue to take place at too late a stage.

Chapter 5: A society that is confident in the use of science

Section A: Better understanding of the nature of science

How can we embed and communicate the principles of responsible scientific practice and ethics? (p28)

The universal ethical code is a useful step in helping to embed principles of responsible scientific practice. However, we believe that it is only a small step and has significant shortcomings [1]. In particular, the code does not go very far beyond legal requirements or existing professional codes. As such we are concerned that it is more related to public relations than it is to do with improving conduct within the scientific professions.

In order to embed responsible scientific practice more completely, we strongly urge that all higher education institutions introduce courses on ethical issues as part of *every* science degree. This was recommended back in 2003 by the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST, a working group of UNESCO) [2].

We believe that such courses need to involve discussion of a broad range of issues, including those that are uncomfortable to the science community. Examples are the role of science in war, environmental damage and social injustice. Without a clear understanding of how science and technology can and does contribute to global problems, we question whether students will be properly equipped to help solve such problems.

Another change we recommend to help improve the ethical practice of science is for *all* academic journals to insist that authors declare their interests (including sources of research funding).

Section B: Confidence in science funded by the private sector (p30)

The consultation paper reports that the public trusts independent scientists more than those from industry or government. It then states that “There is no reason why the way science is conducted, governed or communicated by the private sector should be or be perceived to be any different from the public sector.”

We believe such a statement shows a lack of understanding of the practice of science. There is significant documentary evidence (including numerous academic papers) that powerful interests can and do influence science – whether by shaping the research agenda, reducing openness, influencing the research results, or affecting the public perception of the results. Such effects have been summarised by, for example, Krinsky [3], Langley [4], Washburn [5] and Monbiot [6]. SGR is also carrying out further work in this area, to be published next year. The evidence we have seen leads us to believe that the public has good reason to put greater trust in scientists who can clearly demonstrate a greater level of independence.

We should point out that this does not mean we believe there to be a high level of malpractice or corruption in scientific work. It can, for example, simply be a reflection of different, but legitimate, viewpoints in a field where there is a great deal of scientific uncertainty (which, by definition, covers all issues at the cutting edge of science). What it does demonstrate, however, is that powerful interests such as big business and the military can take advantage of (e.g.) such uncertainties to pursue a narrow agenda that may not be to the benefit of wider society.

What more can the business community do to foster public confidence in science in industry? (p32)

Given that industry is obliged to prioritise the interests of its shareholders above others, there will always be concern that any scientific research which it carries out will be biased. The only solution that we can see is that industry itself needs change and give much greater priority to the public interest (for example, by prioritising the transition to a low carbon economy). By doing so, it will gain greater public trust. Attempts at (for example) ‘greenwash’ – where a corporation engages in public relations activities, but does little to change its business activities – will be counter-productive.

Chapter 6: A society with a representative, well-qualified scientific workforce

Section A: Exciting people about science

What more do schools need to enhance the science curriculum to make it more exciting and relevant? (p40)

We welcome some of the recent changes to the schools’ science curriculum. In particular, we are pleased with those aspects which have emphasised the social and ethical dimensions of science and technology. We believe that this will help encourage school children understand the importance of science and technology, and consider both the positive and negative aspects more fully.

However, we are very concerned that teaching of science is geared too much towards passing exams, and enthusiasm (not to mention, learning) is suffering as a result. In our opinion, there is too much ‘learning by rote’ and not enough emphasis on practical experimentation, exploration of scientific ideas, and the development of critical thinking. Improvement in all these areas would improve the interest level of students.

Section C: Increased diversity

The government and scientific establishment need to appreciate that the current prominent involvement of controversial industries in science and technology education – for example, military/ defence corporations – can put off many students. For example, the UK Graduate Careers Survey 2008 (conducted by *The Times*) showed that the military/defence sector topped the list of areas that university-leavers said that they had an ethical objection to working in [7]. Indeed, several well-known defence employers – including the Ministry of Defence – have recently been voted out of the Top 100 Graduate Employers [8].

Hence, we recommend that the government and the science and engineering institutions need to be active in encouraging other industries which have a more positive public profile – such as environmental industries – to become more involved in education, while partnerships with military industries should be reduced (or, at least, be balanced by wider societal engagement). We believe this will also have the benefit of enhancing public trust in many areas of science.

References

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