Guidelines for scientists on communicating with the media

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Further copies of these Guidelines , together with the full MESSENGER report, can be downloaded from http://www.sirc.org/messenger/ and may be distributed freely.

We welcome feedback on the Guidelines and all aspects of the MESSENGER project. Comments can be sent to feedback@sirc.org

Introduction

These guidelines have been developed as part of the EU-funded *MESSENGER* project after extensive consultation with key stakeholders and actors across the European Community. They have included members of science, technology and health research institutions and departments; representatives of national and EU government agencies; journalists, broadcasters and media specialists; representatives of civil society groups and organisations. The full report, which summarises the key points arising from these consultations, is available from **www.sirc.org/messenger/**.

There has been complete consensus among those consulted regarding the desirability of guidelines for scientists on communicating research and scientific advice through the popular media. Many contributors to the *MESSENGER* programme have insisted that such guidelines are now *essential* if the European Commission's aim to encourage effective engagement and dialogue on science and research is to be realised.

It is also the case that in order for members of civil society to participate meaningfully in this process of engagement, they need to be *informed*. The major sources of knowledge available to them are not the peer-reviewed journals, text books and conference proceedings that are the tools-of-the-trade for professional researchers. Rather, it is through the popular media of television, radio, newspapers and magazines – together with an increasing number of internet web sites – that the large majority of citizens gain knowledge about scientific and technological progress and receive scientific advice.

The popular media, of course, are not routinely in the business of providing a free help service for scientists. They exist not only to inform their readers and viewers but also to entertain and to present polemical standpoints. They are also in the business of selling papers or maintaining ratings in order to make profits or justify public investment in the form of licence fees or taxes.

It is crucial that scientists understand the role of the media and how it operates as a system within society when they are seeking to spread news about the research they have undertaken, the results that have been produced and the implications of them to members of civil society. This is not to deter scientists from engaging with the media. The science communities are increasingly seen as having a duty to do so and conditions attached to funding may, in fact, *oblige* them to do so. It is all the more important, therefore, that communication with the media is undertaken in such a way that possible sources of misunderstanding are avoided and that the potential for accurate and balanced coverage is maximised. This serves not only the interests of the science community but of civil society at large, who have the right of access to information about scientific progress conducted in their name and often at their expense.

While there are numerous examples of how the media have 'hyped' science stories and generated unnecessary anxieties in the absence of real empirical evidence, there are equally examples of where scientists have communicated, say, data relating to risks in such a manner that public misunderstandings have been almost inevitable. This has led to understandable tensions between scientists and journalists. On the other hand, a more positive picture of the popular communication of science knowledge and advice has also emerged over the course of the *MESSENGER* project. Most of the science coverage across Europe is, in fact, quite accurate and informative, as can be seen from the media analyses in Section 3 of the MESSENGER project report. The news may be framed to include discussion not only of the science itself but also, for example, the moral and ethical implications of resulting procedures. Discussion of the potential risks vs. benefits posed by novel technologies is similarly common across the EU. This, however, is both inevitable and desirable in liberal democracies where scientific endeavour is increasingly seen as having a need to be accountable. It is also the case that the media, reflecting the needs of their audiences, seek not only to communicate scientific knowledge but also to provide advice on managing risks that might be posed or on ways of maximising the potential benefits.

What is important here, many of those contributing to the development of the guidelines have stressed, is that such inevitable debates are conducted within a rational framework where the empirical evidence is acknowledged and given due weight. The problem, of course, is that while science operates within the limits of uncertainty, citizens look for reassurances that the 'system' – sources of power and influence within society – is doing its best to protect them from potential danger and harm. Rather than looking for answers to the questions ‘Are mobile phone masts safe?’ or ‘Does nanotechnology pose a potential threat to the environment?’, citizens (and that includes scientists) read newspapers in order to establish whether their expectations are being met.

It is, perhaps, because the dialogue of science and the everyday language of citizens are different in fundamental aspects that distortions become evident and suspicions are aroused. To a scientist, the reply must be couched in terms of probabilities and potential unknowns. To other citizens this may well be seen as equivocation or a deliberate attempt to ‘cover up’ something potentially dangerous.

Ultimately, the issue is one of increasing *trust*. European citizens' faith in scientists remains high, but it is not unconditional. The route to trust is through better communication, together with increasing engagement and dialogue between the science communities and civil society – a process in which the popular media have a critical part to play.

These guidelines recognise the potential pitfalls that await all members of the science community when they talk to journalists and broadcasters, whatever their discipline and specialism. They also recognise the need for a free and unfettered press in Europe that will challenge and hold to account members of the science community as much as our politicians, economists, planners and social pundits. The notion of ‘Science in Society’ that is at the heart European Commission’s science policy has been fully supported by the contributors to the MESSENGER project and is reflected throughout these guidelines.

The Guidelines

Why should I talk to journalists?

There is a common misperception across many EU member states that the press is the 'enemy' of the science community – always looking for an opportunity to criticise the work of researchers and to hold them accountable for many of our societies' current ills. While such a perception has surfaced during the consultations to develop these guidelines it is, fortunately, very much a minority view. The more general consensus is that the popular media play a vital role in communicating science to the European publics and are critical to the wider process of dialogue and engagement.

Read the papers, watch TV!

It is important that scientists, technologists and health researchers are aware of how their subject area is covered in the media. What are the main issues and areas of debate that are highlighted? Who are the principal actors quoted in the stories? Are scientists portrayed as 'divided' over relevant areas of research and their perceived implications? Are specific areas of risk highlighted?

In this context, forewarned is forearmed. There is little justification for being surprised when journalists pose questions about an area of research that have already been evident in previous reporting. Similarly, a failure to recognise, for example, widely reported moral, environmental or health concerns associated with your area of work will be unlikely to ensure sympathetic coverage. Communication is no longer a one-way process – it is a matter of dialogue and engagement, and journalists have a central role in representing the views of all stakeholders, not just scientists.

Get to know journalists and the world of journalism

Increasingly, forums and workshops are being organised across Europe to bring together researchers and journalists to discuss current science topics. Some examples of these are shown in Box 1.

Styles of journalism and science communication vary, of course, from country to country across the EU. The ways in which science news is framed – e.g. with reference to moral, commercial, environmental, regulatory issues, etc. – also tends to vary in the same way. An awareness of these sometimes subtle differences can be very useful.

Do I have a press officer?

University departments and institutions increasingly employ press officers (also described as media or communications officers) to act as a bridge between researchers and the media. Many of these have a journalism or public relations background and often have useful insights into the way the media operate. Their experience can be invaluable when preparing material for popular dissemination and should be used at every opportunity. Some organisations actually insist that researchers do so prior to talking to journalists or engaging in radio and television programmes.

There are current initiatives in progress to encourage the development of the press officer role in science departments and institutions across Europe. One such initiative is Communiqué and details of this can be found at http://www.communique-initiative.org/. It has been endorsed by Janez Potocnik. Commissioner for Research, who has said "I welcome the constructive contribution of the Communiqué initiative as a valuable input towards improving Communication on science in Europe."

Box 1. Examples of opportunities for scientists to meet with journalists and broadcasters

- **In France an exchange scheme is organised by the Association for Scientific Journalists for the Press (AJSPI) between researchers and journalists. The initiative, which has the support of the French Research Ministry, attempts to foster a greater understanding between researchers and journalists. Participants of the programme spend a week in an 'alien' environment – journalists in laboratories, scientists in media organisations – promoting an appreciation of each other's working processes and environments. www.ajspi.com/echanges2005.htm**

- **In the UK the British Association for the Advancement of Science (BA) has been running Media Fellowship Schemes since 1987, allowing researchers to gain first hand experience of the workings of the media through summer placements with print, broadcast and online news producers such as. *Nature*, BBC News Online and BBC Television. www.the-ba.net/the-ba/ScienceinSociety/_Schemes_and_awards/MediaFellowships/**

- **In Portugal, the daily publication *Público* has recently introduced an initiative inspired by the BA's scheme that introduces scientists to the rationale, culture, skills and methods of scientific news production. It is envisaged that through a series of 12-week secondments the enterprise will not only help to improve the quality of science communication but also help to promote the profile of research. cientistas.publico.pt/**

- **In Germany, the European Initiative for Communicators of Science (EICOS) offers journalists and science communicators the opportunity to participate in laboratory research with the aim of facilitating dialogue: "*...in which on the one hand journalists might gain a deeper understanding of the scientific endeavour and attitudes of scientists, while scientists on the other hand learn how science is reported and what influences and constraints shape the media content.*" www.eicos.mpg.de**

The initiative is in response to the fact that a disproportionate amount of science coverage in Europe focuses on work conducted in the United States, rather in the EU member states. There is a need to make 'user friendly' accounts of European research more available to journalists and in this process press officers have a critical role to play. If you do not have such an office in your institution, perhaps you might ask 'why not?'

Press officers can be particularly useful in helping you to make your research newsworthy, assuming that it has that potential in the first place. They will urge you to simplify or explain technical terms and to focus on the potential impact of the work rather than the methodological minutiae. In some cases they may suggest that your work is not yet sufficiently advanced or conclusive to warrant media coverage. Their judgement is usually correct in this context.

A press officer, however, may have little expertise in a particular area of science or, indeed, in science at all. While they can be invaluable in helping scientists in the *process* of communication, they cannot be expected to help with the *content* of that communication. For this reason the points noted below should be considered at all times.

What is the status of my research?

Much of science coverage in the European media is concerned with research reports that have been peer reviewed and published in respected journals. If your research has gained this level of 'respectability' it should be made clear. Equally, if the work has not yet been published in this way, that should also be made clear.

This is not to say, of course that peer-reviewed reports are always conclusive or constitute a definitive 'state-of-the-art' in a particular science area. One of the functions of academic journals is to enable early dissemination of research findings that may, or may not, be replicated by others.

Where research is at a preliminary stage, however it may have been published, this must be made clear. While there is a natural temptation to 'enhance' the importance of one's work, this does not serve the interests of either scientists or the public.

Studies which have revealed correlations, for example, but have not identified the causal factors involved, must be communicated very carefully indeed if misunderstandings or distortions are to be avoided. A typical way of treating such reports by sub-editors is with a headline such as 'Brain cancer linked to use of iPods', even though the term 'link' in this context is based solely on what might turn out to be a spurious co-variance.

Communicating implications for human health or behaviour derived from laboratory animal studies must also be undertaken carefully. There are countless examples of newspaper reports heralding, say, a 'breakthrough' in treatment for a particular disease, which are based solely on studies of small numbers of rats or mice – something often noted by journalists in the last paragraph or so in order not to 'spoil the story'. This must be anticipated and the limitations of generalising to humans from animal studies should be stressed at the beginning of interviews or releases.

What's new?

There is a natural tendency for all scientists to emphasise what is novel about their research findings. It is also the case that journalists and broadcasters are rarely interested in covering research findings which simply confirm what we already knew.

Stressing how your findings differ from those obtained by others serves another purpose. It should allow readers of media reports to put your work in proper context and note that other scientists take a different view – whether your focus is on climate change, levels of obesity in children or the potential applications of nanotechnology.

Be aware, however, that some journalists are keen to highlight divisions within the science community which may not, in fact, exist to any significant extent. A single physician was largely responsible for generating, following remarks he made at a press conference rather than in a published paper, considerable anxieties about the possible effects of the MMR vaccine in the UK by suggesting that it could be linked to the development of both autism and Crohn's disease. Press coverage of his comments, however, implied that there were much more widespread divisions of opinion within medical circles – a misrepresentation that led many parents to withdraw their children from vaccination schemes. All scientists have a responsibility to present their work in such a way that the potential for this type of distortion is minimised.

The communication of risks and benefits

The example of the MMR scare leads us to one of the most important, but also most difficult aspects, of media science communication. This has been stressed repeatedly by all of the key experts who have contributed to these guidelines. How can I tell people about the potential risks or benefits identified in my research in a way that they will be able to understand and put into a proper context?

> **To a scientist a risk is simply the statistical probability that an event will occur multiplied by the hazard presented by that event. This is not, however, the way that ordinary people, and even scientists when 'off duty', think about risk.**

Many other factors are involved and these need to be considered carefully when explaining risks. There are substantial reference books, reports and articles advising on the best ways of communicating risks and benefits. Some examples are shown in Box 2. The guidelines on risk communication presented here are common to many of these and are ones that have been identified by contributors to the consultation process as the most significant.

Voluntary and involuntary risks

People tend to be more worried by risks over which they feel they have no control compared with those that they feel able to do something about. Even though the risks may, statistically, be very small, their involuntary nature magnifies the perceived threat. This is also the case when a perceived risk is imposed by others – e.g. the building of a waste processing centre or the siting of a mobile phone mast.

Catastrophe and dread

Some consequences of a risk may be perceived as so severe that extreme anxieties are aroused even though the probability of the event occurring is very small. The widespread avoidance of British beef following the outbreak of BSE in the UK and the worldwide reactions to possible SARS and avian flu epidemics illustrate this effect.

The potential for large-scale aircraft crashes, melt-down of nuclear reactors or even giant meteors falling to Earth arouse similarly amplified reactions because of the numbers of people that may be affected by such events. Perhaps this is why they feature in popular books, films and television documentaries so frequently.

Box 2. A selection of on-line resources on risk communication

- OECD (2002)*OECD Guidance Document on Risk Communication for Chemical Risk Management*. (Renn, O., Leiss, W. & Kastenholz, H.) www.olis.oecd.org/olis/2002doc.nsf/43bb6130e5e86e5fc12569fa005d004c/cb81407367ba51d5c1256c01003521ed/$FILE/JT00129938.PDF

- *A Critical Guide to Manuals and Internet Resources on Risk Communication and Issues Management*, Gray, P.& Wiedemann, P. www.kfa-juelich.de/mut/rc/inhalt.html

- Strategy Unit (2002) *Risk: Improving government's capability to handle risk and uncertainty*, Cabinet Office, London. www.strategy.gov.uk/downloads/su/risk/report/downloads/su-risk.pdf

- Bennet, P. (1998) *Communicating about risks to public health pointers to good practice.* Department of Health, London. www.dh.gov.uk/assetRoot/04/03/96/70/04039670.pdf

- Walter, M.L., Kamrin, M.A. & Katz, D.J. (2000) Risk Communication Basics, *A Journalist's Handbook on Environmental Risk Assessment*, www.facsnet.org/tools/ref_tutor/risk/ch6comm.php3

- Harrabin, R., Coote, A. & Allen, J (2003) *Health in the news; Risk, reporting and media influence*,. Kings Fund. www.kingsfund.org.uk/document.rm?id=85

- Ballantine, B (2003) *Improving the quality of risk management in the European Union: Risk Communication*,., The European Policy Centre. www.theepc.be/TEWN/pdf/365551782_EPC%20Working%20Paper%205%20Improving%20the%20Quality%20of%20Risk%20Communication-final.pdf

- Special issue: Perspectives on Crisis and Risk Communication, *The IPTS Report*, Issue 82, March 2004. http://www.jrc.es/home/report/english/articles/vol82/

- Covello, V.T. & Allen, F.W. (1988) *Seven Cardinal Rules of Risk Communication.* US Environmental Protection Agency, Washington. www.epa.gov/stakeholders/pdf/risk.pdf

- Communicating Risk – an online resource for journalists, public officials and scientists. Developed by the European Journalism Centre with the support of the European Commission DG Research. www.communicatingrisk.org/

- *A Primer on Health Risk Communication Principles and Practices*, Centre for Disease Control, Agency for Toxic Substances and Disease Registry www.atsdr.cdc.gov/HEC/primer.html

- *Communicating Risk in a Soundbite: a Guide for Scientists* is the result of a meeting between top scientists and journalists, who assessed the best ways to explain risks via the broadcast media. www.sciencemediacentre.org/downloads/communicating_risk.pdf

- *Communicating Risk*. UK Resilience, Cabinet Office, London. www.ukresilience.info/preparedness/risk/communicatingrisk.pdf

- Amanatidou, E. & Psarra, F. (2004) *Risk Communication: a Literature Review*, Final Report prepared under the study "Evaluation of the use of scientific advice in risk communications and the development of a Community action plan (SARC)". www.communicatingrisk.org/eufunded/ea1410_Literature_Review_Report_Final.doc

While the risks of some negative outcomes can be assessed quite precisely, others can not. In many areas there is a degree of ambiguity and ignorance. This was the case, for example, with vCJD – it was difficult to estimate the number of people who might contract the disease over a period of time since the causal mechanism had not been fully identified.

Uncertainty and the precautionary principle

There are many versions of the precautionary principle – some more 'stringent' than others. In essence, however, the principle asserts that when there is the theoretical potential for risk, even though no empirical evidence of risk has currently been obtained, precaution should be exercised. In some cases this will mean that development of a new scientific process or novel technology is delayed until the actual risks can better be determined, or introduced with strict controls.

All scientists are familiar with the issues posed by this principle – some seeing it as undermining the basis of the scientific method itself. Among the key actors and stakeholders who have contributed to these guidelines, however, there were some strong areas of support for this kind of precaution, particularly when risks to public health are involved. Some suggested that the only reason not to adopt the approach would be if one sought to put the interests of industry above those of the people.

> **Some scientists interpret the precautionary principle as meaning that they must always prove that something is 'safe' before proceeding – something that empirical science, which works on probabilities and involves necessary uncertainty, can never do. In reality, however, the precautionary principle is just one variant of essential risk assessment and it is an issue with which scientists should engage fully and openly.**

Explaining what is currently known and precisely where areas of uncertainty still exist reinforces the transparency of science and fosters trust. Simply refusing to be part of the debate does not.

Lack of equity of risks and benefits

When potential risks, however small, are perceived as delivering no tangible benefits, hostility can again be heightened considerably. The rejection of genetically modified crops and food products in Europe reflects this process. In this case the arguments were as much about the lack of need for GM food in Europe as they were about risks posed to health or the environment.

In contrast, where the benefits of a technology or process are very visible, the perceptions of the risks involved will be much reduced. X-Rays, for example, are seen as 'safer' than potential fall-out from a nuclear reactor. Motor cars are one of the most dangerous forms of transport, but their utility is seen as outweighing the risks they pose.

Risks in context

From this it is clear that people's perceptions of risk, and their reactions to them, are not what we would ordinarily describe as 'scientific'. There may also be ethical and political issues that enter into the assessments. Some people are suspicious of agricultural biotechnology because they fear that multi-national corporations will be able to exert control over small farmers in Africa and Asia. Objections to 'fast' or 'junk' food may be as much to do with the influence of American-led burger chains as with scientific assessments of their nutritional qualities.

Awareness of all of these factors is essential if scientists are to engage in meaningful dialogue with civil society through the media.

You should be aware that even the most careful presentation of risks and benefits identified in your research will not necessarily be read by others in the way that you intended.

If the journalists and broadcasters with whom you communicate are themselves not clear about the implications of your work, the potential for wider public misunderstanding is greatly increased. From the large body of literature that exists on risk communication and from the advice provided by key actors and stakeholders across the EU, we can identify some quite simple steps that may reduce this potential.

State the risks and benefits meaningfully

There are numerous examples of press reporting and broadcast news along the lines of "Research has revealed that Factor X increases the risk of Y by 30%." This is, of course, usually quite meaningless on its own since we are not told how big the risk of Y is in the absence of Factor X. It is also the case that readers simply glancing at the article will interpret it as showing nearly a 1 in 3 risk of Y – an alarmingly high figure. The journalist may not be the main culprit here – the absolute risk of Y was not mentioned in the interview or news release.

The absolute risk should always be stated clearly and early in any statement so that the significance of the increased or relative risk can be understood.

Suppose, in our example, that Y is a form of cancer and out of 10,000 people 80 will contract it if they do nothing. With Factor X, an extra 24 will contract the disease – an increase of 30%. This starts to allow a more sensible appreciation of the relevance of the research to be obtained. There are, however, other factors associated with the data that need to be stressed

In many cases the risk of Y is not evenly distributed throughout a population. The increased risk posed by Factor X may also not be evenly distributed. An example of a report in the UK *Guardian* shows how these issues may best be tackled. It particularly reflects excellence in the way information has been communicated to the journalist.

The headline of the story is **'Study spells out heart attack risk posed by painkiller'.** A first sight this seems to be just another 'scare' story about common medicines. Two subheads follow, however, **'Problem found with patients on high doses'** and **'Authors stress danger is minimal in everyday use.'**

The first paragraph expands on these facts:

"Common painkillers such as ibuprofen and diclofenac can double the risk of heart attack, according to a new study. The increased risk only occurs with high doses and leads to attacks in an extra three people per thousand compared with those not taking the drugs."

Right from the beginning we have the relative risk (RR) clearly put into a meaningful context – 'double' (RR of 2) means an extra 3 heart attacks per 1,000 people using the painkillers. It is also clear that not everyone has an increased risk – just those on high doses. Readers can thus start to assess risk at a *personal* level.

The article goes on to note that the epidemiologist who conducted the study felt that people should not be unduly alarmed by the findings. He was also quoted as saying, "For a person who is unable to move unless they take these drugs, they may be willing to accept that risk if [the drug] is giving them back their life." The risks are not only presented in a meaningful context but are contrasted with the tangible benefits to the specific population that is at risk.

The article continues with more from the epidemiologist who observes that doctors had been confused in past about the best way to prescribe anti-inflammatory drugs. The new study, he said, "supersedes all the previous work that has been done in the area. We have looked at all the evidence that has ever been done and our report is hopefully going to help doctors to assess these drugs."

Again, the benefits of the research are clearly communicated by the scientist. Later, the article provides further detail about what 'high dose' means in this context – "about twice what the normal person would take" – and reassures us that "People who are popping these for an odd headache, the risks to them are minimal."

This article reflects both best practice in science journalism by the author, Alok Jha, but also, in particular, excellent communication by the scientist, Dr Colin Baigent. When information is presented clearly and in the right order – e.g. specifying exactly who is at risk very early, followed by appropriate reassurances – it is much easier for a journalist to write an article that is accurate, balanced and informative.

In this example the risks were quite precisely known. In other cases, however, they may be less easy to quantify. This issue of 'uncertainty' is perhaps the most difficult one for a scientist seeking to communicate and engage with lay publics. Some specialists in the risk communication field have even suggested that where there is serious uncertainty about the magnitude of a risk it may be wiser to delay communication until a more accurate assessment has been established.

Comparing risks

One way of putting risk into meaningful context is to make comparisons between a newly discovered risk and one that is more familiar to people. Thus, one might say that the risk to the neighbouring community of emissions from a novel form of power generation is no greater, on the basis of empirical evidence, than that currently associated with gas- or coal-fired generators. In this context you might also wish to note that new process has measurable benefits in the form of lowered emissions.

Comparisons, however, must be relevant. In particular, they should be similar in terms of their voluntary/involuntary aspects. Suggesting to people, for example, that the risks to health posed by their 'unbalanced diets' is much greater than that which might derive from electromagnetic radiation from power lines will be both unconvincing and seen as patronising. People can change their diets. They cannot move power lines.

Expressing risk in terms of the number of people that are likely to be affected is, as we have seen from the example above, a useful way of putting risk in meaningful context. Again, however, some caution is needed. Telling people, for example, that the risk of dying from a source of food-borne contamination such as acrylamide is less than that of winning the jackpot in a national lottery might not be very wise. People think that they might win the lottery – why else would they buy tickets? A better comparison would be between the risk posed by acrylamide and those associated with dioxins, PCBs or other known carcinogens.

It is also necessary to understand that people, including some scientists, find it difficult to understand the immediate relevance of very large numbers. Is a one in a million chance a small, moderate or large risk? What does 1 in 10^{58} mean?

This last figure comes from the assessment of risk posed by the collision of sub-atomic particles in a research facility in Italy some years ago. At the time there was some discussion, given wide publicity in the media, of whether there was the possibility of a 'black hole' being generated, with the consequent destruction of the planet. The figure of 1 in 10^{58} was the risk that was calculated. The fact, however, that the scientists could show that there was a risk at all generated considerable anxiety, despite it requiring 58 zeros to express.

In retrospect it might have been wiser to express this risk not in simple numerical terms but with a simple "no" or by saying that 10 to the power of 58 is many times larger than the number of years the universe has existed, which amounts to the same conclusion.

Frames of engagement

We noted above that people perceive risks not in purely scientific terms but also with regard to psychological, emotional, moral, social and political frameworks. Not surprisingly, therefore, news reports and press articles that cover science developments involving perceived risk also refer to these issues. We have noted earlier that broad scientific areas such as biotechnology, nanotechnology, nuclear energy, etc. are also ‘framed’ in references to environmental, ethical or commercial issues. Journalists will often include the views of other actors and stakeholders, from representatives of consumers’ associations and single interest groups to politicians, priests and moral philosophers, as well as scientists conducting research in a particular field.

This is a healthy process and illustrates, if such illustration is necessary, the extent to which science is embedded in society, rather than standing apart from it. It means, however, that when scientists are interviewed by journalists or broadcasters they are often invited to comment on these broader issues as well as on the specific scientific content of their research.

Public interest and policy

On occasions research findings have such significance for human behaviour, lifestyles and well-being that they also have strong implications for public policy. This has been highlighted recently by the Royal Society – the leading science institution in the UK. Their report, *Science and the Public Interest* is available from **www.royalsoc.ac.uk/downloaddoc.asp?id=2879**.

The report notes that strong public interest may arise from research that has specific implications for dietary habits, personal security, the state of the environment, etc. and that these, in turn, may have relevance for policies at national or European level.

In these cases even greater care and responsibility are required when communicating research findings to the general public through media channels. The Royal Society document contains a useful summary of relevant considerations in Annex 1 of their report.

Some other more general but very useful resources are shown in Box 3.

A summary and checklist

- All scientists have a professional responsibility to communicate their research to public audiences and to offer appropriate guidance and advice where appropriate. The popular media is a major channel for such communication and should be embraced rather than shunned.
- Get help where it is available – your organisation's press or media officer, for example.
- Keep up-to-date with media coverage of science in general and your area in particular.
- Attend workshops, seminars etc. that enable scientists and journalists to meet and discuss relevant issues. Get to know how journalists work and the constraints that they face.
- Where your work is at a preliminary stage or has yet to be published in a peer-reviewed journal, make this clear in interviews.
- If your findings and conclusions differ from those of other established scientists in the field, make this clear. At the same time, don't talk up the 'novelty' aspect of your work just to appeal to the media.
- Be especially careful when communicating risks or benefits identified in your research. Always express risk/benefit in a meaning ful context that people can understand. Never talk of relative risk without clearly stating the absolute risk in simple terms.
- Where your research has implications for lifestyle changes or public policy, be particularly careful how you describe it. It is here that the maximum potential for distortion can arise. This may be the case when your work focuses on, say, dietary issues, personal security, the state of the environment, etc. Be prepared for social, ethical, political discussion and questions in this context.
- ENGAGE! Seek out opportunities to communicate directly with civil society groups and members and to discuss the implications of your work. After all, in a lot of cases they will actually have paid for it. Maintain and build their trust in what you are doing whenever you can.

Box 3. Additional resources

- SIRC/ASCoR, Final report of the FP6 MESSENGER project. http://www.sirc.org/messenger/
- EC, *European Research; a Guide to Successful Communications*. http://ec.europa.eu/research/conferences/2004/cer2004/pdf/rtd_2004_guide_success_communication.pdf
- EC, *A Scientist's Survival Kit; Communicating Science* http://ec.europa.eu/research/science-society/pdf/communicating-science_en.pdf
- SciDev.net, *An E-Guide to Science Communication* http://www.scidev.net/ms/sci_comm/
- BBSRC, *Communicating with the Public:* http://www.bbsrc.ac.uk/tools/download/communicating_notes/cwtp.pdf
- STEMPRA, *Practical Advice for Science Communicators, Science, Technology, Engineering, Medicine Public Relations Association* http://www.stempra.org.uk/advice.html
- European Federation of Biotechnology, *Dealings with the Media* http://www.efb-central.org/images/uploads/Dealings_with_the_media_English.pdf
- NASA / ESA, *Press release guidelines for scientists*, available on the European homepage for the Hubble Space Telescope http://www.spacetelescope.org/about_us/heic/scientist_guidelines.html