

7 THE ROLE OF MEDIA IN PUBLIC ENGAGEMENT

Most adults are exposed to science predominantly through mass media. The media are therefore often assumed to play a key role in communicating science and shaping public attitudes. However, notes **Jenny Kitzinger**, the relationship between people and the media is more subtle than often assumed. People are not passive consumers of media messages and they bring their own interpretations to what they hear and see. Mass media have many drawbacks as a way of communicating scientific detail yet clearly have the potential to reach large numbers of people. People involved in science communication and public engagement need to think carefully about their objectives before considering how to work with the media.

Talk to any member of the public about science and sooner or later they will describe an image they saw on television, a report in the press, or perhaps mention a science-fiction book or film. Discussions of genetic science, for example, often prompt memories of particularly eye-catching pictures (such as the notorious photograph of a human ear growing on the back of a mouse) or provoke reference to fiction such as *Frankenstein*, *Brave New World* or *The Boys from Brazil*. Debates about science in the UK are also populated with references to previous high-profile scientific controversy (such as thalidomide, *Salmonella* or ‘mad cow disease’) and people often comment on the shifting nature of scientific advice about health: “One week the headlines say something is good for you, the next week it’s bad for you.”

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Any orchestrated attempt at science communication or ‘public engagement’ does not, therefore, take place in a vacuum. A museum exhibition, community theatre project or internet engagement activity all happen in a world saturated with news headlines and pervasive cultural images. The mass media are a powerful force

resourcing how people talk about science, scientists and scientific evidence. This can provoke considerable frustration among some scientists or policy makers, and prompt intensive efforts at enrolling the mass media to promote ‘more positive’ representations. However, quite *how* the media influence public perceptions, and the implications for public engagement, raise complex questions.

How media influence operates

It is a mistake to believe that just because people often reference what they have seen in the media that they must, therefore, have uncritically accepted it. People work with media resources to think, joke, imagine, illustrate their point of view or fuel debate. Sometimes the media *reflect* a cultural anxiety or perspective, as much as they create it. Detailed research into how media influence operates rarely identifies a simple, one-way, causal route. Early notions that the media act as a ‘hypodermic’ directly injecting ideas into people’s minds have now largely been discredited. Research during the 1940s and 1950s, for example, showed how opinion leaders within communities filtered how messages were received by the general population. Other researchers argued that people select from media messages for their own purposes and that the media are therefore more likely to be used to *reinforce*, rather than to change, existing attitudes.

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More recently, audience reception studies have revealed the diverse ways in which people may respond to the same media output. The messages ‘decoded’ by audiences are not necessarily those intended by the producers. Meaning does not lie in the text (programme or newspaper article) alone; it is created in an encounter between text and audience. How we respond to a particular item may be influenced by class, gender, sexual and ethnic identity, as well as wider cultural context. Programmes that might seem to promote one world view may be used, at least by some viewers, to support another, and representations that seem negative may be used positively. A traditional Western that casts cowboys as heroes and ‘red Indians’ as savages can still be enjoyed by some Native Americans who identify with the cowboy character and see him as representing a free and autonomous way of life akin to Native American values. An American soap opera, understood by some viewers as a celebration of consumer capitalism, will be seen by others as a critique of mainstream American values. Less work has been done on how people respond to science programmes – but emerging research suggests that similar variation is evident in how, for example, diverse public groups respond to a science documentary or science-fiction film.



MY LIFE, OUR WORLD

Citizen Science is At-Bristol’s dynamic answer to getting young people absorbed in emerging biomedical issues.

As befits a science and discovery centre, At-Bristol is at the forefront of experimental informal learning. In its Citizen Science project it has adopted an array of styles and approaches, regularly exploring novel techniques of engaging young people (12–19 years old, a notoriously hard-to-reach demographic) in meaningful discussion about the impact of biomedical science on society.

Working with partner schools, scientists and other external professionals, Citizen Science has combined conventional approaches to engagement, such as →

CITIZEN SCIENCE

Funding

£415 000 (2003, Society Award) – Citizen Science: Engaging young people and teachers in biomedical science issues

Project lead

Catherine Aldridge, At-Bristol

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Left: Young people are increasingly being taught about the ethical context of science.

However, the complexity and diversity of people's responses do not mean that the media have no influence. Experimental work and statistical analysis of trends suggest that the media can set the agenda around what problems are facing society and how we should be setting priorities. Other research suggests that patterns of media coverage (e.g. around crime and violence) may progressively cultivate a particular way of looking at the world.

In-depth focus group studies examining how people relate to specific TV programmes or news reports also demonstrate how media influence might operate. Such research highlights the importance of visuals or narrative structure over the surface logic of any particular media text. For example, John Corner and his colleagues examined four programmes about nuclear power and analysed discussions among groups of viewers.¹ They looked at how people respond to different images (such as steam rising from a pond next to a nuclear power plant), to presentation of facts (such as information about leukaemia pockets) and also to programme structures. One documentary was generally interpreted as suggesting that the Sellafield nuclear power plant was implicated in causing leukaemia. This was in spite of the programme's presentation of many explanations that queried or even rejected this suggestion.

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Through close attention to their research participants' conversations, Corner *et al.* suggest why the programme operated in this way. They argue that the documentary's imagery and structure, built around one family's search for answers about their child's leukaemia, was more powerful than the programme's abstract speculation about risk and the evidence. This study also highlighted the power of images, which, they argue, can exert a 'positioning' power upon viewer imagination and understanding of a kind that may prove more resistant to counter-interpretation than the devices of commentary, interview and voice-over.

A large body of work on how people relate to science, health and risk reporting echoes such findings. Media presentations of dramatic stories about women enduring the 'family curse' of 'the breast cancer gene' may have greater impact than reporting about other facts about risk factors for breast cancer.² Similarly, dramatic images of people dying of AIDS, which were splashed over the press in the 1980s, undermined the communication of facts about asymptomatic HIV infection. The association that some journalists made between AIDS and morally suspect 'risk groups' also acted as a barrier to understanding that behaviour, rather than identity, was linked to HIV transmission.³

The limits and potential of the mass media in public engagement

The mass media do not easily adapt to communicating scientific details – and can often mislead. However, they clearly engage their audience in some ways. Anyone reflecting on potential of the mass media in relation to public engagement needs to consider the different genres in play, the professional practices of those involved, and the industry pressures. Film scriptwriters, for example, are unlikely to make accurate facts the centre of their drama – unless it suits their purpose to grip and entertain an audience at a particular moment. However, for better or for worse, they are likely to provide space for exploring dilemmas or 'what ifs', and raising questions about the potential social consequences of science (however far-fetched those scientific achievements might seem today).

News reporting, for different reasons, is also unlikely to provide the ideal medium for good 'science communication' as traditionally conceived by scientists. Journalists often do not feel they have the space or time to report complex detail. They will also tend to simplify for a general audience, and use familiar and emotive terms in place of scientific ones; they may prefer 'human cloning', for example, to terms such as 'cell nuclear transfer'. In addition, the issues that are newsworthy will not be a simple reflection of the most significant facts as defined by scientists, or scientific risk assessment – front-page coverage of a gene for breast cancer, for example, is more likely than coverage of smoking or health inequalities.

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It is also not necessarily the science journals that set the agenda for science reporting in the news media. Media interest may be triggered by the release of scientific papers in the major journals – but it will also be triggered by policy decision making, political controversies or civil agitation (e.g. against GM crops). The journalistic definitions of 'balance' can also mean they give equal attention to two sides of a story about risk – regardless of the apparent balance of scientific opinion – a tendency dramatically illustrated in the UK during the MMR vaccine crisis.

All the same it is important not to underestimate either the dedication of some journalists to promote science or the skill of reporters and columnists writing not just on science, but also on politics, environment or women's pages.

Towards a reflective position on the media's role in public engagement

The mass media are sometimes roundly denounced by scientists. However, this is not always justified. The media are often blamed for presenting scientists as evil, power-crazed figures, for example, but for every headline about 'bogus boffins'



→ the use of scenarios and facilitated debates, with more far-reaching methods, such as a TV chat-show format, and projects based on art-science crossovers.

At-Bristol has also forged links with key local groups. It works closely with the University of Bristol's highly rated Graduate School of Education, which takes the lead on evaluation. It has also run projects with the university's 'Children of the 90s' project (ALSPAC, the Avon Longitudinal Study of Parents and Children). And it has worked with others in the Science Learning Centre South West to advance continuing professional development opportunities for the region's teachers.

For students, the main impact of Citizen Science is to instil what At-Bristol refers to as 'active citizenship', a long-term upturn in curiosity about the issues discussed, continuing beyond specific activities and penetrating the students' daily lives. Topics covered have therefore been carefully chosen to appeal to the target age group – including rainforest medicines, the effects of drugs on the brain, and alcohol use and abuse.

Reinforcing this aspect of Citizen Science has been the strong relationship fostered with teachers. The activities benefit from ongoing teacher input, creating projects and online resources that bear direct relevance to the curriculum, allowing teachers to tie lessons into experiences the students are personally familiar →

Left: Understanding how the media report science is important for young people.

or every film portraying the dangers of scientific innovation, others cultivate the view that Western science is a fail-safe and authoritative way of knowing that will provide an answer to all modern ills. It is misleading, therefore, simply to typecast the media as ‘anti-science’.

Protesting against media sensationalism, for example, ignores the role of scientists’ own hype.

It is also important to take account of how media messages are produced and received, and to consider the risks of simply blaming the media. Protesting against media sensationalism, for example, ignores the role of scientists’ own hype. Scientists and funding bodies have increasingly become engaged in PR battles that can involve promoting exaggerated claims for what science can offer in the imminent future. It can be tempting to promise clinical applications from research within ‘five to ten years’, but such claims are likely to be counterproductive for public trust in the long term. Stem cell research is one example of an area of current research where hope can turn into hype.

The way in which policy makers have used scientific facts has also come into disrepute. The photo-opportunity of the UK Government minister John Selwyn Gummer, feeding a beefburger to his daughter to underline the assertion that scientific advice showed beef was safe, is one image that famously backfired.

Thinking about the role of the mass media in ‘public engagement with science’ benefits from a reflective stance that includes an acknowledgement of these issues.

Caution should also be used when accusing the media of scaremongering. Using the media as whipping boy to account for perceived public distrust in science may miss the point. The danger is that scientists end up believing that, if only the public understood the science, then they would be ‘on-side’. However, as other essays in this collection show, this is not necessarily the case. Whether or not the public understand the science, they often have a strong set of concerns about the political and moral economy of the scientific enterprise.

Thinking about the role of the mass media in ‘public engagement with science’ benefits from a reflective stance that includes an acknowledgement of these issues. This should include questioning the very definition of public engagement with science. The phrase ‘public engagement’ can be simply a way of reiterating the straightforward goal of educating lay people about the facts. Sometimes it refers to a wish to inform consumers about the value of peer review, or, conversely, to remind them that scientific findings are always contingent. At other times it is used to describe activities designed to inspire youngsters

with the excitement of science (recruiting the scientists of the future).

In particular, the phrase is used to imply the wish to consult citizens or even involve them in setting the research and development agenda and reflecting on the social context and consequences of diverse choices.

Quite what one hopes for from the mass media will vary depending on one’s goals – which may include any or all of the above. Expecting fiction films to be factual or newspapers to behave like popular science journals, however, is neither realistic nor necessarily desirable. Indeed, the questions some journalists ask about the socio-political context of science, and the visions that science fiction raises about future consequences, might be very good bases for some ‘public engagements’. A range of media debates and representations can, in this context, be seen as problematic but also as simultaneously productive – a basis for dialogue and for not only ‘public engagement with science’ but also for ‘science engaging with the public’.

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Acknowledgement

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Further reading

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→ with. Learning gained from the response to each activity also feeds back into the ongoing development of new projects, generating a tight, iterative relationship between new activities and those that went before.

Citizen Science has developed a wealth of learning material, each project and activity having been rigorously evaluated. It hopes to share this mass of valuable information, disseminating what it has learned as broadly as possible.

Society Awards

Upwards of £50 000, Society Awards come in two forms: activities and research. **Activity awards** support large-scale activities, such as conferences, art projects, workshops or educational resources. The intent is that the activity will make a sizeable, nationwide impact on public engagement with biomedical science.

Research awards are of the same financial scale but support academic research that advances knowledge of public engagement in the biomedical sciences.

www.wellcome.ac.uk/engagingscience

Right: Teachers have a vital role in making science relevant to students’ lives.

