

Public engagement

Thomas L. Webb and Ellen Poliakoff argue that it's time to take a psychological approach to understanding and promoting participation in public engagement activities

Public engagement activities involve any scientific communication with an audience outside of academia. These activities range from speaking to five-year olds at a local school to giving an interview to John Humphrys on Radio 4's *Today* programme. While some scientists engage with the public, others choose not to. Given these differences in behaviour, it is perhaps surprising that psychologists have had little to say about scientists' decisions to participate (or not) in public engagement activities. This is a missed opportunity.

The issue of engaging the public with science will not go away. Taxpayers' money funds a substantial proportion of the research activity in the UK, and the public is becoming increasingly interested, and in some cases concerned, about scientific issues. Science is at the core of many of the issues facing global society today – terrorism and violence, economic productivity, sustainable development, and health. Yet, there is a gap between interest and knowledge. Only 40 per cent of UK adults consider themselves well informed about science (MORI, 2005).

From the perspective of scientists, including psychologists, public engagement is now an important part of their job description. Key markers of competence like the 2008 Research Assessment Exercise (RAE) now include public engagement activities, and scientists are asked about their public engagement plans when applying for research funding. As Leshner points out

in his Editorial for *Science* (Leshner, 2003), 'the centrality of science to modern life bestows an obligation on the scientific community to develop different and closer links with the general population' (p.977). So how can psychologists contribute to this aim?

Much of the research to date on public engagement has not been conducted by psychologists. The focus has been on the best way for scientists to engage with the public or how to influence policy making at a national or an international level. However, psychologists could help to answer many other questions related to public engagement with science. For example, what stereotypes do people hold about science and scientists? How do public engagement events influence these beliefs?

Our concern has been what influences whether an individual scientist decides to engage with the public or not. The majority of evidence to date on this issue has come from two large-scale surveys conducted by the Wellcome Trust (2000) and the Royal Society (2006). In the Wellcome Trust survey ('The role of scientists in public debate') 1540 scientists were interviewed about public engagement. The key findings were that scientists felt that they had a duty to communicate their research to the public, but that a lack of time, skills, and

incentives from funding bodies were significant barriers.

The Royal Society 'Survey of factors affecting science communication by scientists and engineers' involved 1485 research scientists in higher-education institutes. It was found that public engagement was more likely to be undertaken by scientists who were in senior positions, over the age of 40, involved in teaching as well as research, funded by government or charities (rather than research councils), and working in departments rated less than five-star in the last RAE. However, while these demographic statistics are interesting, they lack explanatory value – why are senior scientists more likely to participate? Are these scientists more confident about their ability to communicate with the public? Furthermore, the statistics do not inform intervention – we cannot encourage public engagement by promoting scientists to senior positions.

The Royal Society did, however, ask participants about the barriers that they perceived to greater communication with the public. Sixty-four per cent of respondents identified the need to spend more time on research and around 80 per cent said that increased funding or career recognition would encourage them to participate. As a result of these findings the Royal Society argued that involvement in public engagement should be rewarded at a departmental level and make a positive contribution to the career progression of scientists. Furthermore, it was argued that institutions and funding bodies need to provide better support for scientists undertaking activities involving public engagement.

In our own research (Poliakoff & Webb, 2007) we tried to compare the relative importance of perceived barriers like lack of time, money, and career recognition with individual beliefs about participating in public engagement activities (e.g. 'I am scared that I will not be taken seriously'). A sample of 169 scientists at different levels were asked a variety of questions about their participation in public engagement events. Our outcome variable was the strength of scientists' intentions to participate in public engagement events in the next 12 months.

The findings were revealing. Although many scientists agreed that a lack of time and money were an issue, these factors did not influence their intentions to participate. Instead, it was scientists' attitudes toward public engagement (e.g.

"We need to foster intrinsic motivation, not feelings of obligation"

references

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- Poliakoff, E. & Webb, T.L. (2007). What factors predict scientists' intentions to participate in public engagement of science events? *Science Communication*, 29, 242–263.
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‘Taking part in a public engagement activity would be enjoyable’) and perceptions of control over whether or not to participate that determined intentions. Perceptions of control reflect both how confident people feel in their ability to engage with the public and whether the decision to do so ultimately rests with them or, for example, depends on someone else (e.g. an invitation to participate). Finally, it mattered what colleagues were doing. Scientists who believed that colleagues participated were more likely to intend to do so themselves. In stark contrast to the adage ‘Do as I say, not as I do’, it did not matter whether they believed their colleagues approved or disapproved, just whether they believed that their colleagues took part themselves.

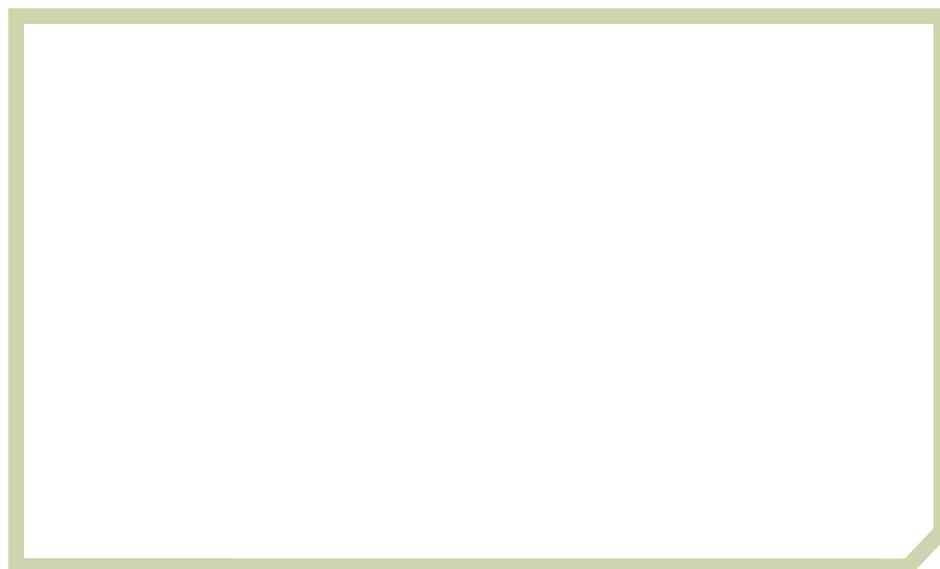
So why are time, money, and recognition so frequently reported by scientists as barriers to participation when they do not seem to predict decision making? There are a number of possibilities. First, issues of money, career recognition and time could provide socially acceptable excuses for scientists to mask other concerns about participating in public engagement (e.g. the belief that participating in public engagement events is beneath them). Second, concerns about time, funding and recognition may not influence scientists’ decisions directly, but the likelihood that these decisions are translated into actual participation. That is, good intentions may only translate into participation when there are sufficient resources and opportunities available to participate. Finally, time, money, and recognition may influence decisions via beliefs. In other words, scientists may feel that they have little control over whether or not to engage with the public because other commitments consume their time.

We believe that interventions designed to promote participation in public engagement events should draw on insights from social and health psychology and adopt a two-stage approach. First, interventions should target scientists’ beliefs about participating in PE activities in an effort to promote positive intentions. Specifically, interventions should begin by targeting scientists’ attitudes and perceptions of control over participation. A targeted intervention could present information and persuasive arguments about the benefits of participating in public engagement events alongside skills training to foster confidence and feelings of control over participation. Institutions should make greater efforts to publicise participation in public engagement events among the scientific community to dispel

beliefs that other scientists do not participate. Indeed, attending a successful event where they observe other scientists participating could address both these aims. Second, interventions should help scientists to translate their positive intentions into action – it is here that the Wellcome and Royal Society findings prove useful. Involvement with public engagement activities should be rewarded and supported at an individual (career recognition, funding), departmental, and institutional (e.g. contribute to RAE) level. To date, we believe that attempts to promote participation in public engagement events have overemphasised

voluntary work that they might do within the community.

A few words of caution though. It is possible that those who participate in public engagement activities for personal reasons, without regard for career benefits, may not welcome a more strategic approach to public engagement. Research on self-determination theory shows that rewarding intrinsically motivated participants for performance of the focal behaviour actually decreases motivation and self-reported interest. It is also worth reiterating a point made by the Royal Society – public engagement should not be compulsory. In other words, as



Ellen Poliakoff showing the Stroop test to a passing shopper

organisational and policy changes (stage 2 of our two-stage intervention) at the expense of individual scientists’ beliefs about public engagement events (stage 1). Psychologists are ideally placed to help redress this balance. For example, similar ‘two-stage’ interventions have been effectively employed by psychologists to promote health behaviours (e.g., Milne et al., 2002).

Interventions should target individual scientists and not hope that institutional initiatives will ‘filter through all levels of an organization and down to individual scientists’ (Wellcome Trust, 2000, p.49). We need to foster intrinsic motivation, not feelings of obligation. In our article, we pointed to the notion of the ‘civic scientist’ who chooses to contribute to wider society for personal rather than professional reasons. Indeed, one scientist commented that they had chosen public engagement instead of other kinds of

participation in public engagement events increases it should remain acceptable to say ‘no’. Academia is a broad church; people have different strengths and should be allowed to play to them.

In sum, we believe that using psychological theory to understand and promote participation in public engagement activities provides a number of novel insights. Psychologists can thus contribute twice to public engagement, both through their own participation and by understanding how more researchers can be encouraged to participate.

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