

**How did modern science communication emerge in
different countries round the world?**

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Dating the start of “modern” science communication is always a process fraught with danger. In the United Kingdom, one might start with the foundation of the Royal Society in 1663, with its motto “Nullius in Verba”: translated loosely as “take no one’s word for it”, the Society insisted on public demonstrations of scientific claims, albeit to a public that consisted exclusively of rich and well-connected gentlemen. The end of the 18th Century Enlightenment saw popular books on science – often written in the form of conversations between young enthusiasts and their older parents or guardians – reach a mass middle class audience. Later this same audience was treated to regular science features and reports from the newly formed scientific societies in magazines such as *The Athenaeum* and *Macmillan’s Magazine*.

Once the genie was out of the bottle, the 19th Century saw an explosion of science communication activities, including the annual meetings of the British Association for the Advancement of Science (now the British Science Association), founded in 1831, public lectures for all classes, fierce debates (especially around evolution), “improving” educational events at the Mechanics Institutes, travelling shows, books, articles and pamphlets, as well as the foundation of natural history and science museums – “cathedrals of science”. And although the content may have changed in the last 200 years, as science (understood widely to include engineering, technology and medicine) has developed, none of these activities have diminished in form, frequency or intensity.

The addition of scientific photography, radio, film and television simply added to the possible outlets. More recent developments of “new media” seem only to have added to the available platforms. Popular science has been used both to bolster religion (e.g. the

work of Paul Davies) and to undermine it (e.g. the work of Richard Dawkins). It has been used to awe, inspire and empower, a particular goal of the pre-World War 2 left scientists such as J.D. Bernal and J.B.S. Haldane, but one that carried on into the post-war era, and continues today. In choosing just three events to mark the emergence of “modern”, post WW2, science communication in the UK, one has to dump 99.9% of history and ignore 99.9% of what is currently happening. So here are my three:

1. The Report of the Royal Society’s “Committee on the Public Understanding of Science” – the CoPUS or Bodmer Report, after its chair Sir Walter Bodmer - in 1985 did mark something of a sea-change. It came at a time when science was perceived to be under attack and undervalued in Mrs Thatcher’s “Brave New Britain”; the underlying analysis of CoPUS was that the public undervalued science because there was not enough science in the mass media, and that meant there was insufficient pressure on politicians to ensure that science funding was protected and enhanced. The CoPUS report put pressure on the mass media to carry more science.

But it also made a rallying call to the scientific community itself. Scientists were told that they should “consider it their duty” to communicate about their work with their fellow citizens. No longer the preserve of the scientific great and good, science communication became a task that could and should be carried out by the entire army of researchers from the lowliest PhD student to the mightiest professor. Funding schemes to support this were set up. Training workshops – making use of (science) communication professionals – helped established scientists gain the skills that they needed. For younger scientists, there were new courses at graduate *and* undergraduate level to empower them with skills that had not previously been part of the curriculum. Parliament got its own Parliamentary Office of Science and Technology to brief it on issues that might have policy implications, and the Government itself had a similar office to help. So far, so positive.

2. The 1992 founding of the journal *Public Understanding of Science*, based at the Science Museum in London and printed by an enthusiastic Institute of Physics Press,

came out of a growing realisation amongst social scientists and historians that the new movement for Public Understanding of Science was not an unalloyed benefit. Whilst CoPUS was empowering the scientific community to communicate, was that communication equally empowering to the public at large? The launch issue of *PUS* should be required reading for everyone interested in the fields covered by PCST. Leave alone the individual articles – excellent as they all were – taken as a document in itself, this journal demonstrated the multifaceted and contradictory nature of the field. Calls for more public understanding of science, sat alongside calls for leading research institutions to be more reflexive about the relationships between science and society, and the way they organised themselves and operated. Ways to understand public hostility to science – the “anti-science movement” – contrasted with ways to understand the public understanding of science and scientists’ understanding of the public.

For the founding of *PUS* took place amongst a growing climate of concern that what the scientific community was engaged in was a communication process that was top-down, paternalistic and one-way only: scientists knew what the public needed to know to be / become really useful citizens and people just had to take in this information and like it. This somewhat crude, simplistic, but rather-too-accurate, caricature of the PUS movement became known as the “Deficit Model”, with deficiency all on the side of ordinary citizens and sufficiency residing solely in the scientific community. *PUS* – the journal – then carried many articles articulating a much more nuanced, contextual approach to science communication, which highlighted the importance of lay expertise in collaboration with research results as inputs into solving societal problems.

3. In 2000, in the wake of scandals in the UK over “Mad Cow Disease” (mirrored, for example, in France by HIV contaminated blood transfusions and polluted cooking oil in Spain) the UK House of Lords held its own enquiry into relations between science and society. Its report warned of a breakdown in trust between the scientific community, on the one hand, and the public, on the other. It detected a “new mood for dialogue” and insisted that public engagement become an integral and meaningful part of policy-

making. In the words of the then Science Minister Lord Sainsbury “the deficit model is dead”.

In reality, the Deficit Model has adopted the attitude of Mark Twain that reports of its death were an exaggeration. The House of Lords report most definitely changed the climate for science communication in the UK so that genuine public engagement and consultation are an integral part of everyday life. The numerous exercises undertaken since 2000 have undoubtedly had some effect on policy around science, but how much is yet to be determined. In the meantime, people of all levels of scientific understanding and accomplishment still need and enjoy clear and attractive communications about the results of research: one may argue about just which, if any, deficit is being remedied thereby.