

**WHEN THE DOG MUST TALK TO THE CAT –
COMMUNICATING SCIENCE TO POLITICIANS
OR
SCIENCE AND POLITICS –
THOUGHTS ABOUT A COMPLEX RELATIONSHIP**

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Abstract. From a communication view, political lobbying for Science means targeted communication about a long established, well-tested, fact-based and logically robust system of inquiry to a highly dynamic environment in which decision-taking is influenced by many non-scientific factors and with norms that differ widely from the tenets of science. The paper discusses some of the communication issues that arise when these very different worlds meet.

1. Introduction

One of the major milestones in the evolution of science was clearly the advent of the ‘experimentalists’ in the UK in the middle of the 17th century. With the backing of King Charles II, the Royal Society was established as a ‘haven’ for scientific experiments. Though the term ‘science’ had yet to be established – as indeed had its deeper philosophical underpinnings – science as a specific human activity was given room to develop on its own, insulated and largely independent from society at large.

However, since the days of the industrial revolution, the advances in practical applications of scientific insights, notably in the areas of human health, transport and communication, development of arms, etc., meant that science could not remain independent from mainstream society. Indeed the very progress of science and technology has exerted a great pressure on society to deal with the social consequences of these developments.

Especially since the days of WWII and the invention and deployment of nuclear weapons, the ethics and morality of science became an issue for everyone, reinforcing the reintegration of science into society at a much deeper level than ever before. But now a very different society had emerged than the one in which science was born – a society with elaborate parliamentary-based systems of governance, and demands for accountability, openness and participatory decision-making – in short, a society of informed citizens practicing democracy.

So, whilst the continuing progress of science and technology generates its own needs for a constant negotiation with a society that must ultimately decide on many, increasingly complex socio-scientific issues, the evolution of society, not the least as regards systems and practices of governance, inevitably entails greater involvement from society in questions that have traditionally been seen as belonging exclusively to the realm of science.

There are of course further, perhaps more mundane, reasons why interaction between scientists and politicians is important. For example, the wish to secure material support for science, such as development of costly research infrastructures, force scientists to engage with political decision-makers and thus to venture into the stiff competition for funds and other support in the same arena with other groups in society.

This is why public awareness of and engagement in science has become so important over the last decades, including dedicated interaction with political decision-makers. This is clearly recognised by the scientific community. For example, in a 2006 survey by the Royal Society¹ among 1485 research scientists in the UK, policy-makers were identified as the most important audience (cited by 60% of all respondents), as opposed to media (general journalists) which reached a mere 31%. Of course, scientific institutions have been active in this field for many years, organising information events and/or pairing schemes with parliamentarians and government departments. For example, in 1999 the Federation of Australian Scientific and Technological Societies (FASTS) began its “Science meets Parliament” activities in that country². In the USA, Congressional Visits Days provide opportunity for dialogue between scientists, engineers, educators, and managers to meet and discuss with elected decision-makers. The Royal Society has set up a ‘pairing scheme’ between scientists and politicians in the UK³. Recently the Scientific Technology Options Assessment (STOA) Panel of

¹“Science Communication - Survey of factors affecting science communication by scientists and engineers”, The Royal Society, 2006.

²See, for example, Parsons, W (2001): “Scientists and Politicians”, presented at the 6th International Conference on Public Communication of Science and Technology (PCST) at CERN, Geneva,

http://visits.web.cern.ch/visits/pcst2001/proceedings_list.html

³“Royal Society MP-Scientist Pairing Scheme”, The Royal Society 2005.



Figure 1. ‘Mini-hearing’ on European Astronomy at the ITRE Committee of the European Parliament in Brussels.

the European Parliament has taken a similar initiative. In Brussels, the seat of the European Commission and venue for Committee meetings of the European Parliament, about 40 research organisations and institutions now maintain liaison offices. In spite of this, both empirical and anecdotal evidence suggest that public communication, including targeted communication with politicians, is still struggling for acceptance by many scientists as a formal activity which is an integral part of the scientific endeavour.

2. Communication issues

From an academic point of view, activities in the field of public communication of science have revolved around the pitfalls of communication based on the deficit model (assuming a knowledge deficit in the public which had to be ‘corrected’) and the various attempts to substitute this mono-directional communication effort with a more inclusive dialogue, such as has been implemented in so-called consensus conferences, mostly in Scandinavia and in the UK⁴. Irrespective of the relative merits of the deficit model as a basis for developing and implementing a successful communication strategy, it

⁴See, for example, Andersen, I.-E. & Jæger, B.: “Danish participatory models Scenario workshops and consensus conferences: towards more democratic decision-making”, *Science and Public Policy*, October 1999, Vol. 26, No. 5, pp. 331-340, Beech Tree Publishing.

remains clear that communication between different groups in society is different from – and more complex – than intramural communication. Scholars of public science communication have therefore studied belief systems and professional practices in selected target groups, in order to identify potential barriers to effective dialogue. Thus the relationship between science and the media has been subject to numerous studies. The cultural differences between scientists and journalists have been investigated and described⁵. Yet, as regards the complex interaction between science and politics – and scientists and political decision makers – this has primarily focussed on how scientific knowledge is used in the political process.

This paper does not attempt to do that. Rather it constitutes a practitioners observations of some of the issues of the interaction between science and politics.

3. Talking together – Scientists and Politicians

The involvement of scientists in political processes often falls in one of two main categories, perhaps boldly expressed by a) ‘When politicians need scientists’ or b) ‘When scientists need politicians’. Probably the more frequent occurrence is when scientists are called upon as experts, helping politicians to take regulatory decisions. Whilst scientific advice is clearly of great importance, scientists are often called upon in situations of controversy, where the body of contemporary scientific knowledge has not yet advanced to stage where definitive statements can be made. Within the professional boundaries of science this situation is of course normal, in fact it is an essential part of the practice of science. However, when this becomes part of the public discourse the outcome is often unpredictable and in any case subject to the dynamics of public debate, often leaving scientists in an uncomfortable situation⁶. ‘Iconic’ cases of course include the BSE crisis, the area of stem cell research, cloning and the introduction of genetically modified organisms into the food-chain.

⁵See, for example, Peters, H.P. (1995): “The interaction of journalists and scientific experts: co-operation and conflict between two professional cultures”, *Media, Culture & Society*, Vol. 17, pp. 31-48, Sage. A wider discussion of the relationship between science and the media is offered by Nelkin, D. (1995): “Selling Science”, W.H. Freeman.

⁶See, for example, Jasanoff, S. (1990): “The Fifth Branch – Science Advisors as Policy Makers”, Harvard Univ. Press; Weingart P. (1999): “Scientific expertise and political accountability: paradoxes of science in politics”, *Science and Public Policy*, Vol. 26, No. 3, pp. 151-161(11), Beech Tree Publishing; Hoppe R. (1999): “Policy analysis, science and politics: from ‘speaking truth to power’ to ‘making sense together’”, *Science and Public Policy*, Vol. 26, No. 3, 1 pp. 201-210(10), Beech Tree Publishing; and Peters, H.P. (2001): “Scientists as Public Experts”, Paper presented at the 6th International Conference on Public Communication of Science and Technology, CERN, Geneva.

In general, astronomy is of course not associated with societal controversies. Yet situations, with potential for conflict, where decision-makers may call on scientists might include

- Questions regarding Near-Earth Objects, including potential threat scenarios
- New large astronomical facilities (e.g. choosing a location)
- Science education (making science education more attractive)
- Public understanding of science (raising scientific literacy)
- Human culture and perceptions of the role of humankind (exoplanets and the possible discovery of traces of extraterrestrial life).

Arguably the problems mentioned above will seldom arise in situations where scientists seek the dialogue with decision-makers to further the interests of science itself. In astronomy the topics might include

- Support for new large facilities (e.g. ELT, SKA, LST, VO)
- Institutional interests (e.g. in Europe in the context of the European Research Area)
- ‘Defending’ the discipline (e.g. in a climate of increased competition from other scientific disciplines for funds)
- ‘Defending’ science (e.g. supporting the science-driven agenda of the European Research Council).

Nonetheless, this case may potentially present other problems. To the extent that this involves spending public resources, there may be an ethical question of spending public money to gain public support. This is certainly not to suggest that such an activity is not legitimate, since the involvement of scientists contributes to taking (better) informed decisions, so this question may not be obvious to scientists. Yet, in similar contexts, it has occasionally been raised among politicians and by the public, which simply illustrates the complex, perhaps vexed, nature of public communication. Even so, there is a clear, and widely recognised, need amongst decision-makers for high-quality information in topics that involve science, both where science can serve society directly or where society may be called upon to support the further development of science. Establishing meaningful communication across the institutional, cultural and practical barriers is thus a challenge that we must face.

Few politicians have scientific backgrounds and little knowledge about science, a fact often bemoaned by scientists, yet scientists usually know little about politics and matters of state and governance. To some extent this dual deficit is based on the different cultures, but it also reveals what might be called lack of ‘system knowledge’. What are the processes employed by science? What are the processes employed by politics? Successful communication between science and politics clearly requires insight into



Figure 2. Visit to ESO by a Finnish Parliamentary Committee.

both worlds, understandably difficult to achieve by professionals who are busy every day simply to remain informed about what goes on within their own specialised fields.

In approaching the communication problems described in this paper, it is worthwhile to examine some of the more pronounced differences between science and politics and, indeed, between their practitioners.

4. Different cultures, different operating environments

Science constitutes a particular way of trying to understand the world around us. As a means of inquiry, science uses a well known set of tools, including hypothesis, experimentation/observation and their verification through reproduction of results, embedded in the publication practices, including of course the peer-review system. The tenets of science, at least in basic research, are embodied by the Mertonian norms of

- Communalism (the obligation to share results with others)
- Universalism
- Disinterestedness (the obligation to objectivity)
- Originality
- Scepticism.

Perhaps simplified, one can say that based on these norms and using what is commonly known as ‘the scientific method’ science seeks to uncover some kind of ‘truth’.

Whilst in a democratic system, the division of power also gives rise to different cultures within the system of governance, it is clear that the norms, traditions and practices of politics are quite different from those of science. What are the main features of the political culture and how do they differ from the culture of science?

In a democratic society, politics (as an operational form of policy) is of course driven by the need to rally a majority to obtain power. Since majorities are assembled in the harsh light of the public sphere, public perception plays a major role. Once in power, politicians often find themselves confronted with the need to take decisions about a range of issues on short time-scales without sufficient knowledge. In fact prior knowledge is not a requirement. In the world of politics, truth is not the arbiter, power is. On the other hand, there is often a need to make compromises, an option which would be considered unacceptable in establishing scientific results.

One may say that if science is the search for truths, politics the search for negotiated solutions; science is about applying the universal laws of Nature, politics is about making local laws for human society.

In science a practitioner gains status based on achievements and the specific expertise he/she possesses. Since it often takes time to build up a strong scientific reputation, it follows that in academe, the most influential and highly respected scientists are often rather senior. In politics 20-year olds enter parliament, 30-year olds become ministers – yet 80-year olds can become heads of state. Even where such positions are considered largely ceremonial, the daily demand of such functions mean that they can hardly be considered as ‘retirement positions’. It is tempting to state that in many countries the sometimes archaic hierarchies of science are left behind by the dynamics of modern politics.

Scientists may be knowledgeable about their social responsibilities, yet the consequences of their work for society are often not at the centre of their work or daily attention. In politics, it is all about the social consequences.

Both the differences in culture and in operating environment manifest themselves in issues of language, i.e. communication.

Informed by the Mertonian norms, professional communication in science aims to be precise, use jargon, be impersonal and not openly controversial. It clearly aims to serve a specific well-defined audience, but its literary features underline the image of science as a body of knowledge that evolves continuously, following its own, almost mechanistic ways without human interference.

Conversely, political communication is often deliberately imprecise (as politicians test new ideas). It may contain some jargon, though different and certainly much less so than in scientific communication. Political communication can be controversial, sometimes outright polemic and it is more often than not designed for several audiences. It may invoke emotions, questions of ethics and almost always describes human interference as a positive element.

5. Lobbying for science

Encyclopædia Britannica describes lobbying as “any attempt by individuals or private interest groups to influence the decisions of government”. The particular term is generally thought to originate from the USA, but as a practice, lobbying has presumably existed during all times. It is probably fair to state that many scientists, and indeed citizens, are wary of lobbyism, but at the same time, lobbyism performs a vital role in a functional democracy by being an important conduit for solid and reliable, expert information into the decision-making process. Politicians and administrators benefit greatly from this information, which helps them to take decisions on very complicated matters. In this sense, the relation between decision-makers and lobbyists is normally a healthy one, provided that everybody adheres to the various codes of conduct and rules that guide this process.

Those who are active in this field act as interfaces between science and politics. They are able to explain the needs and requirements of scientists to politicians, but they also understand the political ‘machinery’ and can ‘translate’ policy documents and legal texts into language that scientists can better relate to. They will also be aware of protocol issues and spot opportunities or obstacles that may in the end play important, perhaps decisive, roles when decisions are taken.

Importantly, they will understand the political ‘system’ and be able to work both with administrators (mostly civil servants in tight hierarchical systems) and elected officials, e.g. members of parliament or government ministers, noting that the two groups, though depending on each other, have very different traditions, operational conditions and perspectives, as well as limitations.

Understanding cross-cultural communication and possessing ‘system-knowledge’ are certainly pre-requisites for success in this field. But it cannot be denied that the ability to build personal relationships is equally important. For such relationships to persist, however, they must be built on trust and a basis of information and arguments being provided in an honest and balanced way.

6. Arguments

We have reviewed some of the differences between science and politics above. In terms of political arguments – and at the risk of oversimplification – it could be said that whereas science is about *knowledge* creation, politics is about *wealth* creation. It is not difficult to build links between those two objectives, but it does not change the fact that the focus is different. This is not to suggest that communicating science to politicians means skewing arguments, but it does mean placing the arguments in a societal context.

To give a practical example: A few years ago, it was proposed to declare the year 2009 as the International Year of Astronomy, providing a unique platform for astronomy outreach on a global scale. ‘International Years’ formally require endorsement by the United Nations and winning approval for the idea thus entailed an orchestrated petition effort with governments across the world. In order to obtain the necessary support, we developed and implemented an elaborate strategy involving

- reviewing the formal requirements for International Years (legal and political)
- describing the planned activities in the light of these requirements
- mobilising the astronomical communities world-wide and providing guidance to them in their national lobbying
- organising face-to-face meetings with key actors at the UN General Assembly
- coordinating, as much as possible, the national efforts with the international one.

The target audience for this paper, professional astronomers with an interest in communication issues, will be well aware of the arguments for an International Year of Astronomy, celebrating, among other things, the quadrennial of the first use of the astronomical telescope by Galileo. However, in the UN environment arguments highlighting astronomy as a tool to stimulate rational thought and scientific literacy were clearly well received. The fascination with the skies that has existed in almost all cultures and times, and therefore also the notion of understanding astronomy as a unifying element in an otherwise sadly divided world, found much acceptance.

7. In the amorphous world of the public sphere

For scientists, steeped in the academic traditions and the established value system of science, interaction with the public can be confusing. Public debates are seldom focussed and often take unexpected directions. Also, whilst politics is often associated with decisions, it is perhaps more helpful to view

politics as a process, in which the main actors are locked in a continuing negotiation over societal issues.

In this view, engaging with society and, in particular with politics, must be seen as a *long-term* investment. It involves a dedicated, and targeted, communication effort, but – given the nature of public debates – often with unexpected second order effects. Clearly it is a ‘battle’ that must be fought continuously and to prevail, the communication effort requires *visibility* (presence), establishing and maintaining *awareness*. Of course, content is essential, as any scientists will readily agree, but *form* is also important. Together they establish one’s *credentials* which is the platform upon which successful lobbying rests.

Clearly, political interaction requires the allocation of resources. Many scientists will wish to deploy these resources differently, e.g. to buy equipment that may directly benefit their individual research projects. This is understandable, but in today’s world absence from the political scene may bring substantial long-term risks. Therefore, sometimes the question is not: Can you afford to do it? Rather, it is: Can you afford *not* to do it?

8. Conclusion

The time in which science evolved in isolation from society is clearly over, caused both by the effects of scientific and technological developments on society and changes in society itself. At the same time the need for support of science by governments and societies is constantly increasing, calling for a comprehensive dialogue between scientists and politicians. Featuring all the complexities of cross-cultural communication, an appreciation of the respective cultures with their different conventions, norms, role definitions etc. is necessary. Equally important a good understanding of the professional processes employed by science and politics is a requisite for establishing fruitful and constructive communication. Given both the importance of science for society and the legitimate interests of science itself, the dialogue with society is more important than ever before, and it is therefore prudent for scientists to embrace the challenges that arise from this changing relationship with society, and see this challenge also in the context of their professional communication task.