

The Uses and Limitations of Classifying Scientific Advice Arrangements

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Introduction

Policy-making is becoming an ever more complex pursuit, and scientific and technological issues have an increasing impact on the core functions of government. The result of this has been a corresponding increase in the use of expert scientific advice to inform decision-making. However, as the demand for scientific advice has grown, so, too, have questions over its validity. Neither policy makers nor publics will any longer accept expert opinion without question. Recent environmental and public health scares such as BSE in the UK and the contaminated blood scandal in France have exposed the problematic nature of both the provision and the use of scientific advice. Science and technology studies has long argued that all scientific knowledge is contestable, that this is exacerbated when claims are made on a public stage, and that scientific advice is always qualified and uncertain. Moreover, crises and policy challenges such as global environmental change have illustrated beyond serious doubt the complexity and uncertainty inherent in giving advice to policy-makers. What, then, is the utility of scientific advice? Because advice may be contestable, should we completely discount its use in policy-making? If not, then how can advice best be sought, formulated and acted upon?

Funtowicz et al (2000) argue that the time is now ripe for a debate on the relationship between science and policy in the European Union (EU). Within the context of the European Research Area (ERA) initiative, the Commission has called for the development of a common system of scientific and technical reference for EU policy implementation, seeking an alignment of methods and greater comparison and harmonisation of results across the Union (CEC, 2000). A first step towards an improved scientific advisory system is to more fully understand the current picture. As Funtowicz et al (2000) conclude, “the system is complex, unique and changing quickly. Therefore, further analysis is needed (of how the system is working at present, what its shortcomings are, what the needs of policy are and what constitutes good scientific practice) both within Member states and at the European level”.

Clearly, the first stage in this endeavour is to map current arrangements. Mapping requires the development of indicators that allow these arrangements to be typified. In other words, a scheme for classifying advisory bodies needs to be developed, which will also allow for comparison of the ways in which different advisory arrangements operate and, leading on from this, the exchange of good practice. This short paper discusses one attempt to develop and explore the utility of a classification scheme¹.

¹ The development of the classification scheme was undertaken through a small study commissioned through ESTO (see Glynn, Flanagan and Keenan 2001)

Developing a classification scheme

The classification scheme was developed through a general exploration of the advisory structures in the UK, France, Italy, Germany and Sweden, and the more detailed study of two cases, the use of human embryonic stem (HES) cells for biomedical research; and the health effects of electromagnetic fields (EMFs), where scientific advice has had a prominent role. This approach highlighted the wide variety of advisory structures that are employed to support the policy making process. Advisors operate at all levels of the political system, and the advisory process can be initiated in a number of ways. So, for instance, advice may be sought by the head of government, by government ministers, by civil servants, or by legislators. Furthermore, advice need not be sought explicitly – a standing body may initiate advice to policy-makers. Not surprisingly, the need for advisors to be seen as independent from interested stakeholders is increasingly expected and, whilst our study suggests that advisors are rarely excluded outright on the basis of their interests, it is usually the case that they are required to declare any interests they may have at the outset.

More generally it is clear that openness and transparency in the advisory process are increasingly recognised as important requisites for safeguarding the robustness of advice. There is a growing expectation that advisory bodies will publish information, from final reports to, in some cases, the minutes of meetings, and there seems to be an increasing tendency to engage in wider consultation than has maybe been the case in the past.

The role played by advisory bodies in the policy-making process can vary. A common distinction is made between advisory bodies that perform a risk assessment function (providing an objective assessment of a particular situation which is the basis of decision by policy makers) and those that are engaged in risk management (which goes beyond simply technical evaluation of risk to consider possible policy options and their appropriateness). However, our findings suggest that this distinction is not easy to maintain in practice, and it is probably impossible for advisory bodies to ignore the policy context in which assessments of risk are made. The way that advice feeds into and informs policy also varies, with different degrees of dialogue between advisors and policy makers.

These findings suggested a number of aspects that can be considered in developing a classification scheme. These are detailed below in Table 1.

Table 1: Aspects of scientific advice considered by the study

Mobilisation of advice	<ul style="list-style-type: none"> • (Sought by) Head of Government • Responsible ministry/agency • Legislature • Public(s) • Self initiated by advisory body • Other advisory body
Status/permanence of advisory body	<ul style="list-style-type: none"> • Statutory body • Non-statutory standing body • Fixed term (<i>ad-hoc</i>) body
Scope for action	<ul style="list-style-type: none"> • Purely advisory • Monitoring role with power to act if regulations are breached • Charged with issuing licenses • Charged with setting standards • Wider legislative function
Role	<ul style="list-style-type: none"> • Risk assessment • Risk management
Remit	<ul style="list-style-type: none"> • Focused on specific risk questions • Covers a number of issues within an area • Encompasses a range of issues and areas • No fixed remit, advises in any area
Consultation	<ul style="list-style-type: none"> • Reliant on expertise of members alone • Receives external views via interviews or hearings with additional experts • Consultation with a wider range of experts • Broader consultation, perhaps going beyond experts to include stakeholders, public(s)
Research	<ul style="list-style-type: none"> • Reviews existing research results • Able to commission new research
Openness of process	<ul style="list-style-type: none"> • Report is publicly available • Some meetings are open to the public • Meetings are open and/or minutes/agendas published etc,
Composition of advisory body	<ul style="list-style-type: none"> • Scientific experts • Includes experts from outside scientific disciplines (e.g. ethicists, lawyers) • Composed of legislators • A mix of the above

The utility of the classification scheme

The utility of such an approach was explored by attempting to classify the main advisory bodies used in the stem cell and EMF issues according to the above dimensions. This exercise provided reasonably detailed information on the various arrangements in place and allowed comparisons to be made. Differences between the two cases, as well as between the five countries considered, were clearly evident.

Differences between issues

The higher level of public debate and the wider issues involved in the stem cell case seem to have led to a number of differences in the way in which this was dealt with by the advisory-policy system. Key differences were:

- The way in which advice was mobilised – for the EMF issue, advice was generally sought by the relevant ministry, whilst the stem cell issue saw a variety of initiating actors, with legislators being particularly prominent (given the greater level of public debate surrounding the stem cell issue, it is not surprising that there was a greater involvement of parliamentarians than in the case of EMFs)
- The degree of consultation engaged in by advisory bodies – with wider consultation being more common with the stem cell issue than with the EMF issue
- Composition of the advisory body – in the stem cell issue the process was more likely to involve a wider range of actors, including parliamentarians, ethicists, lawyers and others, reflecting a ready acknowledgement that the issue touches on a range of different expertises and perspectives.

Differences between countries

While there were clear differences between the two issues, it will come as no surprise that there was also variety in arrangements across each country, reflecting the different political and policy-making cultures involved. For instance:

- The general tendency for parliamentary involvement in the stem cell case was not observed in the UK and Italy (though after the study was completed the UK House of Lords did initiate its own high profile inquiry into the issue)
- Statutory bodies played a more prominent role in some countries than in others (notably France and, to a slightly lesser extent, Italy).
- In the case of one country, Italy, no external consultation by bodies advising on the two issues in question was observed.
- In both issues, openness and transparency were greater in Sweden than in the other countries, with advisory bodies in the UK, France and Italy generally only publishing final reports.

Given that only bodies dealing with two specific issues over a specific time frame have been explored using the classification scheme described above, it is difficult to draw any general conclusions from these results. However, the process of attempting to classify the operation of the scientific advisory system in these two issues does raise questions for further investigation.

Limitations of the classification scheme

Whilst the suggested classification scheme could be used to map scientific advice arrangements more extensively across the EU, exploration of the two policy issues discussed above has also shown the limitation of any attempt to classify such complex processes in this manner. Fundamentally, some of the most significant variables that should be considered in any examination of the operation of the scientific advisory system have been obscured by a narrow focus on structure and function. Such variables include the political, policy-making and scientific cultures of the countries concerned, all of which will certainly shape the dimensions of the structures in which advice may be sought and provided. Most significantly, and not surprisingly, the specific socio-technical content and context of the particular issue under consideration influences the manner in which the advisory and policy systems engage with that issue, affecting the way expert advice is likely to be mobilised.

So, a preoccupation with classifying the structure and function of advisory bodies will inevitably obscure the many subtleties in what is a complex and contingent process. A simple but telling illustration of the difficulty of classification along these lines can be seen in the case of the scientific advice regarding EMF risks in Italy. Two main bodies, the Higher Institute of Health (ISS) and the Higher Institute of Worker Security (ISPESL), both considered the possible effects of EMFs on human health. Despite the fact that the scheme outlined above classifies these two bodies identically in every dimension, the fact is that they arrived at almost opposite conclusions regarding the risk from EMFs, with the ISS adopting a much more precautionary approach. The scheme alone can provide few insights into why this might have occurred.

These limitations would seem to suggest that there are factors lying outside of the scheme proposed, factors that would be difficult to accommodate within it. But there are also limitations within the dimensions covered by the scheme proposed and closer scrutiny of these inevitably highlights their problematic nature. Who decides on the selection criteria and on the composition of advisory bodies? Why, in some cases is it deemed acceptable to have an advisory body consisting strictly of narrowly specialised scientific experts while in others broader participation is called for? How is the remit of an advisory body set, and what flexibility do advisors have to shape this remit as their work progresses? Clearly the remit plays a major role in guiding the advisory process and will inevitably have an impact on the final conclusions that are reached. The nature and extent of the interactions between the advisors and their policy-maker 'customers' will also have an impact on the shape of the advice produced. The recent BSE inquiry in the UK (Phillips, 2000) made clear the complex interaction between advisory bodies, the relevant ministry and civil servants, highlighting the subtle influences that can prompt advisory bodies to follow particular avenues of investigation and reach certain outcomes. All these factors are likely to vary according to the economic, social and political, as well as scientific, dimensions of the issue in question, making them difficult to internalise into any straightforward classificatory scheme.

Finally, there is also a unit of analysis problem that refinement of the classificatory scheme alone is unlikely to solve: standing advisory bodies with a generic remit frequently set up sub-groups or bodies to deal with particular issues. The question then is which body to describe using the classificatory scheme, since the sub-group is

likely to differ in a number of ways from its parent organisation. This is an important consideration, since one of the main rationales for developing and using a classification scheme is to allow comparison between different arrangements across various issues and countries. If like is not compared with like, then the classification scheme has very little utility in this regard.

Conclusions

Our attempts to develop a classification framework have stressed a number of important aspects of the mobilisation of scientific advice. The use of the scheme does provide a framework for mapping the various scientific advice arrangements across the EU and also offers scope for some comparison between advisory bodies and across issues, although further refinement is still required. It is possible that a more detailed study of advisory bodies would allow some of the problems raised here to be dealt with more fully, although it is likely that some limitations can never be addressed satisfactorily.

Perhaps a more useful approach would be to place greater focus on the processes involved in the formulation of advice. If such a scheme could detail, for example, the way that an advisory body engages in wider consultation or the approach to selecting advisors, then the scope for learning may be enhanced. Currently, information is exchanged between advisory bodies, e.g. the advisory body examining the health effects of mobile phones in France has adopted much of the work done by the main advisory body that dealt with this issue in the UK, although this sort of thing does not appear to happen in any systematic way. A simple classification of advisory bodies in Europe could help to facilitate this transfer of information by detailing the various bodies engaged in particular areas. However, a more complex classification of the processes involved in formulating advice could have a more far-reaching influence, for example, through the stimulation of discussion around ideas of 'good' practice. Moreover, such discussions could play an important role in any movement towards the development of a common system of scientific and technical reference for EU policy implementation.

Whilst the development of classification schemes may prove to have policy relevance, it is necessary to proceed with care, as it is clear that reducing what is a highly complex process to a limited number of dimensions risks limiting our understanding of advisory processes rather than enhancing it. Classification may have a role in highlighting similarities and differences that require further investigation and in raising questions about good practice, but if the multifarious reality of scientific advice processes is to be better understood, then there is no substitute for detailed case studies exploring specific instances of the mobilisation of advice.

The study discussed in this paper was short in duration and limited in scope, and cannot hope to have comprehensively explored every aspect of the interaction between expert advice and policy makers. However, it is hoped that the exploratory use of a classification system and – just as importantly – the discussion of its limitations, will provide a useful input into debates surrounding the use of scientific advice.

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