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Science advice: challenges pave way for judgement and values

For decades, academic experts have tried to follow ideals of freedom from value judgements. But new research is striking a blow for the expert who applies values. Qualitative assessments, including the hitherto much neglected humanities, are therefore set to gain an increasingly important role.



WHAT IS THE CURRENT STATE of advice based on scholarship? As scholarly activity expands on all fronts, in virtually all academic fields, the situation should be the best one conceivable. But is it?

Judging from overall trends, an affirmative answer is not a given. The economic crisis of 2008 was hardly caused by a general *lack* of expert knowledge of economics. Rather, it was a particular *type* of economic expertise that proved to be a key cause of the crisis (never mind that *other* economic expertise disclaimed responsibility . . .).

Our inability to move from knowledge to action on climate change is hardly due to our knowing too little about its causes either. Can the explanation lie instead in the fact that knowledge relevant to change in society has too negligible a place in the corridors of power?

Should experts have opinions?

My questions are, of course, rhetorical. If we look at a number of essential challenges to society, national or international, we soon find that

research-based knowledge assumes a capricious role. Expertise is not lacking, and a tremendous expansion in the provision of advice in most sectors, in the majority of countries, is already well under way.¹ But knowing whether it is effective or tenable in the long term is not always easy.

Until a few decades ago, providing scientific advice was a fairly esoteric and partly secret activity, often tied to national security or strong economic interests. Research on provision of advice (a growing field exists) studies, for example, whether the process is democratic and transparent. Its quality, effectiveness and legitimacy, and how far it is scientific, are also examined. Other issues relate to its forms, method, institutional structure and what might be termed its ‘cultures’, which follow national lines. There is also a great deal of exchange among countries; after all, it is more than three decades since organisation scholars Paul DiMaggio and William Powell wrote their classic article about ‘mimetic institutional isomorphism’ (1983).² Nowadays, there is also research showing clearly what may seem to be a paradox of research policy: the fact that scientific authorities seldom use scientific knowledge for the advice they provide.³

The new research might perhaps be said to have made our view of scientific advice freer from illusions. The idea that more expertise results in better decisions has proved hard to substantiate. However, this does not necessarily mean that all advice is or must be distrusted. Rather, we should ask about the nature of the knowledge base underpinning scientific advice. What does it include? There are still reasons to ask political theorist Harold Laski’s classic question about whether the expert has superior judgement.⁴ Or is advice just a matter of method? Are such traits as shrewdness and wisdom even reconcilable with words like ‘expertise’ and ‘scientific advice’?

The dispassionate adviser

The person who has done most to remind us about Laski’s question is the Harvard professor Sheila Jasanoff. It was she who translated Laski’s wish for a judicious expert into the modern notions of ‘serviceable truth’ and ‘virtuous reason’.⁵ Jasanoff is also one of the most influential figures in the rapidly growing research area of science and technology studies (STS). This research has found, for example, after several decades’ studies of the practice of providing scientific advice, that although the advisory

work has grown in volume, it has not changed particularly much in terms of organisational structure. It still rests, in all essentials, on a small number of specific areas of knowledge in natural sciences, technology and engineering, medicine and economics, and it favours, by a wide margin, quantitative methods at the expense of qualitative assessments. In advice, numbers trump words — a trend in the formation of expertise with historical roots predating Laski's question by more than half a century.

The advice given is, moreover, based on the existing body of knowledge rather than on new combinations of knowledge adapted to the problems or challenges posed by the activity. It is closely tied to cultural, political and economic norms that, in all essentials, rest on the current norms in such western institutions as the OECD and World Bank. They are based on a putatively value-free 'linear model' in which knowledge is first produced and then applied in the form of advice given when it has finally been verified.⁶ Perhaps most importantly, the advice is given with great care to observe the traditional division between facts and value judgements. We thus have a fact-based and number-based advisory system that is remote from values — not only political ones in a narrow sense, but values that may be associated with judgement and capacity for action.⁷

The ideal-type advisor — in the Weberian sense — is demonstratively uninvolved, or what the historian of science Naomi Oreskes has called 'dispassionate', i.e. unemotional.⁸ The argument is the classic one: that science must triumph for objective, factual reasons, not by standing for what is 'good' or by being vociferous. But this idealism, Oreskes argues, entails a risk of becoming counterproductive, especially as opponents in the climate debate, for example, are singularly passionate and clamorous. Perhaps, in purely empirical terms, it is not even true that research that is emotionally engaged for a good purpose would be less successful as advice. The question can, in any case, be posed. What should we say, for example, about a book like *Silent Spring* (1962), written by the same Rachel Carson who edited official information material from the US Bureau of Fisheries for many years?

Advisory failures

This brief summary of how scientific advice is usually provided already sheds some light on the advisory failures in economic and climate policy that I began this chapter with. Facts without contexts and direction risk



becoming pointless, or never being heard. Perhaps we should simply refer to ‘advice failures’, in analogy to the term ‘market failures’. The idea of market failures was (as we know) to create an argument for state intervention and public funding, for example in order to stimulate research-based innovation, i.e. for policy reasons. (That this was an oversimplification of how innovation processes happen, and why, does not particularly matter for my reasoning just here.) Similarly, the term ‘advice failures’ could result in the reflection that more concerted efforts should, perhaps, be made to see whether improving scientific advice is possible. Left to itself, its path dependency and its ideological orthodoxy, policy advice does not appear fully capable of living up to expectations. Perhaps it needs to be questioned in a more profound way and given more politically relevant, in the sense of value-based, characteristics.

It is urgent to pose these questions now. The role of the advisory system has changed in recent years with the inroads of an administrative model that has, rather, moved in the diametrically opposite direction. Its external features are well known: evaluation, performance measurements, simplification and systematisation of a large number of public service activities and whole policy areas. One extreme version of this model is basing policy on evidence: quality — or, more generally, success — in an activity is rated according to certain criteria and its achievements are measured to make it easy to decide whether the activity is of ‘high quality’. In activities where systems like this are applied, advice of a tradi-

tional kind — composite assessments of complex situations — can easily be weakened or marginalised. Instead, the advice tends to gravitate towards expert assistance in setting the criteria, which in turn favours simple, measurable outcomes.

The attractiveness of this kind of model is not hard to see. Politicians and other leaders then need not occupy themselves with constantly seeking answers to the question of how society, or even the sector or activity for which they themselves are responsible, can be improved. Instead, the starting point is a set of agreed positive characteristics of a society or activity. The characteristic that is invariably easiest to agree on is economic growth. In this way politics too is simplified, or rather banalised.

But the disadvantage is obvious to anyone who thinks about it. What people can agree on in this way is fairly little, and experience from the past few decades' scientific advice is that more complex value issues are pushed into the background while the simplest political aims are those that tend to survive.

Above all, it is the combination of a stereotyped advisory style and the endeavour to base the advice on evidence that has tended to make the advice one-dimensional. An extreme example (but by the same token a clear one) may be taken from the Netherlands. There in 1945, in the light of contemporary demands, a central planning unit for economic issues was created. For 40 years this agency worked without any particular debate taking place. On the initiative of a few political parties it began in 1986, ahead of the Dutch elections, to carry out calculations and assessments, in both cases *ex ante*, of the parties' economic election programmes. A growing number of parties joined in. The initial premise of this exercise was that the economy can be regarded as a non-political issue, i.e. that it is possible to determine, through arguments that are 'internal' to economics, which economic policy is 'best'.⁹ Nevertheless, one might of course wonder whether it was really that simple or, as one scholarly intervention phrased the question, 'Does it make sense?'.¹⁰

There are naturally various explanations why a radical change took place from a more esoteric, activist advisory style that we associate with Machiavelli and his successors over the centuries. One that seems agreeable, at least to me, is that dependence on individual advisors or small groups could decrease. More voices, and at best more types of voices, could then be heard. Another was really ideological: the aim was to reduce the power of politics and boost the influence of individuals and their

choices. This means, in practice, that the market is given a larger place in many areas of policy. The idea of a market is nevertheless in strong contrast to the notion of creative policy resting on the conviction that it is desirable to develop society systematically in a particular direction. The characteristics of the advisory system touched on above conform fairly well to the administrative model that prevailed in the neoliberal period, i.e. roughly from 1980.

Regimes of policy advice

With this background, the post-war period could be described as consisting of a series of policy advice regimes (here I am thinking primarily of Sweden, but I believe that a similar argument could be applied to several countries). The first regime was characterised by the Cold War, a substantial exclusiveness dictated by security policy and economic conditions, with few and informal advisers and varying, sometimes sporadic scientific foundations. During this period the Swedish National Defence Establishment, a separate defence-related institute, was formed in 1946 along with several military or other government agencies that influenced research planning. The second regime bore the marks of political belief in planning and control and a more formal and open process of negotiation with the scientific community. It also absorbed emerging ideas of research planning as an instrument of industrial and economic policy along the lines of ‘linear-model’ thinking. The inception of this regime in the area of research policy was symbolically marked by the setting-up of the Swedish Government’s Science Advisory Board in 1962.

A third regime ensued, from the early 1990s, that was closely bound up with a neoliberal political order, performance management and weakened faith in governing according to political objectives. Evaluation, instead, superseded advisory work. It may be seen as particularly ironic that the Swedish Research Council (VR), which was newly formed in 2000, was assigned in the middle of this period to serve as the Government’s advisory body on research-policy issues. Not much came of this advice, because of simple shortcomings in competence (people lacking ability to take on the assignment in its full breadth) and a narrow interpretation of the task (the emphasis was laid on bibliometrics).¹¹ Above all, the VR model failed because the centre of political governance had already shifted away from expert-based consultation and given way to

increasingly competitive, performance-based resource allocation. Thus, active provision of advice from VR was not particularly sought after by the Government.

Right now, we seem to be in the midst of a new regime change, an emerging fourth regime after the Cold War, Linear model and (neoliberal) evaluative regimes. There are many signs that the managerialist model associated with the neoliberal era has passed its zenith and is in a phase of decline. Faith in performance management through criteria-setting and evaluation appears to be decreasing, even among those who used to embrace it to a greater or lesser degree. This does not mean that it will be abandoned entirely: it will probably pass on enduring elements, and performance management may assume different dimensions in different sectors. How far the marketisation of public services will go is, however, hard to say; national and sectorial differences are likely to be considerable.

Yet, and precisely because of this uncertainty, the time should thus now be ripe to discuss, more actively than for a very long time, what kind of new policy advice regime could be adopted. During the recent audit regime, the dominant questions were ‘quality and relevance’¹², i.e. whether investments in research yielded a return in the form of desirable effects, such as a given volume of highly cited articles or boost to innovations and growth. In Sweden this tendency was strongly reinforced by the economic crisis of the 1990s.

One argument for reforming the advisory work is the ever greater complexity of policy. The universities’ repertoire is growing, and there are more and more commercial actors and think tanks involved in providing advice, with varying degrees of scientific support and with a floating boundary with sheer lobbying. A second argument is that systematic and high-quality advice has been neglected in the Swedish system, both by the Government and by other actors.¹³ A third argument is that the value and policy dimensions of research policy are undersupplied with advice. How is advice provided on the direction, needs and functions of research? And who can do so in an interesting way? Finally, a fourth argument concerns the timing. A window of opportunity is opening now that both the innovation doctrine (i.e. that the foremost task of Swedish research is to promote innovation and competitiveness) and performance management will probably decline in importance in the years to come – a change that has already begun.

Since research policy nowadays starts from great challenges and societal needs it is clearly essential to ask how advisory work can tie in with these issues. Should it be linked more to other areas of policy, forming a kind of ‘integrated research-policy advisory service’? There is, I think, much truth in this idea.

In the Environmental Research Advisory Board, which was set up by the Swedish Government after the 2010 election and to which I used to belong, we worked in 2013 and 2014 on the project known as the ‘environmental policy arena’.¹⁴ The notion that a strictly limited environmental policy is not achievable is characteristic of this new playing-field. The environment is such a complex matter that it is interwoven in one way or another with all other policy areas, not least research policy. New conditions for this policy must be to recognise this and offer advice accordingly. But it also demands new skills and they too must be integrated. The policy challenges cannot be met solely by adding more experts, each on their own separate component issues, since an old STS rule is that involving more experts is no guarantee against reduced uncertainty.

What implications does this way of thinking have? It could ultimately lead to a transformation of the advisory function in the state, not least in the area of research policy. It is more than 50 years since the Research Advisory Board was set up. The Swedish Research Council’s role in issuing advice is inadequately articulated. An institutional transformation appears necessary.

In other words, a new advisory-policy regime would need to get to grips with many shortcomings: evaluation fatigue, quantitative bias, traditionalism, unidimensionality, value aversion, inability or reluctance to undertake complex assessments and weaknesses in terms of future planning, control capacity and integration into other policy areas. Ultimately, such a situation threatens to bring not only sterility and ineffectiveness in the advisory function, but also a failure to inspire confidence, a declining legitimacy and, if matters worsen, a weakening of the democratic foundations of policy.

The regime that should be tried would, instead, affirm values and thus be the opposite of ‘dispassionate’ in Naomi Oreskes’ terms. It would comprehensively formulate the conditions and scope for research policy. It would also need to mobilise more types of expertise, and have an integrative effect on different areas of policy and expertise. Attempting to

devise a completely new regime overnight is hardly desirable. Rather, one should see this as a development assignment, over many years. An initial step would be to ensure that the Government's own research agencies embark on joint discussions and thereafter seek contact with other agencies to consider how to draw up a Swedish advisory policy. At best, the Government itself should also give its blessing for this work.

Knowledge of the humanities

One branch of knowledge that would need to become more engaged in this regime is the humanities. Expertise from the humanities has been uncommon, at least in Swedish advisory work. Or, put another way, knowledge of the humanities is underused. Perhaps it is also underdeveloped in our time, compared with the largest and best-funded domains of knowledge in science, technology and medicine. This causes great harm, since the so-called 'grand societal challenges' are challenges to society rather than to the environment or climate, which we often cite as what is at peril. But the shortcomings are in society, and the damage too affects society; or, as the political scientist Bo Rothstein expressed it when, in 2012, he received a large European grant for research on corruption, 'Human suffering is not caused by a lack of gadgets or too little technology; it is caused by dysfunctional social institutions'.¹⁵

Just a couple of years ago the historian Anders Ekström and I carried out a review of Swedish research policy for the humanities. The result was an eyeopener: such a thing hardly existed. Not in one of all the research bills in nearly 35 years had there been clear articulation of any purpose for which society might need the humanities. There was an activist and eagerly monitoring view of development in IT, surgery, educational theory and practice, ecology and sundry forms of technology, and an eloquent account of the misfortunes that lay in store if Sweden neglected any of these and countless other areas of knowledge. Yet of the humanities there was scarcely a word. No collapses awaited the nation, no vital functions of society were threatened if all Sweden's faculties of humanities were to vanish overnight.¹⁶

The lack of policy articulation in the domain of humanities would be worth investigating thoroughly. But even without such an investigation, we could safely say that one key cause lies in the weakness of the advisory system. Knowledge of humanities has seldom or never been given

priority as an advisory area. It was understandable, perhaps, that there was no scope for it during the Cold War or the Linear model regimes when advice on security policy and the aspirations for innovation and economic growth were at the forefront of advice. Even in the growth-oriented audit regime it seems understandable, albeit deplorable, that the humanities were not adequately articulated.

Today, knowledge of humanities is less easy to dispense with. Few people can think that another marginal refinement in the analysis of what is causing the climate crisis will bring us closer to resolving the climate crisis. Nor does anyone believe that the society we have created can curb the pace of its species extermination just because we learn yet another incremental fact about biodiversity. Knowledge based on natural sciences is fundamental, but *it is not enough for managing complex challenges*, and this applies not only to societal issues (education, infrastructure, media etc.), but also when it comes to the climate and environment, health and technology.

Knowledge of the environment in the humanities and social sciences – or rather, knowledge of humankind and society in ways that are relevant to the environment and climate – is now emerging under the banner of ‘environmental humanities’. Similarly, knowledge of the humanities is emerging that can support decision-making in areas like public health, medicine and ICT – ‘medical humanities’ and ‘digital humanities’. In the humanities, we reinterpret, identify, articulate and mediate new ways of seeing the world. Over time, part of this knowledge becomes emerging world views and new perceptions of society.

One researcher who has meant a great deal for the development of several areas of knowledge in the humanities over the past 20 years is the French sociologist Bruno Latour. He, like Jasanoff, is active in STS. Starting with studies of one of the primary sites of scientific production, the laboratory, Latour has successively extended his domain to posing questions in recent years about how to make a new scientific project feasible. This is a project that seeks to broaden the actual remit of science and scholarship as a social enterprise. Research, including the kind that is justified by its ‘environmental benefits’, often has fairly short-term instrumental motives that are weighed against others in a kind of internal priority discussion. This is, of course, a reality and still profoundly characterises our societies. But for Latour a completely different order looms on the horizon – one in which military and commercial considerations

have receded into the background, and the endeavour to set up sounder and fairer management of Earth's collective resources has come to the fore.

Latour writes about this in his book *Politiques de la nature*.¹⁷ Perhaps its most radical aspect is his insistence that nature should not be perceived as reserved for research in the natural sciences, any more than in the humanities or social sciences. Nature must be made accessible to democratic considerations. Facts and values, contrary to what the rulebook says, should be actively mixed since nature is not just 'natural' but also part of the social reality that we human beings are both responsible for and want to achieve something for.

Values give guidance

Perhaps ideas like these are needed in order for scientific advice to be capable of asking new questions. What would happen if these ideas were taken more seriously? In a frequently quoted work on scientific advice from 2007, *The Honest Broker*, political scientist Roger A. Pielke Jr has argued for a role of the advisor as not only a neutral expert but one that cautiously adopts and identifies with a certain position — an 'honest broker' who actively points out the advantages and disadvantages of various options.¹⁸ At the same time, he has taken a stance against a role as science advocate, i.e. the proponent of a specific course of action.

Pielke's position was considered new and interesting in 2007 but is now, less than a decade later, already passé in research and debate. These now pivot on more openly formulated remits for scientific advice. As the British policy researcher Andy Stirling, for example, maintains, it is unreasonable for researchers to confine themselves to presenting facts now that the situation is increasingly acute. There must be a meaningful context for facts: they must be associated with values that give social change a direction. Stirling refers to what he calls 'directionality'. Spokesmen for the research community should use their authority to back certain ethically defensible action options. Or, as Stirling expresses it, experts should be encouraged to influence the development of society by offering 'plural, conditional advice [that] helps enable mature and sophisticated policy debate on broader questions'.¹⁹

I support Stirling in this regard. We have had too little advice that is responsibly and openly based on certain declared values. Nor is it reason-

able, in my view, for whole areas of knowledge, such as humanities, to lie fallow when societies are heading for trouble or being undermined by weak or one-sided use of knowledge. When advisory failures take place, understanding about advisory policy must be reached, and this must be a joint task.

Anyone who reads the scientific assessments that now fill the world with their aspiration of laying knowledge foundations for this and that²⁰ is struck not only by the often impressive scholarship that underlies them. Just as striking is the anxiety that radiates from them, the unwillingness and perhaps inability to extend from what can be quantitatively substantiated to what brings the issues to real resolutions. This kind of advice, according to the value-free ‘linear model’, opens up spaces that tend to be used by forces that seek to take society somewhere quite different. These forces make use of marginal doubts and lingering uncertainty to prevent what must, in other respects, stand out as wise and judicious.²¹ It is possible to do the opposite and fill such empty spaces with integrative, well-considered ideas about what may be the correct and defensible action to take.

It is time to embark on serious discussion of a new policy for scientific advice. This discussion will be about how to give knowledge an impact in our society and how it can coexist with values — without which it will have no impact.

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1. Justus Lentsch & Peter Weingart, ‘Introduction: The quest for quality as a challenge to scientific policy advice: An overdue debate?’, in Justus Lentsch & Peter Weingart (eds.), *The Politics of Scientific Advice: Institutional Design for Quality Assurance*. Cambridge: Cambridge University Press, 2011, pp. 3–18; p. 5.

2. Paul J. DiMaggio & Walter W. Powell, ‘The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields’, *American Sociological Review* 48 (2), 1983, pp. 147–160.

3. Andreas Stucke, ‘Quality assurance through procedures: Policy advice by the German Science Council’, in Justus Lentsch & Peter Weingart (eds.), *The Politics of Scientific Advice: Institutional Design for Quality Assurance*, Cambridge: Cambridge University Press, 2011, pp. 157–173; p. 171.

4. Harold Laski, ‘The Limitations of the Expert’, *Harper’s Monthly Magazine*, December 1930.

5. Sheila Jasanoff, *The Fifth Branch: Scientists As Policymakers*, Cambridge, MA: Harvard University Press, 1990.

6. Silke Beck, 'Moving beyond the linear model of expertise? IPCC and the test of adaptation', *Regional Environmental Change*, 11, 2011, pp. 297–306.

7. Sheila Jasanoff, *Science and Public Reason*, Abingdon, Oxon: Routledge-Earthscan, 2012; Sheila Jasanoff, 'Watching the watchers: Lessons from the science of science advice', *The Guardian* 8 April 2013, www.theguardian.com/science/political-science/2013/apr/08/lessons-science-advice, accessed on 30 January 2015; Lentsch & Weingart 2011.

8. Naomi Oreskes, 'The Scientist as Sentinel', *limn*, 3, 2013, <http://limn.it/the-scientist-as-sentinel>, accessed on 16 June 2014.

9. Frank A. G. den Butter, 'The Industrial Organisation of Economic Policy Preparation in the Netherlands', in Justus Lentsch & Peter Weingart (eds.), *The Politics of Scientific Advice: Institutional Design for Quality Assurance*, Cambridge: Cambridge University Press, 2011, pp. 177–214.

10. Johan J. Graafland & Arie P. Ros (eds.), *Economic Assessment of Election Programmes: Does it Make Sense?*, Dordrecht: Kluwer, 2003.

11. See the critical public inquiry published in 2008, Swedish Government Official Reports (SOU) 2008:30, *Forskningsfinansiering – kvalitet och relevans* ('Research funding: Quality and relevance').

12. The words of the subtitle of the above-mentioned public inquiry.

13. Mats Benner et al., *Mot en kunskapsbaserad forskningspolitik? Rapport till Ingenjörsvetenskapsakademien* ('Towards a knowledge-based research policy: Report to the Royal Swedish Academy of Engineering Sciences'), Report IVA-R 480, Stockholm: Royal Swedish Academy of Engineering Sciences, www.iva.se/globalassets/rapporter/utsiktsplats-forskning/iva-nifu-studien-id-93129.pdf, accessed on 30 January 2015.

14. Christian Azar et al., *Miljöpolitikens spelplan: Rapport från Miljöforskningsberedningen, oktober 2014* ('The Arena of Environmental Policy: Report from the Swedish Environmental Research Advisory Board, October 2014'), ed. Torgny Nordin, Stockholm: Fritzes, 2014.

15. MarieLouise Samuelsson, '60 forskare i 16 länder ska belysa korruptionsbekämpning' ('Sixty researchers in 16 countries to clarify the fight against corruption'), *Universitetsläraren*, 3, 2012.

16. Anders Ekström & Sverker Sörlin, *Alltings mått: Humanistisk kunskap i framtidens samhälle* ('Measure of all Things: Learning from the Humanities in Future Society'), Stockholm: Norstedts, 2012.

17. Bruno Latour, *Politiques de la nature: Comment faire entrer les sciences en démocratie*, Paris: La Découverte, 1999.

18. Roger A. Pielke Jr, *The Honest Broker: Making Sense of Science in Policy and Politics*, New York: Cambridge University Press, 2007.

19. Andy Stirling, 'Keep it complex', *Nature*, 468, 2010, pp. 1029–1031.

20. Nina Wormbs, 'How monitoring can become normative: Arctic assessments and the terminology of change', in Birgitta Evengård, Joan Nyman Larsen & Øyvind Paasche (eds.), *The New Arctic*, Dordrecht: Springer (in press).

21. Naomi Oreskes & Eric M. Conway, *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*, New York & London: Bloomsbury Press, 2010.