

REPORT OF A DINNER/DISCUSSION

The Role of the Chief Scientific AdviserHeld at the Royal Society on Tuesday, 26th June, 2001

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In the Chair: **The Rt Hon The Lord Jenkin of Roding**, Chairman, The Foundation for Science and Technology

Speakers: **Professor David King FRS**, Chief Scientific Adviser, Office of Science and Technology, DTI
Professor Sir William Stewart FRS PRSE, President, The Royal Society of Edinburgh and President, BA
The Rt Hon The Lord Peyton of Yeovil, House of Lords

Professor King and Sir William Stewart attended a workshop before the dinner/discussion at which they discussed with a group who had experience of government/science relationships the opportunities and problems facing the Chief Scientific adviser (CSA). Professor King outlined his role and his priorities (expanded in his subsequent lecture). Discussion focussed on the following:

Transparency - This was a key feature in developing public confidence in the scientific base on which government policy is formed. The Food Standards Agency showed how to do it. But there are limits – security is the obvious one. Don't expect Ministers to be free with any information which is disadvantageous to them. Civil servants, aware of Ministers' political concerns, will be cautious; and their advice to Ministers will remain confidential (don't overrate the effect of the Freedom of Information Act).

Quality of the scientists in Government - There are concerns – outsourcing and the privatisation of the government laboratories had caused many good scientists to leave public service. The prime tasks now were accessing the best scientific advice, wherever it was to be found, and understanding and interpreting objectively that advice to Ministers and to the public (the intelligent

customer role) The CSA must ensure that good science is used in policy making and that presentation to Ministers is not biased to suit policy objectives.

Mitigating the effects of Departmentalisation - Individual Ministers (and therefore their departments and civil servants) had, and will continue to have, different and conflicting objectives and priorities. This can be good (creative tension) and bad (failure to pass information thought to be damaging, unwillingness to work co-operatively). The Cabinet Office and the CSA have a crucial role in seeing that, where problems covered several departments the bad effects were minimised and genuine co-operation took place. Equally important was recognising information and policy gaps where no department was taking a lead.

Articulating effectively the place and need for good science. The CSA should seek to ensure that government, industry and academia worked together to increase the supply and quality of scientists; recognition of their value to society and public understanding of scientific methodology. But the danger of being a "cheer leader" for science was to appear to be arrogant, and to be undervaluing non-scientific values which were strongly held by the population at large.

LORD PEYTON gave a vivid summary of Lord Zuckerman's personality (wide range of interests, outstanding intellect and memory and, on occasion, charm) and career (from South African emigrant via academic success to enormous governmental influence). He highlighted his influence on bombing strategy, which led to disagreements with Lord Cherwell over saturation bombing, and, in co-operation with Lord Tedder, to bombing railways and transport links – vital in the success of Overlord. His dramatic address to the NATO conference in 1961 on the catastrophic effects of nuclear weapons (there would be no winners) marked the end of confidence in the policy of deterrence and initiated the search for nuclear containment. His move as CSA to the Cabinet Office enabled him to press his interest in breaking down barriers between scientific disciplines, which led to the successful foundation of the School of Environmental Studies at the University of East Anglia. This survey of Lord Zuckerman's life gave rise to three questions:

1. Does the place science occupies in government do justice to its importance and value?
2. Should the CSA be an adviser or expert?
3. Are government scientists sufficiently aware of the realities and narrow horizons of politicians?

SIR WILLIAM STEWART agreed that Lord Zuckerman's career offered some pointers to the effectiveness of a CSA. At MOD Zuckerman had staff and authority; at the Cabinet Office he was more a consultant; he had no staff and no-one was obliged to implement his proposals. He was not sufficiently close to the PM to overcome this weakness. He (Stewart) had worked to establish a close rapport with Mrs Thatcher and Mr Major, and fought for, and obtained, staff and additional resources. He saw the functions of the CSA as being:

1. The guardian of the science base – arguing that basic science is the foundation of our economic future and that outstanding science is a vital part of our culture;
2. Strengthening the place of science and technology in government - setting up the Office of Science and Technology (OST) with a Cabinet Minister in charge;
3. Dealing with the crises of the day – salmonella, Ariane rockets lost on launch, endless EU arguments;
4. Getting transdepartmental co-operation – difficult because the PM is too busy, individual Ministers have their own agenda, and their civil servants are, therefore, necessarily defensive;
5. Recognise and address strategic issues -

important to scan the horizon for possibilities and be prepared. Future big issues were likely to arise in the biological area, where increasing knowledge of complex interactions made both certainty and precautionary measures difficult. The possible use of biological weapons and the knowledge of the way infectious diseases could sweep through populations must be thought about.

PROFESSOR KING endorsed Sir William's view of the role of the CSA in overseeing the science base, addressing transdepartmental issues and seeing that good quality scientific advice was available to Ministers. He stressed that a strong science base was essential not only for wealth creation in a knowledge-based economy, but also for successful defence, health and law and order policies and the health of the country's culture. Hence the government's allocation of extra money to science – the current budget was £2bn p.a. rising by 7% p.a. for the next three years. 20 years of underfunding had made the science base very efficient, but dangerously stretched and thin. The stress of science policy was now towards working more closely with industry, encouraging commercialisation through spin offs, and science parks. The government was looking for a return on its investment. It was recognised increasingly that scientific work and advice raised real ethical problems and concerns amongst voters and consumers, who had different perspectives from researchers and scientists. People needed to be convinced that scientific advances were beneficial, and that there were good reasons for taking inevitable risks. Crucially, scientists must recognise that, whatever their research record, they do not sell themselves, or their achievements, objectively. Essential debate could not start until other values were recognised and scientific sales talk analysed objectively. Key current scientific issues were energy, climate change, transport and the environment. The exhaustion of fossil fuels as well as global warming must mean that future energy use would come from renewables (including, possibly, nuclear). The UK Energy review was vital, but international action was essential. He was heartened by recent visits to the Carnegie group and Washington that this was beginning to be recognised. On foot and mouth disease, the use of a central science group, incorporating all the relevant disciplines, and where all views were challenged and tested so that advice was as robust as possible, showed how future crises might be managed.

In the following discussion many of the points that had arisen during the workshop discussion were further aired. In particular the concern that had been expressed about the number and quality of good scientists (not only in Government service,

be addressed. But what could be done to provide incentives and an adequate career structure in Government for able scientists? Moreover, how did we try to get scientists, who did not intend to have a career in Government, but would be more valuable in national life, if they understood how government worked, to spend some time inside government learning about it. Professor King made it clear that he considered all these points as falling within the scope of his post. It was essential that the talents of the female half of the workforce were utilised and recognised. The problem went back to attitudes in schools (and he saw scientific education as a priority) and time might rectify some of the imbalance, but pressure needed to be kept up. The excitement of working on large and difficult problems should encourage able scientists to enter Government service; against that, however, was the fact that scientists came out of universities wanting to work in the centre of their discipline, whereas the essence of many of the most difficult issues faced by Government overlapped, or were at the edge of, discrete disciplines (but see the School for Environmental Studies at UEA as a possible way out of this problem). Providing a satisfying career in the absence of major laboratories was difficult; more flexible arrangements for moving in and out of government work might be needed.

The scope of the CSA's work and the underlying social and demographic trends affecting the economy were raised. No mention had been made of the CSA's role in relation to the social sciences, where the scope for bad science and politically slanted theories, statistics and research "conclusions" were even greater than in the physical sciences. What thought was being given to emerging problems such as the ageing work force, and the politically highly incorrect issue of the relationship between differential birth rates and the intellectual ability of the workforce? Again, Professor King saw the social sciences – and, indeed, the humanities - as lying within his sphere of interest and concern. Many of the issues in the Energy Review would touch on social and economic issues and he would wish to ensure that research, where needed, was rigorous, and the conclusions from it were presented objectively, and not slanted to favour particular political interests. It was suggested that it would be easier to do this from the Cabinet Office, and that having the OST in DTI was not satisfactory.

The role of the CSA in wider public debate about science was further explored. If he was not to be the "cheer leader" for science, who would be? How could the misleading arguments of such bodies as the Animal Liberation groups and some of the environmental NGOs be countered except by vigorous assertions by the CSA of the primacy of scientific methodology? Who else could dispute the widely held view that any scientist who had been

untrustworthy, and the only valid scientific input came from the independent scientist – i.e. who knew nothing about the subject? Maybe an advocate role did not sit easily with the gatekeeper role, and perhaps the two roles should be split. All these were genuine problems, but perhaps the answer lay not in demanding a "cheer leader" role for the CSA, nor in excluding him from it, but in seeing that as many senior scientists as possible not only knew how to present scientific issues, and argue about them with those who did not share their preconceptions, but felt it their duty to do so.

Sir Geoffrey Chipperfield KCB

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