

## DINNER/DISCUSSION SUMMARY

Can city managers make better use of science?

Held at The Royal Society on 3<sup>rd</sup> June, 2009

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**Chair:** **The Earl of Selborne KBE FRS**  
Chairman, The Foundation for Science and Technology

**Speakers:** **Boris Johnson**  
Mayor of London  
**Sir Alan Wilson FRS FBA**  
Centre for Spatial Analysis, UCL and  
Chairman, Arts and Humanities Research Council  
**Professor Tim Allen**  
Director for Analysis and Research, Local Government Association

MR JOHNSON recalled the outstanding achievements in science and engineering in London in Victorian times. The current major projects for London - Crossrail, the tube upgrade, the Thames underwater tunnel, the Olympics - were on a Victorian scale, and offered enormous opportunities for engineers to make London a better city. These projects, and those related to carbon reduction such as retrofitting domestic, commercial and public buildings to reduce heat loss, and developing and prioritising electric vehicles, would also give wider employment opportunities and encourage inward investment. But his major concern was whether we had the engineering and scientific skills and resources in the UK to take advantage of these opportunities. There had been a 26 per cent decline in students reading for science and engineering degrees, and a number of universities had closed scientific departments. The basic reason for this decline was the failure of schools to prioritize scientific subjects, while encouraging softer subjects (e.g. media studies) in order to gain high places in league tables. Those teaching and studying difficult subjects such as the sciences should receive a premium. Teachers and career advisers should use every opportunity to demonstrate both the income advantage of a scientific or engineering career (engineers could earn 30 per cent more than other graduates) as well as the exciting and socially valuable work offered.

PROFESSOR WILSON said that the demands and opportunities that Mr. Johnson had noted for scientists and engineers applied also to social scientists. Cities needed evidence based policies related to central government strategic aims: for that they needed the detailed scientific based system of the kind that the private sector habitually used in developing policies. These systems comprised policy, design and analysis. Crucial was a systematic approach based on the modelling of the ample existing data on population, movement and activities. Cities faced "wicked problems" in all areas - poverty, poor education, health, crime and poor housing. These were all interrelated and could not be solved individually. There needed to be an Intelligence System which enabled data to be so analysed that the effects of policies could be seen across the board; and designs of policies could reflect likely results. It should then be possible to understand how national policies, such as equalizing GDP nationally, would

respond to attempts to limit growth in the South East and London; or how bringing successful and failing schools into a federal structure could best be implemented. Modelling data in this way and using it for developing systems was already used in transport planning and could be used more widely. Reasons why this systematic approach was not more widely used were the silo mentality in government departments, local authorities and public bodies; the desire of politicians for quick and eye-catching solutions, and unwillingness to wait for data and analysis; the shortage of quantitative social scientists; and the reluctance, nationally, locally and academically, to envisage the development of such intelligence systems as a major scientific project on the scale of CERN – the particle accelerator.

PROFESSOR ALLEN saw the pure, applied and social sciences as all necessary for helping to solve the problems of cities. We could no longer expect long term stable area wide policies, such as the post war agriculture strategy, to come from central government. Society now was too complex, changing too rapidly, generationally and geographically too diverse, with increasingly different values and expectations, for such policies to be viable. We now faced major problems over resources (repaying debt); how to balance capital investment against revenue demands, and how to ensure that investment and lifestyles remain sustainable. Increasingly local authorities need to frame policies in the light of local conditions and aspirations; allow citizens to make their own choices about risk, cost and access to social and other services. In short this means that authorities must become facilitators rather than providers. Authorities need to provide much more accurate and real time information so that individuals can anticipate and avoid or mitigate their consequences (flood warnings are an example). Major problems ahead lie in creating sufficient common understanding to allow different groups with different values to work together for common goals; preventing targets from becoming so rigid that there is insufficient flexibility to incorporate innovation; and understanding how to change behaviour to reduce carbon emission. Most important, they need to know how to create partnerships between science and public sector policy makers and employees which respond to the needs and aspirations of individual citizens. Professor Wilson was right: this could only be done by a systematic

approach which recognized the interaction of problems and policies.

While, in the ensuing discussion, many speakers endorsed the systems engineering approach advocated by the presenters, there was considerable concern about its feasibility. Central to this concern was the inability of local authorities to spend resources in accordance with their own perception of needs and priorities. Central government specified too dogmatically and precisely how government money (over 80 per cent of local government revenue) should be spent. It was very difficult to vire expenditure between different heads; and there were far too many authorities and agencies involved in taking decisions - for example, twelve authorities were involved in planning decisions in the London Gateway - a similar scale project in Barcelona had two. Even when fewer organizations were involved, as with the Olympic legacy in London, there had been problems in getting the Olympic Delivery Authority, the London Development Agency and the Mayor's Office to coordinate effectively. An authority would find it difficult to utilize more resources on prevention of health problems, rather than remedies for them, partly because of institutional problems with the NHS, but also because there would be vested interests opposing limiting hospital services to allow expansion of preventative medicine. Systems engineering and analysis was all very well, but presenters had underplayed the importance of politicians who had to respond to public concern, which might well not correspond to the best policy advice. It was too easy to assume that if a local authority had complete control over all its resources, and could spend them unconstrained by central government, local citizens would be more content. Local politicians would make decisions on expenditure governed by their interest in seeking re-election - which could mean keeping expensive and inefficient services and facilities such as local schools and hospitals. For the systems agenda to be translated into actual decision making on the ground there needed, therefore, to be much more work done in informing the public about the data and the systems used to analyze it, and how it led to action. While it might well be true that housing, education, employment and health problems were results of poverty, if helping poor families meant diverting resources from other uses, both taxpayers (don't subsidize scroungers on my hard earned wages) and vested interests (spend more money on getting better teachers, or more police) would need to be won over.

None of these concerns, however, led speakers to doubt the presenter's main argument, that the public sector badly needed a more systematic approach to the policies and design of major projects. Understanding complexity and interrelationships - the wider picture - was essential, but there was always the danger of losing the focus and concentration, which were necessary if a project was to be implemented successfully. The answer lay in seeking, first, to define the problem to be solved, and only then designing solutions. Definition meant the modelling analysis already discussed, which should illustrate the wider picture; policy choice based on it demanded the politician's command of communication to persuade the public; implementation required focus. Here it was important to recognize the importance of media specialists - Mr Johnson's comments on media studies should not be taken as meaning that those engaged in teaching and research on media studies were not doing work of great utility. But in all three stages, scientific (whether pure or applied or social) skills were needed. Was this recognized? Should more scientific skills be demanded of city managers and officials? There should be more academic input into the public sector, but a significant problem was the failure of academics to realize the time scale in which politicians need to take action.

There never would be time to do the work if academia only realized it needed to be done when a problem was articulated politically; it was up to academia and city managers to identify emerging problems and work on them before they became acute. Also it was crucial for city managers to understand how decisions were made by those at the top of organizations and government. Securing access and personal contact with top corporate and governmental decision makers was vital.

Speakers noted that not only were the built structures in London Victorian, but so were the institutional structures of local and central government. Did the structure of government departments recognize the cross cutting problems of modern society? Was it necessary to have 150 local authorities and innumerable quangos and agencies all working to different remits and failing to share data? In many cases, it was not the scientific resources that were lacking, but the failure to use them efficiently and repeating the same exercise in different contexts.

Behavioural change was the most difficult issue for government, whether local or national, if it wished to reduce carbon emissions. Speakers differed about the emphasis which should be given to appeals to altruism and personal profit. Certainly, many people would respond automatically if they understood that more immediate expenditure would yield savings in the short term. But for many, the short term was always too long. They might respond only to subsidy or regulation. Either would involve costs for others - more taxes or inconvenience - who would only accept them through a fear of common catastrophe or through altruism. So, fear, profit and altruism all needed to be marshalled. Perhaps the construction of a major conference centre to provide a focus for environmental gatherings might stimulate and focus interest in both highlighting the skills needed for meeting climate change and heightening citizen's awareness of the problem. The problem was who would pay for it.

Sir Geoffrey Chipperfield KCB

#### Web Links:

##### **Arts and Humanities Research Council**

[www.ahrc.ac.uk](http://www.ahrc.ac.uk)

##### **Centre for Advanced Spatial Analysis, University College London**

[www.casa.ucl.ac.uk](http://www.casa.ucl.ac.uk)

##### **Department of Communities and Local Government**

[www.communities.co.uk](http://www.communities.co.uk)

##### **Economic and Social Research Council**

[www.esrc.ac.uk](http://www.esrc.ac.uk)

##### **Engineering and Physical Sciences Research Council**

[www.epsrc.ac.uk](http://www.epsrc.ac.uk)

##### **The Foundation for Science and Technology**

[www.foundation.org.uk](http://www.foundation.org.uk)

##### **Greater London Authority**

[www.london.gov.uk](http://www.london.gov.uk)

##### **Local Government Association**

[www.lga.gov.uk](http://www.lga.gov.uk)

##### **Research Councils UK**

[www.rcuk.ac.uk](http://www.rcuk.ac.uk)

##### **Technology Strategy Board**

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