Technical advice

Scientists tend to complain that Congress rarely pays heed to what they have to say. But the issues are often as much about values as they are science, says **David Goldston**.

How should Congress seek advice from scientists? This question has been mired in controversy ever since the Republicans abolished the Office of Technology Assessment (OTA) in 1995 when they took control of Congress. The office was set up by Congress in 1972 to write reports on technical issues, and the resulting documents were regarded highly by science-policy experts. The Republicans killed the OTA mainly to save money — it had been receiving about $20 million annually in its final years — although some conservatives also complained that the agency dispensed biased advice.

The Democratic takeover of Congress in last year's elections revived the hopes of those pushing for the OTA's re-establishment. Last month, however, the Democrats decided that it would be too costly to include money for the agency in next year's appropriations. As an alternative, the spending bills include funding — $2.5 million in the House bill and $750,000 in the Senate version — for the Government Accountability Office (GAO), an investigative arm of Congress, to work on technology assessments. In recent years, the GAO has undertaken a number of technology studies at the request of Congress, but the results have received scant attention.

For many US scientists, the demise of the OTA has taken on inordinate symbolic significance. Scientists often suggest that in eliminating the agency, Congress chose a path of wilful ignorance that has led to poor decisions over the past decade. But has the absence of the OTA really hampered policy-making? Not particularly. Congress is awash with information provided by scientific groups, and it still formally seeks scientific guidance — particularly from the National Academies, which arguably have more prestige and credibility on Capitol Hill than the OTA had. And reports from the academies can make a difference. For example, the 2006 report on the palaeoclimate record, specifically on the 'hockey-stick' graph (see *Nature* **441,** 1032–1033; 2006), helped quieten congressional debate over whether recent decades have been unusually warm.

Other reports have been equally prominent, if less decisive. The academies' 2002 report on fuel-economy standards has become the bible on that subject, although, like the Bible, it is quoted by all sides. That's partly because of the report itself — it concluded, for example, that the standards had cost lives in the past but that, because of new technology, they needn't in the future — but it is also because scientific information does not usually point ineluctably to a single conclusion on policy.

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Policy-making needs to be informed by both science and values. Is stem-cell research ethical? That's not a science question, although one needs to understand the potential of stem-cell research to answer it. Should clean-air standards be strengthened? That is not a science question, but one needs to know what researchers think the health impacts of dirtier air would be.

Often, when scientists complain that Congress is ignoring science, what they really mean is that Congress is making policy calls they don't like. The notion that Congress would make different decisions if the OTA were around is another way of saying: "If you knew what I know, you'd think what I think." That's a dangerous fallacy. And it's a fallacy Congress itself tends to perpetuate, because in today's polarized environment, politicians on all sides like to claim that their views are the only ones backed by science.

That's not to say that Congress doesn't ever simply ignore science. But the idea that Congress would have acted more responsibly about, say, climate change if the OTA had been around is absurd. Congress has not lacked information about climate change. Scientists can lead congressmen to information, but can't make them think. Otherwise, the 2001 National Academy of Sciences climate report completed at the request of President George W. Bush would have been enough to alter the climate debate in Congress.

But climate change is an atypical issue in that for so long Congress was debating a purely scientific question — is climate change real? — and was largely impervious to an unusually broad scientific consensus. Now that Congress is asking for scientific advice on climate, it may be about to err in the opposite direction.

A House spending bill would hand over to scientists the decision on how to allocate $45 million among federal agencies for climate adaptation and mitigation. Specifically, the decisions would be made by a panel chaired by the president of the National Academy of Sciences — who would also choose six of its members — and would include the heads of seven federal agencies and the president of the National Academy of Engineering. The Senate counterpart to the bill does not have a similar provision, and it's too early to know whether Congress will ultimately create the panel.

But the proposal sets a bad precedent. How to spend money on climate adaptation is not a purely scientific question, and the federal government should not be delegating its decision-making on it to a group of private scientists (who would be a majority on the commission) with no accountability to the public. Moreover, leadership of the panel by the National Academy of Sciences would make the academy seem biased if it later evaluated the resulting programmes, which is its traditional role. Worse still, the academy would be likely to tarnish its reputation as an expert arbiter of scientific disputes related to policy decisions if it started to make policy decisions itself.

Congress should do everything possible to hear from scientists. That's why re-establishing the OTA is a worthy idea even though its consequences would be less far-reaching than many scientists think. But Congress and scientists need to stop pretending that science alone can determine policy decisions. Claiming that a particular policy approach is the only one justified by science simply opens science to attack, while muddling discussion of the values issues at stake. In the long run, Congress may do more harm to science by setting up the proposed climate adaptation panel than it ever did by closing down the OTA. ■

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