

## Two sides of Spanish science

SIR — In the past decade, *Nature* has carried many articles about science in Spain, but it has not previously been remarked that there are two kinds of researchers in Spain. One, which could be called 'Science Citation Index (SCI) scientists', holds the real power in the Spanish scientific community.

These SCI scientists work in such fields as biochemistry, biology, biophysics, chemistry, cytology and histology, endocrinology, immunology, materials science, medicine, neurosciences, optics, physics and spectroscopy. These subjects have in common the ease with which they can be published in SCI ascribed journals because of their widespread interest. SCI scientists do not carry out much field work, they frequently have contacts with overseas researchers and they carry out few educational activities.

The other group, which might be called 'parallel Spanish Scientists', work in areas that are not well developed in SCI journals. They often carry out field work in such areas as agriculture, ecology, engineering, forestry, food science, geography, geology, geosciences, oceanography, ornithology, botany, veterinary sciences and zoology. These parallel Spanish scientists usually work in local areas and publish in serious Spanish journals that are not in the SCI lists. They often know French or German (rather than English) and carry out other activities such as teaching, writing books, organizing meetings or running laboratories.

The easy computerized access to the SCI lists to measure productivity has simplified the government's task in awarding grants, increasing salaries, allocating projects, forming boards of examiners, providing posts for civil servants and so on. SCI productivity is the crucial number that governs the life of all Spanish researchers. This pragmatic transformation of Spanish science, which was accelerated in 1986 when Spain joined what is now the European Union, has two different results: bolstering scientists working in exportable subjects who are obviously happy with this policy, and causing great discontentment among the 'parallel researchers' working in regional and local subjects. In spite of the apparent unfairness of this system, many 'parallel Spanish scientists' are working increasingly on papers included in SCI journals. Meanwhile, we all watch with sadness the decline in quality of contributions to Spanish written journals.

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Chapter 6 contains a great deal of valuable information to help policy-makers, especially those in developing countries. It provides estimates that show climate change damages in developing countries are likely to be up to 9 times greater, proportionately, than damages to developed countries. It also shows that the net aggregate effects of projected climate change would probably be global damages of the order of a few per cent of gross domestic product. This gives an economic rationale for acting to reduce greenhouse gases that goes beyond energy efficiency and other measures that are worth doing for their own sake. These and other findings in the chapter, and in the balance of the WG3 report, support actions both on greenhouse gas reductions and to assist developing countries. The SPM and chapters have already been cited favourably by the Climate Action Network (Environmental NGOs) in their submission to the Ad Hoc Group on the Berlin Mandate of the Conference of Parties to the Framework Convention on Climate Change.

The final Plenary Session of the IPCC in Rome (11–15 December 1995), with some 120 countries represented, has also accepted unanimously the Summary for Policy Makers and all chapters of WG3 (as well as those of Working Groups 1 and 2). This acceptance was a recognition that, while government representatives may not necessarily agree with all statements in all the authored chapters, they find a wealth of information and valuable assessments in the Technical Chapters of WG3 that will assist future climate negotiations.

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SIR — It was reported in a recent News story (*Nature* 378, 329; 1995) that I declined a request from Pat Michaels for detailed output from a climate model, the details of which are cited in the second scientific assessment of the IPCC. He claimed that he needed the gridpoint data to review the IPCC report. At the time, I sent Michaels the current draft of the paper cited in the IPCC report (and subsequently published in *Nature* 376, 501; 1995). Michaels had expressed concern that scattering from anthropogenic sulphate aerosols would not diminish the expected warming over the Arctic due to increasing greenhouse gases. So I also sent another preprint, subsequently published in the *Journal of Climate* (8, 2364–2386; 1995) which explains how the Arctic can be cooled by aerosols, even if they are not located over the Arctic. In accordance with normal practice, the raw data are not normally released until the results are formally published. Hadley Centre model data are the property of the UK Depart-

ment of the Environment and not IPCC, and are made freely available to bona fide researchers in due course through the UK Climate Impacts LINK Project.

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SIR — Aubrey Meyer *et al.* assert (*Nature* 378, 433; 1995) that a chapter should be excluded from the Second Assessment Report (SAR) of the IPCC. The chapter concerns "Social Costs" of climate change and has been prepared by IPCC Working Group 3 (WG3).

This SAR Summary has been approved but the chapter prepared by WG3 disagrees with the summary. Meyer *et al.* observe that the IPCC procedures do not permit amendment to approved summaries, and they do not like the WG3 chapter. For these reasons, they assert that the chapter should be excluded from the SAR. But the correct amendment would be a change to IPCC procedures, not a change to the SAR. The IPCC summaries should be written and approved only after the work they summarize has been completed.

The IPCC approved the summary of its 1994 Scientific Assessment before that report was written. This resulted in misleading data being 'tailored' to fit the summary in that report. Now, either the summary of the SAR will 'summarize' a chapter that is not in the SAR, or the summary will say the opposite of a chapter that it claims to summarize. Neither of these options should be acceptable to scientists of integrity.

Do the signatories of the letter from Meyer *et al.* never conduct peer review of other people's work? Would any of them recommend publication of a paper that contained a 'summary' that 'summarized' work not in the paper? And would they recommend publication of a paper that contained a 'summary' stating the opposite of conclusions in the paper?

The IPCC purports to be a scientific organization providing scientific advice to politicians. Many observers have suspected that it is a primarily political organization. The letter from Meyer *et al.* is all the confirmation they require of their suspicion.

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