FRENCH SCIENCE

In Midst of a Freeze, Science Minister Calls for Expansion

PARIS—Since his appointment more than a year ago as France's minister of research and higher education, François Fillon has wanted to be seen as a champion of the nation's research efforts. Yet 2 months ago he was cast by researchers in the role of oppressor rather than defender of basic science. His National Consultation on the Greater Objectives of French Research, billed as a sweeping rethink of French research policy, triggered alarm bells throughout the scientific community, raising concerns that both fundamental research funding and the job security of scientists were under threat. And 4 days before the consultation's crowning event—a national "synthesis" meeting in Paris addressed by Prime Minister Edouard Balladur—1200 senior scientists and university presidents published a "manifesto for research" claiming that the vitality of French science was "being put at risk" by Fillon's plans (*Science*, 29 April, p. 652).

But this week, Fillon was back in the role of champion. Armed with his final report to the Parliament—which had been modified to meet the most serious objections from the scientific community—Fillon addressed the National Assembly on 21 June and asked for a steady increase in the science budget over the next 10 years. Although virtually all of the proposed increase would go to applied rather than basic research, Fillon told *Science* in an interview last week that he intends to maintain fundamental research at the level of inflation. This may fall far short of what many scientists had hoped for, but in light of France's economic woes it would still be good news. "For the moment, I don't think the scientific community will make trouble for its minister," says physicist Guy Aubert, director of the Ecole Normale Supérieure of Lyons and a key participant in the national consultation. "It will let him try to make a good defense of French research."

"I thought...we could define basic research priorities [in terms of] the strategic interests of the country. But...this was an error."

—François Fillon

Even with the cautious support of scientists, however, Fillon has a tough fight on his hands: Last month the budget ministry announced that 8% of the government's 1994 budget for research, excluding salaries, was being frozen. This may turn out to be a temporary measure, but it could result in some cuts—and the timing, right before Fillon's pitch for increases for science, couldn't have been worse. "To announce a freeze of 8% just before a national science debate, I'm not sure if that's a murder or a suicide," says François Kourilsky, director-general of the Centre National de la Recherche Scientifique (CNRS), France's largest public research agency.

To improve his chances of persuading the parliamentary deputies, Fillon arrived at the debate this week carrying some heavy ammunition, including a promise from Balladur that the research ministry would be the first to have its funds unfrozen. He had also enlisted the support of Jacques Chirac, a leading contender in next year's presidential elections. This had great symbolic value, because in the past Chirac has not been considered a friend of French science. When he was the conservative prime minister during the "cohabitation" with socialist President François Mitterrand in 1986 to '88, the research budget was frozen. This came as a great shock after several years of socialist indulgence of French science. And when the conservatives took power again in March 1993, many French scientists feared the worst—and their concerns were quickly borne out by a 9% cut in funding for new research projects in the 1994 budget.

Fillon says that he understands why many researchers mistrust the government's inten-

PUBLICATIONS

Quantity No Longer Counts in Britain

Chalk it up as a modest victory in the battle against publication inflation. Earlier this month, the councils that allocate core funding to British universities announced that they will no longer use total publication counts as a measure of the relative strengths of research departments. Instead, they will take into account only the four best papers individual researchers in each department have published in the previous 3 years. "The funding bodies wish to signal clearly that...the number of publications...is not considered necessarily to be an indicator of research quality," the councils said in a statement.

The shift has important implications. The councils—the Higher Education Funding Councils for England, Scotland, and Wales and the Department of Education for Northern Ireland—will soon begin a quadrennial assessment of the quality of each university's research departments. The councils will use the results to divvy up about $200 million in block grants a year.

The first assessment took place in 1992. The councils based their rankings on information supplied by the universities about the number of research staff members and students, total publications, external funding, and plans for future research. The councils then graded each department by peer review on a scale of 1 to 5, with grade 5 getting 4 times as much funding as a rating of 2, while a rating of 1 attracts no funds. The universities of Cambridge, Oxford, and London generally received the lion's share of top grades across many subject areas.

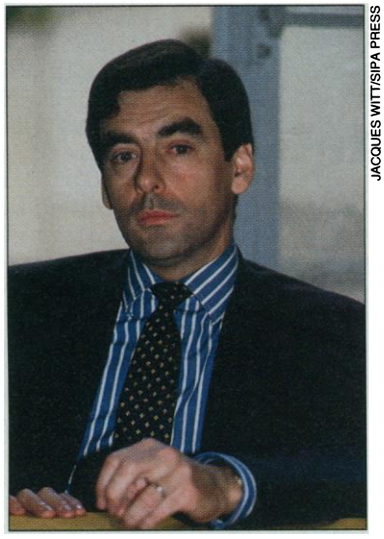
The next assessment, to be completed in 1996, will include similar measures, with the exception of publication counts. The decision to consider only a few top papers reflects a growing concern over some researchers' frantic efforts to accumulate publications by splitting results up into series of short papers and appending their names as co-authors on as many publications as possible. "We strongly welcome the decision to drop publication counts....[This reflects] the widespread view in the academic community that publication counts are a crude and unreliable measure of research performance," says David Triesman, general secretary of the Association of University Teachers.

A few other research granting bodies and tenure committees are also trying to deemphasize publication volume as a measure of a researcher's productivity. Three years ago, for example, the U.S. National Institutes of Health (NIH) revised grant application forms to stop researchers from submitting page after page of references. Now applicants must fit biographical and publication data on just two pages. Anthony Demsey, acting deputy director of NIH's division of research grants, who was instrumental in making that change, says "We've done a certain degree of curtailing but not to the same extent [as the British funding councils]."

–Claire O'Brien

Claire O'Brien is a science writer in Cambridge, England.

tions. "A lot of scientists believed that a minister of the right could only have one ambition, to reduce fundamental research in order to benefit industrial research," he says. "But I launched this consultation because I wanted to listen." And Fillon says the process led him to change his mind about the role of the government in basic science. "I thought at the beginning that we could define basic research priorities [in terms of] the strategic interests of the country," he says. "But the consultation showed me that this was an error, and that complete liberty is an essential condition [for science]."



JACQUES WITT/SIPA PRESS

Man of many parts. François Fillon, cast as hero, villain, then hero again.

Henri-Edouard Audier, a chemist at the Ecole Polytechnique outside Paris and the chief organizer of the manifesto campaign that attacked Fillon's proposals earlier this year, agrees that Fillon "has taken into account" a lot of the scientific community's concerns. In particular, says Audier, Fillon has allayed fears that he was about to radically restructure the national research agencies, where around 60% of France's publicly funded research is carried out. Nevertheless, Audier says that although Fillon has "tipped his hat" to basic science, his final report to the legislature puts "all the accent on technological research. In a period of [economic] recession, if one puts more accent on one thing, something else is going to have less money."

Fillon's central proposal is that France's research spending—expressed as a percentage of gross domestic product (GDP)—should catch up with that of its leading international competitors by 2005. Currently, French research and development spending stands at 2.42% of GDP, behind that of Japan (2.86%), the United States (2.78%), and Germany (2.58%). But French industrial R&D lags even further behind—1.54% of GDP, compared, for example, with 2.16% for Japan—and it is this gap that Fillon is most anxious to close. He asked the Parliament to formally commit itself to increasing research spending by 2.5% per year above the rate of growth of the GDP—a figure that would require a boost in the 1995 research budget of roughly 4.3%.

Researchers had feared that Fillon was going to redefine the status of government-employed scientists so that they could be transferred from the government research agencies to the universities. Instead, the final report calls for a wide-ranging system of incentives to increase exchanges of scientists between the agencies and universities and also between the public sector and industry. While this is welcome, proposals for increased coordination of France's science effort by the research ministry—with a special focus on getting the country's life scientists working in concert—are certain to cause controversy. Kourilsky admits that French science "is very scattered" and that some of the nation's more than two dozen national research agencies are "not at a sufficiently high [scientific] level to do what is expected of them," but others are wary of too much guidance from the government. "A real coordination could help the system," says Audier. "But it could also be something completely authoritarian and bureaucratic."

Fillon plans to present his research strategy to the French Senate, the Parliament's upper house, in October. By then, the national budget for 1995 should have been announced, and the research minister will know whether or not his efforts to boost French research have fallen victim to the economic crisis.

"Fillon is fighting very hard to reverse these budget cuts," says Aubert, "but the power in France is clearly in the hands of the people in the budget ministry." And Audier, whose manifesto for research has now garnered over 2000 signatures, says he, too, will wait until the fall before doing anything more. "If Fillon is a real champion," says Audier, "he will get those funds."

–Michael Balter

Michael Balter is a science writer in Paris.

RESEARCH INTEGRITY

Misconduct Panel Sets Ambitious Agenda

When Congress established a new commission on research integrity last year, it gave it a modest mandate: Write a new definition of research misconduct for the Department of Health and Human Services (HHS) and make other recommendations to improve the practice and oversight of research. But the commission evidently has far grander plans. Meeting for the first time earlier this week, the 12-member Commission on Research Integrity made it clear that it wants to rethink the entire federal role in scientific misconduct, and nothing—not even whether HHS's Office of Research Integrity (ORI) or the appeals board that has bedeviled it should continue to exist in its current form—appears to be beyond its purview.

"By now people are starting to realize that [misconduct] is not idiosyncratic and that a lot of these problems are institutional," said the commission's chairman, Kenneth Ryan, a Harvard Medical School obstetrician. Fine-tuning the current system isn't enough, Ryan told panelists and a public audience: "We have to get the scientists' attention. We have to be seen as imaginative."

If that is Ryan's goal, then he's off to a good start. The commission, which includes some of the most active figures in the world of scientific misconduct policy, has set itself an ambitious schedule. It plans to meet monthly for the next 2 years and to hold several public hearings. It plans to solicit the views of the heads of federal agencies, the leaders of the research community, whistle blowers, scientists who have been accused of misconduct but later vindicated, congressional aides, defense lawyers, and others. Commission members said they hope to go beyond a definition of scientific misconduct to a definition of science itself, as well as suggesting ways to foster research integrity and root out misconduct. The commission wants better statistics on misconduct, and it may commission a review article on the history of misconduct and misconduct policy.

While the commission was preparing to rethink scientific integrity from first principles, ORI was appealing for some help with its immediate problem of winning cases before the HHS appeals board. Among the issues ORI wants the panel to address are:

- Should the Public Health Service definition of misconduct continue to include the controversial phrase "other practices that seriously deviate" from scientific standards?
- What level of intent should be required, and who should bear the burden of proof when there is a claim of honest error?
- Should there be a national regulation on how long data should be retained?
- Should there be a statute of limitations on misconduct claims?

Although the panel agreed to consider these issues, members privately made it clear they were not interested in simply propping up ORI. Asked whether the panel would act quickly on ORI's concerns, one panel member explained that "the problem goes a lot deeper than that."

–Christopher Anderson