When in Rome, reform

Radical reform of the Italian research and education systems is needed to address the lack of autonomy and lack of funding

It was a hot autumn in Italy last year, and things show little sign of cooling down over the winter, at least, not politically. The final months of 2008 saw a wave of protests throughout Italy that were triggered by a government decree altering the procedures used to select academic staff. The decree, issued by Mariastella Gelmini, Italy's Minister for Education, University and Research, is only a small part of a larger programme of reform—which is widely unpopular among Italian students and academics—that has now been approved by parliament. The reforms are intended to modernize Italy's higher education system and to cut costs. The financial side of the plan would gradually decrease the financial fund for universities and research (FFO), which is currently €7 billion per year, by a total of €1.5 billion by 2013. The protesters were enraged about the proposed cut in funding for research and education, but were even angrier because another decree by Silvio Berlusconi's government would severely threaten the jobs of thousands of temporary research staff.

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Yet, Gelmini's decree was itself a compromise of sorts. The government's initial intention was to decree the entirety of the proposed bill without any consultation, rather than to follow the usual legislative procedure. Only after the streets of Italian cities were flooded with protesting undergraduates, PhD students, researchers and rectors, was Gelmini forced to backtrack. The result is that the main part of the bill will follow the usual legislative procedure and be debated in parliament.

The focus of Gelmini's decree itself is the academic personnel selection process; the 'concorsi' system of nationwide exams that evaluate applicants for professorial and research positions. Giuseppe Valditara, a member of Gelmini's close circle, described the changes that the decree makes to the concorsi as “a turning point for the Italian University, the first step towards the revolution of a paralyzed system.” The concorsi are notorious for deep-rooted nepotism, with virtually no merit system for the evaluation of scientific achievements, and applicants who are well connected to full professors—the so-called 'baroni'—are generally more likely to obtain better results in the exam and thus become researchers. Gelmini and her supporters are confident that if the members of recruiting commissions are randomly selected, rather than elected as is currently done, that this will make a substantial difference in terms of meritocracy and transparency. “Before investing more into research, which is our plan in 2010, we must heal the ill system,” Valditara commented.

However, most Italian scientists have not welcomed this plan to re-style the concorsi, even though it would apparently introduce a system based more on scientific merit. In the short term, the protests are against the immediate delay to the current round of selections—Italian universities have not been allowed to recruit new academic staff for more than four years—and, in the long term, many critics argue that political and private interests will still be able to interfere with the selection process and that playing with the specifics of the concorsi is insufficient. “Concorsi should disappear for good and departments should be independent and free—and, in turn, responsible—to recruit whoever they think is the best candidate for a certain position,” explained Alessandro Fatica, a molecular biologist at the University of Rome.

Another measure of the decree is the creation of a national publications' database intended to help assess the productivity of individual scientists.

Professors and researchers will receive biannual bonuses to their salaries if they can prove that they have published within the last two years; those who have not done so will be excluded from recruiting panels and their bonuses will be halved. Moreover, in an effort to slow the brain-drain from Italian institutions, universities will be able to invite back Italian academics working abroad to fill vacant positions. The decree also allows universities to recruit one new researcher for every two whose contracts expire between 2009 and 2011, thus relaxing a decree signed by Silvio Berlusconi that had restricted them to one for every five.

The decree goes further still. In an effort to introduce both quality control and meritocracy, 60% of the available funds will be used to employ young researchers at the beginning of their careers, and funding for research studentships will be increased by €135 million in 2009. In addition, 7% of the government funds that are allocated to universities will be given on a performance-related basis from 2009 onward in order to reward universities that demonstrate excellence in teaching and research. The plan is to extend this performance-related funding to 30% of government-awarded moneys by 2013. Coupled to this 'carrot', there will also be a zero-tolerance policy toward academic institutions with budget problems: these universities will not be able to hire new staff at all.

Although a few academics hail Gelmini's reform as just what the Italian higher education system needs, most disagree with the measures proposed or are, at least, cautious about the extent of change. "Overall, I see positive signals," commented Enrico Decleva, President of the Italian Rectors' Conference and Rector of the University of Milan. "Nobody can be against words such as 'meritocracy' and 'transparency'. It is necessary to put professors under rigorous evaluation. However, we need an organic reform, and many of the points touched [on] in the decree are limited to 2009, showing a short-term vision. My concern is that the reform will stop with this decree. If so, I must say that it is not enough. Our universities are ready to go through a deep reorganization of funding, recruitment and governance. Nevertheless, current financial resources are absolutely inadequate."

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"Gelmini introduces a sort of diversification between virtuous universities and universities with budget problems.

Moreover, there are pale attempts to open a door to young generations," commented Enzo Nisoli, Associate Professor of Pharmacology at Milan University. "However, the media hype that the Government has been building up against nepotism, baroni, and idle people inhabiting Italian universities is irritating [...] there are also a lot of excellent professors and scientists. The truth is that the government is cutting funds. High-quality research comes with the right financial support, which is missing."

Indeed, many of the scientists who were protesting against the decree agree that the latter point is the main problem faced by Italian academic research, a view shared elsewhere (Anon, 2008). As a National Research Council (CNR; Rome, Italy) funded researcher, Gianluca Baldassarre, at the CNR Institute of Cognitive Sciences and Technologies in Rome commented: "[T]he amount of public money invested in the Italian research and development sector—1.1% of the gross domestic product (GDP)—speaks against what the Government is claiming. It also remains a far cry from the 'Lisbon strategy', with which the European Union set the goal of investing 3% of the GDP in research and development [...], and also from the European average of 1.84%."

Despite a few centres of excellence, the situation at most Italian universities is

very poor: only two Italian institutions narrowly made it into the *Times*' ranking of the world's top 200 universities in 2007 (The Times Higher Education, 2007), five universities are, in effect, bankrupt and the overall system has a dropout rate of 55%—the highest in the developed world. For each student, Italy spends the equivalent of US\$8,026—compared with the average of US\$11,521 calculated by the Organisation for Economic Co-operation and Development (OECD; Paris, France)—and only 17% of Italians between the ages of 25 and 34 have a tertiary qualification, compared with an OECD average of 33% (www.oecd.org).

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The past 20 years have therefore seen one clumsy reform attempt after another and Gelmini's programme is just the latest. The general trend has been towards promoting associate professors to full professorships, rather than attracting younger researchers. In 2005, Letizia Moratti, the Minister for Education, University and Research in the previous Berlusconi government, eliminated permanent contracts for all but professors, thus further penalizing the younger generations and making their already precarious situation even more insecure. Moreover, owing to the saturation and stagnation at the top, the research system is ageing markedly: according to the OECD, only 17% of permanent staff at Italian universities are younger than 40 years old, compared with 25% in France, 46% in the UK and 36% in Spain (www.oecd.org).

The unavoidable conclusion is that reform is urgent. By 2010, if nothing changes, most Italian universities will face budget deficits and, in the light of the latest decree, will therefore not be allowed to recruit anyone. Thus, even if Gelmini has appeared concerned about the turnover of research staff, her plan will not result in the needed injection of new blood into the ageing university system. "Italian governments, of whatever political persuasion, have always considered research and higher education the last wheel of the train, lacking

consciousness that research is an instrumental long-term investment for both economic and social development," commented Tullio Pozzan, Professor of Pathology at the University of Padua. Indeed, the FFO has often been used to fix emergencies elsewhere, reducing further the money available to fund research and education. This year alone, €300 million went to the bankrupt Italian airline Alitalia, and €470 million was used to eliminate the principal property tax. In 2007, the previous Prime Minister, Romano Prodi, ended a truck drivers' protest against high gas prices, which had paralysed the whole country, by spending €90 million from the same fund to offset the increase in gas prices.

Yet, it is not only the government that fails to realize the economic and social benefits of scientific research. "The worst deficit comes from the private sector: business enterprises invest between 0.4 and 0.5% of GDP into research, compared to the European average of 1.2%," commented Luciano Maiani, President of the CNR and former Director of the European Organization for Nuclear Research (CERN; Geneva, Switzerland). Indeed, both large companies and smaller businesses—on which the Italian economy mainly relies—do not get tax breaks for investments into research.

However, the lack of investment is not the only complaint made by the Italian scientific community. "As things stand, the Italian university is dead," pronounced Franco Cotelli, Associate Professor of Developmental Biology at the University of Milan. "It is a generalization, of course, but the plethora of permanent professors, who have never had the intention to take transparency and meritocracy into account, are responsible for this situation. For the first time, international criteria for evaluation—such as impact factor and citation index—appear in this decree [and they] are not welcomed by many within the universities."

The lack of formal evaluation in research has always been considered to be a weak point in the Italian system. In September 1999, the government created a ministerial committee for the evaluation of research (CIVR); after a couple of years, it was suspended owing to a lack of funds. Fabio Mussi, Gelmini's predecessor, set up another national research and university assessment agency (ANVUR), which was supposed to take over the work that the

CIVR had done, but this was also frozen when the government changed after the last national elections.

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The main source of public funding for research projects, which is distributed by the Italian Ministry of the University, is called Research Programmes of National Interest (PRIN) and is allocated yearly without serious evaluation. The selection of proposals is taken care of by the Ministry, which relies on a guiding committee to nominate anonymous reviewers, who are chosen from a ministerial database of 6,000 names. There is no transparency and there is no follow-up for awarded applicants; their success beyond securing the money is never assessed. "Ironically, some scientists who are not supported by public funding, or who receive ridiculously small amounts of money, are instead quite successful with other funding sources. These include the US National Institutes of Health [NIH; Bethesda, MD, USA], European Grants, and Italian private foundations [...] whose external referees follow international criteria," commented Fatica.

Yet, even the lack of quality control is not the end of the troubles. Italian research is facing another problem: that of young researchers with temporary contracts, who are nicknamed 'precari' because of their precarious positions. Renato Brunetta, Minister for Public Administration and Innovation, presented another decree to reduce public spending by streamlining the civil service. As researchers affiliated to national research agencies are considered to be civil servants, these proposed funding cuts would affect their jobs directly. Brunetta's plans address the previous government's law that allows civil servants with long-term temporary contracts to obtain permanent contracts after three years. He intends to freeze this stabilization, which is expected to result in job losses for around 2,000 researchers next summer. "[I]t might affect many more in the future," commented Vittorio Morandi, a researcher at the Institute for Microelectronics and Microsystems in Bologna. "Governmental sources report

about 4,500 long-term temporary staff. On the contrary, based on a self-census [<http://lalaral.istc.cnr.it/censimentoprecari>], we claim to be around 60,000 among research agencies and universities. In Italy, 'precari' are research scientists who work at universities or research institutions on a fellowship or a yearly contract. Many 'ageing' young researchers stay in this limbo, jumping from a contract to another without any prospective of job security, any account of merit and expertise," he said.

Baldassarre is one of the 'precari'. He has just secured a €7 million grant as the coordinator of an integrated European project, which includes more than €1 million for his institute. But although the CNR provides the laboratory space, Baldassarre has to use his grant to pay for his research and his own salary, as well as those of six colleagues. "They put the problems affecting the Italian civil service in general into the same basket as those specifically affecting the research sector," Baldassarre said. "Many Italian researchers would welcome increased autonomy for research institutes, accompanied by serious evaluation and responsibility processes, as well as moving away from

a traditional civil-service recruitment model in favour of one that guarantees excellence in research." Yet, he disagrees with an indiscriminate recruitment process. "It is very good that there is an intention to establish an agency for scientific evaluation, but it should not include members appointed directly by the Ministry. Politicians should not be part of this mechanism," he concluded.

Not surprisingly, Italy's young scientists are leaving the country at an estimated rate of 6,000 per year. Next year could see a major exodus when many of the current 'precari' might lose their jobs; Baldassarre might be one of them and he would not even be allowed to transfer his grant.

"Italian universities produce very good researchers, despite the struggling conditions, and we should be able to keep them in Italy," commented Luciano Maiani, the first CNR President to be recruited on the basis of merit. "The research sector needs more researchers, more young energies, to whom we should guarantee career progression based on merit and the possibility to let them realize their scientific ambitions.

Small critical mass means also decreased competitiveness and, in turn, smaller attraction of European grants. For example, Italy contributed 14% of the total funding allocated within the 6th Framework Programme, but received only 9% of the grant money."

Overall, the message coming from the scientific community is clear and simple: basic science represents an investment for the country and, without proper funding coupled to a serious reorganization of the recruitment and evaluation processes, any reform will be in vain. The hope of the scientists is that the Italian Government will listen, and that Gelmini's silence reflects thinking and focus on a wider reform of the Italian university system.

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