
Amaya Moro-Martín

From a 21st-Century Spanish Emigrant

Spanish astrophysicist Amaya Moro-Martín has been outspoken in defense of scientific research and development in Spain, against the budget cuts which threaten its existence. This message was sent to the April 13-14 Schiller Institute conference in Frankfurt, Germany.



Moro-Martín's research ranges from solar and extra-solar planetary systems, to the formation of circumstellar disks. She serves on the governing boards of Euroscience and the Royal Spanish Society for Physics, and is a founder and the spokesperson for Investigación Digna—Dignified Research—a grassroots science-policy lobby at the Spanish Congress and Senate, which played an active role in sponsoring the "Open Letter for Spanish Science" in March 2012, warning that budget cuts threatened to bring about a "collapse" of the Spanish research system, signed by over 46,000 Spaniards and foreign scientists.

Moro-Martín titled her message "From the Diary of a Spanish 21st-Century Emigrant."

I am crossing the Sonoran and Mohave deserts of the Southwestern U.S. Their native inhabitants live in Indian reservations, confined to regions with limited natural resources. A fictitious independence allows them to modify some laws so that casinos and the sale of tobacco—activities strongly regulated in the rest of the U.S.—are the basis of their precarious economy. I think of Eurovegas, the macro-complex of casinos and golf courses that Las Vegas Sands wants to build near Madrid. To please that corporation, the Spanish government plans to under-

mine immigrant and labor laws, modify tobacco regulations, and offer generous tax breaks. I think of the biology PhD, a former employee of the Spanish National Research Council, to whom the Bureau of Labor in Spain recently assigned a course to become a croupier. How ironic that the destiny of the people of this land that once belong to New Spain, and our destiny, that of the old Spain, may end up converging in a slot machine.

My daughter sleeps in the carseat next to me. We have been traveling since she was ten weeks. By the time we go back to Spain she will have spent half of her life traveling. These trips are not for pleasure. I am a scientist and I am looking for a job. I work at the Spanish National Research Council and my supposedly "tenure-track" contract ends in a few months. There are thousands of researchers like me. But we are invisible. The recent words of the Spanish ruling-party Congressman in charge of R&D still resonate in my head: "There is no brain drain, it is no more than an unjustified cliché."

I am thinking about the last of our many meetings at the Spanish Congress with him and the "young" scientists who were present. Diego just moved to Australia. Andy has an offer in Brazil. I am applying for jobs in North America. It would not be the first time I leave my country. I lived in the U.S. for 11 years, but this time my departure would not be triggered by curiosity. I am running away. I think about giving this Congressman a call from the next gas station; no, better from the next roadside casino. The Spanish National Research Council just lost 1,208 science jobs in the last 15 months—205 in January and February 2013—and the only measure adopted by the Spanish government to stop this brain drain is to offer them courses to become croupiers. This is no brain drain, it is a brain annihilation.

There are too many scientists and not enough croupiers. In a June 2012 letter to *Nature*, the Spanish Secretary of State stated that "the Spanish R&D system is not large enough to justify paying as many researchers as it currently does." Retiring scientists are not being replaced, and the number of new permanent science positions released (at all levels, and for all research centers in Spain) has been slashed steadily, from 681 in 2007 to 15 in 2013. But the latest indicators available (corresponding to 2009) show that in Spain, the percentage of the active population working in R&D is 9.6 per thousand, below the EU-27 average (10.4 per thousand), and far from leading EU countries like Germany (12.7 per thousand), Sweden (15.4 per thousand), and Finland (20.8 per thousand).

But their denial goes beyond the brain drain. In a January 2013 letter from the Spanish Presidency, we were reassured that the Spanish government is “firmly convinced of the importance of research and innovation in the economic and social development of Spain,” and that “despite current difficulties, a considerable effort has been made to maintain the investment in R&D, trusting the potential of our researchers...”

Luis de Guindos, the Minister of Economy, now in charge of R&D after the Ministry of Science was dismantled by the new government, went even further, affirming that the R&D budget was not only maintained, but it was increased by 5% in 2013. Compared to the preceding year, R&D spending has been slashed by 14.5% (2010), 5.1% (2011), 22.2% (2012), and 13.7% (2013), accumulating a loss of approximately 40% since 2009. Where he is getting that 5% increase for 2013 is a mystery. Interestingly, he was a top official of Lehman Brothers at the time it went bankrupt.

To pretend that research can survive the standstill imposed by these drastic budget cuts is like asking someone to stop breathing for an hour. In spite of all this, policymakers keep talking about the need to shift to a knowledge-based economy. Pure rhetoric. At best we will achieve a borrowed-knowledge economy with little domestic know-how. They are shredding our children’s future into casino chips. Literally. The tax breaks under considerations for Las Vegas Sands may be of the order of the entire yearly budget for R&D grants.

This negation of reality is the context of the newly approved “Spanish Strategy for Science, Technology and Innovation,” a document that does not mention the drastic budget cuts in R&D of the last few years, makes no assessment of their impact, and does not suggest any measures to stop the brain annihilation. It does not even specify the human and financial resources that will be available for R&D in the short- and medium-term. The document tell us an old fairy tale: to reach an R&D investment of 2% of GDP in 2020, ignoring that 2% was the government’s goal for 2010, that the European Commission agreed on 3%, and that the average in the EU-27 today is just over 2%. In other words, cheerfully delaying the convergence with Europe by more than a decade.

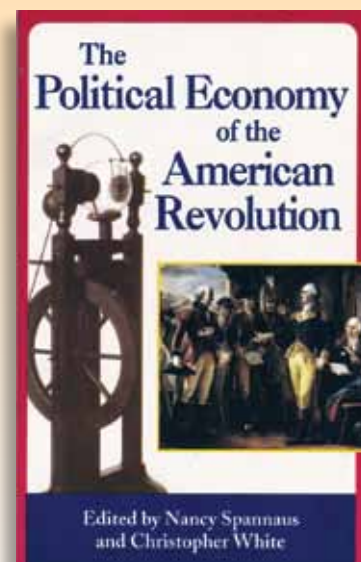
But this so-called “Strategy” is much more than uninformed wishful thinking. Maybe following directives from the Chicago School of Economics, it establishes the transfer of resources from basic research in the public sector to innovation in the private sector.

Which private sector? The one that did not invest in R&D even when the economy was booming? And how would they innovate? Basic research constitutes the building blocks of all scientific progress, and this magical word, “innovation,” will go nowhere without the scientific progress achieved by the public sector. And more fundamentally, the Spanish government should take into consideration what is valued by our society, not only by the stock market. How to put a price tag on the search for life on other planets, or the cure for a rare illness?

Another buzz word is “excellence.” Scarce resources, the government asserts, will make excellence flourish, as if research followed the Darwinian rule of survival of the fittest. But like evolution, research is not predictable. By whom and using what standards can excellence be identified? Would they have foreseen the impact of the serendipitous discovery of penicillin? As a species, research will not be able to flourish in a rapidly changing environment without a diversified portfolio, in particular, when the best trained “young” scientists—in their late 30s and 40s—are leaving the country (or becoming croupiers).

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the entire scientific community, including the confederation of scientific societies, the conference of Spanish university chancellors, the two major trade unions, and the federation of young researchers. Has the government listened to our warnings regarding the irreversible dismantling of a research system that has taken four decades to build? Absolutely not.

My baby daughter is waking up. I raise my eyes from the laptop and I see a desolate landscape. A billboard announces a nearby casino.