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Merits and liberty or nothing

At no other time in our history has so much attention has been dedicated to the problem of the funding of science. This is both good news and bad news.

Good news - because for the very first time the problem is not reduced to scandal, but considered in its complete and structural nature. Bad news - because there's no doubt left that things are not good. The sickness in our system is universally recognised among the political and academic world, but the diagnosis is less universal and the remedy is even even less agreed upon.

Although many were quick to claim the work of Mario Capecchi, Nobel Laureate for Medicine in 2007, (for an entire career spent outside of Italy) as "Italian", few found it convenient to consider Capecchi's comments on the system of science in Italy. But he has reminded us of some simple and clear things:

Firstly, that Italian science is badly and insufficiently funded.

Secondly, that funding more and better science would be a good investment for the development and the future of the country.

Thirdly, how can one assure that science is funded in a good way? Everyone agrees that Italian science is under-funded. But attributing this to our low gross domestic product (compared to other western countries) clouds the issue. The small part of our small GDP funds a scientific community that is itself very small compared to the rest of the developed world. And if the funding of recognized institutions' scientific activities were separated from the funding of activities that are science in name only - for instance, support for industrial research, the sustenance that the Health Ministry gives to institutions falling among its own jurisdiction and so on - the figures would be lower still. It would be a useful exercise to determine which portion of GDP actually funds competitive and free research. The astonishment would be much bigger than the figure - which itself would be very low compared to any previously mentioned portions of GDP.

The fact that science is funded badly, even very badly, is less recognized. Italy lacks a single agency for the biomedical research that organizes and stably oversees the funding via a system called "peer-review". This system of evaluation of science, both before the work takes place and after publication, has to rely not only on the anonymity of the reviewers (that protects independence of judgement) but also, on the competence of the reviewers, their scientific merit, on credibility of the review, on the use of stable procedures that have to be public and transparent, and on the monitoring of the obtained results and above all on the systematic exclusion of any kind of conflict of interest and connections between funders, investors, evaluators and those being reviewed.

To do all this in a country in which science is growing, spreading, expanding from an elite activity to become a widespread profession, a dedicated organisation is needed. In the US, the NIH administers annually more than eighty thousand research projects that are assigned in a competitive way based on open calls for proposals from the scientific world. For this there are nineteen thousand competent reviewers worldwide. In Italy the commitment of those who have tried this in the past (MIUR) has been forgotten and nowadays nothing similar exists, neither in conception nor in organisation. The need for an institution of this kind is urgent - not only in Italy but also in other European countries (where at least the problem is recognized).

In Spain ANEP has for 22 years supplied scientific and technical support on 27 themes, to the decisions of the public bodies through a unique mechanism based on rigour, independence and transparency.

The scientific and technological delay of Europe compared to the USA is ascribed mostly to the invention and adoption of a system that is able to reconcile and foster merit and liberty, qualitative achievements and mass diffusion. Europe is not able to institute it.

Apropos of this it is sufficient to think about the new European Research Council and its difficulty in certifying many researchers are submitting fundable projects and how inadequate its tools are in organizing and managing a process of peer- review. This is one of the most important facts that have allowed the USA to assume a leadership position in the developed world during the last century. This is the lesson Capecchi has politely reminded us of.

Why is this all so urgent?

Because if we do not introduce not only the principle but also the practise of the peer-review what will be funded will not be the best possible science, and innovation will not take place. Without these simple things the sense of the problem will be lost. The question is not about promoting the merits of the individual or to protect the young, but to safeguard the general interest with science the engine of development - not only in terms of economy, but also in terms of civility, culture and ideals.