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## **Top snobs and similar noblemen**

The success of science is founded on liberal principles that in Italy, in spite of our growing passion for foreign things, has not yet been imported or imitated.

One part of the Italian scientific community doesn't say "interesting" but "intriguing". Not "evident" but "apparent". Not "ingenious" but "ingenuous". And who cares if the meaning of the Italian words and their English false friends is turned upside down?

"After 3 years of military service in Cuneo" Totò would have said to state our exposure to the stimuli of the world, we don't say influence impedes the distribution of public funds for research. We just call it 'top-down', and we mean the distribution of public funds to researchers by direct negotiation and without any public announcement, competition or scientific evaluation.

And lost as we are in the contemplation of meritocracy (that evokes a frightening power for the "good ones"), we are convinced that peer-review is only a sticker of guarantee for our last article in *Nature*, a recognition of merit and status symbol of good society. According to meritocracy we include also a certification and a claim for power for the distribution of public funding. And if we distribute money top-down to the known names, or worse if we let the known names decide to give the money to the known names (that is, to themselves), we can claim ourselves meritocratic but not deserving, no matter if we are scientists or administrators.

Our political country does not follow the spirit of science.

That *western* is not a *film* and *film* is not a *western* has to be explained, or maybe not. But both scientists and politicians should know what peer-review is. The scientist should remember that peer-review publishes his article in *Cell*, not his picture in *La Repubblica*. And that funds for research have to be obtained through peer-review not by the pictures published in newspapers. Because this funding, distributed in a different way, could produce other papers by different authors with a bigger benefit for the public (and less for private individuals).

Politicians should know that peer-review is a practice of the science they are administrating. But it's above all a principle of the public administration and is therefore political.

Peer-review (namely evaluation by one's peers) is the method used to make administrative decisions in science in those countries where science is a public good. The decision of a magazine to publish an article or not, of a financial agency to fund a project or not, of a university to give a professorship or not and even of the government to nominate one person over another, can be taken top-down, based on non-scientific considerations, or it can be taken using peer-review, binding the administrative decision to a scientific evaluation that is competitive and taken by an independent third party according to the rules previously defined. These rules exclude the interference of other kind of considerations, including connections, conflicts of interest, ideological prejudices, affiliations, personal pressures and self-referential comments.

Peer-review is not only a principle of science. It's a liberal principle of separation and balancing of powers. Peers are originally equals to the crown, noble counsellors of the king and members of the parliament that limit its power. It's not a meritocratic principle, but a principle of equality in the regulation of the access to public resources. It avoids confusion between the interests of the public administration and the personal, political, economical, ideological or even scientific interests of public administrators (that in Italy are often both - public administrator and scientist - professors nominated politically into powerful administrative positions).

By default, this system promotes and defends the best science, just because the best science is of public interest and not private interest of the privileged. This system does not give privileged treatment to known names, but instead restricts evaluation to the scientific merit without bias while maintaining confidentiality and anonymity of the evaluators.

Peer-review has been developed, enforced in time and applied in public administration bodies like the NIH in America, with written rules and procedures. It's not peer-review for members of a commission to evaluate their own projects or those of close collaborators, nor to evaluate the projects of direct competitors, nor to negotiate with the public administration the attribution of funds to single researchers or groups. This is not the peer-review that was been invented to prevent all this. Preventing these things helps science to achieve its goals. This has been historically proven. This is the way the yellow fever in Louisiana (1879) was overcome, or antidotes to toxic gas and surgical techniques for the wounded in WWI were developed, or how penicillin was produced on industrial scale. By peer-review, science has developed the new pharmacological treatments against smoking that have reduced deaths by coronary diseases. We import these medicines and we have stopped smoking by imitation. But we are not able to import or imitate the political and scientific principles of peer-review.

Instead of buying and reselling fishes we should learn to fish again.

Like democracy, peer-review is not good in itself. But all other systems are worse. It was its systematic and sound adoption that has transformed - in a few decades - a country without any good doctors into a leader in the world of science and innovation of medicine. The difference between Italy and Europe and the American system is not the volume of scientific funding. Italy has invested one third in research compared to the US, but Italy has one fifth of the American population and finances a scientific community 16 times smaller. If Italy is not a scientific power worldwide it's mainly because we are a country of groups and affiliations, members, clients and godfathers, referees, protectors and protected and not free individuals.

It's not science and its rules we do not understand. We could explain science and its rules to the world, since in part we created them. Science blossomed in Italy when it was not in conflict with the political leading class. But in the times when science has become product and multiplier of liberty in the free world, in Italy it has withered into a corrupt system. Top-down.