SISSA – International School for Advanced Studies Journal of Science Communication
ISSN 1824 – 2049 http://jcom.sissa.it/

Editorial

Patterns for dialogue: under construction

NASA has decided to cut by 50% the next two-year budget for the Astrobiology Institute (NAI), and for all of the studies on life in outer space. This reduction follows an announcement made by Dr Michael Griffin, the Administrator of the space agency of the United States Government when, in addressing the Mars Society last summer, he clearly stated that xenobiology studies are marginal to the mission of NASA.

After a decade of living (dangerously) in the media limelight, this is a hard blow for astrobiology. And most unexpected. It comes precisely at a time when research on life outside the Earth was starting to achieve a large amount of breakthroughs–. Traces of liquid water have been detected on planet Mars. New organic matter has been discovered on comets and on object travelling at the borders of the solar system. Hundreds of planets orbiting around stars other than the Sun have been discovered, some of a size that is compatible with the presence of life as we know it. Living beings (bacteria) have been found thriving on Earth at environmental extremes, buried underground or below the sea surface, or in the most inhospitable ice deserts.

Certainly, hitherto nobody has found the sensational smoking gun: an alien organism, born far away from Earth and unconnected with the only life history that we know of - life on Earth. Certainly, the above-mentioned discoveries are hardly significant for the general public or inspirational for politicians, but it is equally certain that they increase the likelihood that something out there is pulsing and reproducing itself. In short, something that lives.

So, why is NASA cutting funds for astrobiology just now? Budget reasons, for certain. Organisational reasons (making biologists and space engineers work together is an awkward task). Indeed. Nevertheless the actual and deep reason is likely to be found in the range between promises and reality.

About ten years ago, among announcements on discoveries of alien bacteria fossils and imminent human landings on the red planet to search for life, astrobiology became an emerging science. NASA had to reinvent its mission, following the end of an era - – the one of the “space race” between the US and the USSR, – when politics provided the main drive. The search for life in outer space was considered as the most effective issue to touch the heart of taxpayers and, consequently, of politicians. On the other hand, discovering an alien organism, even a simple bacterium, would be one of the greatest scientific achievements of all time that would change our vision of the world in a way no less a radical and deep than Galileo’s and Darwin’s discoveries in astronomy and biology.

NASA poured investments onto this project, creating a special institute, the above-mentioned NAI, endowed with a lavish budget, providing scores of millions of dollars and excellent researchers, capable of producing top-quality scientific research. But it also created a lot of expectations. In the past ten years, everybody was under the impression that we were about to witness the discovery of new life forms in the rocks of Mars or in the ice of Titan. In short, the smoking gun seemed to be drawing closer and closer.

Predictably, that hope has been thwarted. Indeed, the pace of science hardly ever coincides with the pace of politics and image. The money invested by NASA in astrobiology has produced a good-quality research, even though it has not discovered any aliens or made the millennium breakthrough. It is as if NASA had only just realized that exobiology research is a long-term project with uncertain results. And therefore considers it no longer strategic for the agency, that on the contrary needs research projects able to reach out to people’s hearts, as well as capable of achieving sensational, but also immediate, results.

The bottom line is: in the relations between science and society the ‘announcement’ technique is fruitless in the long term. If scientists want to have public opinion permanently on their side, they should not stake everything on astonishing promises that cannot be kept.

The relations between science and society are complex and very tricky, but these two worlds must necessarily communicate. What remains to be devised is the best strategy for communication, providing there is one. Hence, the path to be followed is empirical and should proceed through trial and error. This is particularly true in case of unprecedented and difficult occasions, such as the meeting held in early February between the Società Chimica Italiana[1] and WWF Italia. Chemistry is considered as an

[1] Italian Chemical Society.

intrinsically bad science by many ecologists. Whereas environmentalism is substantially regarded by lab people as an anti-scientific movement.

The scientific society and the environmentalist movement have had the courage to break a dual taboo by publicly committing themselves to meeting in a systematic way to exchange views, – calling the most popular scientific journalist in Italy, Piero Angela, – to bear witness to the event.

Nobody knows, not even the protagonists themselves, how this attempt to dialogue will be interpreted or what results will follow. Both parties involved would be wrong if they tried to reduce it to a mere attempt to educate each other, with chemists taking this meeting as a chance to transfer to the 'illiterate environmentalists' the minimum notions needed to "know and therefore appreciate chemistry" and with WWF activists taking this dialogue as an opportunity to transfer to the 'nasty chemists' the minimum notions required to "know and therefore appreciate environmentalism".

Certainly, this Italian initiative is a good example of social networking, with the creation of a network or even just short segments between scientific institutions and the organisations of society. And its great value probably lies in the very concept of sniffing each other and in the mutual willingness to acknowledge one another.

The moral to be drawn is: in the dialogue between researchers and citizens, nobody should consider erasing one another's identity. A difficult dialogue, even a conflict, should remain. What truly matters, in the multi-faceted meeting between science and society, is to never let the debate die. On the contrary, it should be kindled and survive at the highest possible level. In order to find, through trial and error, the best achievable balance.

Pietro Greco

Translated by Massimo Caregnato