

Comment

A dialogue on hard sciences is possible. Is it useful too?

Stefano Sandrelli

“If people feel they understand the world around them, or even if they have the conviction that they *could* understand it if they wanted to, then and only then are they also able to feel that they can make a difference through their decisions and activities”.
F. Oppenheimer, *Dedication to Understanding*, in *The Exploratorium*, Special issue, March 1985

Universe, a creative laboratory

“What is most needed is sutures, the creation of parallel mental universes, communicating vessels,” told me ardently a lecturer at the *Accademia delle Belle Arti di Brera* who was taking part in the project *Universo, laboratorio creativo* (Universe, a creative laboratory), a collaboration established in 2006 between the *Accademia* and *INAF-Osservatorio Astronomico di Brera*. By implementing this project, whose title is (literally) “an idea worthy of God”, now in its second year, we astronomers of Brera aim at sharing the mental images created in us by the present scientific representation of the cosmos, to metaphorically ‘take them to the streets’. In an attempt to achieve this purpose, a series of meetings-workshops were organized to include on each occasion approximately thirty people, comprising astrophysicists, lecturers and students at the *Accademia*. The meetings are based on a scientific report about any contemporary astrophysics issue (e.g. dark energy and the expansion of universe). The atmosphere is highly informal: anybody may interrupt at any time and say what they want, ask a question, raise some doubts. “What do you think? This is what you, scientists, should ask to the people”, told me the lecturer-artist at the *Accademia*. And this is what we do.

When I said we want to take those images ‘to the streets’ I meant no joke. We want to transform the images of science, at least those related to the science we deal with, from a *fortified place* within the minds of scientists into a *public place*, maybe a square, a street, a café. In short, a common subject, worth of an exchange of turns in conversations among friends, in between comments on a football game, the political situation and your love life. Idealistic; unrealistic maybe? According to the lecturers and the students of Brera who have supported the initiative, the conclusion should be the opposite: the project appears to be completely in line with the explicit requests by non-experts, so much that it was welcomed enthusiastically by over 300 students-artists and by two dozens of lecturers who, far from being passive, have fed an exciting exchange of opinions. They have asked for explanations, have put forward their view of things, and have shown – or better, demonstrated – that art, at least the one they use to interpret the world, does not disregard contemporary science at all. As proved by highly technical terms they use, and their search for materials and methods comparable to traditionally scientific ones – save for a different realm of research, a different language, a different purpose. In general, if a dialogue is ever to be mentioned, in this case it really is a dialogue. I am quoting this example because, although very specific in its creation and very fortunate in its implementation, it has the evident quality of being reproducible. If it is true that artists are particularly interested in astronomy for the universal themes it deals with (the birth, evolution, the end, the relation with space and time), it is also true that a large part of contemporary science borders equally exciting suggestions. Think of the links now typical between mathematics and beauty, the relation between physics, matter and universe, the impact biotechnology, genetics and neuroscience have on the representation of life.

Moreover, it is noteworthy that also these examples feature a dialogue not linked to possible practical uses of science, but exclusively to the representations and the scientific and artistic interpretations of the same phenomenon.

Key elements to success

The key elements to the success of the Milan experience are only a few and simple ones. To implement a real dialogue, i.e. an equal exchange between two points of view, both communities have accepted a risk, willing to renovate their language in order to make it open and accessible, and have put aside old judgment schemes, wondering, at every step, about the meaning of the representations submitted to them. At the same time, the cognitive deficit of the two players in the dialogue is a fundamental spur to turn upside down a language and behaviours taken for granted.

The basic requirement of a dialogue obviously is respect for one another and the willingness to listen to one other. This attitude may frighten the scientists more fond of the institutional respect their role implies, but it is not about affirming, for instance, that the artist's viewpoint can or must change the approach to a scientific representation of the expanding universe. On the contrary, it is about acknowledging that the artistic contribution can provide a totally different representation of the same phenomenon, and not competing with, yet complementing – and never concluding – the scientific representation itself. As if, to exemplify through an analogy, the physical-mathematical representation of a volume containing a novel – a description totally independent from the content – were joined by a critical-literary view. Could somebody maintain that the overall result would not be a general enrichment of the image of that volume?

Is dialogue really useful?

Dialogue clearly has a democratic charm that the deficit-model cannot have. Not only that: the demand for dialogue is a social demand that has increasingly reinforced in the past few years. However, as suggested by the example of Brera, a dialogue is useful not only for the stakeholders that wish to communicate, to risk, and that have views able to enrich one another. I believe this is not always true. Although it may be unpleasant to write or read, the skills of a layman are totally irrelevant when the Theorem of Fermat, quantum statistics or stellar nuclei neutronisation are dealt with. Discussing on the consequences of scientific breakthroughs or on specific application is a completely different issue. This leads to my last point.

In general, you cannot escape the unpleasant feeling that science communication is obliged to choose increasingly sophisticated methods to act for a reason that has little to do with the intrinsic learning mechanisms or with principle democracy. The issue I am dealing with is whether we are climbing higher and higher only because it is the only direction left for us to move, with our back against the wall owing to a world and a society that never before have appeared so confused, complicated, chaotic, immense and, at the same time, necessary and fatal. A society apparently unchangeable through cultural instruments. The infamous “rubber wall” has apparently become a rubber cake. And we, science experts or laymen, are the raisin within. If the citizens had the feeling that a better knowledge implies better life conditions or the chance to realistically imagine a better society (whatever this may be), probably the interest in science would improve irrespective of the communication model adopted.

In other terms, we should be able to offer non-experts, students and ourselves a real bi-blade razor, with a dual action: on the one hand, we should offer a scientific world able to dialogue with society; on the other hand – the second necessary blade – a society provided with a human and scientific culture able to change the rules of the world. So, I wonder whether stopping at the former step, constantly changing the approach to science communication, with all the practical and theoretical effort it requires, should be interpreted especially as a decadence sign of a social model unable to renovate itself and forcing us to strive in an irrelevant bombast.

As a citizen, and not only as an amphibious science communicator, the question I have to face, with an increasing insistence and anguish is: why should I dialogue with science, if this does not give me the instruments to contribute to build a world that I like better?

Translated by Massimo Caregnato

Author

Stefano Sandrelli has a PhD in astronomy and is head of the Public Outreach & Education office at INAF - Brera Astronomical Observatory in Milan. Since 2000 he has been producing for RAI TV more than 300 episodes of a weekly TV program which features the activities of the European Space Agency and is broadcast on Rainews24 and RAI 3. For ESA, he also reported on the ENEIDE and ESPERIA missions, in which Italian astronauts took part. Keen on literature, he has won the Teramo Award for unpublished novels (young authors section) with an astronomical tale entitled "Luna e la notte di San Lorenzo". Together with Daniele Goutier and Robert Ghattas, he has edited "Tutti i numeri sono uguali a cinque", an anthology of unpublished novels by Springer Ed. (2007) written by scientists and scientific cultural operators. He has two little ones, Anna and Luca, who are growing too fast. This is the only thing that really matters. E-mail: stefano@brera.mi.astro.it.