

## Editorial

# Amphibious Environments in Science Communication

The historian Marshall Berman wrote that living in modern times means “to find ourselves in an environment that promises us adventure, power, joy, growth, transformation [...] and, at the same time, that threatens to destroy everything we have, everything we know”. Today – at a time when modernity has become a “reflexive modernity” for some, whilst for others it is already over (and for others still “we have never been modern”) – it seems that Berman has grasped an important concept: a part of media narration is characterised by a fluctuation between euphoria and fear, triumphalism and rejection, as regards science and technology as well as other areas (the ambivalence of the “Frankenstein effect” discussed by Jon Turney).

However, if we look at the biggest recent social debates (transgenic products, the Kyoto protocol, cloning, stem cells, IVF treatment and energy sources), we can observe something interesting: talk about what science is today is not solely concerned with the contrast between euphoria and fear surrounding technological applications that get out of human control and cause disasters, but also regards the problem of its role in society. It focuses on a technology that is seen not only in two opposite ways, as either a silver bullet, the perfect solution to problems or as a mega-machine without a driver, a self-propelled or uncontrollable golem. It is also painted as a controllable and controlled force field, which can however be directed towards authoritarian ends or interests against those of the community as a whole.

So, while it is true that the sorcerer’s apprentice, the Golem, Faust, Frankenstein and the mad scientist are still guest stars in Hollywood and that violations of a natural or divine order caused by science and their tragic, unforeseen consequences are still a *leitmotiv*, it is also true that these narratives exist alongside that of a scientist oppressed by doubt regarding the intrinsic value of what he does. In *Red Planet*, for example, the mission’s head scientist declares that he has discovered that science “has no answers for the most interesting questions” and this is why he turns to philosophy and religion. Great action films do not just tell us tales of monsters escaping from laboratories, but also of multinational companies that use technology for illicit or unethical ends, or dictatorships (similar to those imagined by Huxley and Orwell) where technology is a weapon used by the authorities and scientists are its priests.

The question raised is not, therefore, only whether we will be able to control our creations, or whether they will take control over us, but also whether science will lead to progress and liberation or whether it will end up increasing social injustice and power for the few. Social representations do not only fluctuate between a concept according to which science and technology improve our lives on this planet and another, opposing view point, according to which they lead to its destruction. Other equally common arguments speak of a science and technology that are so closely linked to market forces and economic interests that they do not just have a profound effect on the natural environment, but on the very concept of human nature itself (enthusiasts speak of technoscientific acceleration in a “transhuman” and “hyperhuman” direction, whilst the more cautious amongst us ask themselves about what the post-human world we are building will be like).

During an interesting discussion with Jürgen Habermas, Joseph Ratzinger - already mentioned in the past in *JCOM* - asked how we could find ways to govern the new global society and man's new ability “to create and destroy” in the lack of a universal ethos. He stated that “the fundamental alteration of the image of man and of the world, generated by the evolution in scientific knowledge, is essentially linked to the collapse of age-old moral certainties”. Ratzinger writes: “Man is now capable of producing another man in the laboratory [...] He is no longer a gift of nature or God the creator: he is a product of himself. Man has reached the bottom of the well of power, the very source of existence”. He added that, while, on the one hand, science cannot generate an ethos and “new ethics cannot arise as a product of scientific debates”, on the other, “extremely dangerous diseases” exist within religion, and no religion *per se* is able to provide a universal ethos. Religion, just as much as “reason”, concluded the cardinal, must be kept “under observation”. They must mutually mark out their territory, inventing a “polyphonic

relationship” between reason and faith, “reciprocal salvation and purification”, entailing listening and the ability for self-restraint.

It is not important to talk about whether these discussions (like others, on the end of politics, science or history) are deemed acceptable or unacceptable, or whether they have solid foundations. What we are interested in is that these discussions take place, that they are on the agenda, and that they circulate through society. They are the emerging sign of a major structural transition. Decisions relevant to scientific development are now made together with publics of non-experts.

If this is true, the challenge for those studying science communication may perhaps become more complex (and certainly more interesting). It is now necessary, but not sufficient, to ask ourselves whether the regulatory models and communication tools we use to inform the public about science are adequate for improving public engagement and public awareness. It is necessary, but not sufficient, to assess the attitude and the scientific literacy of different public groups. If the social question does not merely concern fear and resistance, but also a demand to take part in decision-making, to open up a debate on the meaning of science in society, on how it is governed, on the whys and wherefores of technological development, therefore the mere knowledge of the public and the improvement of scientific awareness prove insufficient.

Ernest Schachtel said that nature “is the name that we give it”. Science too. We need to ask ourselves how to produce effective, accurate and good quality journalism, as well as asking ourselves about the “name” we give science and the nature in our society, and the value, meaning and power that we attribute to them.

This makes the challenge more difficult, because it implies scouring amphibious and transdisciplinary, rather than interdisciplinary, environments, where history, sociology, the philosophy of science, social psychology and anthropology play a significant role in addition to communication theory and public opinion surveys.

Yurij Castelfranchi