DOI: 10.4408/IJEGE.2019-01.O-ED

EDITORIALE

LEADER

by
prof. Gabriele Scarascia Mugnozza

Scientific Editor-in-Chief

RISK COMMUNICATION: LESSON LEARNED AFTER L'AQUILA EARTHQUAKE

Exactly ten years ago, during the night of 6 April 2009, a magnitude (MI) 5.9 earthquake ravaged the city of L'Aquila (central Italy) and a wide surrounding area. The earthquake killed 309 people, left over 1,500 people injured, caused huge damage (estimated at some billions euro) to socio-economic activities and to many strategic and residential buildings, and destroyed a historical-architectural heritage of extremely high value.

The earthquake gave rise to lots of controversy and accusations, which resulted into a trial before the Court of L'Aquila. At the end of the first-instance trial (October 2012), seven people (experts and technical officers of the Major Risks Committee - Commissione Grandi Rischi) were each convicted to six years of imprisonment. The trial had a worldwide resonance and upset the international scientific community, so much so that it became internationally known as the "*trial against science*". In the third and last stage of the trial, all of the defendants were acquitted, except for the Deputy Head of the National Civil Protection Department, who was convicted to two years of imprisonment by a final judgement.

The facts that led to the trial, the proceedings, and the hearings in all of its three stages, as well the final ruling by the Supreme Court of Cassation, highlighted the critical issues that are implied in communicating risks.

Ten years after the earthquake and seven years after the first-instance judgement, we can draw some important lessons from the L'Aquila case and make a few points on an issue that concerns not only the soundness of the prosecution's case, but also and above all the sensitive relationship existing between science and law, between expectations of citizens exposed to risks and actions of institutions in charge of managing them, between risk perception and risk mitigation, between media communications and institutional communications. All this entails social, economic, and political implications, which are often of crucial importance and extremely sensitive.

Indeed, if we examine the relations among the above-mentioned parties through the filter of the L'Aquila trial, we realise that the theme of earthquakes, dominated by uncertainty and unpredictability in the short term, challenges the parameters, values, and categories that usually underpin experts' opinions and consequent decision-makers' actions.

The rules to be applied and the duties of the different parties engaged in risk assessment, management, and communication may be interpreted in different ways, with system-wide repercussions, potentially detrimental to the safety of citizens, as we have tragically experienced.

First of all, what is lacking is a common language among policy-makers, scientists, and journalists who are supposed to provide effective communications. However, faced with the issue of geological risks, magistrates too have to pass judgements relying on principles and criminal allegations that are altogether inadequate or biased by mistaken beliefs based on similar cases. Hence, communication poses new challenges to those who aim to implement effective risk mitigation actions under emergency conditions (e.g. in response to complex and potentially catastrophic events, such as earthquakes), avoiding the dissemination of contradictory and ambiguous messages. On the one hand, we have to become aware of the scale of some phenomena and of their unpredictability in the short term, owing to the intrinsic uncertainty of the evolution of the geological processes that govern them. If we acquired this awareness, we would not urge disaster scientists to give us answers that they are unable to give us, and we would stop nurturing the false myth that they can offer certainties. On the other hand, the failings of scientific communications are now more evident than ever, a critical problem that is compounded by the out-of-control flow of information on the web. Thus, taking a different approach to communicating risks before, during, and after emergencies, above all earthquakes, is absolutely imperative. In this regard, especially in Italy, we lag behind in terms of risk culture and earthquake "*literacy*", in spite of the high seismicity of our country, of the availability of significant historical knowl-

edge on earthquakes, and of technical and scientific advances that can help mitigate their destructive effects. Owing to this gap in the knowledge of geological risks, prevention measures are virtually missing from public debates and population demands and, consequently, they are neglected in electoral programs and by political decision-makers.

Furthermore, it is worth stressing that, as no individual discipline can, *per se*, tackle the complexity of the issues at stake, an integrated and multidisciplinary approach is needed. The contributions of seismologists, engineers, sociologists, jurists, psychologists, and scientific journalists are of paramount importance in order to understand emerging critical issues and prospective measures to mitigate geological risks.

In this scenario, in order to make progress and no longer experience tragedies and trials such as the ones of L'Aquila, we should achieve a "*shared and responsible management of risks*", in which barriers between the different disciplines would be broken down and each of us would take their own responsibility. In other words, we should take a genuinely cross-disciplinary approach to risk assessment, management, and communication: avoiding self-referentiality (for which technical experts and scientists, who possess the data and process it with methods recognised by the scientific community, are often blamed); increasing the presence of press officers within agencies and organisations and promoting the professionalism of journalists; assigning the proper role to science and disseminating scientific knowledge among the population; giving priority to a culture of prevention rather to emotional emergency response.

As to the latter point, I am quoting a passage from an interview with Giuseppe Zamberletti, the founding father of the national civil protection system in Italy and the creator of the Major Risks Committee, who passed away in January this year:

The activity of civil protection spans from prediction to prevention of natural disasters, and to emergency response proper. However, prevention remains the most sensitive activity. Unfortunately, the culture of prevention lags behind in our country, because it always involves financial costs, to be borne even by individual citizens. People often have no real perception of the usefulness of investment in prevention and there is a true cultural battle that we have to fight. The national education, information, and communication system should work in such a way that the culture of prevention would finally become the heritage of all of us.

In embracing Zamberletti's moral testament, the Italian Journal of Engineering Geology and Environment is firmly engaged in vigorously pursuing this cultural and civic commitment.

Giuseppe Zamberletti (1933-2019) (Photo: Presidenza del Consiglio dei Ministri - Dipartimento della Protezione Civile)