

# Terremoti, comunicazione, diritto

Riflessioni sul processo  
alla "Commissione Grandi Rischi"

a cura di Alessandro Amato,  
Andrea Cerase, Fabrizio Galadini

la Società



**FrancoAngeli**

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Alessandro Amato, Andrea Cerase, Fabrizio Galadini

(eds.)

# **Terremoti, comunicazione, diritto**

Earthquakes, communication, law

**Riflessioni sul processo alla  
“Commissione Grandi Rischi”**

Reflections on the “High risk committee” trial

**FrancoAngeli**

*Suggested reference*

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### *Back cover*

Disasters often have very long incubation and not a single responsible. For these reasons it is not possible to grasp the complexity of the “L’Aquila seven” trial without putting aside the excess of simplification, prejudice and hasty search for the culprits. This book is addressed to anyone who cares about problems related to natural hazards and the knowledge needed to avoid that in a next future they can turn into disasters. The first degree trial ended with the conviction of the seven experts who participated in the meeting of the "Major Risks Committee", but the appeal verdict overturned the in an acquittance of for six of on seventeen, pointing out a problem that affects not only the strength of evidences, but also the delicate relationship between science and law, between the expectations of citizens at risk and institutions called to manage it, between risk perception and action to mitigate reduce it, between media professionals and institutional public communicators. The possibility of different interpretations of rules and obligations of players involved in risk assessment, management and communication suggests relevant consequences at system level, introducing new potential threats to citizens' safety, that won't be late to emerge.

The following analysis highlight the impossibility of single disciplines to charge on themselves all complexity of the debated issues, emphasizing the need for an integrated and multidisciplinary approach. The contributions of seismologists, engineers, sociologists, lawyers, psychologists and science journalists would precisely delineate the very relevant issues emerging in the two trials, outlining a critical perspective toward the judgments and proactive about the future.

**Alessandro Amato**, seismologist, is research director of the Italian National Institute of Geophysics and Volcanology and was director of the National Earthquake Center at the same institution.

**Andrea Cerase**, sociologist, received a PhD in Communication Sciences. He has been a research fellow in sociology of culture at the University La Sapienza of Rome.

**Fabrizio Galadini**, geologist, is research director of the Italian National Institute of Geophysics and Volcanology; was director of the Section of Milan and is responsible for the office of L'Aquila with the same body.

Essays by Alessandro Amato, Stefano Cappa, Marco Cattaneo, Giacomo Cavallo, Andrea Cerase, Giovanni Ciofalo, Massimo Crescimbene, Philip England, Gabriele Fornasari, Fabrizio Galadini, Alessandra Galluccio, Pietro Greco, Gaetano Insolera, Kazuki Koketsu, Federica La Longa, Mario Morcellini, Satoko Oki, Roberto Paolucci, Massimiliano Stucchi, Giuseppe Tipaldo, Mario Tozzi, CeciliaValbonesi.

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| <p>Two eminent legal practitioners and law professors introduce the book by providing a short resume about the most important criminal justice issues related to the L'Aquila trial, also discussing the many twisting of the law which took place in the first degree trial and the ways in which they were partially corrected by the recent appeal verdict.</p>  |      |    |
| <i>In scienza e coscienza</i><br><b><i>In science and conscience</i></b><br>(A. Cerase, A. Galadini, A. Amato)  | »    | 13 |
| <p>The editors' introduction to the volume illustrates the case and the structure of the book, even dealing with some relevant key questions stemming from the different chapters, as the uncertainty of science, the social construction of risks, the role of the media, looking at disasters as a battlefield for a number of latent conflicts.</p>  |      |    |
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| <p>The 6 April, 2009, L'Aquila earthquake was one of half-a-dozen devastating earthquakes in the past decade which raised questions both about the scientific understanding of earthquake hazard, and about the ways in which societies interact with their scientists. Italy's response to these questions has been idiosyncratic. The author sets the earthquake hazards in Italy in the context of those in other parts of the world and suggests questions that individuals who feel they may be exposed to seismic hazard should ask about their geological surroundings, about their state of knowledge, and about the preparedness of their communities.</p> |      |    |

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*“Grandi Rischi”*

***Misunderstood science: examples and reflections from  
the “Major Risks” trial***  
(A. Amato e F. Galadini)

Two seismologist attempt to provide an explanation on the trivialization of scientific concepts regarding earthquakes as seismic swarm, main shocks vs foreshocks, prevision vs forecast who repeatedly were discussed in the courtroom, resulting in a flawed image of science and in a tremendous pressure over experts to release “reassuring statements”.

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***L’Aquila trial: uncertainty in disaster sciences and  
scientists’ responsibility***  
(K. Koketsu e S. Oki)

Koketsu and Oki are two leading figures in Japanese science of disasters: in their chapter they analyze the verdict motivations and the ambiguities in using terms as “forecast” and “prediction”, fostering a cutting criticism on authorities behaviours and Italian judiciary in the L’Aquila case. Their starting point is the way society expects disaster sciences to prevent or mitigate future natural disasters. Various constraints, however, often make difficult the foreseeing, so that there is a high incertitude in the social contribution of disaster sciences. If scientists overstep this limitation, they will be even criminally responsible. The L’Aquila trial in Italy is such a recent example and so the authors have performed data collections, hearing investigations, analyses of the reasons for judgment, etc., to explore the incertitude of disaster sciences and scientists’ responsibilities.



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***Prevention or Russian roulette? Considerations on  
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(R. Paolucci)

The author is a seismic engineer and his chapter explores, illustrates and explains the structural causes of major building collapses occurred in L'Aquila and other seismic areas, and the ways to build or refurbish proper houses and public building to improve effective seismic risk reduction.

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***Seismic risk and earthquake prediction in the affair of  
"Major Risks" trial*** (M. Stucchi)

Stucchi's paper is focused on how some misconceived and ambiguous ideas of seismic risk and earthquake forecasting have affected the first degree verdict. The author stresses the way a judge of the first degree trial supported the idea that experts of the so-called "High Risk Committee" should have provided a detailed assessment of seismic risk, also contesting the reasons why their evaluations were found "approximate, generic and ineffective".

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***The earthquake of communication***  
(M. Morcellini)

Mario Morcellini is one of the most influential voices in Italian communication studies, and he has been also a legal consultant for one of the defendants in the L'Aquila trial. His work is aimed at exploring the role of communication in the L'Aquila disaster, and the failures of media, public communicators, and government representatives. Morcellini also suggests they need to improve their skills and ability in coping with high risk situations in a next future.

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| <b><i>L'Aquila earthquake: the communication scenario</i></b> |   |     |
| (G. Ciofalo)  |   |     |

In his work Ciofalo tries to explain conundrums and contradictions in media coverage from the beginning of the seismic swarm until the big shake of April 6, 2009. In this chapter the author also discusses the presumed effects of media on risk behaviours and the role of the “amateur predictor” Giuliani in local and national media agenda building.

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| (A. Cerase)  |   |     |

According to the author, the poor debate on risk communication among Italian academy and policymakers resulted in an amplification of side effects of the earthquake. His comparative analysis on risk communication guidelines demonstrates that judges' conceptions on the discipline dates back more than forty years ago and risk communication practices and ideas are often grounded on undemonstrated and misleading assumptions.

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Seismologists provide a detailed reconstruction of the journalist's misconceived portrayal of scientific concepts, as was issued by local and national media before the earthquake, and the way in which a wrong and approximate information about the seismic swarm preceding the April 6 earthquake affected the public's perception of risk and lay people's individual responses.

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| <b><i>When science trembles: science, pseudoscience, politics and media in the L'Aquila earthquake</i></b> |      |     |
| (G. Tipaldo)   |      |     |

In this chapter Tipaldo considers the role of media and social movements in the aftermath of L'Aquila earthquake. It is a part of a wider longitudinal study on science communication practices by Italian researchers initiated in 2012 by the University of Turin, and it takes the story of L'Aquila as a "revelatory" case study, uncovering the complex communicative interactions that today increasingly bind Science, Politics, Media and Society in risk assessment and uncertainty management.

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| (S. F. Cappa)   |   |     |

Stefano Cappa, neuropsychologist, was a legal consultant for one of the defendants. In his analysis he considers risk decisions of L'Aquila inhabitants before the shock in the light of the classic Tversky and Kahneman's prospect theory and of the most recent neurosciences literature.

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| (M. Crescimbene e F. La Longa)                            |   |     |

Both the authors are psychologists and researchers in the risk perception field. In their work, they explain fundamental mechanisms of risk perception and they provide interesting data to demonstrate that seismic risk is still underrated in Italy and even in the Abruzzo region after L'Aquila earthquake. Today, in Italy, studies on perception of seismic risk are quite rare and even more rarely results are known and considered to support risk analysis and improve communication. This problem mainly arises from two reasons: an inadequate integration between social science and science that 'traditionally' are involved in earthquake studies such as physics, seismology, geology and engineering; an intrinsic difficulty of social science to relate with other disciplines, adopting shared language, methods and techniques.

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| <b><i>A former researcher goes to the discovery of a verdict</i></b> |   |     |
| (G. Cavallo)   |   |     |

Cavallo, who has been a researcher in astrophysics for Italian research Institutions, considered the trial and the verdict as he was a (young) law student. His chapter is a review on logical and scientific fallacies which accompanied the trial which resulted in an unfair verdict. It also considers the different ways of reasoning in legal and scientific matters. It points out that a verdict should be easily understandable to every Italian citizen, including scientists, since it is issued in the name of the Italian people. There is still much reciprocal ignorance, but as legal information is increasingly available on the web, ignorance must not last, and must be overcome by efforts from both sides. The essay proceeds to dissect and examine the first instance verdict as if it were a scientific paper, and points out weaknesses in practically every statement contained in it.

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| (C. Valbonesi)  |   |     |

The author is a legal practitioner and she offers a wide angle analysis on the legal liability of scientists in the L'Aquila trial and other similar cases. Her legal argumentation considers the Italian legal literature on science in courtrooms to criticize the poor use of science in the assessment of forensic evidences, as it occurred in the first degree trial.

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| (A. Galluccio)  |   |     |

Should scientific communication affect risk behaviour of a vulnerable population? Galluccio investigates the causal links between the messages issued by the Italian Civil Protection and the death of 29 in L'Aquila, stressing the way in which psychic causality is used as forensic evidence, and its ability to produce verdicts "beyond any reasonable doubt".

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***Geological disorders in Italy: difficulties and errors in understanding and communicating***

(M. Tozzi)

The chapter is about a number of sources of geological hazard in Italian territory and their impact on human and social environment. Poor regulation, lack of controls by the authorities, unauthorized building and ignorance are presented as factors which may amplify risks posed by environmental hazards, such as earthquakes, volcanoes, landslides and floods.

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***Clouds and clocks. The uncertainty of science and certainties of media***

(P. Greco)

Was the L'Aquila trial an example of the same old scapegoating story? Charges against scientists could be intended as a mean to hide the lack of seismic planning in the years prior to the earthquake? The famous Wiener's metaphor entails a number of contradictions between the actual possibilities of uncertain science, and claims for certainty coming from the public.

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***A memory lacking country*** (M. Cattaneo)

More than two Italians on five actually live in a high seismic hazard area. Despite this alarming situation, the existence of good building laws and of a seismic hazard map considered as one of the most advanced in the world, when a major earthquake occurs we still pretend to be amazed as it is the very first time, as if we are condemned to a kind of *damnatio memoriae* when facing disasters.

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***Editors and authors (bios)***

## **Editors**

**Alessandro Amato**, seismologist, is Research Director at INGV (National Institute of Geophysics and Volcanology). He has been Head of the INGV National Earthquake Center and member of the Major Risks Committee. He has participated in many national and international research projects, acting as coordinator for some of them. He studied the main Italian earthquakes, publishing dozens of articles in international journals. In the last few years he has been engaged in science communication.

**Andrea Cerase**, sociologist, received his PhD at the Sapienza University of Rome where he has also been a research fellow in sociology of culture. He has taught at Sapienza University of Rome and even in Florence and Sassari Universities. He is engaged in research and teaching on risk and risk communication, changing worlds of journalism and media systems, media role in fostering discrimination and racism. He also participated as a researcher in several European Union funded research projects.

**Fabrizio Galadini**, geologist, is research director of the National Institute of Geophysics and Volcanology and research associate of the Institute of Environmental Geology and Geoengineering of CNR (Italian National Research Council). He was director of Milan section of INGV and is currently in charge at INGV offices in L'Aquila. He has taught at the University of Roma Tre. He carried out a number of research activities geological, archaeological and historical seismology, aimed to improve earthquake risk mitigation.

## **The authors**

**Stefano F. Cappa** is graduated in Medicine and specialized in Neurology at the University of Milan. He spent periods of study and research at the University of Boston and also at the Massachusetts Institute of Technology. He is full professor at the IUSS Pavia and Head of the Cognitive Neuroscience Unit at S. Raffaele Hospital in Milan. His research concerns in particular language disorders, dementias and the neural basis of social behavior, and he published over 250 indexed publications, as well as chapters and monographs.

**Marco Cattaneo**, graduated in Physics, joined the editorial staff of "The Science" in 1991. Since 2006 he is editor of "Le Scienze" (Italian edition of Scientific American) and "Mind & Brain", and since December 2010,

editor of “National Geographic Italy.” It is co-author of books such as “The Unesco World Heritage” (White Star, from 2002 to 2004, repr. 2012) and “Cities of the World” (White Star, 2005).

**Giacomo Cavallo** graduated in Physics; received his PhD in Astrophysics at the University of California, San Diego, La Jolla. He has been a researcher in the field of high energy astrophysics at the TeSRE Institute of CNR (Italian National Research Council); he has been also science attaché at the Embassy of Italy in Tokyo, chief of plans and coordination of the ESA Science Programme, and member of the Chair Committee at Asi (Italian Space Agency).

**Giovanni Ciofalo** is assistant professor of Sociology of cultural and communication processes at Coris - Department of Communication and Social Research of La Sapienza di Roma, where he teaches Sociology of Communication and Social media management. He conducts research on communication, cultural consumption and memory. Among his most recent publications “Infiniti anni ottanta” (Knopf, 2011) and “Homo communicans” (Armando, 2013).

**Massimo Crescimbene** is a psychologist, specialized in analytical existential psychotherapy and group leadership psychodrama. He worked at the Italian National Research Council since 1999 and he actually serves as researcher in psychology at INGV. Since 1990, he conducts research on psychosocial issues such as risk perception, rumors, risk communication. He works on outreach and education activities on seismic and volcanic risk. He is author of several publications in international journals and teaches at the master in emergency psychology at LUMSA University of Rome.

**Philip England** graduated in Physics at Bristol University and received his PhD in Geology at the University of Oxford. He spent four years at Cambridge and Harvard six years before returning to Oxford in 1986, where he is Full Professor of Geology. His main research interests concerns the continental tectonics, seismic hazard, subduction zones, and the search for simplicity in geological processes.

**Gabriele Fornasari** is Full Professor of Criminal Law at the University of Trento. He spent periods of study, research and teaching at the Max Planck Institute for Criminal Law in Freiburg and the University of Göttingen, Munich, Salamanca, Castellon, Buenos Aires and Valparaiso and he was also a fellow of the Alexander von Humboldt Stiftung. He is Vice-Director

of the Inter-University Centre Transcrime, editor of the journal “Diritto penale XXI secolo” and is the author of over 150 publications.

**Alessandra Galluccio** received her Master’s degree in Law at the University of Milan defending her dissertation in criminal law entitled “L’Aquila Earthquake and criminal liability: reflections on a hard case”. Since January 2014 she is a PhD candidate in criminal law in the same university.

**Pietro Greco** is a science writer and journalist. He deals with history and news reporting on the relationship between science and society. He is editor of the journal “Science and Society”, co-editor of the web journal Scienzainrete, program host at Radio3Scienza Rai. He holds a number of publications as author or co-author of over 40 books. He collaborates with many universities and research centers on science communication and risk perception.

**Gaetano Insolera** is a criminal defense lawyer and Full professor of Criminal Law at the University Alma Mater Studiorum of Bologna. He is the author of several monographs and articles about constitutional principles in criminal law, complicity in criminal felony and associative crimes. It is member of the editorial boards of several magazines and director of book series and member of the Governing Council of the Italian Association of Professors of Criminal Law.

**Kazuki Koketsu** is a Professor of Applied Seismology and Division Chair of Disaster Mitigation Science at the Earthquake Research Institute, University of Tokyo. He obtained the title of Doctor of Science from University of Tokyo in 1987. He has been chairing the Japanese Subcommittee for Evaluation of Strong Ground Motion since 2012, and compiling the tables of earthquakes in Chronological Scientific Tables since 2001.

**Federica La Longa** is a psychologist, specialized in Occupational Psychology, and she received a Master degree in Strategic Psychotherapy. Since 1992 she conducts research on Education in Seismic Risk at Italian National Research Council until 1999 and at INGV since 2000. Since 2002 she participates in public meetings training / information post-seismic events and is one of the creator of a questionnaire on seismic risk perception. She is the author of a number of publications on Seismic Risk Perception, Rumors and Education on Risk.



**Mario Morcellini**, Full Professor of Sociology of Cultural and Communication, is director of Coris - Department of Communication and Social Research and Vice Rector for Institutional Communications of the Sapienza University of Rome, where he teaches, among other things, “Cultural Industry and Media Studies” . National spokesman of Interconferenza (National Conference of Deans and Directors of Departments); is currently member of CUN (National University Council).

**Satoko Oki** is Associate Professor of Seismology and Disasters Information at the Faculty of Studies on Information and Environment, Keio University, Japan. He received the degree in 2006 from the University of Tokyo. He worked at the Scripps Institution of Oceanography, University of California at San Diego, and at the Earthquake Research Institute, University of Tokyo

**Roberto Paolucci** is Full Professor of Earthquake Engineering at Politecnico di Milano. He is currently coordinator of the PhD in Structural, Seismic and Geotechnical Engineering in the same Institution. For more than twenty years he has been active in several research areas affected by seismic hazard and risk, participating in numerous national and international projects, sometimes as coordinator. He received two awards in international research and was repeatedly invited as keynote speaker at international conferences.

**Massimiliano Stucchi**, seismologist, was formerly Director of Research at the Italian National Research Council and from 2000 at the INGV where he directed the section of Milan. He has coordinated the project of the seismic hazard map Italian and contributed to the definition of the current seismic code. He coordinated national and international projects of historical seismology and compilation of earthquake catalogs. Today, he cooperates with the Eucentre Foundation in Pavia.

**Giuseppe Tiplado** is a Post Doc Fellow at the Department of Culture, Politics and Society at the University of Turin, where he teaches Sociology of Communication and Media Analysis. He studies the relationships between techno-science, politics, media and society. He also deals with content analysis of media texts, with particular attention to the new media environment (blogs, websites, social networks). His latest book is *L'analisi del contenuto e i mass media. Oggetti, metodi e strumenti* (Il Mulino, 2014).

**Mario Tozzi** holds a PhD in Earth Sciences and is senior researcher at the Italian National Research Council. He is the author of dozens of scientific publications in Italian and international journals. He's the anchor of TV scientific programmes such as "Fuori Luogo" on RAI 1 and "Atlantis" on La7. He also led "Gaia" on Rai Tre. He writes on dailies and magazines as "La Stampa". He collaborated with a number of publishers as UTET, Treccani, De Agostini. He recently published the books *Pianeta Terra ultimo atto* and *Tecnobarocco*.

**Cecilia Valbonesi** received his PhD in Criminal law at the University of Florence and is a lawyer of the Forum of Florence. She is the author of numerous publications in journals and collective volumes concerning negligence liability in medical, industrial, business and natural disasters. She also deals with criminal protection of minors.

Le catastrofi hanno spesso un'incubazione molto lunga e più di un responsabile. Per queste ragioni non è possibile cogliere la complessità della vicenda giudiziaria conseguente al terremoto dell'Aquila se non si mettono da parte gli eccessi di semplificazione, i pregiudizi e la frettolosa ricerca di colpevoli. Questo volume si rivolge a chiunque abbia a cuore i problemi connessi alla gestione dei rischi naturali e le conoscenze necessarie per evitare che in futuro questi possano convertirsi in disastri.

La condanna in primo grado dei sette esperti che parteciparono alla riunione della "Grandi Rischi" e l'assoluzione in appello per sei di loro evidenziano un problema che non riguarda solo la solidità dell'impianto accusatorio, ma anche il delicato rapporto tra scienza e giurisprudenza, tra attese dei cittadini esposti ai rischi e istituzioni chiamate a gestirli, tra percezione del rischio e azioni per ridurlo, tra operatori dei media e comunicazione istituzionale. La possibilità di interpretazioni divergenti delle norme e dei doveri degli attori coinvolti nella valutazione, gestione e comunicazione dei rischi mostra un insieme di conseguenze di sistema, potenzialmente negative per la sicurezza dei cittadini, che non hanno tardato a manifestarsi.

Le analisi qui presentate evidenziano l'impossibilità che singole discipline si facciano carico da sole della complessità dei temi trattati, sottolineando la necessità di un approccio integrato e multidisciplinare. I contributi di sismologi, ingegneri, sociologi, giuristi, psicologi e giornalisti scientifici delineano accuratamente le criticità emergenti nei due processi, tratteggiando una prospettiva critica rispetto alle sentenze e propositiva rispetto al futuro.

*Contributi di:* Alessandro Amato, Stefano Cappa, Marco Cattaneo, Giacomo Cavallo, Andrea Cerase, Giovanni Ciofalo, Massimo Crescimbeni, Philip Englund, Gabriele Fornasari, Fabrizio Galadini, Alessandra Galluccio, Pietro Greco, Gaetano Insolera, Kazuki Koketsu, Federica La Longa, Mario Morcellini, Satoko Oki, Roberto Paolucci, Massimiliano Stucchi, Giuseppe Tipaldo, Mario Tozzi, Cecilia Valbonesi.

**Alessandro Amato**, sismologo, è dirigente di ricerca dell'Istituto Nazionale di Geofisica e Vulcanologia ed è stato direttore del Centro Nazionale Terremoti presso lo stesso ente.

**Andrea Cerase**, sociologo, è dottore di ricerca in Scienze della Comunicazione. È stato research fellow in Sociologia dei processi culturali presso Sapienza Università di Roma.

**Fabrizio Galadini**, geologo, è dirigente di ricerca dell'Istituto Nazionale di Geofisica e Vulcanologia; è stato direttore della Sezione di Milano ed è responsabile della sede dell'Aquila presso lo stesso ente.

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