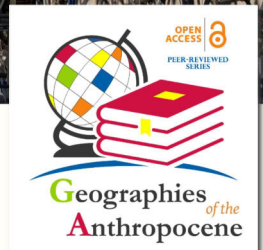


EARTHQUAKE RISK PERCEPTION, COMMUNICATION AND MITIGATION STRATEGIES ACROSS EUROPE

Piero Farabollini, Francesca Romana Lugerì, Silvia Mugnano
Editors



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Geoethics focuses on how scientists (natural and social), arts and humanities scholars working in tandem can become more aware of their ethical responsibilities to guide society on matters related to public safety in the face of natural hazards, sustainable use of resources, climate change and protection of the environment. Furthermore, the integrated and multiple perspectives of the Environmental Humanities, can help to more fully understand the cultures of, and the cultures which frame the Anthropocene. Indeed, the focus of

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Introduction

Piero Farabollini¹, Francesca Romana Luger², Silvia Mugnano³

Risk and disasters are social constructs deriving from an unsustainable human-environment interaction. Earthquake hazard doesn't create damages and destruction; it is our vulnerability and exposure to such processes that creates the conditions of risk. There is nothing natural about an earthquake disaster, yet the common perception is that humans are victims of nature's extreme events. Moreover, the ability of a society to respond to earthquakes does not depend primarily on the emergency conditions created by the impact, but rather on the pre-disaster settings and circumstances.

From the agricultural revolution onwards, humans have tried to free themselves from the control of nature by modeling the territory for their benefit. This, on the one hand, has enabled the social development we enjoy today, yet, on the other, the interaction with natural processes we do not fully understand has created problems of exposure and vulnerability. The consequences went beyond the creation of risk conditions and caused profound changes in environmental cycles contributing to the current geographies of the Anthropocene.

Recent earthquakes, including those in Italy, have unequivocally shown the dominant role of societal vulnerability in creating those disasters. The Mediterranean region, unceasingly affected by strong earthquakes and almost all type of known natural hazards, is very representative of these complex and multi-scale dynamics.

From an examination of the dramatic events that have recently occurred in the central region of Italy, there emerges the need to provide the general public with correct and clear information on the complex scenario characterising this as well as another- country. Experience teaches us that tackling the subject of the prevention of risk and protection from danger (the avoidance of exposure) is very difficult. What is needed is a communicative strategy that informs the public of the characteristics of a territory (understood

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as a natural and cultural environment) and the relative operative dynamics, just as one should understand the anatomy and physiology of one's own body in order to manage and protect it in the best possible way.

Indeed, a disaster is above all a social event (Alexander, 1991; Ligi, 2009; Pelanda, 1981), in which people are actively involved in the process leading to the occurrence of the catastrophe. It is not by chance that the social sciences engaged in the study of disasters in Europe have experienced an important consolidation in recent years; in Italy, especially since the earthquake of L'Aquila onwards, the national scientific production has substantially aligned to the international growth trend. Such vivacity, as Davide Olori (2017) states, does not correspond to a theoretical reconstruction of the proposals, which on the contrary have widened the distances between the different positions, pursuing - mostly - an applied approach. This volume, instead, is intended to be the first attempt of a proposal that aims to bring together different approaches and viewpoints of scholars from different disciplines on the subjects of reduction, mitigation and communication of earthquake risk: physical and social scientists, physicists, engineers and humanists who participated in the S41 session of the 36th Assembly of the European Seismological Commission which took place in Valletta, Malta from 2 to 7 September 2018, coordinated by Elena Dell'Agnese, Francesco De Pascale, Piero Farabollini, Francesca Romana Luger, Fausto Marincioni, and Francesco Muto. This session encouraged abstracts discussing the multiple dimensions of earthquake risk reduction, including, but not limiting to, the following research lines: risk communication and social perception; prevention and population preparedness; community-based approach; adaptive capacity; representation of earthquakes in popular culture; new technologies for investigations of hazards and risk; vulnerability reduction; disaster governance. As a result, this volume, has collected several contributions presented during this session to which other interesting proposals of scholars presented after the publication of the Call for Book chapters of the series have been added. Hence, this book is an output of a rigorous review of those proposals and contributions. The volume is divided into three sections:

- 1) Mitigation Strategies of Seismic Risk Communication;
- 2) Communication and Prevention Strategies of Seismic Risk.
- 3) Resilience and Post-Disaster Recovery.

In the first section, "Mitigation Strategies of Seismic Risk Communication", Cüneyt Tüzün, Ahmet Anıl Dindar, Aybige Akıncı (2019) explain one of the most comprehensive and challenging disaster mitigation strategy being applied in Turkey based on the real experience since the 1999 earthquakes.

Mikhail Rodkin and Vladilen Pisarenko (2019) deal with a review of a series of previous publications by authors about the methods of statistical analysis of seismic regime and related damages. The work of Alper Uzun and Burak Oglakci (2019) covers the prevention and risk management studies to be done before an earthquake occurs, focusing on awareness level and risk governance. Chiara Braucher and Mattia Giandomenici (2019) would propose the proactive and participative approach to the Environment Construction at large, including the “direct intervention from settled communities - still persistent but in serious decrease all around the world - as an important strategy for risk mitigation, an alternative to the profit-based narrations of political decisions”. In the second section “Communication and Prevention Strategies of Seismic Risk”, Volterrani’s chapter (2019) presents and discusses a draft model for the prevention of communication in relation to risk of disasters and other types of crisis, starting from the experience of the Italian campaign “I do not risk”, and, finally, to risk of radicalization of second young migrant generation. Andrea Cerase’s work (2019) considered the media coverage of scientific issues during the Emilia 2012 and Amatrice 2016 seismic crisis by the four most circulating Italian national newspapers within the 31 days following the first earthquake shock, through a comparative analysis. The contribution of Piero Farabollini (2019) aims to illustrate, through a sort of alphabet the activity of the commissioner, the legislative and financial system and the route - with the relative rules to reach the objectives - necessary to give society the due guarantees. The study of Fausto Marincioni, Eleonora Gioia, Mirco Zoppi and Elena Vittadini (2019) investigates, through a questionnaire, food management in the case of the earthquakes of 24 August 2016 in Central Italy, assessing survivors’ ability to access food (food security) and the field kitchens practices to ensure hygiene and avoid food-borne disease outbreak (food safety).

In the third section “Resilience and Post-Disaster Recovery”, Maurizio Indirli’s work (2019) presents an excursus through the ages and a brief (not exhaustive, of course) state-of-the-art regarding “resilience”, pointing out some open questions of the current debate among researchers of different disciplines, working in the fields of hazard mitigation, sustainability, risk assessment, heritage preservation, and so on.

Piero Farabollini, Francesca Romana Lugerì and other authors (2019) deal with the case study of the 2016 central Italy, describing the reverse seismic sequence and the geological effects.

The work of Silvia Mugnano, Fabio Carnelli and Sara Zizzari (2019) aims to discuss what needs to be tackled by response and recovery disaster management policies when second homes are involved, by considering also

the expectations and intentions of the affected owners with regards to tourists needs included in the redevelopment plans.

Finally, the chapter of Teresa Carone, Giulio Burattini and Fausto Marincioni (2019) aims to clarify the influence of territorial bonds on social resilience of small mountainous communities in the aftermath of the August 24, 2016 central Italy earthquake.

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Increasingly, socio-natural risks and disasters represent the result of an unsustainable interaction between human beings and environment. The current scientific debate has generally agreed on the idea that the impact of natural hazards needs to take into account the social vulnerabilities and exposures to risk of the affected population. The most recent earthquakes have unequivocally shown the complexity of the phenomena and their multi-scale dynamics. Indeed, the territory is the combination of natural, social and cultural environment and only by exploring its anatomy and physiology, it will be possible to manage and protect it in the best way.

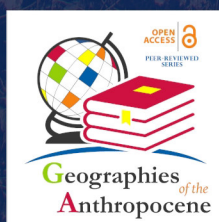
This volume collects a quite wider range of national and international case studies, which investigate how socio-natural risks are perceived and communicated and which strategies the different communities are implementing to mitigate the seismic risk. This publication has been possible thanks to a fruitful discussion that some scholars had at the 36th General Assembly of the European Seismological Commission held in Malta from 2 to 7 September 2018.

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Silvia Mugnano is Associate Professor of Urban Sociology and her research interests include housing, urban transformation, and socio-natural disaster studies. She is teaching nationally and internationally on tourism and local development, and she is intensively working on promoting the topic of socio-natural disasters in the sociological debate. Her recent publications on the topic include *Territori Vulnerabili* (FrancoAngeli, Milan, 2017) and a Special Issue on "Socio-Natural Disaster, resilience and vulnerability: the territorial perspective in Italian current debate" in *Sociologia Urbana e Rurale* (2016) and several articles among which "A New Normality for Residents and Tourists: How Can a Disaster Become a Tourist Resource?" (Springer, 2016).

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