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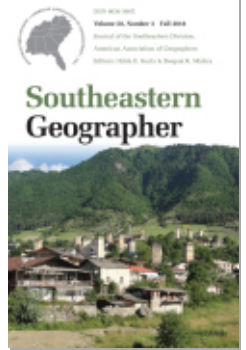
Natural Hazards: Explanation and Integration by Burrell E. Montz, Graham A. Tobin, and Ronald R. Hagelmann III (review)

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Southeastern Geographer, Volume 58, Number 3, Fall 2018, pp. 317-320 (Review)

Published by The University of North Carolina Press

DOI: <https://doi.org/10.1353/sgo.2018.0031>



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REVIEWS

Natural Hazards: Explanation and Integration,

Second Edition. Burrell E. Montz, Graham A. Tobin, and Ronald R. Hagelmann III.

New York: Guilford Press, 2017, 445 pp. + xvi, tables & figures.

ISBN 9781462529179, Price: \$51.00.

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This second edition of an accessible textbook is very welcome. The book also serves as a valuable refresher or even introduction for specialists, practitioners and policy makers who find themselves working in multi-disciplinary teams or working their way through specialist reports and recommendations. Each of five discipline-based chapters provides a substantial overview of approaches to natural hazards taken by the physical sciences, psychology, sociology/ anthropology, public administration and politics, and economics. A penultimate chapter on risk assessment introduces the reader to more applied subjects. First and last chapters bracket the rest with an essay on the trends and significance of natural hazards worldwide and the authors' suggested integrated approach.

There are advantages and challenges in presenting an inherently interdisciplinary topic in discipline-labelled chapters. An advantage is that specialists can mug up the vocabulary and approaches of unfamiliar disciplines in order better to cooperate with team members. However, this advantage is reduced by the fact that topics

recur. For instance, perception has its own chapter and also comes up again in the risk assessment chapter, as do choice and other behavioral issues as well as policy. Economics is not confined to its chapter, but haunts policy processes and, combined with politics (e.g. political economic structures) is a constraining shadow cast over every process from awareness and risk perception, warning through recovery. Behavior has its home chapters but is defined so broadly that its surrogate, choice, comes up everywhere. Such overlap and interweaving of key terms is not a bad thing. In fact, the approach lays a strong foundation for the final integrated framework. However, the drawback of such a building block structure for the book is some repetition and some semantic drift (discussed below).

Chapter one is a well-balanced account of the human significance of natural hazards, the relative contribution of nature and society to disaster creation and different managerial responses. The authors dispatch older physical perspectives that "ascribed all or almost all responsibility

for disasters to the processes of the geophysical world” in half a page, then turn to human dimensions. This paradigm shift is often referred to as a change from a hazard-focused to vulnerability-focused perspective (Wisner, 2016). However, the authors’ narration of this shift fails to document the geophysical science and engineering contributions to human safety in the hundred years between 1860–1960. A balanced combination of physical and social science needs to be translated into government policy and management practice in order to achieve the goal of reducing disaster risk. Montz and her colleagues have provided a book that models that balance, and they wisely caution readers in chapter two that many physical science questions remain unanswered, so physically based studies should not be considered passé (p. 60). Other textbooks with similar titles remain strongly biased toward geophysical and climatic drivers although in their more recent editions make brief reference to human dimensions (Keller et al., 2016; Hyndman and Hyndman, 2005; Bryant, 2005). It is all the more surprising, given the balance offered by Montz et al, that they refer to “*natural* disasters”. They write of an “evolution” in thinking about hazards and disasters (p. 13) and devote less than one page to physical factors in this section to more than four to human and political (“structural”) factors, yet this semantic relic persists! Hazards are natural. Disasters are not. Nevertheless, chapter one is an elegant introduction to the subject; although the sub-section on “Data Sources and Reporting” fails to refer to the major source of global data used by most organizations, EM-DAT (CRED, 2018) and its increasingly popular complementary source, DESINVENTAR (La Red, 2018).

Chapters two and three cover geophysical processes. They discuss magnitude, duration and spatial extent in chapter two and turn in chapter three to frequency, return periods, seasonality, diurnal patterns, geographic location, rapidity of commencement and preparation time. The last mentioned includes an interesting discussion of warning. This approach differs from that in texts written by geologists that take up each geophysical hazard in turn and explore all these processes in one place. The authors make a good case from a policy and management point of view for privileging these processes in order to learn lessons from different hazards and to avoid too narrow a specialist bias (pp. 138–142). The hazards mentioned in these two chapters include tornado, tropical cyclone, flood, drought, earthquake, volcanic eruption, tsunami, and (briefly) landslide (p. 113), avalanche (p. 122), and global climate change. An important omission is wildfire.

Chapter four treats perception studies, and chapter five enquires into the role of human behavior. The next three chapters (six, seven and eight) explore aspects of institutional behavior and planning divided into chapters on policy, economics and risk assessment, respectively. This large part of the book discusses topics and perspectives that overlap. They have in common a central concern with behavior – decisions and actions by individuals, groups and institutions within the limits of choice and constraint, the emphasis often laid on constraint: “...[T]he range of responses for a Bangladeshi farmer is severely constrained by external situational factors... The same ... applies to... the Afghan faced with recurring earthquakes while ensnared in a war-torn environment; or the residents of small islands

whose very survival is currently threatened by rising sea levels” (pp. 162–3). Constraints appear again as possible limits to policy and planning (pp. 247–252).

Chapter five is sub-titled “Community Attitudes and Adjustment”. The authors define community as “an organizational entity with an established means of collective decision making” (p. 186). This definition skews content of chapter five toward formal administrative units and local government: villages, towns, cities, despite the authors’ adding “though not necessarily having recognized geographic boundaries”. Many millions of people live in isolated hamlets and in informal peri-urban settlements who have no “established means of collective decision making” and fall outside the influence of and control by the state or actively resist state control (Scott, 2010). Nevertheless, many of these people – among the poorest and most vulnerable – share with the majority of us the ability to network and support one another on the basis of shared religion, language and ethnicity. Where the marginalized are functionally included within the state apparatus, they may be represented by civil society organizations, as in the drought-prone Northeast of Brazil (MST, 2015; MST, 2018). The authors tacitly acknowledge this but do not inquire into the collective decisions and actions of racial, ethnic and cultural groups. In one memorable passage, they refer to Hurricane Katrina as “one hurricane, but many disasters”, citing “varied impacts [that] spanned diverse geographic scales and settings... different socioeconomic groups, ... and a variety of racial, ethnic and cultural groups” (p. 191). Yet the organized push back against perceived injustice in post-Katrina New Orleans by such groups does not appear (DSCEJ, 2018;

Lowlander Center, 2018). The ambiguity carries across into the authors’ discussion of policy in chapter six. Their categories of policy implementation, schematized as a clever sort of Rubik’s Cube fail to include radically participatory processes that result from interventions by citizen science and push back against “programmatically” policy in situations of extreme uncertainty and ambiguity (Renn, 2008).

The authors’ “integrated approach” is presented in the last chapter. Elements of this model have been anticipated in earlier chapters. Montz and her colleagues “hope to illustrate the complex relationships existing between the individual, society and the physical environment” (pp. 351–2). The groundwork has been laid. On the whole, their hopes are realized in a framework that combines physical forces, individual and societal factors as well as social traits in their figure 9.1 (p. 345). These give rise to risk and vulnerability that call forth loss reduction strategies in a variety of contexts.

While the second edition updates much literature, there are unfortunate gaps. The chapter on economic impacts fails to follow advances in macroeconomic analysis summarized by the World Bank in a watershed publication mysteriously uncited (World Bank, 2015). At the micro scale, the authors fail to mention impacts on household livelihoods and small businesses based in parallel and informal economies found in all low and medium-income countries including the BRICS. The chapter on perception studies conflates “culture” and religious belief in a swift two-page treatment (pp. 173-4) that leaves the reader with the impression that culture only exerts a negative influence on perception. In fact, a growing amount of field research suggests that culture can

have very positive effects, as in the case of the cultural memory of long-past tsunamis that allowed some people to escape death in the Indian Ocean tragedy (Mercer et al., 2012). The World Disaster Report for 2014 provided a useful overview of this emerging scholarship (IFRC, 2014).

The prose is unusually lively and straightforward for a textbook, using questions and simple declarative sentences to create rhythm. Other features make the book easy to use: a detailed analytical table of contents, internal division and sub-section headings that make the book easy to navigate. At \$51 it gives great value for money.

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