

NATURAL DISASTERS IN TRANSATLANTIC PERSPECTIVE: RIVER FLOODS IN GERMAN AND U.S. HISTORY

Uwe Lübken (GHI) and Christof Mauch (GHI)

Natural disasters are causing ever greater damage; this is especially true of floods. Despite the immense media interest and the broadly developed scientific and sociological research on natural disasters, however, the historical investigation of natural disasters is still in its early stages. The tools and strategies with which societies today approach environmental catastrophes have evolved over several centuries. Deep historical transformations are also visible in the experience of and cultural response to natural disasters. The first wide-ranging analysis of its kind, this project is a comparative historical exploration of a specific type of natural disaster: river floods in the United States and Germany. The project aims to improve our understanding of social responses to emergencies in different national cultures, and to offer innovative contributions to environmental history and other fields of historical research.

Given the increasing emphasis on the environment in recent decades, it is surprising that there have been only very limited attempts at a systematic historical analysis of environmental disasters. Environmental historians have pursued various aims. On the one hand, they have sought to uncover nature's historical dimensions: climatic changes over the centuries, shifting coastlines, or desert expansions.¹ In this version, "nature" appears as a slow but independent historical agent. On the other hand, environmental historians have emphasized the interaction between humans and their environment; they have, for example, examined the impact of railroads on landscape and how it is perceived.² More recent is the insight that imagined or idealized "representation[s] of nature and the environment—as they exist in perceptions, environmental ethics, environmental law, myths, and other mental constructions—structure the interactions of individuals or groups with nature."³ All three levels are interdependent. For example, whether past "interventions" in the flow of the Rhine were judged as appropriate depended greatly upon how often the river overflowed its banks and how these floods were viewed by contemporaries: as God's judgment or as arrogant Nature overstepping her bounds, as potential danger or unchangeable fate.⁴

European and North American ways of writing environmental history differ fundamentally. Whereas British, French, and German historians have mainly focused on industrialization and its damaging effects on the environment (and these mostly in an urban context), historians in the

United States have a completely different understanding of nature that grew out of that country's specific historical experience.⁵ Their interest in the history of the natural environment has been influenced for example by the late "discovery" and settlement of the North American continent. At a time when the industrialization of Western Europe was already well advanced, hundreds of thousands of Europeans migrated to the United States and, if they did not remain in the cities, founded farms, communities, and towns in the so-called "frontier" regions, on the border between "civilization" and "the wilderness." For the (mostly white) settlers who arrived to conquer and settle the North American continent since the 1600s, nature was in the first instance a hostile power, hardly something in need of protection.⁶ Accordingly, the main thrust of American historiography has been the emergence of American culture from the wilderness. The victims of this development were the Native Americans, the Africans forcibly brought to America, and their descendants. These groups were considered savages by the white settlers, respectively annihilated and exploited as the slaves who first made possible the large-scale exploitation of natural resources.

According to Frederick Jackson Turner's famous thesis, moreover, the confrontation with nature on the Western frontier served to renew the free political institutions in the civilized Eastern states, which but for the continuous flow of authentic democratic experience would have followed Europe down a path toward decline, corruption, and rejection of a representative political system. In this way, the environmental history of the United States was always political history as well.⁷ In Germany—and, with some qualifications, for Europe as a whole⁸—historians have concerned themselves more with urban ecological problems than with mountains, rivers, and marshes, and have applied mostly sociological and economic methodologies. Their epistemological interests were often marked by contemporary ecological problems like the dangers of nuclear energy.⁹

Environmental history, meanwhile established as a recognized sub-discipline in many countries, is still primarily occupied with the long, slow, structural transformation of the environment in which humans live. Nature and the environment appear as two almost static quantities which only change after centuries, or at least decades. To be sure, Alfred Crosby has shown that catastrophes around the turn of the twentieth century stimulated a greater interest in understanding the environment.¹⁰ But such events rarely become objects of study in their own right for environmental history. Environmental historians have been and continue to be concerned first and foremost with the *longue durée*.¹¹ Catastrophes attract their interest when they have a certain continuity and consistency.¹² This focus on gradual change, however, neglects the fact that nature itself can have the character of an event. Floods, tornadoes, and

earthquakes undermine the notion of time as the snail-like progress of centuries; they demand a unique mode of historical understanding appropriate to their dramatic pace. As Ursula Lehmkuhl puts it, "Through the episodic character of these disturbances, nature gains a quality of historical agency and, with it, power."¹³ The analysis of unexpected, rapid, and destructive disasters has up to this point been almost completely neglected by historians and left to scholars in other disciplines.¹⁴

Sociological and Anthropological Approaches

The investigation of natural and environmental catastrophes has assumed a more prominent place in various scholarly fields. Subjects such as risk perception and risk management are of interest to sociologists as well as to economists and psychologists. Anthropologists and literary critics explore connections between catastrophe and identity, while geologists concentrate mainly on the natural causes of catastrophes. Taken as a whole, all these approaches illuminate natural disasters from different perspectives. The most important inspirations for a historical perspective, however, are offered by social science approaches.

The first empirical study of human behavior in the face of a disaster was Samuel Prince's 1920 analysis of the collision of the French ship *Mont Blanc* with a Belgian steamship near Halifax.¹⁵ Based on this "cornerstone of disaster research,"¹⁶ several institutions devoted themselves to the study of catastrophes from a social science standpoint. Among these institutions, mostly founded after the Second World War, the University of Delaware's Disaster Research Center and the Natural Hazard Research and Applications Information Center at the University of Colorado at Boulder are especially noteworthy.¹⁷ Their research centered on the systematic analysis of social behavior in emergency situations. Catastrophes were seen as deviations from a norm, as unpredictable and extreme occurrences which suddenly descended upon social communities. Hardly touched upon, by contrast, were the socio-cultural matrices in which such disasters occurred, the powerful aftereffects of discourses of catastrophe, and the historical dimensions of disasters.¹⁸ This began to change in the 1980s. No longer automatically viewed as external forces, catastrophes emerged in a new light. According to the new credo, "the view that disasters are social occurrences as well as physical events . . . is central to social scientific disaster research."¹⁹ The reconstruction that followed on the heels of disaster was viewed less as a symbol of a return to normality, but rather as a revelation of what a society defined as normal.

There are no "natural" disasters in the true sense of the word. Shifts in the continental and oceanic plates are "normal" from a geological standpoint and are in no way catastrophes. At most, nature supplies the

trigger for a disaster, but humans themselves are largely responsible for the consequences, by placing industrial facilities or trailer parks in flood zones, for example. Beyond this, there is an unequal distribution of insecurity and risk that can almost always be attributed to social rather than natural causes. This is the only way to account for the fact that certain segments of the population are often disproportionately affected by disasters.²⁰

Thus, an analytic distinction between “man-made” and “natural” disasters makes little sense in relation to their causes.²¹ Anthropological studies account for a large share of the recent work on disasters, concentrating on the social construction of “natural” catastrophes. Many individual studies have shown how even the smallest social organizations have accommodated themselves to continuous threats from the natural world, developing unique coping strategies.²² The spatial and historical diversity of the human experience of catastrophe can be especially illuminated by the study of non-Western cases. Methodologically, ethnographic fieldwork has also set the standard.²³

With the emphasis on the human contribution to “natural” disasters, the fact has largely been ignored that, from the standpoint of those affected, catastrophes often appear to be random events. At least since the Enlightenment and the diminishing power of theological explanations, the notion of a “negative chosenness” has shaped how these events are dealt with, making it very difficult to come to terms with them. It is only when interpretive strategies are deployed that meaning can be gleaned from a power that is fundamentally meaningless and senseless. Ann Larabee concedes that “writing about disaster, collecting and organizing these writings, reasserts the cultural project of signifying, accumulating, and sequencing.”²⁴

Also, from a historical viewpoint, it is important to recognize that the distinction between “man-made” and “natural” disasters lives on in public discourse, unaffected by scholarly research.²⁵ Additionally, technological disasters with environmental implications are usually seen as avoidable and provoke anger rather than resignation. Finally, the nature of the destruction is different. Rarely do natural disasters cause contamination and pollution.²⁶

In general, social scientists and anthropologists rarely deal with events that are more than twenty years in the past. Because sociological disaster research has chiefly been interested in structural insights and in prognosis, an analytical retrospective of recent contemporary history would almost be counter-productive. The context of historical disasters would be too different from contemporary cases to yield relevant insights. To be sure, sociological studies of disasters occasionally make allowances for the necessity of a historical-cultural approach.²⁷ Such calls,

however, have rarely led to results. In general, one can agree with Christian Pfister, one of the pioneers of historical research on natural catastrophes, that disaster research is currently "clearly lacking in temporal depth."²⁸

Goals

The preparation of this project and the review of the literature led to four main areas of inquiry with both historical and contemporary relevance. First, we intend to analyze the institutional reactions to natural disasters, that is to say, the historical development of defense against disasters and of relief measures. Second, we will investigate the social dimension of natural disasters, with special attention to those groups particularly affected by disasters and to reactions to this unequal "distribution of pain." Third, we will focus on cultural reactions to experiencing and working through a catastrophe. Finally, we shall seek to explore how insecurity is dealt with on both an individual and on a collective level.

Based on these four areas of inquiry, we will bring the following main questions to bear upon the source material: How did the state disaster management and prevention programs that shape our present-day institutions emerge historically? In what ways do catastrophes challenge or consolidate authority on the local, regional, and central levels? What examples of conflict and cooperation can be found both "vertically," between the central government and local authorities (for example, between the United States Congress and individual states along the Mississippi river that requested funds for flood prevention), and "horizontally," between different cities, regions, and states (for example, the upper and lower reaches of the Rhine)? Is there a connection between industrialization, the experience of catastrophe, and modernization? Are environmental disasters truly "the salt of the modernization process,"²⁹ in that they introduce a learning process and offer unconventional solutions a chance to be realized, thereby "fostering organizational creativity?"³⁰ Or was, for example, the fact that "flood protection shifted from being an individual responsibility to a state matter" merely the expression of a gradual development that would have taken place even without large catastrophes?³¹ With increasing industrialization and the spread of technology in Germany and the United States, floods now no longer threatened "only" life and limb, but also wide sectors of the economy. In general, the material damages from environmental disasters have multiplied dramatically over the past two hundred years due to the growth of capital-intensive industries. What influence did this rapidly increasing vulnerability of modern states have upon natural "disturbances?" How were communication systems and the infrastructural setting transformed

by crisis? To what extent were natural disasters exploited for political ends? It is a self-evident part of the repertoire of public appearance in the twenty-first century that leaders show up to be photographed in disaster areas. In the United States, this was everything but ordinary up through the 1930s. In 1927, for example, President Coolidge refused to make such a gesture, despite a devastating situation along the Mississippi.³² Beyond individual observations, an examination of the different cultures of political solidarity in Germany and in the United States can yield information about the varying mental responses to catastrophe and about the differing political expectations of government institutions.

The Social Dimension of Natural Disasters

Social science researchers have established that environmental risks are anything but evenly distributed among different social groups. Because of factors such as age, sex, class, ethnicity, race, or religion, various groups have unequal access to financial resources (such as insurance or government assistance), government protection, or other benefits which can help avert disasters or at least minimize their damage.³³ This differing social vulnerability can in extreme situations lead to social and political conflict, which should be analyzed. By the same token, repressive social practices are often first visible in times of catastrophe.³⁴ Similar research findings can be expected from an analysis of floods.

The social dimension of natural disasters is evident not only in the related conflicts and confrontations, but also in the waves of solidarity and readiness to help that regularly accompany them. What can be learned about interregional, international, or transatlantic aid?³⁵ What conflicts emerged (and how were they resolved) when solidarity and spontaneous aid failed to meet the needs and expectations of those affected, as shown for example by the struggle between the federal government and states bordering the Mississippi river over federal responsibility for disaster relief? The congressional documents on flood control measures and financing related to this issue illustrate a vivid landscape of interests, uncovering social, political, and economic privileges.

It holds true for Germany as well as for the United States that, over the course of the late nineteenth and twentieth centuries, a network of laws and regulations emerged from rather sporadic efforts to aid and care for disaster victims. These laws and regulations increasingly supplemented private charitable efforts with state-administered programs.³⁶ A comparison of developments and the various arguments deployed in the debate is of interest because America's founding myth is based upon the glorification of the frontiersman who endures nature's trials, survives without outside help, and derives his identity and strength largely from these experiences.

In addition to social conflicts and mutual aid efforts, there is a further field of historical inquiry into the “resilience” of the population. As a 1993 research project sponsored by the German Research Foundation phrased it, “we aim to examine the social and cultural developments which make the effects of a disaster so powerful that it threatens one’s very life-world, and to explore how these problems can be confronted effectively: Had they occurred thirty years earlier, the disastrous snow-storms of 1978/79 in Schleswig-Holstein would have merely been a severe winter—it was the modern system of centralized supply services and infrastructural dependency which turned this sort of event into a catastrophe.”³⁷ On the whole, we expect that an analysis of social responses to natural disasters will uncover areas of conflict which remain submerged in the “usual state of affairs.” On the other hand, modes of behavior emerge which are only evident during a fundamental crisis.

The Culture of Catastrophe and the Experience of Insecurity

Alongside state measures, social reality, and economic factors, a further important aspect of the encounter with natural disasters falls under the heading of what might be termed “the culture of catastrophe.” What interpretive matrices shape the experience of natural disasters and how have these changed over time? How are disasters remembered and why have they played such a subordinate role in collective memory? Picking up on the work of Roland Barthes and Arno Borst, is it correct to suspect that repression mechanisms are at work here?³⁸ What underlying conceptions of nature and the environment are expressed in reports on natural disasters? Is nature seen as an enemy to be conquered, or is nature’s free reign beyond human boundaries acknowledged? How does this discourse connect with major political and social processes such as industrialization or the settling of the American West? Because news reports on natural disasters occupy such a prominent place in the media—from the earliest newspapers to today’s cable television—the question of the extent to which the media shape the perception of disasters should be addressed.

Disaster forecasting began long before the age of seismographs. In retrospect, signs that announce disasters seem apparent. For example, in Hamelmann’s Oldenburg Chronicle of 1599 there is an image of a triple rainbow, which was interpreted as a flood warning.³⁹ What meanings did these “virtual” catastrophes have, as prophecy, possibility, horror scenario, as something with which one could mobilize resources or campaign for votes? It is noteworthy that disaster reports repeatedly mention the attendant “sounds,” either as noise, associated with most disasters, or as a unique silence.⁴⁰ What role do disturbing and destructive sounds (or their absence) play in the experience of natural disasters?

One area that has yet to be researched is disaster tourism, something that is not only a late twentieth-century phenomenon.⁴¹ How can this be charted over time, between the opposing poles of event-culture and the experience of the sublime?

Although natural scientists have meanwhile intensively researched natural disasters, it is still not possible to precisely predict the size and location of floods. As a result, people who live in particularly threatened regions must still maintain strategies for coping with the danger. Interestingly, despite these risks, there is a tradition of settlement in flood regions, which is often encouraged financially by insurers. How has this kind of risk management evolved historically?

A deep historical analysis of floods can demonstrate what measure of security was striven for in different periods. What price were states, societies, and individuals willing to pay for their security?⁴² Special attention will be paid to the concept of insurance. The large and, in many respects, untapped field of insurance history is a treasure trove for the historical investigation of natural and environmental disasters. There is, to be sure, a wealth of literature, including historical studies, which deal with one or another branch of the insurance business, or with individual companies.⁴³ Few studies, however, address long-term structural questions and cultural issues.

Theory and Methodology

This project underscores the fundamental insight that “natural” categories do not exist a priori, but are materially, socially, and discursively constructed. The meaning of this insight for the analysis of flood disasters is clear when one recognizes them as the result of river flow “corrections” or when one sees the changing ways they have been interpreted over the centuries. By the same token, the study of natural disasters can enrich environmental history in that it will loosen the dominance of the *longue durée* as a category of analysis and illustrate that natural processes and developments can also exhibit the character of events.⁴⁴

An environmental history approach would, however, not be sufficient regarding the content and analytic breadth of this project. Insights from other disciplines are indispensable, and interdisciplinary connections can be made in a great many directions. For example, real disasters might be contrasted with their representations in legend and fiction.⁴⁵ Conversely, we can address the question as to what extent a “culture of disaster” (a term Mike Davis has coined for California) prejudices our view of catastrophes.⁴⁶ Sociological and psychological studies of catastrophe can help explain human behavior in emergency situations. Furthermore, gender studies and discourse analysis are essential to the study

of social practices.⁴⁷ The new institutional economics, and, above all, attempts to combine economic theories with cultural studies, are of great value for this study.⁴⁸

A historical approach offers an excellent starting point for comparative questions.⁴⁹ Numerous diachronic and synchronic juxtapositions can not only illustrate lines of development in individual countries, regions, and cities, but can also allow comparisons of various strategies for handling disasters. Germany and the United States are at the center of this study. This comparative national history approach only appears to be in contradiction with an environmental problematic that, as is well known, does not recognize national borders. On the one hand, Germany and the United States will be considered first and foremost as geographic spaces that in a certain sense serve merely as the “containers” for the objects of study. On the other hand, too strong a territorial limitation can always be opened up, whenever certain events impact several countries, for example the Rhine and Elbe floods, the international dimension of which will not be ignored, or the history of the Mississippi River when it was still under Spanish control.

There is an additional reason to focus on Germany and the United States despite the non-national character of environmental disasters. It is not only the case that environmental issues are understood differently in every country (one thinks here of the almost diametrically opposing views in Germany and France on nuclear energy); the United States and Germany are, despite all their differences, comparable on the basis of their economic, social, and cultural history and structure. Beyond this, the investigative framework is large enough to reveal the great diversity (local, regional, national, and even international) within these “containers.” Lastly, in contrast to Switzerland and France, there are no long-term historical studies of floods in Germany and in the United States. In general, this research project will remain open in terms of the time period analyzed and will focus on specific places and events only for practical reasons. Thus, contemporary flood disasters as well as early modern events will be investigated, though the main emphasis shall be on the nineteenth and twentieth centuries.

Notes

¹ See Rüdiger Glaser, *Klimageschichte Mitteleuropas: 1000 Jahre Wetter, Klima, Katastrophen* (Darmstadt, 2001); Christian Pfister, *Klimageschichte der Schweiz, 1525–1860: Das Klima der Schweiz von 1525–1860 und seine Bedeutung in der Geschichte der Bevölkerung und Landwirtschaft* (3d revised edition) (Bern, 1988); Dietrich Hoffmann, “Erdgeschichtliche Entwicklung der Küstengebiete an Nord- und Ostsee,” in *Historischer Küstenschutz: Deichbau, Inselschutz und Binnenentwässerung an Nord- und Ostsee* (Stuttgart, 1992), 1–16; Marc Reisner, *Cadillac Desert: The American Desert and Its Disappearing Water* (revised edition) (New York, 1993).

² See Wolfgang Schivelbusch, *Geschichte der Eisenbahnreise: Zur Industrialisierung von Raum und Zeit im 19. Jahrhundert* (Frankfurt am Main, 1989); John McPhee, *The Control of Nature* (New York, 1989); John Opie, ed., *Americans and Environment: The Controversy over Ecology* (Lexington, Mass., 1971).

³ Ursula Lehmkuhl, "Einleitung—Umweltgeschichte: Histoire totale oder Bindestrichgeschichte?" in Ursula Lehmkuhl and Stefanie Schneider, eds., *Umweltgeschichte: Histoire totale oder Bindestrichgeschichte?* (Erfurter Beiträge zur Nordamerikanischen Geschichte 4, 2002), 13. All translations are the authors'. See also Catherine Albanese, *Nature Religion in America: From the Algonkian Indians to the New Age* (Chicago, 1990); Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, Mass., 1995).

⁴ See Marc Cioc, *The Rhine: An Eco-Biography, 1815–2000* (Seattle, 2002); Horst Johannes Tümmers, *Der Rhein: Ein europäischer Fluß und seine Geschichte* (Munich, 1994).

⁵ Compare Joachim Radkau, *Natur und Macht: Eine Weltgeschichte der Umwelt* (Munich, 2000).

⁶ See, for example, the description of the 1832 Ohio River flood by Samuel P. Chase, later Secretary of the Treasury and a Supreme Court Justice: "The river, like an animal eager in pursuit as its antagonist retires, pushed closely on and forced them [the merchants] to remove their stores still farther to the second story." John Niven, ed., *The Salmon P. Chase Papers*, Volume 1: Journals 1829–1872. Entry of February 14, 1832. (Kent, Ohio, 1993); Christof Mauch, "'Zurück zur Natur' und 'Vorwärts zur Maschine': Dimensionen und Paradigmata der Umweltgeschichte der USA," in Werner Kemp and Gerd Mielke, eds., *Umwelt* (Trier, 1999), 11–38.

⁷ Frederick Jackson Turner, *The Frontier in American History* (Tucson, Ariz., 1986). For the broader context, see Roderick Nash, *Wilderness and the American Mind* (New Haven, Conn., 1982).

⁸ The French Annales school is an exception, if one understands it as a precursor of environmental history. It was above all Fernand Braudel's work on the Mediterranean that viewed the region as an ecological, and not merely a social and cultural, whole. See Braudel, *Das Mittelmeer und die mediterrane Welt in der Epoche Philipps II.*, 3 vols. (Frankfurt am Main, 2001).

⁹ On the differences between American and European environmental historiography, see Christof Mauch, ed., *Nature in German History* (New York, 2004); Franz-Josef Brüggemeier, *Das unendliche Meer der Lüfte: Luftverschmutzung, Industrialisierung und Risikodebatten im 19. Jahrhundert* (Essen, 1996); Brüggemeier, *Blauer Himmel über der Ruhr: Geschichte der Umwelt im Ruhrgebiet, 1840–1990* (Essen, 1992). See also the overview of research by Joachim Radkau, "Technik- und Umweltgeschichte," *Geschichte in Wissenschaft und Unterricht* 48 (1997): 479–96 and in *Geschichte in Wissenschaft und Unterricht* 50 (1999): 250–58, 356–84. See also the bibliography in Franz-Josef Brüggemeier, *Tschernobyl, 26. April 1986: Die ökologische Herausforderung* (20 Tage im 20. Jahrhundert) (Munich, 1998).

¹⁰ Alfred W. Crosby, "The Past and Present of Environmental History," *American Historical Review* 100 (October 1995): 1177–90. Crosby specifically mentions the eruption of the Krakatau volcano in 1883, the landing of a meteor in Siberia in 1908, and the appearance of cowpox in Africa.

¹¹ Examples include B. L. Turner II, ed., *The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past 300 Years* (Cambridge, 1990); Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600–1860* (Cambridge, 1995).

¹² See Rolando V. Garcia and José C. Escudero, *Drought and Man*, vol. 2, *The Constant Catastrophe: Malnutrition, Famines, and Drought* (Oxford, 1982).

¹³ Lehmkuhl, "Einleitung," 9.

¹⁴ See William Cronon, ed., *Uncommon Ground: Toward Reinventing Nature* (New York, 1995), 24: "[. . .] recent scholarship has clearly demonstrated that the natural world is far more

dynamic, far more changeable, and far more entangled with human history than popular beliefs about 'the balance of nature' have typically acknowledged. Many popular ideas about the environment are premised on the conviction that nature is a stable, holistic, homeostatic community capable of preserving its natural balance more or less indefinitely if only humans can avoid 'disturbing' it. This, in fact, is a deeply problematic assumption." Compare also Donald Worster, *The Wealth of Nature*, 158: "In Sears's day ecology was basically a study of equilibrium, harmony, and order; it had been so from its beginnings. Today, however, in many circles of scientific research, it has become a study of disturbance, disharmony, and chaos."

¹⁵ Samuel H. Prince, *Catastrophe and Social Change: Based on a Study of the Halifax Disaster* (Ph.D. Diss., Columbia University, 1920); see also Henry W. Fischer, *Response to Disaster: Fact versus Fiction and its Perpetuation: The Sociology of Disaster* (Lanham, Md., 1998), 9.

¹⁶ Gerhard Waldherr, "Altertumswissenschaften und moderne Katastrophenforschung," in Olshausen and Sonnabend, eds., *Naturkatastrophen in der Antiken Welt* (Stuttgart, 1998), 59.

¹⁷ Ibid.

¹⁸ See Kenneth Hewitt, ed., *Interpretations of Calamity* (Boston, 1983); Ian Burton, Robert W. Kates, and Gilbert F. White, *The Environment as Hazard* (New York, 1978); Susanna M. Hoffman and Anthony Oliver-Smith, "Anthropology and the Angry Earth: An Overview," in Hoffmann and Oliver-Smith, *The Angry Earth*, 1–16; F. D'Souza, "Disaster Research—Ten Years On," *Ekistics* 51 (1984): 496–99; W. I. Torry, "Hazards, Hazes, and Holes: A Critique of the Environment as Hazard and General Reflections on Disaster Research," *Canadian Geographer* 23 (1979): 368–83; Alessa Johns, "Introduction," *Dreadful Visitations*, xi–xxv; Lars Clausen and Wolf R. Dombrowski, *Einführung in die Soziologie der Katastrophe* (Bonn, 1983).

¹⁹ Kathleen J. Tierney, Michael K. Lindell, and Ronald W. Perry, *Facing the Unexpected: Disaster Preparedness and Response in the United States* (Washington, DC, 2001), 15.

²⁰ See Hoffmann and Oliver-Smith, "Anthropology and the Angry Earth: An Overview," *The Angry Earth*, 1–16; Abramovitz, *Unnatural Disasters*, 23.

²¹ See Hewitt, ed., *Interpretations of Calamity* (Boston, 1983); Anthony Oliver-Smith, "Peru's Five-Hundred-Year Earthquake: Vulnerability in Historical Context," in Oliver-Smith and Susanna Hoffmann, eds., *The Angry Earth*, 74–88.

²² See Hoffman and Oliver-Smith, "Anthropology and the Angry Earth: An Overview"; Hoffmann and Oliver-Smith, *Culture and Catastrophe: The Anthropology of Disaster* (Santa Fe, NM, 2002).

²³ See Hoffman and Oliver-Smith, "Anthropology and the Angry Earth: An Overview," 2 f.

²⁴ Ann Larabee, *Decade of Disaster* (Urbana, IL, 2000), 8.

²⁵ "Natural disasters can appear innocent, even innocuous, in the face of human-made destructive agents such as nuclear accidents, deforestation, and industrial pollution." Johns, "Introduction," *Dreadful Visitations*, xx f.

²⁶ See Stephen Robert Couch and J. Stephen Kroll-Smith, "Introduction," *Communities at Risk: Collective Responses to Technological Hazards* (New York, 1991), 1–7.

²⁷ See Möller and Clausen, "Bestandaufnahme im Bereich der Katastrophensoziologie," 109: "Das Verstehen der standortgebundenen Abhängigkeit und des historisch-gesellschaftlichen Gewordenseins von Begriff und Begreifen [der Katastrophe] ist eine Grundvoraussetzung für eine angemessene Modellbildung der jeweils von Katastrophen betroffenen Gesellschaften."

²⁸ Christian Pfister, "Vorwort des Herausgebers," *Am Tag danach: Zur Bewältigung von Naturkatastrophen in der Schweiz, 1500–2000* (Bern, 2002), 7. An excellent historical case study is found in Manfred Jakubowski-Tiessen, *Sturmflut 1717: Die Bewältigung einer Naturkatastrophe in der Frühen Neuzeit* (Munich, 1992). See also Theodore Steinberg, *Acts of God: The Unnatural History of Natural Disaster in America* (Oxford, 2000).

- ²⁹ Christian Pfister, "Naturkatastrophen und Naturgefahren in geschichtlicher Perspektive," *Am Tag danach*, 16. See also Christopher L. Dyer, "The Phoenix Effect in Post-Disaster Recovery: An Analysis of the Economic Development Administration's Culture of Response after Hurricane Andrew," in Oliver-Smith and Hoffman, eds., *The Angry Earth*, 278–300.
- ³⁰ Ueli Müller and others, *Katastrophen als Herausforderung für Verwaltung und Politik: Kontinuität und Diskontinuität* (Zurich, 1997), 5.
- ³¹ Jürgen Weichselgartner, "Hochwasser als soziales Ereignis: Gesellschaftliche Faktoren einer Naturgefahr," *Hydrologie und Wasserbewirtschaftung* 44, no. 3 (2000): 124.
- ³² See John M. Barry, *Rising Tide: The Great Mississippi Flood of 1927 and How It Changed America* (New York, 1997), 286 ff.
- ³³ See R. Eldar, "The Needs of Elderly Persons in Natural Disasters: Observations and Recommendations," *Disasters* 16 (1992): 355–58; Susanna M. Hoffman, "The Regeneration of Traditional Gender Patterns in the Wake of a Disaster," in Hoffman and Oliver-Smith, eds., *The Angry Earth*, 173–91; Elaine Enarson and Betty Morrow, eds., *The Gendered Terrain of Disaster: Through Women's Eyes* (Westport, Conn., 1998); Santi Rozario, "'Disasters' and Bangladeshi Women," in Ronit Lentin, ed., *Gender and Catastrophe* (London, 1997), 255–68; Margaret Kelleher, "Woman as Famine Victim: The Figure of Woman in Irish Famine Narratives," in Lentin, *Gender*, 240–54.
- ³⁴ See Charles F. Walker, "Shaking the Unstable Empire: The Lima, Quito, and Arequipa Earthquakes, 1746, 1783, and 1797," in Johns, ed., *Dreadful Visitations*, 113–44.
- ³⁵ See Alois Fässler, "Geburt der gesamteidgenössischen Solidarität: Die Hilfsleistungen zur Bewältigung des Bergsturzes von Goldau 1806," in Pfister, ed., *Am Tag danach*, 55–68. See also Anthony Oliver-Smith, "The Brotherhood of Pain: Theoretical and Applied Perspectives on Post-Disaster Solidarity," in Hoffman and Oliver-Smith, eds., *The Angry Earth*, 156–72.
- ³⁶ Weichselgartner, "Hochwasser als soziales Ereignis," 124. In the interim, there appears to be a reversal of the process: "Die Verantwortung wird zunehmend auf die betroffenen Anwohner, Nichtregierungsorganisationen und durch verstärkte internationale Kooperation auch auf supranationale Körperschaften übertragen," 125. See also Steinberg, *Acts of God*, xxii.
- ³⁷ Ferik Möller and Lars Clausen, "Bestandaufnahme im Bereich der Katastrophensoziologie," in Erich Plate and others, eds., *Deutsche Forschungsgemeinschaft: Naturkatastrophen und Katastrophenvorbeugung*, 108.
- ³⁸ According to Arno Borst, "Das Erdbeben von 1348: Ein historischer Beitrag zur Katastrophenforschung," *Historische Zeitschrift* 223 (1981): 529–69, it goes strongly against the modern European sensibility to accept natural disasters as a permanent feature of society and history: "Es isoliert Katastrophen in der Gegenwart und eliminiert sie aus der Vergangenheit, weil sie die Zukunft nicht definieren sollen." See also Roland Barthes's philosophical analysis of the "fait divers" ["Miscellaneous"] sections of the newspaper, where disaster news is often reported, because it fails to fit under any of the usual headings. Barthes, "Structure du fait divers," *Oeuvres complètes*, I (Paris, 1993).
- ³⁹ Reprinted in Walter Barton, *Sturmfluten und Unwetter an der deutschen Nordseeküste: Die Naturgewalten in der Presse des 17. und frühen 18. Jahrhunderts* (Bibliotheksgesellschaft Oldenburg, Vorträge, Reden, Berichte, Nr. 22) (Oldenburg, 1997).
- ⁴⁰ See the exemplary description of the 1927 Mississippi flood by the writer William Alexander Percy, cited in Barry, *Rising Tide*, 278 ff.
- ⁴¹ See Steinberg, *Acts of God*, 3–5.
- ⁴² See Niklas Luhmann, "Risiko und Gefahr," *Soziologische Aufklärung*, Bd. 5: Konstruktivistische Perspektiven (Opladen, 1990), 131–70; Luhmann, *Soziologie des Risikos* (Berlin, 1992); Michael Makropoulos, "Möglichkeitsbändigungen: Disziplin und Versicherung als Konzepte zur sozialen Sicherung von Kontingenz," *Soziale Welt* 41 (1990): 407–23.

⁴³ See C. Rommel, *Probleme der Hochwasser- und Überschwemmungsversicherung* (Zeit- und Forschungsfragen der Versicherungswirtschaft, Heft 6) (Hoffnungsthal, 1950); Wilhelm Schaefer, *Urkundliche Beiträge und Forschungen zur Geschichte der Feuerversicherungen in Deutschland* (Hanover, 1911); Franz Büchner, "Versicherungsgeschichtliche Betrachtungen zum Begriff 'Gefahrgemeinschaft,'" *Zeitschrift für die gesamte Versicherungswissenschaft* 8 (1987): 579–85; Claudia Kalenberg, *Zur Versicherbarkeit von Hochwasser- und Überschwemmungsschäden*. (Schriftenreihe des Fachbereichs Versicherungswesen der Fachhochschule Köln, Bd. 14) (Karlsruhe, 1998).

⁴⁴ For an introduction to the numerous attempts to provide the study of events with a social and discursive framework, see the excellent collection by Andreas Sutar and Manfred Hettling, eds., *Struktur und Ereignis* (Geschichte und Gesellschaft, Sonderheft 19) (Göttingen, 2001).

⁴⁵ See, for example, G. A. Starr, "Defoe and Disasters," in Johns, ed., *Dreadful Visitations*, 31–48.

⁴⁶ Mike Davis, *Ecology of Fear: Los Angeles and the Imagination of Disaster* (New York, 1998). See also Stephen Keane, *Disaster Movies: The Cinema of Catastrophe* (London, 2001).

⁴⁷ See Ronit Lentin, *Gender and Catastrophe* (London, 1997).

⁴⁸ Philip Ethington and Eileen McDonagh, "The Eclectic Center of the New Institutionalism: Axes of Analyses in Comparative Perspective," *Social Science History* 1995 19(4), 467–77; see also the special issue on "Neue Institutionsökonomik als Historische Sozialwissenschaft," *Geschichte und Gesellschaft* 27, no. 4 (2001).

⁴⁹ See Erich Angermann, "Challenges of Ambiguity: Doing Comparative History" (German Historical Institute, Washington, D.C., Lecture Series No. 4) (New York, 1991).