

# Chapter 1

## Understanding Disasters: An Analysis and Overview of the Field of Disaster Research and Management

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Since the 1950s, disaster research has developed into a vast field of study, involving disciplines such as engineering, geology, meteorology, geography, sociology, psychology, and anthropology—just to name a few. A transdisciplinary field of emergency studies has emerged which even is claimed to have an independent status as a discipline of its own (Jensen 2010). In developing a cultural psychology of disaster, we position ourselves within this transdisciplinary field, initially by providing an overview of key issues. The following chapter will introduce current disaster research and discuss the potential advantages and pitfalls of each approach. Any analysis of such a complex, multifaceted, dynamic field is necessarily selective; we place special emphasis on concepts and tendencies that are relevant to formulating a cultural psychology of disaster. Important questions throughout this process include: How is the category “disaster” demarcated and construed, and what implications follow? How do the various approaches understand human–nature relations? How are “nature” and “human agency” perceived? How are historical and sociocultural contexts accounted for?

To offer an overview and orienting framework, the chapter begins with a brief introduction to disaster definitions and prevalent paradigms. We then discuss the key concepts of vulnerability, resilience, and risk with regard to their various meanings in distinct fields as well as their analytical potentials and pitfalls. An outline is provided of how disasters can be understood as occurring at the nexus of humans and nature. This covers such issues as society–environment interactions, human adaptation to hazardous environments, and implications of social, cultural, and political frames

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of the category “disaster” itself. In the final section, we approach the issue of coping more closely, examining professional and nonprofessional ways of “managing” disaster and the interrelation between expert cultures and “local knowledge.”

## 1.1 Introductory Review of Predominant Discourses

Any definition of a problem predetermines possible strategies for its solution. Therefore, examining different definitions of disaster can provide a useful framework to map the variety of approaches and should also reveal common patterns of hegemonic understandings. As the following examples illustrate, definitions of disaster vary over time between theorists, researchers, practitioners, and policymakers as well as within discipline-based approaches and across disciplines.

FEMA	“[A] disaster is commonly defined as a nonroutine event in time and space, producing human, property, or environmental damage, whose remediation requires the use of resources from outside the directly affected community.” (Lindell et al. 2006, p. 7)
UNISDR	“[A disaster is] a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. Comment: Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences. Disaster impacts may include loss of life, injury, disease and other negative effects on human physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, social and economic disruption and environmental degradation.” (UNISDR 2009, p. 9)
Sociology	“[A disaster is] an event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented.” (Fritz 1961, p. 655)
Sociology	“A disaster is a social situation characterized by nonroutine, life-threatening physical destruction attributed to the forces of nature, regardless of what other factors may seem to be involved.” (Stallings 2005, p. 263, italics removed)
Geography	“A disaster occurs when a significant number of vulnerable people experience a hazard and suffer severe damage and/or disruption of their livelihood system in such a way that recovery is unlikely without external aid. By ”recovery” we mean the psychological and physical recovery of the victims, and the replacement of physical resources and the social relations required to use them.” (Wisner et al. 2004, p. 50)

- Anthropology “[A disaster is] a process/event combining a potential destructive agent/force from the natural, modified, or built environment and a population in a socially and economically produced condition of vulnerability, resulting in a perceived disruption of the customary relative satisfactions of individual and social needs for physical survival, social order, and meaning.” (Oliver-Smith and Hoffman 2002, p. 4)
- Psychology “[A disaster is] a potentially traumatic event that is collectively experienced, has an acute onset, and is time-delimited; disasters may be attributed to natural, technological, or human causes.” (McFarlane and Norris 2006, p. 4)

Disaster management agencies such as the US Federal Emergency Management Agency (FEMA) or the United Nations International Strategy for Disaster Reduction (UNISDR) offer rather practical definitions, demarcating a disaster as a nonroutine or disruptive event characterized by damage and losses that exceed the coping capacities of the affected communities and thus require external assistance or outside intervention. Similarly, a long tradition of disaster sociology has centered on disasters as interruptions of community functioning, an approach that is exemplified by Fritz’s (1961) influential definition. Decades later, another constructionist strain of sociological disaster research emerged. As represented by Stallings (2005), authors in this tradition highlight the profoundly social nature of disaster. Framing something as disaster, they argue, always involves the demarcation of certain occurrences as disruptive or nonroutine events and the social processes of interpreting causalities.

Yet another influential understanding was formulated in the seminal publication *At Risk* by the geographers Blaikie et al. (1994, 1st ed.) and Wisner et al. (2004, 2nd ed.). Their differentiation of hazard from human vulnerability and their definition of disaster as the conjunction of both elements resonated far beyond the disciplinary borders of geography. For example, their approach strongly influenced the anthropologists Oliver-Smith and Hoffman (2002), who based their definition of disaster on Blaikie et al. (1994) while also adding a constructionist or relativist twist: that is, similar to constructionist approaches in sociology, Oliver-Smith and Hoffman’s conception of disaster involves a cultural framing of the occurrence, in this case linked to *perceived* disruption. As a last example, we have selected a deeply psychological definition of disaster: Sociologists such as Fritz (1961) are concerned with community functioning, whereas psychologists such as McFarlane and Norris (2006) focus on individual functioning and thus the potential for mental health to be damaged by a disaster.

The discipline-based character of these definitions is apparent, but despite their differences they share a common understanding of at least four aspects: (1) The destructive character of an occurrence serves as a constitutive element, (2) the occurrence is categorized as a disruption to normality, (3) disaster is defined in relation to time, commonly as an event but sometimes as a process, and (4) the destructive and disruptive character of the occurrence is often linked causally to an element of dysfunction or overstrain, necessitating external assistance.

**Table 1.1** Development of Disaster Paradigms (Based on Hilhorst 2007)

	Hazard (1950s–present)	Vulnerability (1980s–present)	Environment (1990s–present)
Casualty	Nature Biophysical casualty	Human Social and structural casualty	Human–nature Complex casualty
Temporality	Singular event Emergency	Process and structure Contingency	Process Long-term interaction
Policies	Technocratic disaster mitigation Emergency management	Risk management Vulnerability reduction	Risk reduction

Definitions not only specify disaster as a category of occurrence (or process) but also distinguish certain types of disaster according to their agent phenotypes; generally, a triple distinction is made between natural, technological, and social or human-induced hazards. Within the category of “natural hazard,” Wisner et al. (2004) suggest six subcategories: famine, biological hazards (epidemics), floods, coastal storms, earthquakes, and volcanoes. Technological hazards include threats such as the release of toxic substances or explosions. Social hazards, by contrast, entail “willful attacks,” civil conflict, or war. Reflecting increased attention to human–environment interaction, a fourth category of “socio-natural hazards” is emerging. It refers to seemingly natural hazards such as floods, landslides, or drought, which are now being recognized as anthropogenic, because the probability of these hazards increases due to human use of natural resources (UNISDR 2009).

This hazard-centered typology has been supplemented with or replaced by other distinctions, such as scope of disaster impact, speed of onset, duration, the size of the affected area, and social preparedness of the affected community (see, for example, Barton 1969; UNISDR 2009). According to these criteria, earthquakes are, for example, classified as sudden onset events of short duration, usually affecting a relatively small geographic area (UNISDR 2009).

**Shifting Perspectives on “Natural” Disaster** Across these different perspectives on disaster, scholarly and applied disaster discourses have followed broader disciplinary, practical, and policy developments. A rough sketch of shifting paradigms therefore provides another helpful orientation framework with which to navigate through the various approaches to disaster research. Following Hilhorst (2007), we identify three major paradigms in Western—and globalized—disaster research and management: the technocratic, hazard-centered approach; the vulnerability approach; and the mutual constitution approach (Table 1.1). Although these paradigms can be associated with specific periods of scholarship, they have not replaced each other sequentially but rather coexist and interact.

The field of disaster research came into being after World War II. Rooted in the scientific context of that time, these early approaches were technocratic in character and based on positivist assumptions (Jigyasu 2002). The understanding of disasters centered on geophysical hazards as external forces that attack communities and cause “natural” disasters. “Natural” hazards were typologically classified as geographical,

geological, or meteorological and rendered predictable with measuring and monitoring techniques developed by the corresponding sciences of geology, meteorology, or engineering. According to this paradigm, appropriate disaster management and engineering structures could enable societies to prevent or ameliorate disaster (Jigyasu 2002). Scholars perceived failed attempts in terms of motivation to improve these efforts, striving for an ideal of control (Hewitt 1983).

However, the idea of technocratic control was soon supplemented by a behavioral approach. In his 1942 dissertation on flood management in the USA, Gilbert White warned against an overreliance on “structural,” technocratic efforts and advocated adaptive or accommodative, “nonstructural” adjustments. He argued for behavioral changes rather than attempts to control flooding; people should receive training in proper disaster response behaviors and be able to anticipate and control the onset of a disaster situation. White (1986 [1942]) famously declared: “Floods are ‘acts of god,’ but flood losses are largely acts of man” (p. 12). By drawing attention to the element of human agency in disaster prevention, White’s behavioral approach introduced a social element into science- and technology-based disaster management—an element that became a central focus of the vulnerability paradigm that followed.

The vulnerability paradigm criticized previous research for being technocratic and hazard centered and attempted to amend these shortcomings by highlighting the political–economic nature of disaster (e.g., Hewitt 1983; or later Blaikie et al. 1994; Wisner et al. 2004). The cause of disaster was no longer attributed to external forces of nature but rather to socioeconomic conditions and the distribution of access to resources (Hewitt 1983). Scholars have criticized the hazard perspective for failing to explain why some hazard agents develop into disasters, while others do not, or why disaster affects some people more severely than others. These new approaches indicate that biophysical processes may unfold as harmful events, but that their destructive impact actually results from people’s vulnerabilities, such as unsafe settlement locations, inadequate housing, or fragile livelihoods. Through the concept of vulnerability, researchers turned their focus to the social factors that lead to disaster and which are (re)produced by social, economic, and political processes (Wisner et al. 2004). This shift in emphasis has meant that “natural” disasters are no longer understood as a singular, sudden-onset event caused by external forces but rather as something deeply embedded in “normal,” everyday life and its socioeconomic structures (e.g., Hewitt 1983; Wisner et al. 2004, 2012).

The applied field of disaster management adopted the vulnerability paradigm in its own way: Under the banner of risk management, programs began to integrate preventive aspects of vulnerability assessment and reduction. Participatory approaches became a trend and post-disaster communities were encouraged to conduct their own hazard and vulnerability analysis (HVA) in order to develop and implement reduction measures for the future. These programmatic attempts necessarily reduced vulnerability to the microlevel of communities rather than tackling its root causes at a macrostructural level.

However, in the 1990s there was an increasing demand for the integration of a development perspective in disaster research and management. Critics, such as Lewis (1999), argued that vulnerability reduction should not only be part of post-disaster interventions but also be integrated into any development effort. Furthermore, these critics highlighted the fact that development policies did not necessarily lead to a reduction in vulnerability because conventional development was equated with economic growth or the rationalization of bureaucratic institutions (McEntire et al. 2002). An alternative understanding of “development” or “invulnerable development” (McEntire et al. 2002) was therefore proposed to integrate vulnerability reduction on a structural level, for example, by considering environmental aspects or settlement patterns.

Increasingly, these approaches addressed questions such as what development should look like if it incorporates sustainable risk reduction and what implications does this have for people’s relationships to natural resources. These were precursory developments to the third disaster paradigm, which treats disasters as complex interactions between nature and society (Hilhorst 2007; this is often discussed in the context of human-induced climate change; for example Brown and Westaway 2011; Pelling 2010). In the discourse of disaster management, this shift has been reflected in the emergence of the claimed new category of “socio-natural hazard” (UNISDR 2009). Fundamental to this third paradigm is a refusal to see humans and nature as two distinct categories. A focus on nature as the decisive agent has given way to the concept of an environment shaped by human action or, one step further, to the idea of a socioecological system (SES) which is a biophysical–social combination of society and environment. Susceptibility to disaster is then understood as societal (mal)adaptation to hazardous environments or as a question of the resilience of SESs (Pelling and Manuel-Navarrete 2011). In addition, Hilhorst (2007) identifies complexity itself as a further characteristic of this third paradigm. In contrast to the relatively simple causalities within the vulnerability paradigm, society–environment relations are not only understood as interactive but also increasingly deemed to be chaotic and unpredictable.

In summary, recent hegemonic understandings have increasingly questioned the naturalness of “natural” disaster. The term “natural disaster” has thus been criticized for neglecting the role of human agency in disasters (Hewitt 1997; Bolin and Stanford 1998). Alternatively, Bolin and Stanford (1998) suggest understanding disaster as a conjunction of processes that “emerge or develop out of the interactions of environmental forces with the particularities of human settlements and the capacities of people in those settlements to deal with the consequences of those forces”. While the vulnerability paradigm emphasizes the human side of disaster and focuses on the question of social and political inequalities, the environmental paradigm makes the human–nature relationship central and eliminates the binary of humans and their environment. The environmental paradigm also changes the analytical time frame of disaster; earlier notions of disasters as singular events have been replaced by a process-oriented understanding that highlights historical context. Accordingly, the processes of coping with disasters cannot be confined to the post-disaster situation

but are rather embedded in a broader backdrop: “It is the pre-disaster conditions that mainly affect a society’s ability to cope with hazard; it is its reconstruction operations that largely determine the effects of subsequent events” (Bankoff 2003, p. 157).

With the concept of vulnerability, the causes of disasters are rooted in social factors; from the environmental perspective, disasters are embedded in a constant process of human–environment interaction.

## 1.2 Key Concepts in Disaster Research and Management

No scientific or management-based discussion of disaster today could avoid the key concepts of vulnerability, resilience, and risk, which we will discuss in the following section. A focus on vulnerability reflects the change of paradigm in the 1980s, while resilience and risk did not achieve widespread resonance in disaster discourse until the following decade. As with many important concepts in widespread academic use, these three terms are subject to contrasting conceptual and definitional interpretations throughout the various disciplines and institutions of practice. However, a thorough, interdisciplinary review of these terms would exceed the scope of this section; accordingly, we have chosen to focus on prominent definitions from the fields of disaster management and research. To cover the disaster management perspective, we refer to definitions developed by experts under the umbrella of UNISDR (UNISDR 2009). To address the research literature, we draw on the work of at least one prominent advocate for each key concept. As all three key concepts also appear in psychology, we conclude this section with a short examination of their use in the psychological literature.

### 1.2.1 *Vulnerability as Susceptibility to Harm*

The rise of the vulnerability concept in disaster studies began in the 1980s and it now occupies a key role in many research and management approaches.<sup>1</sup> The vulnerability paradigm symbolized the shift from a hazard-centered understanding of disaster to a more sociopolitical view—a change from disaster reduction as a matter of technological potency to one of human responsibility. By emphasizing social, political, and economic conditions, the vulnerability paradigm led to a politicization of disaster. To fight the causes of disaster, the vulnerability approach stresses the necessity of deep-rooted (global) social change (more or less tied to a shift in the human–environment relationship). However, in the everyday practice of disaster management, actors tend to address vulnerability reduction on a small scale and most often adopt technical approaches to finding solutions.

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<sup>1</sup> For an exhaustive account of vulnerability in disaster research and management, see Cutter (1996), Weichselgartner (2001) or Villagrán de León (2006).

UNISDR (2009) experts define vulnerability as “characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard” (p. 30). By this definition, vulnerability is a precondition to disaster, with its relation to hazard defined as susceptibility. Accordingly, vulnerability exists independently of actual exposure and can vary within communities and over time. The United Nations experts elaborate:

There are many aspects of vulnerability, arising from various physical, social, economic, and environmental factors. Examples may include poor design and construction of buildings, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, and disregard for wise environmental management. (UNISDR 2009)

Technocratic and planning-related concerns prevail in this explanation, while social aspects are reduced to matters of cognitive and rational preparedness. Issues of socioeconomic distribution, for example, those that Hewitt (1983) highlights in his fundamental critique, could theoretically be read into this definition, but they are far from central. Instead, an inclination toward the paradigm of environmental management and environmental responsibility is conspicuous.

Similar to the UNISDR, FEMA authors Lindell et al. (2006) define vulnerability within the traditional framework of emergency management. They differentiate between hazard exposure, physical vulnerability, and social vulnerability as pre-impact conditions. Physical vulnerability refers to the potential of “adverse physiological changes or damage” and can refer to people (human vulnerability), other living beings and plants (agricultural vulnerability), or buildings (structural vulnerability). Social vulnerability, in contrast, is defined as the “potential for these extreme events to cause changes in people’s behavior” (Lindell et al. 2006, p. 175) and can be further categorized as psychological,<sup>2</sup> demographic, economic, or political. Social vulnerability is determined by more or less structural deficits in “psychological resilience, social network integration, economic assets, and political power” and is distributed unequally among populations and geographic regions (Lindell et al. 2006, p. 77). The authors thus offer a rather simplistic distinction between physical vulnerability creating physical impact and social vulnerability causing social impact. They ignore any interrelation between social and physical processes—such as the social causes of physical destruction or casualties—and thereby do not match the insights provided by other understandings of vulnerability.

As representatives of the political vulnerability approach, Wisner et al. (2004)<sup>3</sup> conceptualize vulnerability as a complex and intertwined web of conditions and

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<sup>2</sup> With respect to our goal of developing a cultural psychology of coping with disasters, it is worthwhile to mention that Lindell et al. (2006) define psychological vulnerability with reference to psychological coping theory following Lazarus and Folkman (1984; see Sect. 2.2.1). Psychological vulnerability is defined as a deficit in emotion-focused coping skills (“personal fragility”) and problem-focused coping skills (“rigidity”). Furthermore, when combined with hazard exposure, psychological vulnerability is also considered a predictor of posttraumatic stress disorder (PTSD).

<sup>3</sup> In the following discussion, we refer to the second edition of *At Risk* by Wisner et al. (2004), even though the core concepts were already elaborated in the first edition by Blaikie et al. (1994).



deliberately emphasize the socioeconomic and political causes of disaster in their Pressure and Release (PAR) model. With PAR, the authors offer a three-stage causal model: Underlying any vulnerability are root causes of an economic, demographic, and political nature, including power distribution, gender relations, and ideological structures; but only the dynamic pressures of macro-forces and inadequate informational resources translate these root causes into the unsafe conditions that reflect the actual vulnerability of a particular population. These conditions are considered unsafe with regard to the physical environment, local economy, social relations, or public institutions. How this structural situation progresses into an actual disaster is explained using PAR's complementary Access model. The authors are particularly concerned with the unfolding of vulnerability at the microlevel of individuals and households, including dynamics of disaster impact, coping strategies, and the interactions among different actors involved. The model centers on livelihood as the foundation of ordinary existence and thus emphasizes people's access to material, social, and political resources. A lack or the uneven distribution of resources is a critical factor that determines the scope of vulnerability:

[V]ulnerability located at the centre of the triangle [of political, social, and economic structures], ultimately reflects people's position in society (not only poverty) as a consequence of their ability or inability to secure access to a large, resistant and sustainable set of resources. (Wisner et al. 2012, p. 27)

The strength of the Access model lies in its socioeconomic emphasis at the microstructural level. However, this strength also turns out to be the model's weakness because it inclines toward economic reductionism, for example, when "social relations" are predominantly qualified in terms of economic or barter relationships. Similarly, it does not sufficiently account for the element of human agency, even while integrating it conceptually. By focusing mainly on economic and technological structures and by offering a causal and deterministic framework, both models fail to integrate the complex interactions between people and their changing environments. Human agency and interactions cannot be reduced to simple and predictable causal relations. Any deterministic framework will thus fall short of capturing and explaining the actual dynamics of disasters and disaster coping. The collapse and reconstruction of a house, for example, can be calculated and projected in economic and physical terms, but such a framework elides important sociocultural and psychological elements that mediate the disaster experience and recovery. Wisner et al. (2004) acknowledge their own shortcomings in integrating subjective experience, agency, and meaning and call for complementary approaches that necessarily rely on qualitative rather than quantitative research.

In general, the pitfalls of the political vulnerability approach lie in its understanding of vulnerability as encompassing elements of both victimhood and responsibility. The notion of victimhood particularly is apparent in vulnerability approaches that study certain "vulnerable groups" or even entire "vulnerable regions." The idea of "vulnerable groups," in particular, has been criticized for neglecting the fact that structural categories such as gender, race, immigration status, ethnicity, religion, and health status depend on specific societal and situational contexts (Wisner et al.

2012, p. 22). Vulnerability should always be seen in relation to a particular hazard and situation rather than attributed to static, essentialist factors; it is constantly (re)produced rather than structurally determined by physical and social conditions. A second point of criticism is derived from the way in which these approaches risk reproducing marginality by reducing “the vulnerable” to victims and downplaying people’s capacities and agency. Bankoff (2003) argues that the vulnerability paradigm labels large swathes of the globe, for example, Southeast Asia, as underdeveloped, dangerous, and universally afflicted with disease, poverty, and disaster. The inhabitants of these regions are perceived as inferior, uneducated victims who need Western medicine, investment, preventative systems, and especially Western expertise to cope with these conditions. As Bankoff suggests, vulnerability often implies the responsibility of outside, expert knowledge to intervene and “help” as a counter to victimhood. However, a new understanding of responsibility has emerged in the discourses of climate change and development policy: Emphasizing the anthropogenic character of many disasters, vulnerability is understood as calculated self-destruction embedded in the human–environment relationship. Pessimism also prevails with a predicted global average increase in vulnerability that will lead to not only more disasters but also disasters with a greater impact (see McEntire et al. 2002; Lewis et al. 2011).

Thus, the concept of vulnerability refers to both a technocratically understood potential to be harmed and a socioeconomic susceptibility to the impact of hazards. Alexander (1997) suggests a more nuanced understanding of forms of vulnerability in order to distinguish between different ways in which people are potentially affected. He offers a typology of six distinct expressions of vulnerability, for example, the “total vulnerability” of the poor, who live in generally precarious conditions where disaster poses only one challenge among many others, in contrast to the “technocratic vulnerability” of the rich, who experience disaster as material loss but not as a matter of survival (and even their material losses are often covered by insurance).

### ***1.2.2 Resilience as Adaptive Capacity***

Some approaches to vulnerability already integrate adaptive capacity even if this is simply to recognize when it is absent. For Wisner et al. (2004), vulnerability exists when people in certain situations do not have the adequate capacity “to anticipate, cope with, resist and recover from the impacts of a natural hazard” (p. 11). Capacities are thus introduced as a positive counterpart to vulnerability, which has been criticized for its inherently deficit-oriented perspective, especially in the victimhood construction of vulnerable groups. In order to incorporate the coping capacities of various groups and individuals, scholars have established “resilience” as a new key concept to shift the conversation to more positive terms. However, like vulnerability, resilience is a word that has been imbued with many different meanings.

Resilience actually originates from physics to describe the capacity of a material or system to return to a state of equilibrium after being deformed or perturbed. The term was adopted more recently in the social sciences as a metaphor to describe the adaptive capacities of individuals, communities, and larger societies (Norris et al. 2008). For example, disaster experts under the umbrella of UNISDR define resilience as:

[t]he ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions. (UNISDR 2009, p. 24)

The psychologists Norris et al. (2008) describe resilience “as a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance” (p. 130). Resilience becomes a factor in cases where a stressful event causes change: “Pre-event functioning” undergoes a crisis and experiences transient dysfunction. With resilience, however, the situation can be overcome through adaptive capacity and a mobilization of resources to achieve “post-event functioning” adjusted to the new environment. In contrast, vulnerability leads to persistent dysfunction. Building on this understanding of resilience, the authors develop a model of community resilience to describe the process of successful collective adaptability based on access to economic resources, relevant information, and relationships (in the sense of social capital; for further information, see Sect. 2.4.4).

Comparing the two definitions, it is clear that resilience always refers to something positive: either the ability or capacity to achieve the positive outcome (UNISDR) or the process by which these capacities are successfully exercised. Furthermore, both definitions relate resilience to successful adaptation. According to UNISDR experts, resilience can potentially involve resistance toward, absorption of, accommodation to, and recovery from adverse effects; therefore, it includes mitigation, containment, and/or coping. However, Norris et al. add a further distinction: If the people affected are successful in blocking a disturbance entirely, altogether preventing a crisis or a decrease in functioning, then the authors use the term resistance. Resilience, in contrast, describes a relatively successful navigation of a crisis. The concept of resilience draws its strength from expanding the analytical perspective and, therefore, disaster management strategies as well to include the possibility of a more or less successful encounter with a disaster (rather than implying that risk reduction means the nonoccurrence of a disaster; McEntire et al. 2002). A third commonality is that both approaches share an understanding of resilience as the self-organizing capacities and crisis management potential of communities or whole societies, which can develop and expand by learning from previous disaster experiences or improving risk reduction measures (UNISDR 2009; UNISDR 2004). The idea of resilience thus accounts for capacities endogenous to the community itself which the community can control better than macrostructural elements or the root causes of vulnerability (see Wisner et al. 2012).

However, the two definitions presented here differ in their relations to resilience: While the UNISDR definition frames resilience in terms of disaster hazards, Norris

et al. formulate a much less specific understanding of resilience (and community resilience) as a process of adaptation to disturbance. This is similar to the interpretation of resilience in SES approaches such as climate change or more generally environmental change research (see Cote and Nightingale 2011; Pelling 2010; Brown and Westaway 2011). According to these approaches, “[r]esilience refers to the ability of a system to absorb disturbance without flipping into another state or phase” (Cote and Nightingale 2011). Resilience thus signifies the absorption of comprehensive systemic change.

Especially in comparison to vulnerability, the construct of resilience tends to lack specificity. Resilience usually represents a general improvement of adaptive capacities, whereas vulnerability relates to a particular event. In the model presented by Wisner et al. (2004), this point applies especially to the progression from vulnerability to “unsafe conditions” or “fragile livelihoods and unsafe locations” (Wisner et al. 2012), although even here the “root causes” remain relatively unspecific.

However, the processes set off by disasters are vast and include social changes beyond those related to hazard. The breadth of the changes can only be captured by a general concept such as resilience and adaptive capacity. If, for example, gender relations, power relations, forms of governance, or religious spirituality change, it is important to find out whether the community’s resilience improves. Resilience would then serve as a criterion for risk reduction-oriented development policy. However, resilience has developed into a general and rather fuzzy concept which is not able to carry the weight of its multiple associations and uses. To counter this, researchers should account for the actual capabilities of people (Sen 1992) in disaster-prone areas, specifically their opportunities and abilities to attain desired and valued outcomes in the specific context.

The notion of resilience relativizes the anomalous nature of catastrophe and its responses. On both, the individual and community levels, academic discussions of resilience and adaptive capacities focus on preconditions for and processes of coping with enormous suffering in extreme situations. In contrast to the Western discourse that separates disaster from the rest of daily life, the resilience approach does not distinguish these cases qualitatively from other human and social experiences.

### ***1.2.3 Risk as a Motivator for Prevention***

Although the key concept of risk includes a general shift toward prevention, the paradigm of risk places much more responsibility on the individual and community levels than the structural paradigm of vulnerability. Across the disciplines and especially among applied and non-applied research approaches, the fundamental understanding of risk varies dramatically. Even though most risk researchers would agree that “risks are objective, subjective as well as socially constructed” (Zinn 2010, paragraph 13), the relative importance of the elements in this triad remains a matter of debate.

In disaster management, risk is defined as a “combination of the probability of an event and its negative consequences” (UNISDR 2009, p. 25). It is important to

note that contrary to common usage, this definition does not equate risk with the possibility of an occurrence but rather with the consequences, the “potential losses” that are also described in technical contexts. Risk models and the scientific discourse on disaster risk reduction concentrate on “objectively measurable risk,” which is normally assessed using a hazard and vulnerability/capacity analysis captured by the formula “ $\text{risk} = \text{hazard} \times \text{vulnerability}$ ” (Wisner et al. 2004). Risk assessment then provides a basis to raise risk awareness. Based on the principle of “bounded rationality,” these authors assume that individuals take risks because they lack either understanding or knowledge (Burton et al. 1993). Disaster risk reduction is then concerned with the question of how, in the face of seemingly obvious threats, people can become better informed and change their behavior in such a way that their communities will engage in effective, independent, participatory, and sustainable prevention, or else adapt to changing environmental conditions. The adequate development of knowledge will ideally lead to disaster risk management in the communities affected (UNISDR 2004), which should also include other goals of development policy, such as sustainability, good governance, gender mainstreaming, or social justice.

The literature on risk reduction has a prescriptive character and aims to contribute to a better—that is, science-based—societal and communal approach to dealing with risk. Insofar as risk management aims to include action by the affected individuals themselves, the subjective approach to increasing risk awareness is relevant because it seeks to determine which factors influence (individual) risk awareness and how risk awareness can either be increased or adapted to an objective risk. These questions are usually examined in cognitive psychological research based on individual responses to risk situations collected with quantitative survey methods.

The corresponding field of applied research in mainstream psychology is equally concerned with risk perception and a “realist” approach to disaster management. Researchers in this area assume that there is an “objective” core of risk and try to investigate the biased, subjective perceptions of reality. Studies analyze how people’s risk perceptions and interpretations deviate from a correct understanding of “objective” risks and how this relates to their values and belief systems (Zinn 2010). Critics of this approach fundamentally object to the cognitivist and individualist core of psychological risk-perception studies and highlight its insufficient consideration or simplistic reduction of human lives. Most studies are based on a normative ideal of the human subject as one who makes cognitive and rational decisions. If subjects of empirical studies then—necessarily—fail to measure up to this ideal, they are found to be acting upon biased perceptions and distorted mental processing. The goal then becomes challenging these biases, for example, through methodology or science, so that the ideal of rational calculation can lead to the “right” undistorted decisions. This rationalism, however, has been unmasked as biased itself and is in need of improvement; recently, the cognitive, rational subject has been replaced by a subject with a softer rationality that works quite successfully with heuristics (see Gigerenzer 2008; Kahneman 2011), intuition, and emotion (see Slovic and Västfjäll 2010). Slovic and Västfjäll distinguish between risk as feelings and risk as logic, whereby the former is based on instinct and intuition and the latter refers to a reasonable, scientific assessment of risk. Although intuitive reactions to danger might be reliable and effective in small-scale situations, intuition is insensitive to large losses

of life and, accordingly, is thought likely to fail in the face of natural disasters (Slovic and Västfjäll 2010).

As the following example illustrates, the distinction between subjective and objective risks is closely related to a binary opposition between laypersons with only biased and inadequate risk awareness and experts with objective “knowledge.” In a recent study, Tekeli-Yeşil et al. (2011) examined factors that improve knowledge and increase risk awareness among Istanbul residents living in areas at high risk of earthquakes. Standardized questionnaires measured two dependent variables: risk awareness, measured as knowledge about earthquakes and earthquake mitigation and preparedness, and risk perception, assessed as respondents’ judgments of the seismic risk at the location of their homes and the potential damage to their houses. In the analysis, residents’ responses were compared to scientific or expert knowledge. For example, respondents were asked to spontaneously recite mitigation and preparedness measures. Their answers were then compared to a checklist of “correct” responses extracted from disaster management manuals. In the same study, the authors also deemed risk perceptions to be generally realistic because they matched or at least did not significantly differ from “actual” or “objective” risk levels, as assessed by the Department of Earthquake Engineering at the Boğaziçi University, Istanbul. However, the researchers found that the level of risk concern, compared to other threats and concerns, was too low among less educated participants and participants of a lower socioeconomic level. They also determined that these subjects had too little knowledge of the measures they should take in terms of risk reduction. One of the authors’ main conclusions was to call for improved risk communication by the media and other stakeholders, especially with respect to mitigation and preparedness measures, and they placed their hope in the development of a general “safety culture.”

In this type of study, the biased subject or the biased community must be enlightened by “knowing” experts about the probability of impending natural hazards in order to be prepared and gain control; at the same time, scientific and expert knowledge tends to have an elevated status (Flint and Luloff 2005). Furthermore, the focus on risk perception implies that risk reduction practices are a quasi-automatic outgrowth of cognitive enlightenment. However, risk perception by no means equals risk concern: any risk that is perceived still has to be seen as relevant, for example, in relation to other perceived risks (Solberg et al. 2010). In addition, risk concern still does not imply risk avoidance or reduction practices, because hazard adjustment is related to norms and dynamics in a sociocultural context (Solberg et al. 2010).

Moreover, “[r]isk is not an objective condition waiting to be perceived by individuals or calculated by analysts” (Bankoff and Hilhorst 2009, p. 686). Risk perception itself is shaped by sociocultural processes through which certain dangers are framed as “risk” (Flint and Luloff 2005). Obversely, the cultural anthropologist Michael Bollig (2012) offers a constructionist definition of disaster risk as “the culturally and socially embedded perceptions of future possible damage resulting from a variety of hazards” (p. 36). Similar perspectives have influenced sociological risk research with a stress on the necessity of studying the construction of risk and risk estimates more closely: What becomes an object of risk, and why or why not? Which social actors undertake which demarcations of risk and non-risk, and which assessments of risk

are regarded as valid or invalid? In order to address these questions in a well-founded way, risk research must consider the political, institutional, and economic context of each situation (Tierney 1999).

The association of risk with particular assumptions of safety and control has been characterized as a distinctive feature of “modern” industrial societies, where notions of security emerge from an almost dialectical relation between science, technology, and social order (Macamo and Neubert 2008). According to Bankoff (2003), it is a Western myth to assume secure and ordinary life as a state of normality, and this myth can only be maintained by framing disasters as singular, disruptive events which are, by definition, excluded from normality. However, there are alternative ways of living with risk; instead of calculation and control, these include facing the future with a general attitude of uncertainty (Macamo and Neubert 2008). Accordingly, people have developed psychosocial mechanisms to live with uncertainty (Bankoff 2003) rather than building their worldview on the fantasy of human potency and control. If, for example, hazards are seen as frequent experiences and facts of life, then people have learned to live with these risks. Without necessarily articulating a conscious risk awareness, people have integrated practices of “risk reduction” and “disaster preparedness” into their common practices, stances, values, and “local knowledge” over centuries (Bankoff 2003). In the Philippines, for example, century-old practices buffer risks through local networks of mutual assistance (Bankoff and Hilhorst 2009). Thus, the critique of cognitive bias in risk perception studies should actually go much further: Risk perception does not by necessity correlate with risk reduction practices. Despite a failure to articulate risk awareness explicitly, people still incorporate strategies into their everyday practices that outsiders would identify as “risk reduction.” As part of an expanded approach to risk perception research, nonnormative, conceptually open approaches to risk adjustment are needed; researchers could, for example, examine how people maintain psychological, social, and economic balance despite the evident presence of a threat—or of several threats—or determine what amount of certainty people deem necessary for everyday living.

At the same time, the “objective” risks identified by experts are often reflected only minimally in political action at the macrolevel. Daily politics involve many competing issues, and disaster risk reduction rarely has a good chance of being realized. Especially in cases where risk adjustment is weighed against short- or longer-term economic benefits, policy and investment decisions are based in large part on the society’s willingness to take on risk and the perceived urgency of risk reduction. One example of this is Germany’s nuclear phaseout following the Fukushima catastrophe in Japan (see Winter 2013). A society’s relation to risk is therefore based on negotiations between various interests and positions, making risk a highly political category. What qualifies as risk and which risks demand risk reduction policies and practices should thus be investigated as a historically situated arena of social negotiation.

### ***1.2.4 Vulnerability, Resilience, and Prevention in Psychology***

The three terms introduced here not only are key concepts in the field of disaster research but also can be seen as key concepts in psychological discourse. Here, too,



the concepts have undergone shifts in meaning and interpretation, as shown in the following section.

Theory and concept building on the topic of disaster and hazard often focuses on collectives, but very similar concepts have developed in parallel in psychology to focus on the individual level. Accordingly, many similarities are evident between concepts related to disaster and theories of psychological disturbance or disease.<sup>4</sup> For example, both are explained in an equilibrium model and seen as examples of decompensation that require outside help. In clinical psychology, “vulnerability” is seen as a disposition. Originally developed to describe the emergence of schizophrenia (see Zubin and Spring 1977), the concept was expanded to explain many other psychological diseases. According to the Diathesis–Stress model, any person can cope with stress and burden until the individual threshold of vulnerability is exceeded and illness results. For the individual, pathological breakdown then interrupts normal life. An exposure to inordinate stress has a similar function to hazard in cases of disaster and in both contexts vulnerability serves as a mediating concept.

In everyday understanding and within the fields of medicine and psychology, responsibility for decompensation has shifted from nature or fate to the afflicted person himself or herself (Herzlich and Pierret 1987). Increasingly, the individual is held responsible for becoming ill by leading a lifestyle inappropriate to his or her own vulnerability. With existing illnesses, the affected person is expected to practice adequate disease management. This is disease specific and conveyed to the patient through psychoeducational techniques within the framework of behavioral medicine (see, for example, Steptoe 2012), specifically as techniques of self-control in relation to the disorder. The “preventive self” (Lengwiler and Madarász 2010) is responsible for compensating for the individual’s own vulnerability, similar to the community in community-based disaster risk management.

Vulnerability is compensated for in two different ways: Similar to the “vulnerable groups” approach, some authors presume that certain aspects of vulnerability cannot be changed—aspects that are either genetically predetermined or acquired through the individual’s interactions with his or her environment. As a static, individual trait, vulnerability is measured by an array of indicators, such as sensory, motor, and regulatory irregularities (see Levit-Binnun and Golland 2012). Interventions are then initiated as compensatory measures; people practicing disease management must learn as to how to deal with their own vulnerability. Other theorists emphasize a dynamic interplay among a variety of protection and vulnerability factors that contribute to psychological health or illness (see Muris et al. 2011), a position which is conceptually closer to a process-based, contextual understanding of vulnerability (e.g., Wisner et al. 2004). In developmental psychopathology, researchers assume that challenging situations can lead to either increased psychopathology or resilience and that the development paths of both are influenced by a complex web of individual biological and psychological factors, experiences, choices, timing, and personal developmental history (Cicchetti 2010).

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<sup>4</sup> Interestingly, Hewitt (1983) critiqued the predominant technocratic, hazard-centered paradigm of his time by comparing its conceptions of hazards with Foucault’s analysis of the social emergence and management of madness.



Similar to developments in the disaster literature, a general conception of resilience has emerged in developmental psychology. Greve and Staudinger (2006), for example, describe resilience as a constellation of fit between individual resources, social conditions, and developmental challenges or problems. Through this constellation one successfully overcomes adverse developmental conditions with the help of regulatory (assimilative and accommodative) processes.

It is considered advantageous to improve one's resilience as part of a general competence in crisis management. While risk and vulnerability are projected onto a specific threat, and prevention is oriented toward avoiding specific diseases, resilience often refers to the achievement of positively connoted states of being, such as health, well-being, or fitness. This capacity-focused concept of resilience represents a major rethinking in favor of the positive strengths and virtues within the field of psychology, embodied by the development of a "Positive Psychology" (see Lopez and Snyder 2009). This shift eschews the victimizing, passive construction of the psychological subject in favor of expanding psychology beyond the scope of illness, overstrain, and processes that end in psychopathology. The new approach emphasizes ways in which psychological health, well-being, fitness, and happiness (Diener et al. 2010) are encouraged, created, and sustained in everyday life.

At the individual level, this shift in focus leads to problems similar to those identified in disaster discourse: one "realist" conception from the culture of expertise offers self-technologies to process risks and optimize resilience. Responsibility lies in the individual to exercise prevention, actively engage in problem solving, and achieve well-being and fitness. Rooted specifically in a North American worldview (Young 2006; McHugh and Treisman 2007; Watters 2010), this approach is supported by the growing prescription of psychoactive drugs (Frances 2013). As with the international framework of disaster management, this conceptual orientation and practice has increasingly been exported throughout the world (Watters 2010).

### 1.3 Conceptualizing Disasters as a Human–Nature Nexus

A situation only qualifies as a disaster if a natural hazard causes destruction and loss in human societies; hence, natural disasters are by definition located at the nexus of humans and nature. However, as the shifting disaster paradigms indicate, understandings of the human–nature relationship and its relevance for disaster studies have changed dramatically over time. The hazard paradigm depicted disaster as a consequence of natural forces and disaster mitigation as an effort to control these forces. Its historical counterpart, the vulnerability paradigm, highlighted human agency and shifted focus from the presumed naturalness of disaster to a sociopolitical and human responsibility to maintain living conditions that reduce harmful hazard impacts and increase people's capacity to face them. The environmental paradigm, in contrast, places human–nature interaction at the causal core of disaster, refusing to attribute this complex and dynamic interrelation solely to the agency of either nature or humans. It is therefore worthwhile examining the human–nature nexus more closely.

### *1.3.1 Disasters in Environments Shaped by Humans*

Recently after an earthquake and subsequent tsunami destroyed the nuclear power plants at Fukushima, people worldwide witnessed how disasters emerge from a mutual interaction between the environment and human societies. As Luig (2012) suggests, this destructive example should put an end to debates on whether “humans” or “nature” are responsible for disasters and proved the obsolescence of the traditional Western nature/culture dichotomy. An alternative in current scientific discussion of disaster is to replace “nature” with “environment” because, unlike nature, environment is always a relational category, “a system representing a certain section of the external world to which actions and perceptions of a subject give significance” (Haltermann 2012, p. 61). Humans inhabit their environments physically and are mediated by symbols, and the manner in which they do it is embedded in specific historical and sociocultural contexts. According to this understanding, the category of environment is inherently cultural. Environment represents the external world as it is perceived and acted upon by humans from the perspective of utility (Haltermann 2012), for example, as natural resources. A strict differentiation between “human-made” or “built” versus “natural” environments is therefore misleading and should instead be viewed as a gradual distinction. Moreover, an environment is always a product and expression of political–economic processes (Bolin and Stanford 1998).

Within the fields of disaster research and management, the interaction between humans and the environment is invoked in many different ways. Some approaches contextualize the causes of disaster in the human–environment interaction in a fundamental way, in accordance with the principle that an earthquake on an uninhabited stretch of land is still an earthquake but is far from being a disaster (Tierney 2007). This understanding is based on the structural vulnerability approach, according to which a given hazard impact only becomes a disaster in the presence of vulnerability. In this view, a society as a whole can be more or less vulnerable, and this is understood as successful or unsuccessful mutuality: on the one hand, societies are better or worse in their adaptation to their respective environments; on the other hand, environments are better or worse in their responses to human activity (Hoffman and Oliver-Smith 1999). Through this evaluation of (mal)adaptation, every disaster is understood as being anthropogenic.

The UNISDR expert committee distinguishes “natural hazards” from “socio-natural hazards,” implying that only some “natural” disasters have an anthropogenic origin; in other words, “human activity is increasing the occurrence of certain hazards beyond their natural probabilities” (UNISDR 2009, p. 28). The category of disaster (or hazard) here is one which would customarily be considered “natural” (e.g., drought or flooding) but is triggered or worsened by human interaction with the environment. The human use of resources increases the risk of disaster; for example, deforestation can cause landslides or draining wetlands can lead to flooding (Tobin and Montz 1997). The entire debate on climate change and the effects of global warming falls into this category. In these cases of “socio-natural hazards,” the hazard itself already qualifies as being caused or amplified by human activity—in contrast

to the previous understanding, where human responsibility is emphasized through the concept of vulnerability. Accordingly, disaster mitigation efforts take on different forms because socio-natural hazards can be reduced “through wise management of land and environmental resources” (UNISDR 2009, p. 28).

The socioecological system (SES) approach offers yet another analytical framework. The mutuality of the human–nature relationship is conceptualized so broadly that society–environment units are its starting point for analysis. Adaptation does not refer to human change that accommodates the environment but rather to a process in which whole dynamic, systemic units adapt themselves to changes that occur over a long period of time. Changes are understood as inherently produced through the complex interrelation of subsystems and attributed neither to singular environmental elements such as hazards nor to human agency alone.

All of these approaches contextualize disaster in a broadly conceived adaptation process of humans and the social and material structures they create. However, by emphasizing different aspects, these approaches have different strengths and weaknesses. For our investigation into coping with disasters, it is especially interesting to examine how these approaches envision the relationship between human agency and the environment.

Even if the environmental paradigm offers the potential to overcome the nature–culture dichotomy, many interpretations of the approach tend toward an environmentalist line of argumentation that runs the risk of entangling itself in this hegemonic, Western thought tradition. The hazard-centered paradigm focuses in particular on technocratic control of the environment, taking the position that humans can compensate for dangerous events through the deployment of appropriate technology; catastrophes result from a failure to use adequate technologies and preventative measures (Hewitt 1983; Bankoff 2003). By contrast, current discussions on climate change and related disaster risk reduction efforts draw heavily on an environmentalist discourse, which emphasizes human moral responsibility toward “nature” and warns against the destructive potential of human action. Arguments in favor of control and nature conservation both tend to place humans in opposition to nature by stressing human agency—the difference between them is that the former equates agency to potency, while the latter is tied more to responsibility. Murphy (1994) characterized this representation of the human–environment relationship as the “plasticity myth,” because “nature” is construed as a pliable object subject to human rationality and use—an object to be manipulated, shaped, or harvested.

In contrast to these approaches, the SES approach within environmental change research conceives of society and environment together, as systems. Although it offers interesting impulses with regard to the complexity and mutuality of society–environment interactions, the conceptual framework of “systems” leans toward a mechanical view of the world. The idea of a system implies a constellation of functional and predictable relations and fails to account for the creative and unpredictable element of human agency (Hilhorst 2007). Only in recent years have environmental studies begun to expand their analyses beyond resources or infrastructure and started to address questions of perception and subjectivity (Brown and Westaway 2011).

However, entirely discarding the idea of mutual interaction in favor of human agency, as Hilhorst ultimately suggests, also misses the mark. If we take the mutuality of society–environment interaction as a starting point, then it is impossible not to recognize the dynamic interrelatedness of social structures, human agency, and biophysical environments. Not only is human agency embedded in social environments but social actors are also always embedded in biophysical environments. At the same time, forces of nature not merely are discursive constructs but also have their own agency.<sup>5</sup> The occurrence of a natural effect can impact sociocultural constructs such as when the Lisbon earthquake of 1755 caused a paradigm shift in the worldview at that time (Luig 2012). Because of this, the construction of the world or worlds needs to be conceptualized as being interrelated with extra-discursive forces. The exosemiotic agency of nature becomes apparent in hazard and disaster, but even then, it is a nature experienced through societal practices and constructs (Oliver-Smith 2002).

### ***1.3.2 Cultural Adaptation to Hazardous Environments***

Many natural hazards are systemic elements of a particular environment; the habitual presence of hazards normally leads to a situation in which societies have grown accustomed to them over time (Oliver-Smith and Hoffman 2002). This adaptation takes place on the material level, from the construction of houses to livelihood or settlement practices. For example, economic activities that generate mixed incomes, such as farming and home industries, buffer potential losses. However, social institutions can provide important flexibility in crisis response as well (Zaman 1999; Schmuck-Widmann 1996). Take, for example, the inhabitants of island chars in Bangladesh, where hazard constitutes a regular component of their livelihood strategies: floods irrigate, fertilize, and kill off pests; they make transportation routes easier to navigate; and they are a necessary prerequisite for fish to proliferate (Schmuck-Widmann 1996). It is only erosion, as a long-term effect of flooding or even a lack of flooding altogether, that becomes a problem. The example illustrates a way of life that faces not only a potential threat of hazard but also the impact of a hazard itself. Such instances of “living with disaster”—living with flood, drought, or volcanoes, as the case may be—demonstrate that a realized hazard does not necessarily lead to disaster. To what extent the impact causes damage or interrupts the “normality” of community life depends on the vulnerability of the people affected. The “living with disaster” approach (which should really be called “living with hazard”) emphasizes the relevance of vulnerability, which can be reduced through adaptation to the environment or (implicitly) increased through certain development processes (Villagrán de León 2006). In this sense, disaster is also described as a society’s inability to adapt to its environment: in “graphic ways, disasters signal the failure of a society to adapt successfully to certain features of its natural and socially constructed environment in

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<sup>5</sup> Especially within debates on the social construction of nature, constructionists have been criticized for overemphasizing the discursive while neglecting the agency of nature.

a sustainable fashion” (Oliver-Smith 1996, p. 303). Here, adaptation can take place on several different levels: economic, ecological, social, or ideological.

By referring to “cultures of disaster,” Bankoff (2003) introduces a further idea of cultural adaptation to environment. With the example of the Philippines, he shows how the long-term experience of living in hazardous environments leads to a historical–cultural adaptation process by which strategies for coping and risk reduction are developed. These strategies encompass land utilization, crop husbandry and diversification practices, mutual support systems, strategies to eliminate psychological distress, and the development of patronage relationships. Compared to the “living with disaster” approach introduced earlier, Bankoff places more emphasis on coping capacities for crisis behavior, addressing psychological aspects as well. Here, he draws on a remarkable article by the anthropologist Jon W. Anderson (1968), who already discussed “disaster-cultures” more than three decades earlier.<sup>6</sup> Bankoff agrees with Anderson’s thesis that the more chronic a threat, the more culturally normal it becomes. Experience with the manifested hazard is integrated into the conceptual system or collective cultural knowledge and transmitted from one generation to the next, for example, through myths (Frömming 2006). Through cultural transmission individuals may have knowledge about hazardous situations even prior to a personal experience of exposure (Anderson 1968). In an acute emergency situation, they can resort to these cultural tools to assess and cope with the situation. Cultural adaptation to the environment thus provides not only pragmatic strategies but also interpretative schemes and psychological tools. One could also say that disaster in all of its facets is integrated into the cultural worldview so that the emergency situation does not actually overstep the boundaries of expected normality, even if it poses a disruption to everyday routines. Within this framework, cultural strategies can be specific to one particular hazard or can also respond to a general living with uncertainty (see Sect. 1.2.3).

In the interdisciplinary field of disaster research, the outcome of this adaptive process is commonly framed as indigenous or local knowledge. It is composed of technical, ecological, and historical knowledge of practices, beliefs, values, and worldviews (Dekens 2007) and characterized by its specific familiarity with local environments and by practices developed in long-term interaction with nature and its forces. With respect to natural disasters, local knowledge can include cultural techniques on three forms: prediction knowledge, direct and sustainable protection strategies, and techniques of coping with disaster and trauma (Frömming 2006). These categories are not limited to strategies specifically aimed at risk or hazard reduction as generally applicable social norms and taboos can also play a role in local disaster risk reduction. For example, in Flores, Indonesia, there is a religious taboo

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<sup>6</sup> Anderson (1968) describes “disaster-culture” as “formulas generated by past accommodation of the culture’s conceptual schema to yet another aspect of the environment. As a basic pattern of trying to understand perceived phenomena, they are elaborations that fit both the perceptions of the phenomena and the conceptual system of the culture which once established need not be continuously generated anew in each individual but can be transmitted as accomplished facts” (p. 304).

against panic reactions. In chaotic situations, people are to follow the unconditional imperative of running away as fast as possible without stopping to look around—a cultural rule that may save lives in the case of a volcanic eruption (Frömring 2006).

The concepts of “living with disaster” and “cultures of disaster” both emphasize local knowledge as a set of available capacities and offer an opportunity to think beyond the victimization inherent to the vulnerability paradigm. However, these approaches harbor their own reductionist limitations, which Spittler (1999) analyzes and illustrates using research debates about the drought in the Sahel: In this research context, scholars went so far as to advocate a “theory of survival strategies” as a counter-paradigm to that of local vulnerability, pointing to the high degree of environmental adaptation among the nomadic populations. They presumed a well-adapted, precolonial life in which people could confront hazard agents actively and with cultural preparation (see, for example, McCabe 2002). This, however, produces a new victim construct, that is, although affected groups are active in dealing with drought, they are painted as victims of (post)colonial power relations that prevent them from drawing on their “actual” survival strategies. Spittler rejects this argument and argues that not all locally adopted coping strategies have been eliminated; some endure just as before. Moreover, he questions whether ideal models of crisis behavior could ever be applied in practice and suggests that other precolonial, macropolitical influences such as war and slave raiding also had an impact on coping with crisis. In general, one should always ask whether the construction of precolonial, well-adapted cultures reflects a romanticizing tendency by the colonial others, especially because attributes such as “closeness to nature versus cultural alienation” have a long racist tradition.

As a second major criticism, Spittler disagrees with the reduction of culture to survival. Indeed, other values play a decisive role in human responses to disaster: During the Sahel drought 1984–1985, for example, the author experienced how Tuareg families still invested their scarce resources in buying proper clothes and celebrating prophet Muhammad’s birthday in a festive way. As he put it, “living and dying with dignity counts more than survival at any price” (Spittler 1999, p. 166). In relation to coping with disaster, Wisner et al. (2004, p. 119) make a similar point that life is not only a question of survival but also a question of living well, or at least living in a way that seems worthwhile to the actors involved, such as with dignity or social cohesion.

However, beyond survival, a general question emerges concerning the relationship between adaptation to the environment and cultural practice (“doing culture”). The adaptive approach risks sliding into environmental determinism and identifying cultural practices as the direct results of ecological conditions<sup>7</sup> rather than seeing

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<sup>7</sup> The socioecological approach in crosscultural psychology operates in a similarly deterministic way. This view assumes that culture represents a group’s response to its physical environment, with certain requirements and limitations. This process produces certain technologies, social orders, and parenting styles, which then influence the development of personality. All of this has been examined through comparative correlation studies across different cultures, whereby cultural factors served as the independent variables (Whiting and Whiting 1975; Berry 1976).

those conditions as *one* influential and somewhat limiting factor. At the same time, the figure of cultural adaptation always contains a functional presumption: cultural practices are presumed to be efficient in their own terms and related to their own immediate goals—with survival as the ultimate goal. Coping is reduced to a mechanical response as if people operated with “no doubts and fears,” always knew how to react, and behaved accordingly (Spittler 1999).

Yet another argument speaks against such narrow functionality: life does not stop at disaster impact nor do other social dynamics. For this reason, people not only adapt to a trigger situation and cope with a disaster but also continue living their lives—under changed circumstances. Thus disaster coping must always also be interpreted in relation to these non-disaster-related dynamics. For example, disasters can provide an opportunity to renegotiate social power relations. The occasion of disaster thus leads to societal dynamics that, in the absence of disaster, might have played out in exactly the same way, in a different way, or not at all (Stallings 1988). Like any major societal event, interpretations of disaster offer an arena in which to contest perspectives on society (Oliver-Smith 1996). Accordingly, interpretations of disaster function not only in terms of coping with the event itself but also in terms of sociopolitical interests: Discursive negotiations of causes may manifest controversial views on society and life in general. Schlehe (2010) demonstrates how religious interpretations of the 2006 Java earthquake actually point to competing views on the present state of Javanese society; some blame the prevalence of islamization and negligence of older “Javanese” traditions, while other statements position a lack of Islamic devotion as the root cause of the disaster. In order to examine processes of coping with disaster, Hilhorst (2007) advocates using a social version of the systemic complexity approach: Multiple social actors participate in the course of the event through their actions, assessments, decisions, and feelings. In an interactive manner, new dynamics emerge, spontaneity and creativity take effect, and conflicting interests undergo negotiation.

### 1.3.3 *The Social Nature of Disasters*

Although the vulnerability paradigm successfully drew attention to the social factors of disaster, some social scientists still argue that the inherently social nature of disaster remains insufficiently recognized in disaster theory (Quarantelli 2005; Tierney 2007). In order to comprehend what these authors mean, it is helpful to return to Stallings’s (2005) definition of disaster as a *social situation* involving the *attribution* of destructive effects to natural forces. Stallings takes a constructionist standpoint by introducing socially defined causality instead of “real” causality and referring to the discursive framings of disaster. He considers the realist claim of scientific “objective” knowledge to be part of the social discourse itself.

The recent establishment of a “socio-natural hazard” category demonstrates the discursive nature of any typology, independent of its descriptive or analytical claim. That earthquakes, oilspills, and willful attacks—but not other adverse events—are all



negotiated under the category of “disaster” points to the fact that disaster discourse in research and management is guided by both political and economic interests. US disaster management, for example, emerged from the Cold War context under a perceived urgency to prepare for nuclear attacks. This led to the inclusion of wilful attacks in the framework of emergency management. Similarly, the professional field of earthquake sciences emerged in the 1970s after a series of large earthquakes in California caused national concerns about macroeconomic and security consequences (Stallings 1995). Accordingly, constructionist sociological approaches highlight the political nature of disaster definitions and disaster management. Definitions of disaster determine which crisis situations set institutionalized mechanisms of disaster or emergency management in motion and, above all, which crises mobilize relief efforts and to what extent.

In a similar vein, it is important to examine what qualifies as a disaster and under which conditions. For example, earthquakes count as hazards with the potential to cause disaster, whereas heat waves are never framed as disasters even though they can be deadly. The decisive criterion is that disaster must specifically cause damage to property (Tierney 2007). Drabek (2006) poses the related question of why tornados tend to mobilize massive relief efforts, while acquiring funds for victims of famine or the human immunodeficiency virus (HIV) normally proves much harder. What qualifies as disaster has little to do with the disaster itself but rather with its discursive treatment. Subjectively experienced suffering or physical destruction is not random, purely constructed phenomena; rather, their framing and, therefore, their effects heavily depend on the discourses surrounding them. Accordingly, the social components of these phenomena represent a powerful discursive field where actors negotiate which kinds of suffering should be recognized as supraindividual “disaster suffering,” and which should not.

Presenting an alternative to the macroeconomic bias of conventional disaster approaches, Barton (1969) introduced the psychosocial framework of “collective stress situations,” which spans a broad range of adverse situations. If “many members of a social system fail to receive expected conditions of life from the system,” Barton (1969, p. 38) suggests analyzing these situations from a perspective of collective stress. In this understanding, collective stress is conceptually linked to a collective experience of deprivation—that is, the insufficient satisfaction of human needs. Human needs and their deprivation encompass physical, physiological, and psychological aspects; collective stress situations therefore cannot be reduced to physical survival or functioning (Barton 2005). Furthermore, deprivation cannot be measured by universal standards; it depends on contextually specific definitions of normal life. People do not necessarily agree on which conditions are normal, so the author alerts the reader to potential disagreement over the recognition and demarcation of “social stress situations.” Instead of “objective” criteria and macroeconomic concerns, Barton places the collective concurrence of subjective losses at the core of his theory with full awareness of the potentially inherent contradictions in this social-subjective understanding.

The criterion of disruption to normality must be examined just as critically as the criterion of damage. Starting with the vulnerability paradigm, disaster was envisioned



as a manifestation of unequal, structurally rooted living conditions, contextualizing the seemingly singular “extreme event” in more broadly conceived socioeconomic processes. Especially in its political implications, the concept of vulnerability accounts for precarious living conditions as one form of everyday “normality,” a recognition that the hazard-centered disaster approach neglects (or, as some would say, obscures for ideological reasons). The myth of a secure and ordinary life may derive from Western hegemonic assumptions (see Bankoff and Hilhorst 2009); however, such an outlook on life requires privileged living conditions even within Western societies, because this (such a state) is only ever achieved by a small percentage of the population. Vulnerability is thus distributed unevenly.

Moreover, myths of security and control may also increase vulnerability. This can occur when societies rely too heavily on human efforts to control environmental forces; in other words, when human agency is overestimated in the society–environment interaction. As early as the 1950s, for example, Gilbert White warned against continuing to settle areas susceptible to floods and relying too heavily on hazard control with dams. This myth is also tied to a culturally specific expectation of normality (Macamo and Neubert 2008). As evidenced by the increasing importance of the risk paradigm, disaster research and management in the hegemonic discourse still strives for calculable control of the event itself or of the complex dynamics of interaction. Omnipresent disaster management or disaster risk reduction in the form of measures prior to, in tandem with, and after the hazard event intend to reduce the fear of imminent threat as much as possible. This brings us back to the question of cultural approaches to danger, whether these are negotiated through security discourses or a presumption of uncertainty—and their close ties to culturally formed perceptions of the environment. A discourse of security goes hand in hand with the fantasy of a nature tamed by humans, whose externalized Other is the unpredictable natural danger. This natural danger is a disruptive force, an exception to the fundamental norm of equilibrium. However, the same natural hazards can also be seen as regular components of nature and human life. Especially in geographic regions where certain hazards occur frequently, Anderson (1968) has suggested referring to a cultural “normalization” of threat: “Threats are omnipresent potentialities of the environment to be taken into routine account as part of the background of life” (p. 298). Approaches to disaster always reflect cultural expectations: How normal is everyday life and how predictable or uncertain are future events? How disruptive are adverse occurrences? To capture these factors, Macamo and Neubert (2008) formulated a phenomenological, cultural-relativist definition of disaster that takes as its starting point the contextual perception of “disruption and normality.” Especially for a psychological perspective on processes of coping with disaster, the issue of culturally shared expectations of the world plays a key role.

## 1.4 Professional and Nonprofessional Disaster “Management”

Turning from the conceptual issues discussed earlier, we can now focus on the applied field of dealing with disasters—or disaster “management.” We begin with a brief outline of key topics related to psychological and social reaction patterns; the

“nonprofessional” ways of responding that are discussed in disaster research. The following section introduces the highly professionalized field of disaster management, focusing specifically on its subfield of disaster mental health intervention. We end this section by elaborating on the relationship between the globalized expert culture of disaster management and the local capacities of people affected by disasters, particularly on context-specific forms of knowledge.

### *1.4.1 Psychological and Social Reaction Patterns*

Psychological disaster research has mostly been concerned with the question of mental health outcome after disaster impact (see Sect. 2.2.5). In cases where individuals demonstrated a certain level of (psychological) vulnerability, psychologists saw exposure to disaster as a trigger for trauma and other pathological stress reactions (Paton et al. 2000). They felt that they should be responsible for addressing the mental health side of these supposedly singular occurrences. Psychological studies were mostly limited to investigating traumatization after disasters (see McFarlane et al. 2009). However, researchers have increasingly explored the assumed automatic link between disaster exposure and pathological outcomes. In the context of building a “positive psychology,” the possibility of positive reactions to and growth outcomes from disaster has gained recognition (e.g., Paton et al. 2000); simultaneously, the research and intervention agenda has started to accommodate “resilience” and posttraumatic growth as new concepts.

Psychological reaction patterns that aggregate in mass behavior were a central focus of early disaster research in sociology. However, sociologists soon began debunking common assumptions about mass hysteria, personal breakdown, and antisocial behavior as “disaster myths.” All of these myths shared a negative image of humanity by which humans respond irrationally and egoistically in disaster emergencies, disregarding the law and social norms as well as potentially spinning out of control, at least from a government perspective. All of these assumptions conceptualize a disaster as an extreme event that disrupts normality and attributes victimhood and (dangerous levels of) ineptitude to the persons affected. However, as early as the 1960s, the disaster sociologist Fritz (1961) suggested a much more positive framework to understand psychosocial disaster response patterns. According to this approach, negative psychological impact on disaster survivors is reduced by their social experience of “therapeutic adjustment”:

The widespread sharing of danger, loss, and deprivation produces an intimate, primary group solidarity among the survivors, which overcomes social isolation and provides a channel for intimate communication and expression and a major source of physical and emotional support and reassurance. (Fritz 1961, p. 689)

Instead of treating social groups as potentially ungovernable masses, Fritz stresses the resourcefulness of collectivity and shared experience. Refuting the assumption of quasi-natural egoism or the disintegrating effects of disasters, other researchers in this tradition have found solidarity to be an universally shared response to crisis,

characterized by a reduction in status differences and increased generosity and helpfulness. Quarantelli and Dynes (1976), for example, found universal, cross-cultural community cooperation during the early stages of emergency, marked by a general willingness of those affected to help each other. However, this “brotherhood of pain” (Oliver-Smith 1999b) usually lasts only for a limited period of time and can tip over into conflict at a later stage.

Approaches such as the “therapeutic community” or the “brotherhood of pain” present a significant corrective to the disaster myth, but it is important to question whether they engage in myth building of their own: Both the emergency situation itself and the longer-term recovery process show evidence of both the myth and the counter-myth.<sup>8</sup> Solidarity might be followed by conflict; altruism can accompany egoistic behavior; and social disparity does not contradict heightened community experiences. It is interesting to note that although he is most often associated with his “brotherhood of pain” theory, Oliver-Smith has also offered a more nuanced perspective, for example, in his early study of a Peruvian earthquake (1979). Here, he developed a time-dependent relationship between solidarity and conflict, while also acknowledging the shifting forms of social identification within post-disaster processes. In the rescue situation immediately after the earthquake, when flight was a question of death or survival, the primary social focus was on rescuing oneself and one’s family. Only in the subsequent early post-impact period did community solidarity and cooperation prevail and status differences among survivors appear to be suspended. However, this “brotherhood of pain” did not last long—it tipped over into conflict, at the latest with the advent of external aid (Oliver-Smith 1979). Today we assume that disaster can intensify solidarity as well as conflict (Tierney 2007), and both social dynamics have become central themes in sociological (and to some degree in anthropological) disaster research. In these fields, conflict is often coupled with external aid and the sudden availability of material resources that need to be distributed. The question of fair aid distribution can become a burden on the community and lead to feelings of envy or jealousy. However, in other respects, for example, with regard to political power relations, disasters may open “windows of opportunity” for competing actors to expedite their respective agendas (Oliver-Smith 1979), potentially leading to conflict as well.

### ***1.4.2 Disaster Management Interventions***

From early on, scientific research on disaster took place in close relation to national and later with international disaster management agencies. By now, there is a global network of state and non-state agencies whose intervention strategies adhere to policies prescribed by national legal structures or, at the international level, United Nations (UN) documents.

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<sup>8</sup> The therapeutic community is most often described as a response to natural risk. Technological disasters tend to trigger more corrosive community processes “that break down the social fabric due to the ambiguity of risk” (Flint and Luloff 2005, p. 403). However, both of these assumptions lack empirical evidence (Flint and Luloff 2005).

It is a standard practice to picture disaster management as a cyclical progression of various phases or stages, also called the disaster management cycle. Most commonly, this cycle is divided into the four periods of hazard mitigation, disaster preparedness, emergency response, and disaster recovery. Mitigation seeks to prevent disaster occurrence or minimize its likelihood and impact; the construction of dams against floods is one example of such measures. According to FEMA, mitigation attempts to either “control the hazard source” and prevent damage in developed areas or else decrease potential hazard exposure through adapted settlement or construction measures (Lindell et al. 2006). If mitigation aims to avert or limit disaster impact, preparedness refers to protective measures that ensure an effective response at impact; it encompasses emergency drills or public awareness campaigns. These two categories of pre-disaster activities are complemented by two post-disaster activities: Emergency response refers to the immediate aftermath and includes rescue efforts, evacuation and first aid, the provision of emergency supplies, and the restoration of basic public services. Once the situation has been stabilized, the phase of disaster recovery is reached, sometimes referred to as rehabilitation or reconstruction. This fourth period lasts until community activities have returned to normal or to a state “as normal as possible” (Lindell et al. 2006, p. 21).

It is important to note that technocratic political strategies of disaster management are changing in response to the shifts in disaster research described in Sect. 1.1. The understanding that disaster emerges only if a hazard and vulnerability coincide has been integrated into evaluation models such as the hazard vulnerability analysis (HVA). As indicated by its name, the HVA offers communities a tool to identify potential hazards, estimate the probability of harmful events, and foresee their potential consequences for different social groups and institutions (Lindell et al. 2006). The second shift in thinking from vulnerability toward resilience finds its expression in a broader understanding of risk reduction today. Rather than responding reactively to singular disaster events and their consequences through emergency services, disaster management has developed into a continuous “total disaster risk management,” according to which appropriate measures should be integrated into each phase of the disaster management cycle in order to reduce the overall disaster risk.

As a general trend, preventative measures have gained importance in disaster management (see UNISDR 2005; Wisner et al. 2012). At the international level, the Hyogo Framework for Action 2005–2015 outlines necessary disaster loss reduction measures on the part of different sectors and actors, such as national and local governments (Lavell et al. 2012), international agencies (see Arnold 2012), disaster experts, local actors and communities (Delica Willison and Gaillard 2012), and civil society (see Thompson 2012). The framework formulates five priorities for action:

- (1) Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
- (2) Identify, assess and monitor disaster risks and enhance early warning.
- (3) Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
- (4) Reduce the underlying risk factors.
- (5) Strengthen disaster preparedness for effective response at all levels. (UNISDR 2005)

A normative character prevails throughout both older and more recent models of (total) disaster management, prescribing how societies should handle hazards (O'Brien et al. 2012). Disaster experts define what needs to be known and what needs to be done. A broad range of manuals and guidelines have been developed to foster sustainable reduction to disaster losses by building the resilience of nations and communities. In addition to disaster-specific risk reduction, the actors involved also strive to boost social and economic resilience<sup>9</sup> in order to mitigate in a more comprehensive manner the underlying risk factors (i.e., as proposed in the fourth priority of the Hyogo Framework for Action). Community-based risk management approaches that draw on “participatory” techniques enjoy special popularity. Using a variety of moderation techniques, the affected populations are integrated into the risk management process by presenting their own evaluation of the risk situation and undertaking adequate preventative and reactive measures. However, the fundamentally prescriptive impetus endures simply through the institutional framework of participatory risk management: the assertion that a risk exists which needs to be managed never comes into question. The experts’ claim to possess “objective” risk knowledge remains unquestioned and necessarily leads to asymmetrical relations between the external disaster professionals and the communities involved. As a result, the prescriptive, universally conceived, rational and expert-based approach to disaster stands in opposition to culturally sensitive, locally specific approaches to daily life and dealing with risk.

On an international level, the technical–economic, organizational, and political side of disaster management still dominates. It shapes the complex coordination of direct emergency aid in disaster responses: the long-term (re)construction of material, administrative, and economic structures as well as future-oriented risk management. This macrolevel largely draws on technical rationality. Central goals include effective planning, logistics, and coordination, often alongside political objectives such as good governance, social justice, gender justice, and poverty reduction. This practical level follows normative considerations, describing how things should be if the actors are to work successfully and effectively. By representing processes of dealing with disaster sequentially, in phases, models such as the disaster management cycle present an ideological image of orderly disaster management and successful coping through controlled actions (Dombrowsky 2005). In reality, however, there are always discrepancies between the model and the actual conditions on the ground. These can include alternate interpretations of the disaster based on local knowledge and local experience in coping with hazards, as well as local, sociocultural structures that stand in opposition to the rationality and interests of those providing aid.

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<sup>9</sup> Disaster-specific risk reduction includes approaches that demand a broad and sustainable environmental policy in the long term, as well as approaches that encompass specific policies tailored to the individual disaster. Social resilience is strengthened by human rights approaches (see Dale and Carmalt 2012), including policies for gender mainstreaming (see Acar and Ege 2001; UNISDR 2005). Economic resilience should result from sustainable livelihood approaches and poverty reduction programs, as well as social protection approaches through social insurance, assistance efforts, and social funds, provided, for example, by the World Bank (Peacock and Prater 2012).

The aid business itself has increasingly been questioned as a means of political manipulation to pursue specific, mostly Western agenda in the name of humanitarian efforts (see Arnold 2012). In response to criticisms such as these, several guidelines and frameworks have been formulated to establish standards for disaster aid (see Sphere Project 2011; ALNAP 2008), including minimum standards for the quality of humanitarian response and demands for conflict-sensitive program management. Following the basic principle of “do no harm” (Anderson 1999), these documents call for the avoidance or reduction of aid-related social conflict. However, considering the expansive distribution of material resources over the course of reconstruction efforts and the likelihood that the corresponding mechanisms of advantage and disadvantage will emerge in crisis situations, this maxim represents an enormous challenge and, in most cases, can only be followed to a certain extent. Moreover, conflict potential often increases when actors follow additional hidden or overt agenda while providing aid, an observation that has been noted with regard to some gender mainstreaming and civil rights approaches. Successful relief efforts must instead consider their own long-term effects and aim to strengthen the local economy or local structures of community self-help rather than weaken them through new dependencies (see ALNAP 2008). Another development is that donor organizations and aid agencies themselves have increased their coordination efforts through policies, such as the cluster approach which was, for example, applied in the 2006 earthquake on Java (MacRae and Hodgkin 2011; Arnold 2012).

### ***1.4.3 Interventions in Disaster Mental Health***

A significant component of humanitarian responses to disaster is the area of mental health. The various practical approaches and recommendations are closely tied to the interdisciplinary field of disaster mental health (see, for example, Neria et al. 2009). In addition, a trend toward professionalization in the field of psychology has produced a new subdiscipline of disaster psychology (see Reyes and Jacobs 2006).

The *Sphere Handbook* (Sphere Project 2011) on minimum standards in humanitarian responses to disaster outlines mental health and psychosocial support organized as a pyramid of intervention. At the top of this pyramid are specialized services provided by psychiatrists, psychiatric nurses, or psychologists. One section lower, we find basic support by nonmental health professionals such as general doctors or community workers. The broad foundation of the intervention pyramid comprises unspecific measures that lead to the activation of social networks, for example, or measures targeting general social protection. According to this model, experts from the fields of psychiatry and psychology are primarily responsible for specialized mental health-care initiatives, even though the broader scope of mental health-care intervention goes far beyond the field of the experts. The Sphere standards further suggest that psychosocial approaches should be integrated into all sectors of humanitarian aid (even in technical fields).

For a long time, the expert fields of psychiatry and clinical psychology have predominantly focused on the identification and treatment of posttraumatic stress disorder (PTSD) as an individual response to disaster (see McFarlane et al. 2009). However, along with a general criticism of the PTSD concept (see Sect. 2.2.5), researchers disagree on the significance of PTSD for public health (Van Ommeren et al. 2005). Bonanno et al. (2010) reviewed psychosocial disaster consequences and intervention programs from the individual to the community level and found a relatively low rate (below 30%) of mental health problems such as PTSD, grief, depression, anxiety, stress-related health problems, increased substance abuse, and suicidal thought among disaster survivors. Instead, the authors emphasize resilience and criticize the growing tendency toward extensive prophylactic psychological interventions in the immediate aftermath of disaster. Interventions such as critical incident stress debriefing (CISD), for example, have proven ineffective or even harmful (Bonanno et al. 2010). Debates continue over appropriate working approaches and strategies in the area of disaster response, and a fundamental consensus is still lacking (Hobfoll et al. 2007). Ager (2006) identifies four core issues for debate: How culturally appropriate are existing intervention models? Which understanding of “psychopathology” or “suffering” are they based on? What priority should be given to mental health concerns in the context of complex emergencies? How can larger populations benefit from psychosocial interventions?

An important milestone in attempts by professionals to reach a consensus occurred with the reporting of the findings of an international panel of 20 experts on the study and treatment of people exposed to disaster and mass violence (Hobfoll et al. 2007). The panel formulated five rather general essential elements of immediate and midterm mass trauma intervention: (1) promotion of a sense of safety, (2) promotion of calm, (3) promotion of a sense of self- and collective efficacy, (4) promotion of connectedness, and (5) promotion of hope. Considering the heterogeneity of disaster situations, the authors rejected the idea of drawing up specific guidelines or courses of action. The experts supported and elaborated their findings both on the individual level of coping with stress and trauma and on the level of communities and social systems. Their report offers pragmatic suggestions that avoid taking a pathologizing perspective on trauma and has since become a central reference point for many subsequent approaches.

One such approach is psychological first aid (PFA), an intervention tool for trained professionals helping children, adolescents, adults, and families in the immediate aftermath of disaster and terrorism (Brymer et al. 2006; Ruzek et al. 2007; Vernberg et al. 2008). It is considered *first* aid insofar as it can be complemented by secondary psychological assistance or other more specialized therapeutic interventions, adapted to survivors’ needs and the time frame (Ruzek et al. 2007). Based conceptually on the principles formulated by Hobfoll et al. (2007), PFA is organized into eight core actions (Brymer et al. 2006): Initial actions include establishment of contact and engagement, provision of physical safety, and efforts to produce emotional comfort and stabilization. Later actions focus on calming and reducing high arousal, numbing, or emotionality. Furthermore, the authors call on aid providers to gather information in order to identify immediate problems and current needs. Other core actions include



providing practical assistance, connecting with available social supports, disseminating information on coping, and building links to collaborative services. Finally, aid providers should educate survivors about stress reactions, adaptive coping strategies, and other opportunities to seek help. PFA offers a range of specific recommendations intended to suit individualized needs and be sensitive to situational contexts (Vernberg et al. 2008). The authors consider their approach to be “culturally informed” as well as sensitive and acceptant to different forms of communication, expression of emotions, religious orientations, and values (Brymer et al. 2006). In general, the orientation toward broad principles should encourage flexibility.<sup>10</sup>

Another practice-oriented initiative by the Society for Community Research and Action (SCRA) draws on the American field of community psychology and aims to transcend the individual perspective and focus on expert knowledge so prevalent in other approaches. The *Manual for Planning and Action to Help a Community Recover from Disaster* (SCRA 2010) reads as a “how to” manual for stakeholders willing to engage in their communities. Like PFA, the manual refers to the principles formulated by Hobfoll et al. (2007), but it is guided by basic community psychology values. It focuses on positive community action—strength, social justice, community resources, participatory action, and flexibility in multiple contexts—but neglects issues of power and social inequality. Furthermore, it fails to account for the cultural specificity of social contexts.

Thus, current approaches encourage broad, low-threshold interventions that can then provide a basis for specialized services (if necessary). The *Disaster Mental Health Handbook* of the American Red Cross (2012) recommends that psychological triage prioritize clients with risk markers, such as loss of a family member or a history of mental health issues. However, all clients and responders can benefit from PFA. If individuals are not calmed or reassured by the secondary assessment, further forms of crisis intervention or referral to a mental health provider in the community may be appropriate. A diagnosis of trauma in terms of PTSD occurs only when symptoms persist over a longer period of time—at least 1 month, according to the current Diagnostic and Statistical Manual of Mental Disorders (DSM-5) by the American Psychiatric Association.

#### ***1.4.4 Expert Cultures and Local Knowledge***

As indicated in most definitions of disaster quoted previously, outside intervention is constitutive of disaster management. The entire field is based on a distinction between affected people, victims, or survivors and external professionals. Many elements

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<sup>10</sup> Bonanno et al. (2010) regret the dearth of empirical evidence to support the effectiveness of PFA and its accompanying psychoeducational materials, citing the difficulty of conducting controlled intervention research in the aftermath of disasters as one barrier to improved knowledge. In our view, however, this critique overlooks the fact that context-sensitive flexibility is an essential component of PFA which, by necessity, stands in opposition to rigid mental health evaluation techniques that require a very high degree of standardization.



of disaster management have been globalized, for example, through UN agencies and international policies, offering a universal framework of outsider knowledge to “manage” the way people cope in their specific local contexts. While skepticism toward survivors’ response patterns prevailed in early disaster research and the vulnerability paradigm saw affected populations as (potential) victims, the key concept of resilience changed the previous paradigms because it allowed researchers to acknowledge people’s capacities and called for the integration of these resources into daily practice. In order to increase the efficiency of preventative disaster risk reduction strategies, aid practitioners began to deploy participatory methods in order to take advantage of locally available capacities. In conjunction with this process, previously neglected local knowledge (Dekens 2007; Bankoff 2003) was increasingly recognized as a valuable resource. Researchers and practitioners developed frameworks to collect systematically and analyze local knowledge (Dekens 2007), while other initiatives attempted to synthesize local and outsider knowledge in participatory disaster risk reduction programs (for example, Mercer et al. 2007, 2010).

However, even with such new developments, old assumptions persist and the relation between outside intervention and local community capacities remains challenging. Realist theoretical positions based on an understanding of risk as an objective given, assume risk reduction to be of equally objective interest to local people. Following this logic, local populations should be ready to jump on board participatory strategies that involve sharing their local knowledge in order to integrate local and scientific knowledge into a cooperative effort. However, it is important to ask whether these programs actually succeed in overcoming the traditional top-down approach to disaster risk reduction in which solutions are developed outside of the specific context to which they are applied (Mercer 2012; Riley 2009; Stirrat and Henkel 1997). Sillitoe (2010), once a pioneer of promoting indigenous knowledge in development initiatives, has become rather skeptical about the chances of harmoniously combining indigenous (or local) knowledge and scientific knowledge. The failure of such approaches may trace back to the logic behind the shift toward participation: this re-orientation was derived not only from a recognition of local capacities but also from the experience that outside interventions failed by ignoring the local context and its specific needs and conditions. Sometimes these interventions even caused harm by inadvertently altering social structures in a permanent way. The shift toward participatory approaches therefore emerged from the shortcomings of top-down logic, but not from an intention to abandon this logic altogether. As a result, the participatory approach has had little effect on the deeper level of power relations and knowledge claims. In addition, over centuries of contact colonized and marginalized groups have developed a deep mistrust toward Western promises of a better life through technology and development (Sillitoe 2010).

Paralleling these implementation challenges, the category of local knowledge itself is a matter of debate at a conceptual level—and some failures in practice might be associated with these problems. Local knowledge is always rooted in local people’s way of life, in “their culture.” The debate over understandings of local knowledge thus recapitulates larger conversations about the concept of culture. Local knowledge is not monolithic, static, or self-contained but rather heterogeneous, dynamic, and hybrid (see Schlehe 2006): Within any given “local culture,” different knowledge,

practices, and strategies exist, and not necessarily everyone agrees on their uniform expression. Specifically, like any form of knowledge, local knowledge is plural and contested. Just as nobody would claim that people's knowledge in European or North American societies has stopped evolving, local knowledge is always dynamic in nature and subject to historical processes. These processes encompass the integration of and interaction with new elements; local knowledge is thus mutable and globally intertwined (Frömming 2006). In the context of this debate, authors such as Dekens (2007) have formulated an understanding of local knowledge that is sensitive to these points of criticism and also counteracts the danger of ecological determinism and survival reductionism as discussed in Sect. 1.3.2:

A local knowledge system is composed of different knowledge types, practices and beliefs, values, and worldviews. Such systems change constantly under the influence of power relations and cross-scale linkages both within and outside the community. As such, local knowledge and practices need to be understood as adaptive responses to internal and external changes which result (or not) in disaster preparedness at local level. (Dekens 2007: VIII)

More radical critiques reject the notion of local knowledge itself, so long as it is framed in opposition to “knowledge” or “global knowledge.” By burying the specific historical and sociocultural roots of “knowledge,” this dichotomy reifies the same power hierarchy that local knowledge discourses intend to overcome (Agrawal 1995). However, the fact that Western, technically oriented solutions so often fail due to the specific challenges of sociocultural contexts provides evidence that these solutions are much less universal than people claim; indeed, ultimately they “are just as firmly anchored in a specific milieu as any other system of knowledge” (Agrawal 1995, p. 425). Questions of knowledge and power thus play a central role both for those promoting local knowledge and for those rejecting the notion entirely. Explicit articulations of local knowledge often convey indigeneness and ethnic identities and assert or seek recognition for these. In this regard, self images and ascribed characteristics (e.g., from government agencies) combine in ways that can be ambivalent, as local knowledge in terms of indigenous capacities always fuses elements of both empowerment and glorified romanticism, as we discussed in Sect. 1.3.2 with respect to a “closeness to nature.”

In order to move beyond a monolithic understanding of “locals” and “outsiders,” each with their own knowledge, and to analyze questions of power without reproducing them conceptually, it is helpful to draw on Hilhorst's (2007) actor-centered approach. This view envisions the entire field of social responses to disaster as interactions between different social domains. In doing so, she considers scholars to be actors as well, grouping them together with disaster management practitioners in one domain. Politicians and bureaucrats constitute another domain in which they propagate patterns of risk governance. Finally, Hilhorst delimits the domain of local response. Each social domain represents an area of social life in which discourses, values, commitments, and practices are shared, but inner transformation, differentiation, conflict, and negotiation also take place (Hilhorst 2007). Throughout the interactions among these various social domains, individual and institutional actors hold a range of different power positions, which occur and are reproduced in relation to material and social resources. Hence, disaster management itself represents an interesting, complex, “cultural” field of study composed of social actors pursuing

their respective agenda in a web of constant interaction (Hilhorst 2007; Hilhorst and Jansen 2010). These dynamics are subject to a wide variety of influences that we can analyze in terms of macroeconomics, politics, culture, or organizational structure, to name just a few. Examples include the competitive dynamics among aid agencies; the coordination process between large organizations or umbrella organizations and case-specific national politics; and the element of personal interaction in disaster aid.

## 1.5 Concluding Remarks

No well-grounded discussion of disaster can escape the challenge of addressing the topic's complexity. Disasters are multidimensional processes in which physical and social elements intertwine to potentially affect all aspects of human life (Oliver-Smith 1999a). Disasters involve a certain degree of collective impact but are experienced subjectively, shaped but not determined by biophysical and sociocultural contexts. A characteristic of disasters is their destructive nature, but distinctions between "crisis" and "disaster" are purely definitional, serving to advance a (political) categorization of suffering that implies different approaches and different claims to external aid. For a long time, scholars emphasized the sudden and disruptive character of disaster, locating this category of destructive events beyond normal life and, in the case of "natural" disaster, beyond human responsibility. In contrast, structural approaches have argued that disaster represents a manifestation of preexisting vulnerabilities, which express themselves as damage or loss as a result of the impact of hazards. "Natural" disasters are also considered man-made and seen as long-term processes rather than sudden, disruptive events. In the environmental paradigm, both of these elements are tied to nature once again with disaster understood as a web of complex interactions between humans and the environment (Hilhorst 2007). Vulnerability then becomes a question of whether societies are able to adapt to their environments. This last perspective places stronger emphasis on biophysical agents, but in contrast to the hazard paradigm, it frames these agents as environment rather than as independent forces of nature. In contrast to nature, the environment always represents a category tied to human beings—lived, used, shaped, and interpreted through cultural practice. Like disaster itself, coping with disaster always occurs at the nexus of society and environment, incorporating both the exosemiotic agency of the biophysical world and its human interpretations and related practices. Over a long period of time, experience with the environment contributes to a collection of specific knowledge—"local knowledge"—that people draw on as a coping mechanism in cases of concrete disaster occurrences.

Researchers representing the environmental approach may not only integrate analytical elements of structural vulnerability but also emphasize the complex and dynamic interplay of many different factors which are not limited to the role of societal structures. On the theoretical level, this implies that agency can be attributed to any number of affected or participating actors—in contrast to the vulnerability paradigm, which risks construing vulnerable groups and persons as purely passive

victims. With the shift toward resilience, a complementary perspective has emerged to focus on the capacity of affected communities and individuals to cope with crises, mitigating the potential for further disasters. Thus, societies, communities, households, or individuals are no longer seen as simply more or less vulnerable but also as more or less capable of adapting to adverse conditions. In contrast to resistance, which would entail preventing disasters altogether, resilience points to the relative physical and temporal extent of damage, and its processual character. Local knowledge has a positive connotation in the context of disaster, often equated with mitigation strategies or other forms of resilience. However, critical approaches often run the danger of interpreting local knowledge as automatically “better” for supposedly being more primordial and closer to nature. But, like any other expression of culture, local knowledge is plural, contested, historically situated in a globalized world, and articulated by specific individuals. This is precisely where we see the main value of the local knowledge discourse: it points to a plurality of knowledge resources that far exceeds the hegemonic scientific base of globalized disaster management.

A technocratic perspective has remained prevalent in recent attempts to integrate local knowledge into disaster management. Local knowledge is mostly reduced to a neat package of practical, local strategies for everyone involved to apply or dismiss in disaster risk reduction efforts. More general cosmologies such as culturally expected normality or human–nature relations are rarely addressed or even seen as obstacles to disaster risk reduction (Hewitt 2012). However, subjective experiences are shaped by the way people perceive and inhabit their worlds; cosmologies and sociocultural practices therefore represent an integral element of any coping process. A cultural psychology of coping with disaster thus requires scholars to account for the emic point of view, or rather the plurality of emic perspectives.

Furthermore, it is important to localize hegemonic disaster research. The hegemonic perspective originated under specific historical conditions and in specific regions of the world. In mainstream research, institutions in the USA have established themselves most strongly (Tierney 2007, Lindell et al. 2006). From the very beginning, mainstream disaster research developed in close connection with the demand for applicable knowledge and corresponding strategies for state, non-state, and later international institutions tasked with helping people overcome and prevent disasters. In many regards, it is therefore an applied science (Tierney 2007), showing conceptual proximity to disaster management as a form of intervention and governmentality. Approaches seen as less applicable, such as constructionist analyses, are criticized for producing irrelevant knowledge that cannot feed directly into disaster management or improve the lives of people affected by disaster (Wisner et al. 2004). However, Tierney (2007) sees disaster research as increasingly open to constructionist insights; we, too, consider that such non-applied meta-perspectives are absolutely necessary to overcome the all-too-pragmatic logics of intervention because on the one hand, they point out that disasters and dealing with disasters need to be contextualized in broad, historical fields of power and societal relationships, while, on the other hand, they enable researchers to broaden their perspectives by helping to challenge the framework of “disaster” and the effects of that framework. Social constructionist insights are useful in questioning power structures, identifying

cultural and hegemonic biases, and increasing sensitivity toward cultural specifics by localizing supposedly “universal” knowledge.

**Acknowledgments** The editors would like to thank Sophia Perl for assistance with editing and translating parts of this chapter from German into English.

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