

Chapter Two

Theoretical Framing of Worldviews, Values, and Structural Dimensions of Disasters

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Chapter Objectives

Upon completing this chapter, readers should be able to:

1. Understand what theory is and how it contributes to framing social vulnerability in a way that illuminates the critical elements of this complex issue.
2. Define critical and conflict theories and explain how they contribute to understanding vulnerability in a more comprehensive fashion.
3. Appreciate how structure and agency interplay in the creation of vulnerability and resilience.
4. Explain how theory leads to an explanation of worldviews and values that in turn influences how disasters are viewed by disaster planners and by individuals and communities who are vulnerable to hazards and disasters.
5. Appreciate how the theoretical framing of structure and agency illuminate how worldviews and values affect our approaches to tackling disaster reduction and increasing resilience.
6. Discuss how systems theory guides a mechanism for understanding and evaluating vulnerability, also linking to sustainable development.

Chapter Summary

Theory, as formal, explicit, and systematic worldviews provide the foundation for scientific analysis and are essential to understand and evaluate hazards and disasters. In the absence of formal theory, we rely on more or less shared or common sense worldviews to explain and predict the world around us. History, the physical environment, social institutions and social relations all shape these worldviews and through them affect our perceptions of hazards and disasters and influence preparedness, mitigation, and response and recovery efforts. Although these factors also shape formal theory, in formal theory we

consciously define, explicitly state, and systematically test assumptions, concepts and propositions.

In the 1990s, emergency managers, social scientists, and those affected by disasters and hazards began to question the then dominant view of disasters as caused almost exclusively by geophysical processes such as tornadoes, earthquakes and floods. This led to a shift in how theorists framed hazards and disasters (as primarily natural and unexpected events) to framing them as expected outcomes of complex human-environment interactions. Hurricane Katrina and the landslides in La Paz demonstrated that risk and vulnerability are not distributed equally within or across societies. Examples like this prompted the revision of theories of hazards and disasters to include the concept of social vulnerability. The concept of social vulnerability draws from a number of sources, but in general, considers individual and collective susceptibility to natural events and the capacity to respond to those events. Conflict and critical theories explain how differential access to resources and power create social conditions and inequalities that lead to different levels of social vulnerability and outcomes of hazardous events among individuals, groups, communities, and nations.

In conflict theory, inequality is viewed as an inherent feature of the social structure, thus it is important to keep in mind the agency of individuals and groups when examining how vulnerable individuals and communities view and respond to hazards and disasters within a given social structure. The political ecology framework, an application of general systems theory to human-environment interactions, provides a powerful mechanism to analyze the complex interplay of variables that result in disasters. Finally, the concept of sustainability forces us to consider the real costs of the inequalities and inequities that result from a worldview of humans over nature and points to the value of local knowledge in creating sustainable interactions with the environment. The concept of human agency, combined with participatory approaches to research guided by a theoretical lens that includes humans as an essential part of the natural environment, creates disaster planning that decreases social vulnerability and promotes sustainable human-environment interactions.

Teaching Suggestions

Theory can be a daunting topic to students and appear overly abstract and irrelevant to their desire to master the content of a new field of study. One way to help them discover the importance of theory is to show them how everything that we do in our daily lives is guided by our shared cultural understandings or common sense theories about the world. You might begin by asking students to discuss a statement attributed to the linguist John Gumperz that “You can’t collect seashells on the beach without a theory.” Why not? This

discussion can show them how we need a clear idea of what a seashell is (concept), how we can tell seashell from a rock or a feather (classifications) and where we are likely to find them (propositions of relationships) to complete this seemingly simple task. From there you can discuss how these common sense theories, though they may contain valuable local knowledge, are largely unconscious and their assumptions may not be tested. But they guide our actions nonetheless. The task of the scientist is to develop, apply, and test formal theory. Scientific theories may be derived from a variety of sources including formalizing and testing theories derived from local knowledge of disasters. The example of high water markers from tsunamis in Japan shows the cost of valuing scientific theories and knowledge automatically over local knowledge.

Another way to show the relevance of theory is to ask students to analyze the examples of hazards and disasters included in this chapter or a more recent disaster such as the series of tornadoes that moved across Indiana, Ohio, Kentucky, Tennessee, Alabama, Georgia, and North Carolina in late February and March 2012 using different theoretical perspectives. The websites included in the resources section can be a useful guide for discussion. You might ask students to go online and find a report of a recent natural disaster. Ask them to analyze it using a political ecology approach and then compare that to a conflict and critical theory approach. Who was most affected? How do we explain differential effects among regions and communities? How do we account for the damage to different kinds of housing, to schools and other public buildings? What might disaster managers and planners have done differently to mitigate the impacts? What future strategies could reduce social vulnerability?

Have students collect media coverage of a recent disaster that includes news reports, blogs, maps and other graphics, and interviews with victims and officials. Have the students analyze the worldview that is being conveyed by the media or blogger and by those who witnessed or were otherwise affected by the disaster. What might students want to know that is not being reported? What questions would the students ask of the reporter? Of people affected by the event? How might the worldviews portrayed affect the response to this disaster or to similar disasters in the future?

A core objective of this chapter is to challenge students to be critical in their understanding of “natural” disasters. Divide students into two groups and ask them to debate the proposition that we abolish the term “natural disaster.” To support their position students could compare the effects of different kinds of disasters. For example, they might compare Hurricane Katrina, as an unusually severe weather-event that disproportionately impacted low-income, minority populations despite levees designed to protect them, to the tornadoes in the Southeast, that appear to inflict damage more randomly, or to the role of droughts in famine in the Horn of Africa. Or, they might compare the same kinds of events

in different locations, i.e., earthquakes in Haiti, Afghanistan, Turkey, the U.S., China, and Japan.

It is important to get students excited about linking theory to natural hazard events. You might initiate a discussion on how the discourse around natural disasters impacts the role that people expect the government to play in responding to these events and to mitigating damage from future events. What are some American worldviews and values, e.g., individual responsibility, the relationship between the federal government and states and local communities, the role of faith-based organizations and civic organizations, that affects how Americans expect the government to respond—either through pro-active policy and infrastructure or through aid after an event?

Students might also explore how history and location affect both local and scientific theories applied to disasters and hazards.

- Ask them to compare articles in professional journals from different decades to see what theories were used and how. Were theoretical approaches explicitly stated or assumed? When do they begin to see evidence of change in the way scientists are looking at and understanding disasters?
- In terms of location, how does a country's position in the global political economy affect how disasters are described and explained? Using materials from their websites, what theoretical frameworks do the World Bank, the Red Cross, the United Nations and other international and national disaster relief agencies use? Are there consistencies across these organizations or do they differ? How has this changed over time? How do their theoretical approaches or worldviews affect their programs, policies and priorities? What are the major conflicts and controversies over theoretical approaches and how would you recommend resolving them?

Finally, the role that culture or worldviews play in determining people's behavior is a subject of debate among social scientists. The authors of this chapter argue that we should be cautious in how we use culture or worldview as an explanatory variable and take other factors – history, economic and political power, socioeconomic status, race and ethnicity, gender, and age – into account when analyzing social vulnerability to disasters. To explore this theme, ask students to read and respond to the article by Craig Janes under Resources and then examine the responses to offers of foreign assistance with disaster relief by Japan's following the 2011 tsunami and Burma following Cyclone Nargis in 2008.

Resources

- A PowerPoint is available to accompany this chapter.
- The following websites may be useful:

- Hazards & Vulnerability Research Institute, University of South Carolina – This is a social vulnerability index for the US that includes: race and class, wealth, elderly residents, Hispanic ethnicity, special needs individuals, Native American ethnicity, and service industry employment - <http://webra.cas.sc.edu/hvri/products/sovi.aspx>
- FEMA Emergency Management Institute - <http://www.training.fema.gov/EMIWeb/edu/sovul.asp>
- The Institute for Environmental and Social Change – A Boulder, Colorado-based non-government organization focused on adaptation and resilience to climate change particularly in southeast Asia - <http://www.i-s-e-t.org>
- National Oceanic and Atmospheric Administration - <http://www.noaa.gov/>
- American Red Cross - <http://newsroom.redcross.org/disaster-response-guide/international-disaster-response/>
- International Federation of Red Cross and Red Crescent Societies - <http://www.ifrc.org/>
- The United Nations Humanitarian and Disaster Relief Assistance - <http://www.un.org/en/globalissues/humanitarian/>
- World Bank Disaster Risk Management - <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTURBANDEVELOPMENT/EXTDISMGMT/0,,menuPK:341021~pagePK:149018~piPK:149093~theSitePK:341015,00.html>
- [Janes, Craig R. 2006. Commentary: 'Culture', cultural explanations and causality. *International Journal of Epidemiology* 35:261-263 doi:10.1093/ije/dyi238.](#)
- List of International Relief Organizations - <http://www.globalcorps.com/jobs/ngolist.pdf>
- Instructors may also benefit from going to the FEMA Higher Education Website for downloadable syllabi, course lectures, free textbooks and more! The current URL for that site is <http://www.training.fema.gov/EMIWeb/edu/collegecrsbooks.asp>. (Last accessed April 20, 2011).

Discussion Questions

1. *Using a conflict and critical theory approach, how do the zoning policies and building codes in your local community affect social vulnerability to hazards and disasters?*

It may be helpful to have students first make a list of zoning policies and building codes in their area and then discuss various impacts on social vulnerability. How do zoning policies and building codes interact? For example, discuss the potential impact of a zoning policy that allows development in a floodplain that is combined with a building code that requires buildings to be elevated above flood level. Does this increase or decrease vulnerability? Zoning policies and building codes are intended to protect public health; can you think of examples where protection from one hazard or disaster creates another unintended vulnerability?

2. *What individuals or organizations can you identify at the local, national, and international level that have succeeded in changing worldviews and values that directly affect disaster planning and mitigation? How have they achieved these changes?*

The intent is to get students involved in a discussion about worldviews and values as a process and not a product of society. When are worldviews and values most likely to change? After an event? How do new ideas diffuse? Did Hurricane Katrina act as a catalyst to change worldviews and values? How?

3. *How do you see institutions responsible for disaster planning and mitigation responding to the use of participatory approaches to research and planning in your community? Should community members and organizations be full and equal partners? Why or why not? How do you determine who should be included and which voices should be heard?*

Ask students if they have been involved in planning in their communities. How were they engaged (i.e., public announcement, radio advertising, personal invitation)? If community members are not full and equal partners, how does that affect their willingness to participate? How should conflict be resolved? Have students list pros and cons to full and equal participation versus limited participation.

4. *Analyze media reports for a disaster or hazard. What values and worldview guide how the event is reported? What is the view of hazards and disasters they present? How might you go about informing journalists and media representatives about ways of viewing these events?*

Provide students with a short media report for a current disaster or hazard event. Have them identify the event and discuss the cause(s) and effect(s) reported. Is the event depicted as a “natural” event? Are human actions explicitly stated as impacting the cause or effect of the event, and what does that indicate about the values or worldview of the reporter? The readers? Using conflict and critical theories, what questions do students have about the disaster or hazard that was not reported?

5. *How does the concept of sustainability challenge the view of hazards and disasters as natural events? What does it tell us about the costs of social vulnerability? What worldview of the relationship of humans to nature does it support?*

The concept of sustainability challenges us to think about the true costs of inequalities and inequities that result from a worldview of humans over nature and points to the value of local knowledge in creating sustainable interactions with the environment. What are some of the costs of social vulnerability? Have students think about costs in terms of environmental, economic, and social dimensions.

6. *Is protection from hazards and disasters a human right?*

According to the World Health Organization, human rights extend beyond the basic right to health to include underlying determinants of health such as health information, access to water and food, and housing. Furthermore, rights must be embedded in norms, institutions, laws, and an enabling environment. How does protection from hazards and disasters fit within this definition? Does protection conflict with livelihood opportunities (i.e., the right to work)?

Test Questions

Essay Questions

1. Given a political ecology framework, how can we understand hazards and disasters as more than just “natural” events?
2. What are the three dominant ways of understanding the relationship of society and nature? Give brief descriptions of each and discuss their effect on how people with those views might respond to a hazard or disaster.
3. Briefly explain the concept of hegemony. Might we consider the dominant view of disasters as “natural events beyond human control” as having hegemonic aspects?
4. Compare how the theoretical perspectives of disasters as caused by geophysical forces and disasters as caused by human-environment interactions (social vulnerability) affects the portrayal of people affected by hazards and disasters.

Multiple Choice/True and False

1. Scientific knowledge is always superior to local knowledge about how to respond to and mitigate hazards and disasters. *False*
2. To successfully adapt to living in areas prone to natural disasters people must often balance competing needs of making a living with safety from disasters. *True*
3. In general, when disasters occur in wealthy nations, property losses are very high but the number of injuries and deaths is relatively small. *True*
4. Formal scientific theories differ from worldviews in the following way:
 - a. They explain and predict events that occur around us
 - b. They are explicit and systematic*
 - c. They are largely unconscious
 - d. They cannot be tested

5. Resilience is related to the concept of adaptation in that:
 - a. Resilient groups or communities are stable and unchanging
 - b. Resilient groups or communities are never vulnerable to disasters
 - c. Resilient groups or communities can adjust to changes in the physical and social environment*
 - d. Resilient groups or communities are less likely to bounce back from disasters
6. Bangladeshis living in the floodplains of the Ganges River mitigate the risks of annual floods in which of the following ways:
 - a. Spending savings
 - b. Selling land and animals
 - c. Obtaining help from family members
 - d. All of the above*
7. Although the community built a 30-foot high levee in 1930, more than 200 people died in the tsunami in the Taro district of Miyako, Japan in 2001 because:
 - a. They lacked a warning system for evacuation
 - b. The levee wasn't high enough
 - c. They relied on the levee to protect them and built houses next to it*
 - d. The levee collapse under the pressure of the tsunami
8. The development of banana plantations increased the vulnerability of peasant farmers when Hurricane Fifi passed through Honduras in 1974 because:
 - a. They relied solely on banana production and the crop was ruined
 - b. They lived near streams and rivers that flooded
 - c. They could not ask the plantation owners for help replanting their crops
 - d. They had to farm steep hillsides, which destabilized the soil and created landslides*
9. Many scientists working within the framework of social vulnerability, view disasters as:
 - a. The product of normal or usual processes*
 - b. Caused by geophysical forces
 - c. Exceptional events
 - d. Affecting only the poor
10. Conflict theory assumes that in capitalist society:
 - a. Conflict is not an inherent aspect of the political economic system
 - b. Inequality is institutionalized through various forms of capital*
 - c. Inequality has no effect on who suffers from disasters

- d. All of the above
11. The development of scientific theory is not affected by history or culture. *False*
12. People living in disaster-prone areas have little knowledge about disasters and how to mitigate their effects. *False*
13. The dominant view of disasters can get in the way of efforts to decrease social vulnerability to disasters by:
- a. Viewing all individuals and communities as equally at risk from disasters*
 - b. Emphasizing that enforcement of building codes can mitigate damage from disasters
 - c. Viewing disasters as resulting from normal and usual processes
 - d. Relying on local knowledge to mitigate disasters
14. Political ecology differs from ecological systems theory in:
- a. Focusing on balance and homeostasis
 - b. Emphasizing the positive effects of development projects
 - c. They are different names for the same theory
 - d. Examining how power and inequality affect ecological systems*
15. Confidence that technology provides the best solutions to human problems like disasters reflects which view of the relationship between people and nature?
- a. People under nature
 - b. People over nature*
 - c. People with nature
16. Everyone in a given society shares the same worldview in the same way. *False*
17. Systems theory enables scientists to examine how the relationships among different systems such as transportation and sewage contribute to vulnerability to disasters. *True*
18. Values provide guidelines for actions that are generally consistent with worldviews. *True*
19. Participatory forms of research can empower local communities and increase resilience by:
- a. Equalizing power between researchers and technical experts

- b. Raising a community's capacity to analyze their risks from hazards and disasters
 - c. Incorporate local knowledge and practices regarding disasters
 - d. All of the above*
20. Which of the following is **not** a reason why systems theory is valuable in anticipating the positive and negative results of a development project like a dam?
- a. Dams only generate electricity and control flooding*
 - b. Dams alter the physical environment
 - c. Dams displace human communities
 - d. Dams may change human exposure to waterborne parasites
 - e. Dams may change farming practices