Disasters and Social Vulnerability: Insights From Theory and Research

Kathleen Tierney
Department of Sociology
Natural Hazards Center
University of Colorado at Boulder

Bam, Iran Earthquake  Northridge Earthquake  Indian Ocean Tsunami
Presentation Themes

- Theoretical Framework for the Analysis of Social Vulnerability
- Ways of Conceptualizing Vulnerability
- Contributors to Vulnerability
What is a Disaster? Disasters as Distinguished From:

- Hazards
- Chronic or Long-Term Environmental Hazards
- Slow-Onset Events
- Epidemics
- “Dissensus” Crises Affecting Communities, Societies: Riots, Communal Violence
- War
- Mass Migrations, Humanitarian Crises
Contrasting Paradigms

- Classical or Systems Perspective
- Vulnerability Perspective
Charles Fritz (1961):

“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.”
Assumptions of the Systems Approach

- Societies and Communities are Systems, Organized Around Essential Social Functions

- Disasters Constitute Crises for Social Systems, Forcing Social Units (Households, Organizations, etc.) to Adapt

- Disasters Originate in the Environment and Impinge Upon Social Systems
Shortcomings of the Systems Perspective

- Event-Focused, Rather Than Process-Focused: Characterizes Disasters as Beginning at Time of Impact

- Neglect of Diversity of Subunits Within Societies, Communities, Possibility of Differential Impacts, Differing Perspectives

- Rooted in Functionalist Assumptions that Characterized U. S. Sociology in 1950s, 60s
Vulnerability Paradigm

- Sees Causes of Disasters as Internal to the Social Order, Not External

- Sees Disasters as Experienced Differently by Different Social Units, Groups Within Communities and Societies

- Sees Society Not as an Integrated “System,” but Rather as Characterized by Inequality and the Potential for Conflict
Vulnerability Paradigm: 
Key Assumptions

- Disasters and Disaster Impacts are Socially Produced
- Vulnerability Linked to Larger-Scale Societal Factors and Processes and Their Interaction With Disasters
- Groups Within Society are Differentially Vulnerable to Disasters
The Progression of Vulnerability

Limited access to
- Power
- Structures
- Resources

Ideologies
- Political systems
- Economic systems

Macro-forces
- Rapid population growth
- Rapid urbanisation
- Arms expenditure
- Debt repayment schedules
- Deforestation
- Decline in soil productivity

Lack of
- Local institutions
- Training
- Appropriate skills
- Local investments
- Local markets
- Press freedom
- Ethical standards in public life

Fragile physical environment
- Dangerous locations
- Unprotected buildings and infrastructure

Fragile local economy
- Livelihoods at risk
- Low income levels

Vulnerable society
- Special groups at risk
- Lack of local institutions

Public actions
- Lack of disaster preparedness
- Prevalence of endemic disease

ROOT CAUSES

DYNAMIC PRESSURES

UNSAFE CONDITIONS

DISASTER

HAZARDS

RISK = Hazard + Vulnerability

R = H + V

Source: *At Risk: Natural Hazards, People’s Vulnerability, and Disasters* by P. Blaikie, T. Cannon, I. Davis, and B. Wisner
Contributors to Vulnerability

- “Hazardousness of Place”
- Vulnerable Built Environment, Ecosystems
- Socially Structured “Event” and “Consequence” Vulnerability
The Built Environment: Bam Earthquake: Vulnerability of Traditional Adobe Construction
Births, deaths, and demographic changes in time period

1 Social relations and flows of surplus

2a Households
   Individuals in Production Unit 1 (e.g. ‘household’)
   Individuals in Production Unit 2
   Individuals in Production Unit 3
   Individuals in Production Unit n

2b Their resource and assets with assets, e.g., land, labour, capital, tools, expectations of resources from others

3a Income opportunities each face a range of income opportunities

3b Access qualifications each income opportunity has access qualifications and a pay-off (money, yields of crop, etc.)

4 Structures of domination

5 Choices of household each household chooses one or (usually) more income opportunities (often a number of times a year)

6 Livelihood together, chosen income opportunities may constitute a livelihood

7 Household budget livelihoods contribute to household budget which is in deficit or surplus at different times of the year

8 Decisions decisions taken on consumption, investment, and realization of assets

9 Outcome of decisions changes in access profile at a later time

Source: At Risk: Natural Hazards, People’s Vulnerability, and Disasters by P. Blaikie, T. Cannon, I. Davis, and B. Wisner
Joseph Henry Press “Second Assessment” Series


*Paying the Price.* Howard Kunreuther and Richard J. Roth, Sr., eds. (1998)

*Disasters by Design.* Dennis Mileti. (1999)


Event and Consequence
Vulnerability

- Who Prepares?

- Who Suffers Disproportionate Losses?

- Who is More Resilient, Able to Recover?
VULNERABILITY RELATED TO...

- Income and Educational Levels
- Minority Group Status, Gender, Language Barriers, Citizenship Status
- “Social Capital” and Access to Resources
Natural Hazards Research
and Applications
Information Center

University of Colorado
482 UCB
Boulder, CO 80309-0482

Web: www.colorado.edu/hazards