Integrating Meteorology and Sociology

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Overview

I. What is sociology?
II. What do sociologists do?
III. What have sociologists contributed to the study of disaster and other extreme events?
IV. An example.
I. What is Sociology?

• Sociology:
  – The systematic study of human society.
  – The systematic study of social behavior, human groups, and institutions.
I. What is Sociology?

• **Sociology**: The systematic study of social behavior, human groups, and institutions.

• **Microsociology**: Seeks to understand local interactional contexts; focus is on face-to-face encounters.

• **Macrosociology**: Generally concerned with social dynamics at a higher level of analysis—that is, across the breadth of society.
I. What is Sociology?

• **Sociology**: The systematic study of social behavior, human groups, and institutions.
  - Microsociology
  - Macrosociology

• **Sociological Imagination**: Emphasizes the influence that society has on people’s attitudes and behaviors and the ways in which people shape society.

“No person is an island.” ~Thomas Behler
II. What do sociologists do?

• What do sociologists study?
  – Aging and the life course
  – Community and urban sociology
  – Crime, law, and deviance
  – Culture
  – Economic sociology
  – Education
  – Environment
  – Family
  – Health
  – Immigration
  – Medical sociology
  – Political sociology
  – Race, class, gender
  – Religion

http://www.asanet.org/sections/list.cfm
II. What do sociologists do?

**Quantitative Methods**
- Survey research
- Statistical analysis of existing data
- Content analysis

**Qualitative Methods**
- Participant observation
- Interviews
- Focus groups
- Document analysis
From a methodological viewpoint, disaster research is hardly distinguishable from the general sociological enterprise (Mileti, 1987: 69).

What makes disaster research unique is the circumstances in which otherwise conventional methods are employed. Put differently, it is the context of research, not the methods of research, that makes disaster research unique (Stallings, 2002: 21).
## Disaster Research Matrix

<table>
<thead>
<tr>
<th>Unit of Analysis</th>
<th>Individuals</th>
<th>Families</th>
<th>Groups</th>
<th>Organizations</th>
<th>Communities</th>
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## Disaster Research Matrix

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<tr>
<th>Unit of Analysis</th>
<th>Disaster Life Cycle</th>
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<td>Preparedness</td>
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III. What have sociologists contributed to the study of disaster?

• Historically
• Conceptually
The Emergence of Disaster Research

• First Empirical Study
  – Prince Dissertation (1920)
The Emergence of Disaster Research

• First Empirical Study
  – Prince Dissertation (1920)

• Initial Field Research Teams (1949-1954)
  – University Based
  – Sociologists Predominated
  – Military Funding

World War II

Cold War
Military wanted to know…

• Panic?
• Demoralized civilians?
• Civil unrest?
• Social control?
Military wanted to know…

• Panic?
• Demoralized civilians?
• Civil unrest?
• Social control?
The Emergence of Disaster Research

• First Empirical Study (1920)
• Initial Field Research Teams (1949-1954)
• National Academy of Sciences Committee on Disaster Studies (1951-1962)
• Disaster Research Center (1963)
• Natural Hazards Center (1976)

– 50+ centers [http://www.colorado.edu/hazards/resources/centers/academic.html]
Substantive Consequences of the Development of Disaster Research

• Focus on rapid onset disasters
Substantive Consequences of the Development of Disaster Research

• Focus on rapid onset disasters
• Focus on collective reactions to disaster
• U.S.-focus
• Applied concerns/policy outcomes
• Theoretical base grounded in sociology
  – “Traditional View” – Collective behavior and organizational response
  – “Vulnerability Paradigm” – Disasters as products of social structure
    • Social inequality drives unequal distribution of risk and impacts
Vulnerability = the potential for loss.
Vulnerability = the potential for loss.

“Vulnerable Groups”
* limited access to resources
* lack of political power
* limited social networks
Resilience

- Broadly conceived as the capacity to adapt successfully to stressful situations and traumatic shocks.
Vulnerability and Resilience

![Graph showing the relationship between vulnerability and resilience.](image-url)
IV: An Example
Hurricane Risk Perception along the U.S. Gulf and Atlantic Coasts

- **The Research Team**
- **PI:** Craig Trumbo, Journalism and Technical Communication, CSU
- **Co-PIs:**
  - Lori Peek, Sociology, CSU
  - Wayne Schubert and Brian McNoldy, Atmospheric Science, CSU
  - Eve Gruntfest, Geography, CU-Colorado Springs and University of Oklahoma
- **Graduate Research Assistants:**
  - Michelle Lueck, Sociology, CSU
  - Holly Marlatt, Journalism and Technical Communication, CSU
- **Undergraduate Research Assistants:**
  - Alyssa Dawson, Sociology, CSU
  - Emily McCormick, Journalism and Technical Communication, CSU
Hurricane Risk Perception along the U.S. Gulf and Atlantic Coasts

- Primary purpose of the investigation:
  - to observe risk perception dynamics in real time
  - to develop a theoretically informed concept of optimistic bias and risk perception
- Participants: 600 individuals recruited for 3-year survey panel sample
- Spatially random sample along 10 mile coastal buffer
- w/ quota component to provide representation across four household types:
  single w/o children
  single w/children
  couple w/children
  couple w/o children
Study Design

Recruit

June 2010
Baseline Survey
Demographics
Experience
Vulnerability
Resilience
Risk Perception
Optimistic Bias

Replacement

June 2011
Follow-up Survey #1
Resilience
Risk Perception
Optimistic Bias
Resilience
Climate Change
(+ baseline for replacement)

Replacement

June 2012
Follow-up Survey #2
Resilience
Risk Perception
Optimistic Bias
Resilience
Climate Change
(+ baseline for replacement)

Season 2010
Phone Interviews
Field Interviews

Season 2011
Phone Interviews
Field Interviews

Season 2012
Phone Interviews
Field Interviews
Survey Concepts

Hurricane Risk Perception

Cognitive
- Knowledge
- Experience
- Personal Control
- Risk Increasing
- Future Generations
- Understood by Science
- Catastrophic Potential
- Voluntariness
- Fatal Potential
  etc.

Affective
- Dread
- Fairness
- Repulsion
- Saddening
- Depressing
- Anxiousness
- Fear
- Worry
- Anger
  etc.
Survey Concepts

Dispositional Optimism

Hurricane Experience

Optimistic Bias

Hurricane Risk Perception

Evacuation Behavioral Intention

Evacuation Decision

Control

Norms

Attitude

Gender
Age
Race/Ethnicity
Income
Education
Language
Trust Authority
Family Size

Vulnerability Factors

Dashed lines indicate effects only among study participants faced with an evacuation order.
Phone Interviews

- What we know about risk perception and hazard warnings:
Phone Interviews

• What we know about risk perception and hazard warnings:
Phone Interviews

• Real-time warning phase data collection
  – The period during which information is available about a probable danger, but before the danger has become immediate, personal, and physically perceivable.
Phone Interviews

• Real-time warning data collection

• Sample
  – Subset of survey respondents (50% expressed interest)
  – ~60 study participants in hurricane warning area
Phone Interviews

- Real-time warning data collection
- Sample
  - Subset of survey respondents (50% expressed interest)
  - ~60 study participants in hurricane warning area
  - Contact via land line and cell phone
    - Warning
    - Recovery
  - ~30 interviews per warning event
Phone Interviews

• Real-time warning data collection
• Sample
• Protocol
  – ~30 minute interviews
  – Semi-structured interview guide
    • Pre-event:
      – Sources of information?
      – Who or what is influencing your thinking?
      – Concerns about evacuation?
    • Post-event:
      – Assess decision to evacuate/shelter in place?
      – Difficulties in evacuation/sheltering in place?
      – Household dynamics in decision making?
Phone Interviews

- Real-time warning data collection
- Sample
- Protocol
  - ~30 minute interviews
  - Semi-structured interview guide
  - Recorded and transcribed verbatim
Post-Disaster Fieldwork

• Purpose: Family decision making in disaster evacuation and return
• Methods: In person interviews, field observations
• Sample: ~15 telephone interview participants + family members = ~45-60 respondents
• Questions:
  – Gender dynamics in decision making
  – Children’s risk perception and response
  – Sources of risk information
  – Contact with officials and agencies
Thank You...

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