

## Lecture Notes: Disaster Vulnerability and Resilience

### Session 9

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#### *The Resilient City: How Modern Cities Recover from Disaster*

##### **Introduction:**

In compiling this research, we examined various types of disasters to which cities are exposed, looking for both differences and commonalities. We looked at everything from terrorist attacks to earthquakes, to wars, even to urban rioting (as something reasonably sudden and destructive happening to a society). We tried to ask what the pattern of response and priority-setting tells us about the society that experiences the disaster. The project began shortly after September 11, 2001, as part of an effort to know what the Department of Urban Studies and Planning at MIT could do in response to the 9/11 attacks. Could we ask better questions about what ought to happen in the aftermath of attacks like Sept. 11<sup>th</sup>? We asked what other places have done in response to such disasters. We tried to develop a theory of how cities and their citizens react to disasters. The group of contributors tended to be historians, social scientists, and other specialists about particular places who could look broadly at the effects of disasters from a variety of perspectives.

##### **Resilient Cities:**

- I. London, 1834
  - a. Turner painting of London Parliament burning.
    - i. Envisions it as a great aesthetic moment.
    - ii. Remember what this meant: destroyed much of the houses of Westminster, prompted the building of new houses of Parliament and other buildings, including the tower housing Big Ben.
      1. Helped pave the way to create something more positive.
  - b. Monet paints scene in 1904, distorted by poor air-quality rather than fire.
- II. Banda Aceh, Indonesia, 2004
  - a. Research will hopefully have implications for recovering from present-day disasters, like the recent tsunami in Indonesia.
- III. Timgad, Algeria: Resilience only as Ruins
  - a. Contrast the modern experience with disasters with ancient experiences.
    - i. It is a reminder that there is a long history of substantial places being deliberately destroyed, like Timgad, or victimized by natural disasters (like Pompeii) where the cities don't come back.
    - ii. The last 200 years seems to be the first time where almost without exception people choose to rebuild cities (of 50,000 +).
      1. Rise of the nation-state system
      2. Rise of the insurance industry

3. Together, these changes have made it less likely for large cities to exist in ruins or to become sites for tourism/visitation rather than active habitation.
- iii. Exceptions:
  1. Many villages are destroyed.
  2. Some cities have lost population in comparison to their surrounding metropolitan regions; economic changes have changed the attractiveness of cities.
- b. Resilience is about a desire to go on with urban life even in the face of tremendous devastation.
- IV. Hiroshima, 1945
  - a. Not much doubt that it would be rebuilt, despite total devastation
  - b. Even immediately afterward, images prove that life continued, habitation continued.
    - i. Many people would find the current image of the city virtually indistinguishable from Japanese cities that were not destroyed in the war.
- V. U.S. Civil War Destruction
  - a. Three different state capitals destroyed (Georgia, S. Carolina, Virginia)
  - b. Each one was rebuilt.
- VI. St. Pierre, Martinique
  - a. Mount Pelée erupted, St. Pierre (the Paris of the Antilles) destroyed
  - b. 30,000 inhabitants, 1 survivor (a convict in a cell)
    - i. The survivor escaped with his life and ended up on display in the Barnum and Bailey circus.
  - c. The city has now come back to a town of about 5,000 people with a volcano museum.
  - d. The fact that the city did not exhibit resilience after the event makes this an exception.

### **Range of Issues**

- VII. “Natural” disasters (unintended):
  - a. Fire
  - b. Earthquake
  - c. Flood/Tsunami
  - d. Hurricane/Typhoon, Epidemic disease
- VIII. Human disasters I – accidental
  - a. Industrial accidents - Bhopal
  - b. Nuclear accidents – Chernobyl
- IX. Human disasters II – deliberate, place-targeted
  - a. Civil War
  - b. Int’l War
  - c. Int’l Terrorism
  - d. Domestic Terrorism
  - e. Riots/civil disturbances

- f. Urban renewal/clearance – such events can be almost as psychologically destructive to people as if the place had been bombed (except you have more warning and it doesn't result in death)

### **Framework**

- X. Proposed Model of Urban Recovery, proposed by an NSF-sponsored study in the 1970s:
  - a. Four Stages:
    - i. Emergency
    - ii. Restoration
    - iii. Reconstruction 1
    - iv. Reconstruction 2
  - b. Time scale is logarithmic:
    - i. For one week period of major rescue operations
    - ii. 10-week period of return to major functionality
    - iii. 100-week period, population returns to previous levels, economics develop to pre-disaster level
    - iv. 500/1000-week period: improvements made.
  - c. Disaster Recovery is claimed to be “orderly and knowable”.
  - d. San Francisco, 1906:
    - i. People engage in “disaster tourism”
    - ii. Day-to-day personal recovery and coping (photo of family cooking in the street).
    - iii. People immediately start looking for good things to come from the event.
    - iv. “The city is certain to arise from its ashes greater and more beautiful than ever” – editor of *Harper's*.
      - 1. Vast destruction was there to pave the way for progress.
    - v. *Oakland Herald*: “Think of the good times coming.”
    - vi. Modeled out along NSF study's logarithmic scale: fits easily on the scale.
- XI. Missing Pieces:
  - a. Stories constructed to explain and interpret the event
    - i. What does it mean that this happened to our city?
  - b. Symbolism: the role of the built environment in signaling to people
  - c. Politics of reconstruction

### **Narratives of Resilience**

- XII. Characteristics
  - a. Patterns of how each disaster is interpreted, whose voices are listened to, what stories are being told, whose stories are left out.
  - b. Narratives about optimism and progress were allowed to predominate even though they did not totally reflect the experience of people.
- XIII. Examples
  - a. Chicago Fire
    - i. Low death-toll

- ii. Immediate focus on recovery
- iii. Many stories about how this is a “blessing.”
- iv. Built up twice – once shoddily and rapidly and again in the 1880s with skyscrapers, Chicago School of Architecture.
- v. Is discussed in terms of capitalism’s creative destruction
  1. The nature of capitalism is to tear down and rebuild.
- b. Oklahoma City terrorist bombing.
  - i. Memorial built in replacement of the building.
  - ii. Narrative of progress emphasized.
  - iii. Edward T. Linenthal: *The Unfinished Bombing: Oklahoma City in American Memory*, 2001.
    1. The process of thinking through the meaning of the bombing continued for years after
    2. Progressive Narrative: The process of memorialization was at least as important as the event itself
    3. Faith-based Narrative: Strongly Christian area. Narrative about those whose faith had been tested but they would persevere.
    4. Toxic Narrative: This narrative comes from a set of people whose lives were forever ruined by this particular event.
    5. Dominant voice/interpretation: we are going to build a memorial, develop tourism, build a new office building, and Oklahoma will be better off than it was before the bombing.
- c. Resilient Postcards (Manhattan)
  - i. Post 9/11 images of the destruction draped in the American flag.
  - ii. Postcards \$3 each (people making profits off of the loss)
  - iii. Sense of defiance, patriotism
- d. Mapping Destruction
  - i. New York and Oklahoma City have mid-range death-tolls (on a logarithmic chart, at least) but a very small percentage of the city is destroyed.
  - ii. Cities destroyed by natural disasters/nuclear bombs have lost between 10 and 100% of their infrastructure and buildings.
  - iii. The city most destroyed, lost most population: Warsaw in World War II, though Tangshan Earthquake (1976) comes close.
  - iv. Goma, Congo 2002 experienced massive destruction while the world was focused on Afghanistan.
  - v. Even relatively small death-tolls and destruction can have enormous impact.

### **Symbolism of Disaster and Recovery**

- XIV. Buildings are often the targets of disaster and the symbols of recovery.
  - a. Washington, DC, 1814.
    - i. British burn the White House and Capitol in retaliation from colonists burning York, in Canada.

- ii. 25 years after power had been consolidated in the new United States.
        - 1. Buildings that symbolize that power have been destroyed.
      - iii. Discussion about what to do continued for a long time.
      - iv. Narrow vote to rebuild the capital in the same location.
        - 1. Buildings when rebuilt are constructed in either grander or more important ways.
    - b. Postwar Berlin: East vs. West
      - i. To a surprising extent, both Easterners and Westerners wanted to use architecture to symbolize the superiority of their particular recovery.
        - 1. East: Karl Marx Allee with grand buildings to highlight the importance of the worker.
        - 2. Western equivalent: Hansa Viertel. Modern architects each design a demonstration building (Towers in the Park).
        - 3. Politics and design combine.
    - c. Nazi Destruction of Warsaw
      - i. Nazi's tried to plough it under completely.
      - ii. They made it a crime to keep any visual record of the Old Town
      - iii. Recovery:
        - 1. People smuggled drawings and after the war, Warsaw sought to rebuild all of the most pure Polish elements.
          - a. Additions to buildings during foreign occupations were not included in the rebuilding.
        - 2. Post-war; decide not only to rebuild but also to solve some of its circulation problems.
          - a. Build an underground highway through the center city.
        - 3. Attempt to cast the pre-war built environment negatively.
          - a. Under the Communist regime; old city is characterized as "capitalist."
          - b. Dense, unequal conditions had prevailed.
          - c. Alternative is the new and powerful social workers' city.
- XV. Baghdad, Iraq
  - a. The first impulse, as cities were conquered, was to pull all of the statues from the old regime down.
  - b. Marines come in; put American flag over Saddam's head.
    - i. This act creates a symbolic image (carried worldwide by the media) suggesting that the Americans have claimed the victory for themselves rather than for the Iraqi people.
  - c. Toppling Saddam as a person, as a political figure gets pictured as toppling Saddam the statuary.

## **The Politics of Reconstruction**

This is the extent to which the rules about who matters and what matters are tied into questions of resilience.

### **XVI. Examples:**

- a. Tangshan, China: 1976.
  - i. Completely wiped out city.
  - ii. Lost key-node in industrial northeast section of China
  - iii. Quick mobilization of recovery
  - iv. 10-years later, city is completely rebuilt with population returned to previous level (1 million).
  - v. Politics playing out:
    1. Mao system of self-reliance vs. transition of power to idea of modernization/Westernization, etc.
- b. Mexico City Earthquake, 1985
  - i. Inequalities literally exposed in the visual landscape of destruction
    1. The government seen as more interested in recovering international economic ties than in supporting rescue and recovery operations.
    2. Governmental response to disaster is perceived as poor and as benefitting people unequally.
- c. Kabul: Not Yet Resilient, 2004
  - i. Destruction caused by 20+ years of war and devastation from Soviet occupation to the present.
  - ii. People are resuming daily life as much as possible.
  - iii. Reconstruction remains very tenuous.
  - iv. In the Middle-East, a dynamic is developing by which countries associate the progress narrative as an imposition from outsiders (Westerners) and this makes resilience more challenging.

## **Conclusion**

### **XVII. 12 Axioms:**

- a. Narratives of resilience are a political necessity
  - i. Progress oriented outlook is absolutely essential for every government
  - ii. Horrific destruction is an opportunity for reform.
- b. No matter what the disaster, the government looks bad for letting it happen.
  - i. Disasters reveal the resilience of governments:
  - ii. If bouncing back means bouncing back to bad practices, it can lead to increasing pressure for reform.
- c. Narratives of resilience are always contested
  - i. Not only is the progressive narrative not the only one
  - ii. But there may be different contending versions of the progressive narrative.
- d. Local resilience is linked to national narrative
  - i. Rebuilding Warsaw is about redefining what it means to be Polish

- e. Resilience is underwritten by outsiders
  - i. The Chinese example is an exception
  - ii. Discussion about what to do about Bam was as much about the politics of international relations with Iran as it was about the response itself.
- f. Urban rebuilding symbolizes human resilience
  - i. Building symbolizes the heroic renewal because the human tragedy is so overwhelming
  - ii. Rebuild to reassure people about the future.
- g. Remembrance drives resilience:
  - i. In Basque Gernika, destroyed in 1937, Franco denied residents the emotional and cultural rebuilding that was an important part of the city's recovery. Any public acknowledgement of what happened in the town (that Franco had in fact bombed the city himself) was forbidden until his death. The Basque people took only a short while to physically rebuild but decades to recover their culture.
- h. Resilience benefits from the inertia of prior investment.
  - i. In London, 1666, the power of people who held land had a great deal of influence on how the urban fabric was actually rebuilt.
- i. Resilience exploits the power of place
  - i. Washington DC: In the middle of the Civil War, Abraham Lincoln insists that it is important to finish the dome of the capitol to symbolize the union of the country.
- j. Resilience casts opportunism as opportunity:
  - i. Is this capitalizing on the opportunity to make things better or to forward a specific political agenda that does not benefit people as a whole?
- k. Resilience, like disaster, is site specific; every disaster has an epicenter, not just earthquakes. Who is most vulnerable?
- l. Resilience entails more than rebuilding:
  - i. To recover has more to do with buildings being built; social networks need to be rebuilt as well. Gernika underscores the difference between the physical rebuilding of a place and the emotional/cultural rebuilding of a place.

We learn a lot about the rebuilding of cities, but we can use disasters as a diagnostic tool to understand the rifts that exist in society just prior to the disaster.

Mother Teresa: "What you spend years building, someone could destroy overnight. Build anyway."

Discussion.