



# Resilient Disaster Response and Recovery

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# Themes for This Presentation

- **Resilience in the aftermath of disasters arises from the social order—from society itself—when social conditions allow for it to arise**
- **Resilience-enhancing activities include group emergence, organizational extension, network emergence, and improvisation**
- **Disaster managers should take advantage of these processes when disasters strike**

# Emergent Groups



**Mexico City 1985**



**Oakland, 1989**



**Emergent Groups in  
Hurricane Katrina:  
Common Ground and the  
“Cajun Navy”**





# New Zealand Example: The Student Volunteer Army







## Organizational Extension: From Occupy Wall Street to Occupy Sandy



**In My Community:  
September 2013  
Floods**



**The Mudslingers**



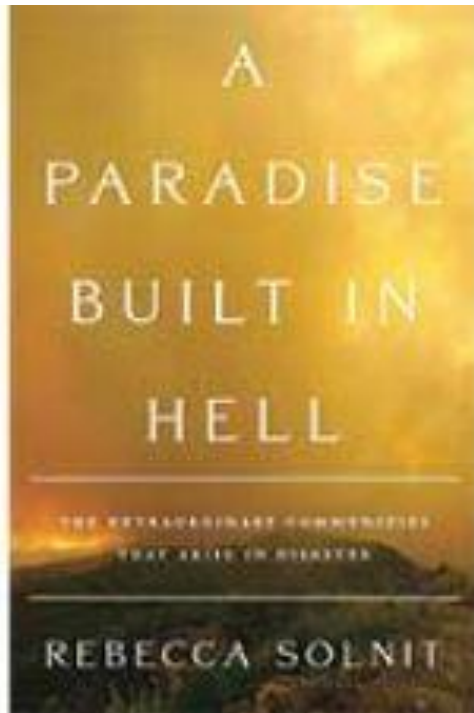
**Boulder Flood  
Relief: Extension of  
Occupy Movement  
Organization**

# **Emergent Groups Save Lives**

**“In Southern Italy in 1980, 90 percent of survivors of an earthquake were extricated by untrained, uninjured survivors who used their bare hands and simple tools...Following the 1976 Tangshan earthquake, about 200,000 to 300,000 entrapped people crawled out of the debris on their own and went on to rescue others...it was to their credit that more than 80 percent of those buried under the debris were rescued. Thus, lifesaving efforts in a stricken community rely heavily on the capabilities of relatively untrained survivors, including untrained volunteers, as well as those of local firefighters and other relevant personnel.”**

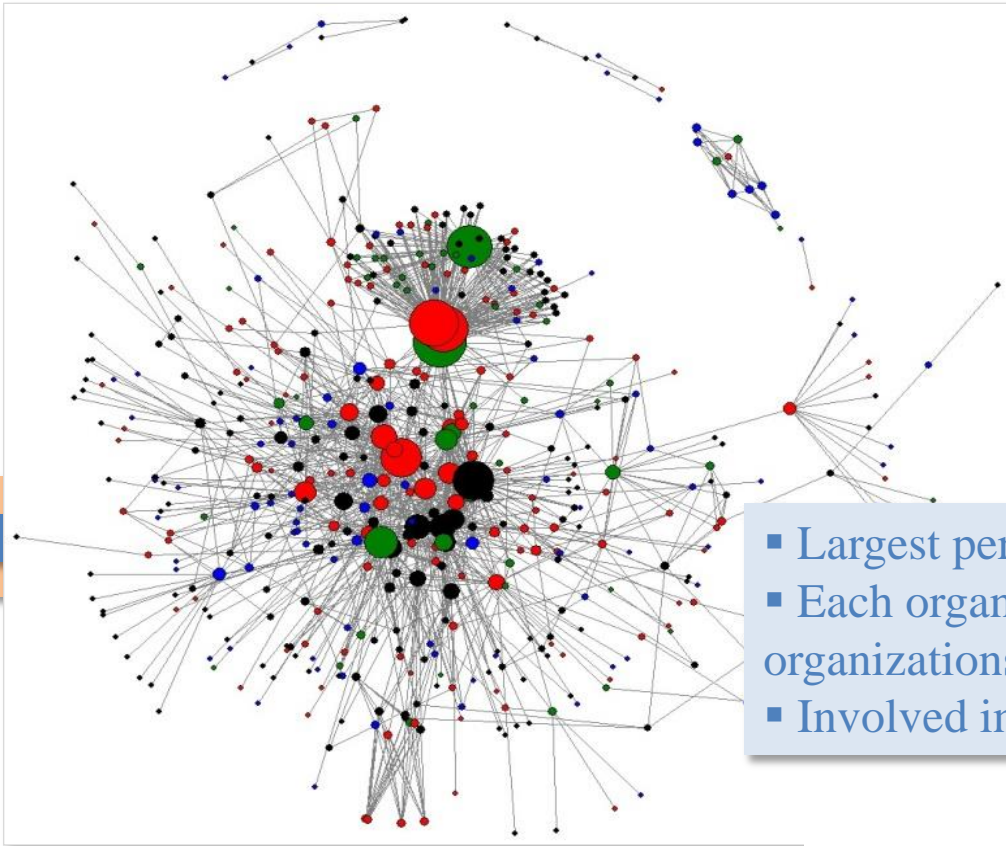
**--Eric Noji, *The Public Health Consequences of Disasters* (1997)**





**Extensive discussions of emergent groups in Rebecca Solnit's *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster* (2009)**

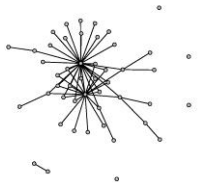
# New Networks Also Emerge in Disasters



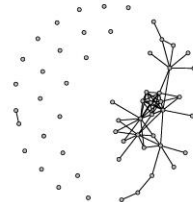
717 Organizations  
6,6617 Actions and interactions  
42 Tasks

8 Scales of operation  
4 Types of organizations

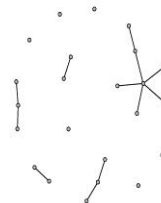
- Largest percentage of organizations were government
- Each organization worked with average of 8 other organizations
- Involved in 2-3 tasks each (range of tasks: 1-27)



Credentialing



Debris Management



Forensic Investigation

**Christine Bevc, “Working on the Edge: A Study of Multi-organizational Networks...in the World Trade Center Attack.”**

# Advantages of Emergent Networks

- **Entities form networks and sub-networks in response to needs as assessed “on the ground”**
- **Networks change as situations change**
- **Networks bring together diverse information and diverse perspectives for problem-solving**
- **Networks are examples of “distributed intelligence” and “the wisdom of crowds”**



# **Improvisation in Disasters**

- **Disasters, especially major ones, give rise to surprises**
- **Disaster plans rarely anticipate surprises**
- **Disasters almost always require responding organizations to improvise in order to respond to the unexpected**

# Improvisation in Action



**WTC Building 7,  
Sept. 11, 2001**



**Improvised New York City Emergency Operations Center, Pier 92**

# Different Degrees of Improvisation

## (Wachtendorf, 2004)

- **Reproductive:** Improvisation aimed at meeting a goal when the original means for doing so are disrupted; setting up substitute procedures, but without much change in organizational arrangements and procedures (New York City's EOC)
- **Adaptive:** Improvisation that consists of adjustments away from what was planned (Providing credentials for thousands of personnel who were responding to the WTC attack)
- **Creative:** Improvisation in situations where organizational arrangements and procedures offer no guidance and there is almost total surprise (Processing debris, remains, and forensic evidence)



# Key Points About Improvisation

- **Improvisation is not the opposite of planning. Being able to improvise requires extensive knowledge of response repertoires, resources, and plans.**

**“You can’t improvise on nothin,’ man.  
You’ve got to improvise on somethin.’”  
---Jazz Great Charles Mingus**

- **Improvisation is not the same as disorganization:  
Responding to disasters requires a mix of “agility and discipline” ---John Harrald, Emergency Management Expert**

# Fostering Resilience: Some Recommendations

- **Expect group emergence following disasters and plan to integrate emergent groups and activities into response efforts: emergence *will happen***
- **Increase the capacity to improvise through cross-training; planning for catastrophic events that present unexpected challenges; avoid stovepiping; reward “out of the box” thinking and initiative**
- **Be prepared to relax bureaucratic requirements in the event of disaster to allow for improvisation; foster “empowering settings”**

# From All of Us at the Natural Hazards Center: Thank You!



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