

STRENGTHENING LINKS BETWEEN TECHNOLOGIES AND SOCIETY FOR EUROPEAN DISASTER RESILIENCE

BUILDING ON DRIVER+' INSIGHTS

“...helping crisis managers identify **proven technologies** and approaches...This is critically important work for a future in which climate change-related events – wildfires and floods – are likely to **increase in frequency and severity**, as well as **persistent threats** from earthquakes and terrorism.” ... “This is a problem since as societies become **more complex**, **increasing scope and unpredictability** of potential crises and faster dynamics of major incidents put increasingly stringent demands on crisis management.”

My points for discussion:

- New types of crisis
- What can technologies do?
- Types of innovations
- Do it yourself!

NEW TYPES OF CRISES

- Transboundary
- Enduring or creeping
- **Institutional** (intentional and unintentional)

- A crisis in this perspective is: a period in which the arrangements of a policy sector are confronted by a relatively strong, continuous **decline in legitimacy**,
- leading to a chronic or **systemic failure** of a policy sector's arrangements.

- The **institutional arrangements** are the cause (or at least part) of the crisis. That is: the governance structure of a policy sector (its decision-making procedures, venues and policy instruments) as well as its policy image (how policies are understood and discussed) fail to meet the demands.

- Society (civil organizations, citizens/inhabitants) don't necessarily know how the formal institutes work.

THE ROOTS OF CRISES

Some root causes:

- Lack of effective frameworks or arrangements to deal with complexity (institutional deficit)
- Decline of expertise (institutional ignorance)
- Problematic public relations of policy makers and of politicians (institutional image)

Result:

Lack of mutual trust between citizens and policy makers: the politics of crisis management (Boin, 't Hart).

Examples:

- Inability of Europe to deal with the influx of refugees
- Negligence of the consequences of human-induced earthquakes for local communities

NEEDED IS A MORE INCLUSIVE APPROACH

Don't despair, there are lessons learned from disaster management and disaster governance/sociology (and from DRIVER+ for that matter!).

The shoulders of giants (Quarantelli, Dynes):

- *Chaos*, command and control
- *Continuity*, collaboration and cooperation
- The (high) reliability in/of complex sociotechnical systems. Institutions are managed, i.e. not every problem is wicked! (Emery Roe). High reliable networks (Sydow).

INNOVATION = PARADOX

- 1) There is no technological fix for social problems
- 2) Technologies alone don't change organizations/institutions

Two types of innovation (Clayton Christensen):

- Sustaining innovations: improvement, but to uphold the status quo.
- Disruptive innovations: create simpler and **imperfect solutions** in the short term, since they are less complex, and convenient (e.g. the introduction of the PC to replace big mainframes). (unpredictable) successful in the long term.
- The innovator's dilemma: why abandon a proven solution for a promising, yet imperfect and unpredictable solution? Result: inertia.

CATALYTIC INNOVATIONS AND SOCIAL CHANGE

Catalytic innovations (again: Clayton Christensen) aim at:

- Systemic social change with a focus on social and public values
- Offering services that are simpler and only good enough (e.g. frugal innovation) but meaningful
- Generating new (re)sources e.g. including volunteer manpower
- Encourage social entrepreneurs outside formal institutions to stimulate collaboration

INNOVATIONS IN CRIES AND DISASTERS

Online platforms:

- Technological fix: the information warehouse (give me the same information and I will save the world)
- The institutional response: control and integration of information

However:

- The warehouse approach neglects that different actors interpret information differently. Crisis information from society is ambiguous, messy, unclear.
- Disaster governance is characterized by decentralization and plurality in decision-making.

Platforms that enable collective sensemaking are needed:

- 1) Multiplicity: Information can have different meanings to different groups
- 2) Flux: Meanings vary depending on context and timing
- 3) Negotiation: Issue specific coalitions & open narratives

EXAMPLE 1

EXTENDING ORGANIZATIONS



Ready2Help as disruptive innovation: new ways of working, mobilization of people rather than informing people. Not perfect and sub-optimal, but it works.

EXAMPLE 2

EMERGENT SOCIAL MOVEMENTS



SOCIETAL RESPONSE: ALLOW FOR DIVERSITY

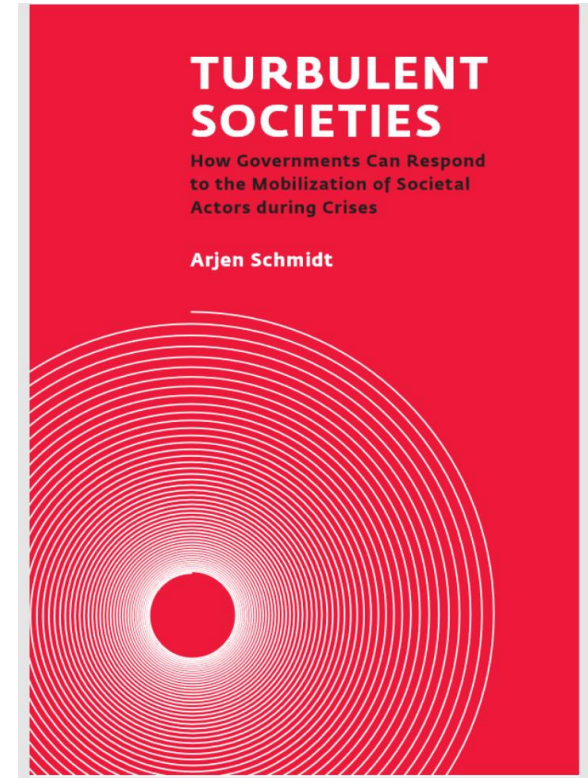
Rather than seeking to control, response institutions are challenged to tap into local, spontaneous and social movements initiatives

Institutions should consider the value of disruptive and catalytic innovations

The **resilience perspective** emphasizes an adaptive approach, facilitating different *transformative mechanisms* and allowing new initiatives to emerge

INTERMEZZO: INSTITUTIONAL RESPONSES

	Cooperative societal mobilization	Contrarian societal mobilization
Functional responsiveness	adaptive	Channeling (might be enough)
Political responsiveness	conservative	(need for) reformist action and a paradigm shift



THIS IS A MYTH...!

Counter arguments:

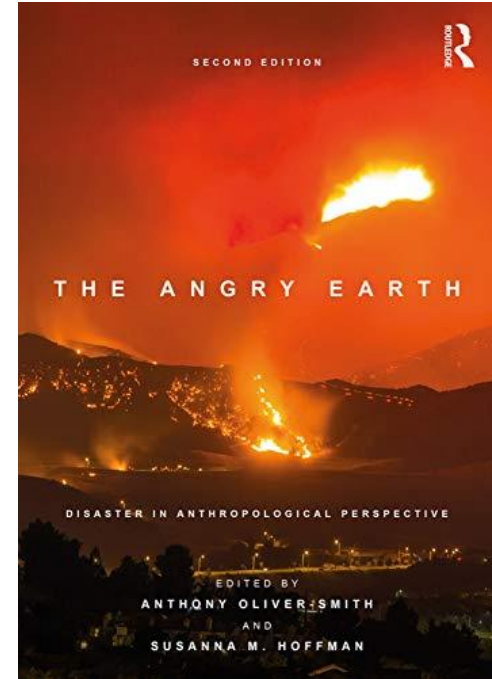
- Disasters lead to a collapse of sensemaking
- Integration is needed to fight chaos
- Technological platforms only will work if everyone is on the same page
- There is a lot of fake news 'out there'
- ...

MYTHS ARE MOBILIZING STORIES

Collaboration doesn't necessarily depend on perfectly shared ideas, interests, or norms, which are difficult to accomplish when time is short, meanings are divergent, and conditions are ambiguous.

The co-creation/production of knowledge and solutions (e.g. in crisis/disaster *living labs*) is helpful in making assumptions and interpretations of emergency responders, civic organizations, inhabitants explicit.

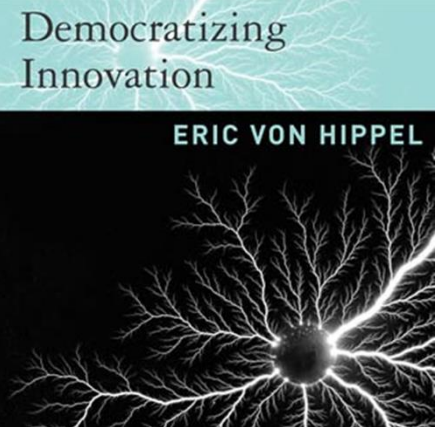
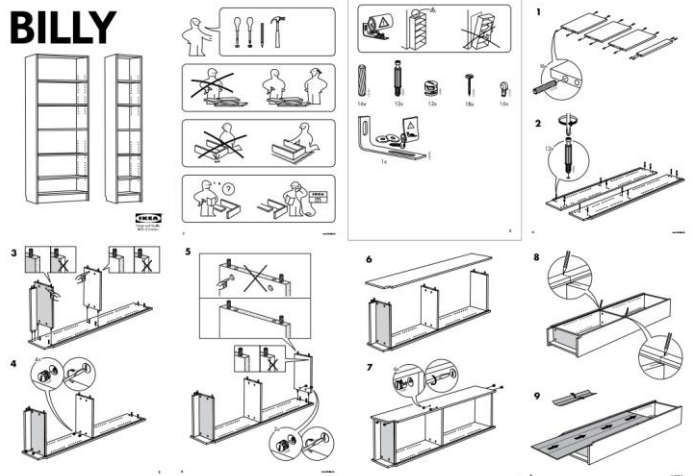
Crowd sourcing as catalytic innovation.



Liminal times and
the opportunity for change

CROWD SOURCING: DO IT YOURSELF CRISIS GOVERNANCE

BILLY



Following instructions

Creative outcomes

LINKS



The overall objective of LINKS is to strengthen links between technologies and society for improved European disaster resilience, by producing sustainable advanced learning on the use of social media and crowdsourcing (SMCS) in disasters. This is done across three complementary knowledge domains:

- 1) Disaster Risk Perception and Vulnerability (DRVP)
- 2) Disaster Management Processes (DMP)
- 3) Disaster Community Technologies (DCT)

From this knowledge base, LINKS will develop methods, tools and guidelines (LINKS Framework), informed through interactions with relevant stakeholders (LINKS Community) online (LINKS Community Center) and in person (LINKS Community Workshops).

LINKS Cases

<p>Case 1 - Italy EARTHQUAKE</p> <ul style="list-style-type: none">• Multi-Hazard Dynamics• Mountain Areas• Shrinking Communities• Seismic Swarm <p>UNIEI SCIT PDT</p>	<p>Case 4 - Denmark FLOODING</p> <ul style="list-style-type: none">• Early Warnings and Forecasts• Risk Communities• Democratizing Data• Climate Change Adaptation <p>UICP FRB HBR HBR</p>
<p>Case 2 - The Netherlands INDUSTRIAL</p> <ul style="list-style-type: none">• Chemical Spill• Explosions• Industrial Hazards• Preparation of Citizens <p>VU ST VRG.</p>	<p>Case 5 - Germany TERRORISM</p> <ul style="list-style-type: none">• Lack of Information• Quality of Information• Citizen Involvement• Training <p>DHPG</p>
<p>Case 3 - Germany DROUGHT</p> <ul style="list-style-type: none">• Large-Scale Area• Water Shortage• Forest Fires• Climate Change• Extreme Long Duration <p>SIC</p>	<p>Associated Case - Japan TSUNAMI</p> <ul style="list-style-type: none">• Low-Frequency• Evacuation Routes• Shelters• Vulnerable Groups <p>CRESD</p>



THANK YOU.
ANY QUESTIONS?