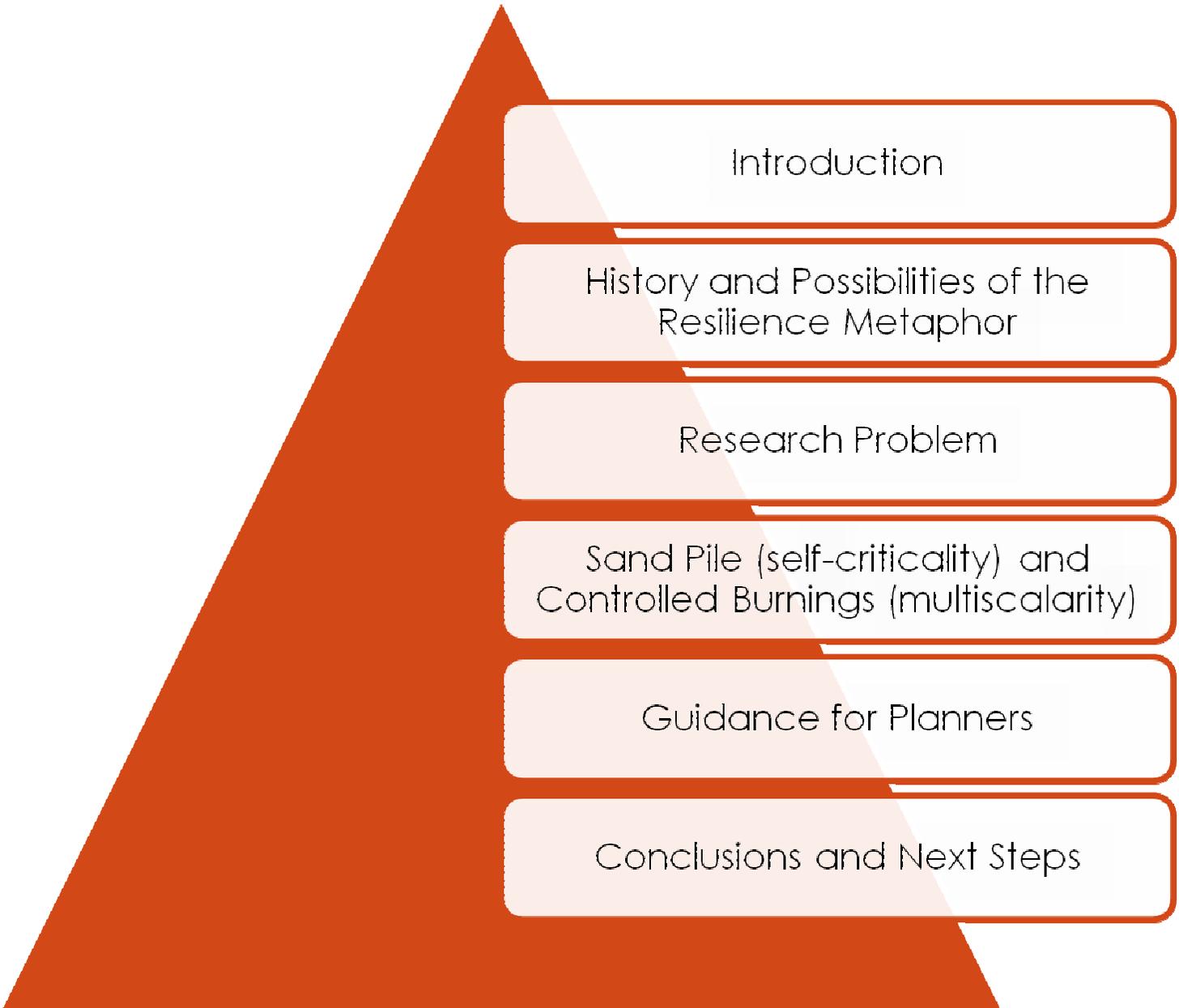


# METAPHORS

## FROM THE RESILIENCE LITERATURE: Guidance for Planners

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# Outline



Introduction

History and Possibilities of the Resilience Metaphor

Research Problem

Sand Pile (self-criticality) and Controlled Burnings (multiscalarity)

Guidance for Planners

Conclusions and Next Steps

# Introduction

- The resilient what?
  - Systems?
  - Managers?
- Scientific v. Psychological Resilience
- Resilient Thinking is the topic (as a noun, as opposed to as an adjective)
- Need for Resilient Thinking in Normal Spatial Analysis, Design and Planning (as opposed to existing or potential

# Resilience – History and Next Steps

- As an Ecological Concept
- As a “Response to Hazard” Concept
  - Natural Hazards
  - Climate Change
  - Human Accidents
  - Terrorism
- The Next Step: Is This a Useful Concept Spatial Analysis, Design, and Planning?

# Resilience in Ecology

- Dynamic structure of ecosystems
  - “stability” of the whole
- Dealing with Disturbances
  - Resilience – bounce back
  - Constancy – no change
  - Resistance – no effect

# Resilience in Ecology

- Analysis and Measures
  - Drivers and passengers
  - Diversity
  - Rivets
  - Idiosyncratic
- Feedback
  - Positive
  - Negative
- Stability



# Resilience as a Desirable Attribute in Hazard Occurrences

Paton & Johnston, 2001

Adger, 2005

Allison & Martinay, 2008

**Godschalk, 2003**

**Berke, 2003**

**Cities need to plan  
for such  
occurrences**



# Resilience/Hazards/ Terrorism

Not much out there:

**Coaffee & Rogers, 2008**

**Coaffee, Wood & Rogers, 2009**

**Cities are “threat-  
rich” and need  
PREPAREDNESS**

# Resilience as an Adaption to Climate Change

UN Habitat, ICLEI, “Resilient Cities 2011”

Adaptation of environments

Shocks, in natural and social systems

**Berke:** Low levels of adaptive capacity

**Cities need to  
adapt for such  
occurrences**



# The Next Step:

- Is “Resilience” a useful concept for spatial analysis, design, and planning (i.e., non-event instigated situations)?
- The focus would be on economic and/or social “properties” of spaces (e.g., metropolitan areas)
- Focus would be on dynamics of systems as they occur over space

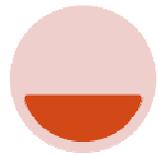
# RESEARCH PROBLEM

**To expose and explain  
resilience metaphors  
that are most  
appropriate for these  
kinds of situations**

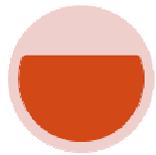
To use these metaphors  
to understand likely  
outcomes in several  
planning contexts

- *A Transit Improvement*
- *Growth of an Economic Sector*
- *Changes in Lifestyles*
- *Environmental Migration*

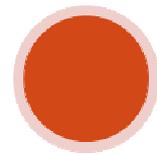
# Metaphor → Practice



Metaphors



Concepts



Scientific  
Rules

# COMPLEXITY METAPHORS (+ underlying Concepts)

## Sand Piles

- Per Bak
- ***Self-Organized Criticality***

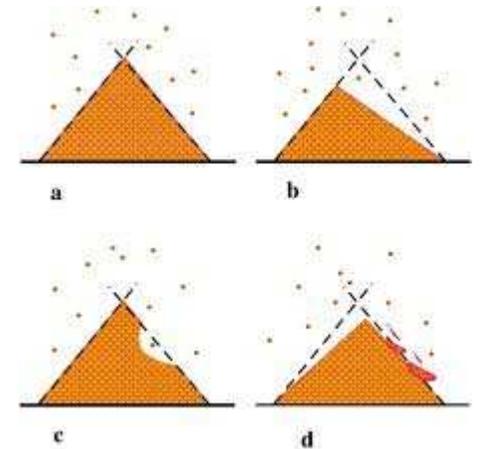
## Controlled Burns

- Forest Management
- ***Multiscalarity***

# Sand Piles

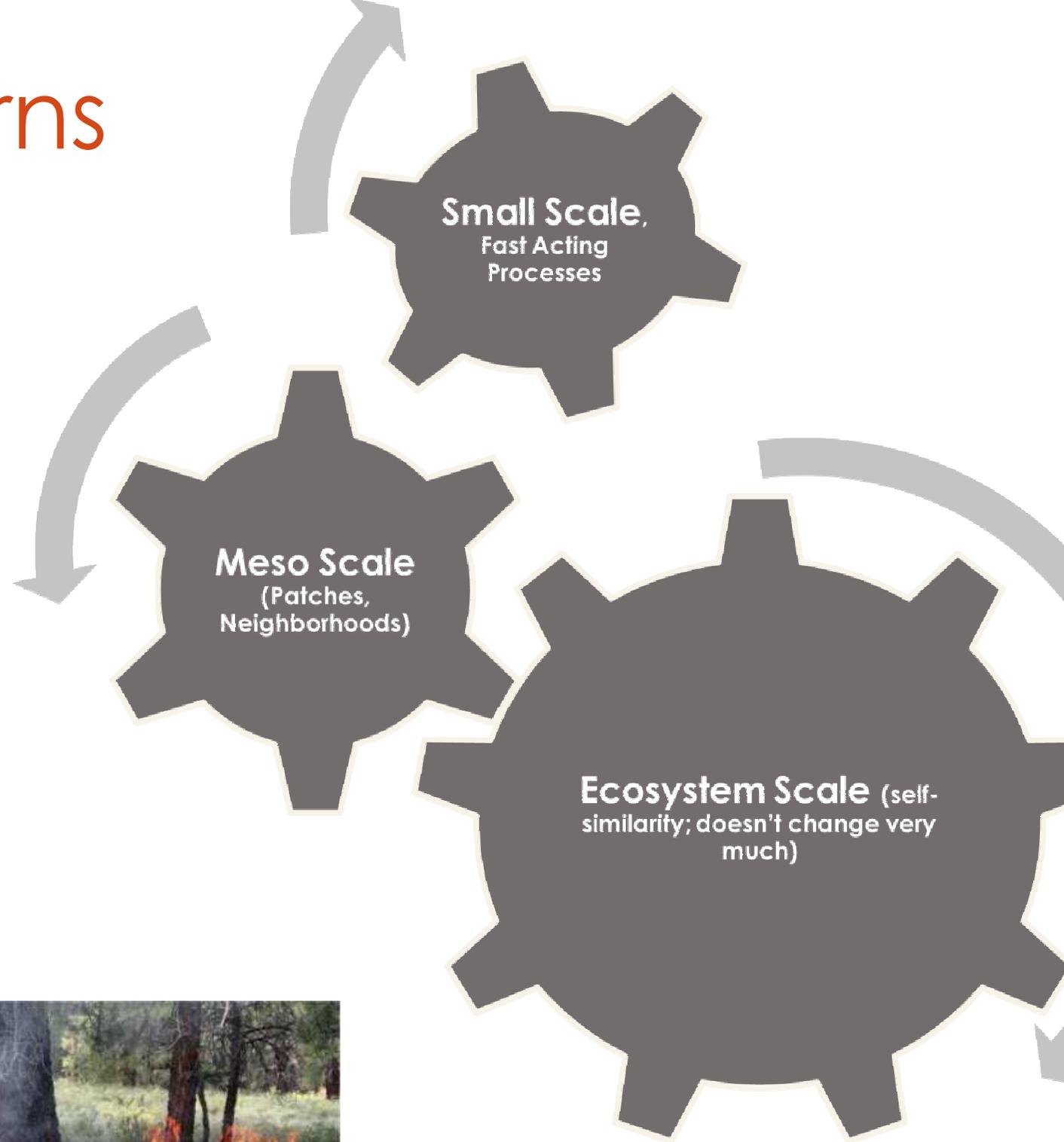


- The Specific Example
- The Concept that It Contains
  - Self Criticality
  - Thresholds & Tipping Points
  - Agent Based Models to Describe System



# Controlled Burns

- The Specific Context
- **Multiscalarity** – things occur in nature in hierarchies – the bottom of the hierarchies occur “faster” and build up higher levels, which move slowly.



Study design

1993	1994	1995	1996

Harvest event



# Guidance for Planners

An Urban Trolley



Polycentric Employment Centers within a Metropolitan Area



LATs



# The Wave- Ft. Lauderdale Urban Trolley The System and the Disturbance

What would



say?

Should it be  
burned?



- Does not change the mobility patterns of the region
- Creates a small insignificant avalanche
- But Sand pile stays the same

• **WAVE NEEDS TO BE  
CONNECTED TO OTHER TRANSIT  
MODES**

- The ecosystem is the transportation network & desire to use it
- System-wide alteration not likely
- “Burning” of inefficient road patterns, possibly

# New Economic Sectors & Employment Centers The System and the Disturbance

What would



say?

Should it be  
burned?



- Sand pile is overall economic activity, spatially distributed

- Introduction of new types of economic activity makes the Sand Pile larger and perhaps changes its shape.

- Small adjustments in the Sand pile as competition for space occurs among economic actors

- System is spatial pattern of employment

- Certain firms and spaces become obsolete and become obstacles for functioning

- “MAKING ROOM” for new firms = “burning” of previous land use pattern

# LATs

## The System and the Disturbance

What would



say?

Should it be  
burned?



- Sand pile is the Housing Market

- LATs stress the Housing Market (Sand pile) by creating the need for additional housing units

- Creates small avalanches in certain sections of the Sand pile (neighborhoods that are attractive to LATs)

- But Sand pile stays the same

- System is the Housing Market

- LATs increase the demand for “smaller” units, making certain kinds of housing non-attractive or non-competitive

- The non-attractive or non-competitive housing unit types may need to be cleared out

Or

- LATs should live together!?

# Conclusion and Next Steps

Metaphors Are Useful for Thinking About Planning Situations

The concepts underneath the metaphors are even more important

Resilience is a scientific concept

Resilience appears to be useful for spatial analysis, design and planning

It is MORE THAN Psychological Resilience

# Thank you for your Attention!

Resilience is a scientific concept

Change can occur from slow moving processes

Remember Resilient Thinking

Let's get back to planning instead of reacting to events