

# Disturbance & Emergence

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PROCESSES OF CREATING SPACES IN THE SCIENCE/POLICY  
INTERFACE TO TRANSFORM KNOWLEDGE INTO ACTION

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# Background: One Health

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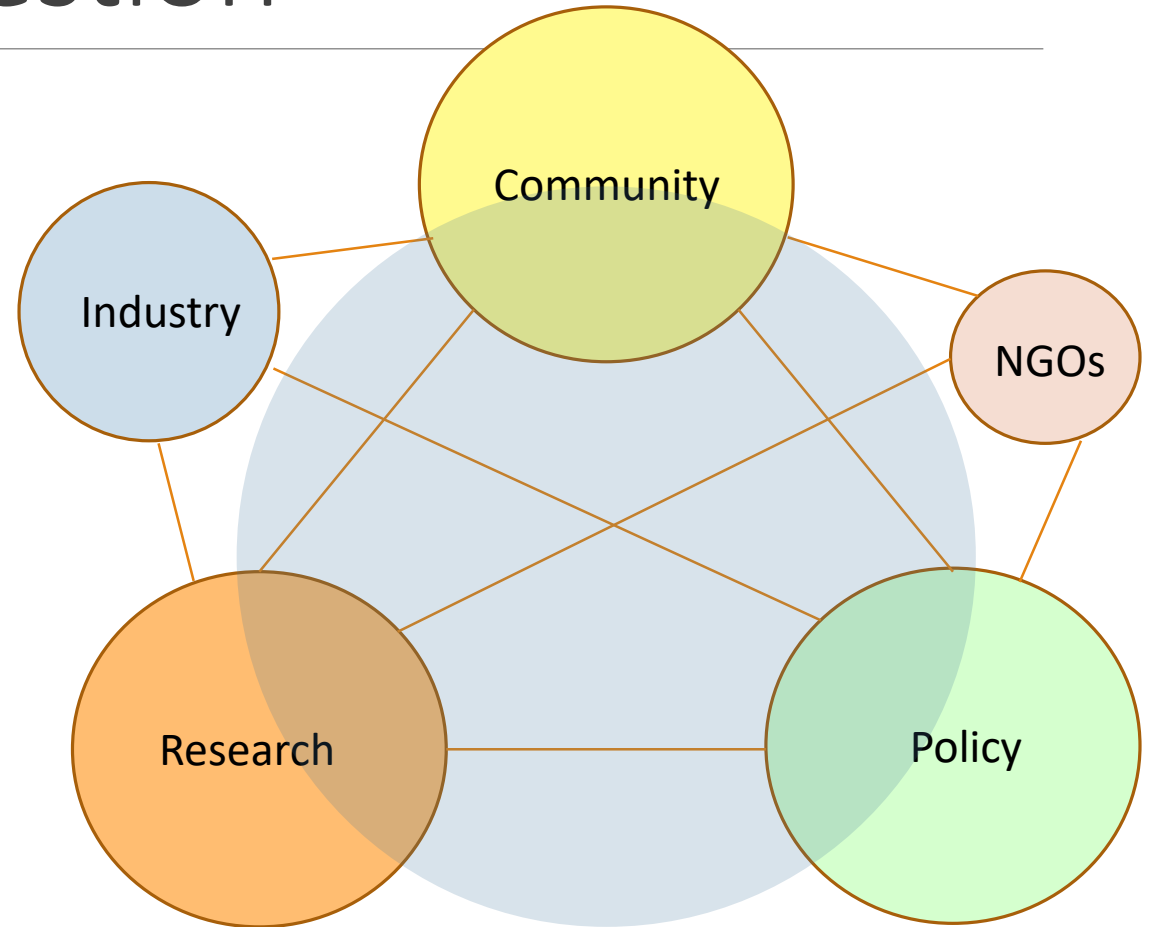


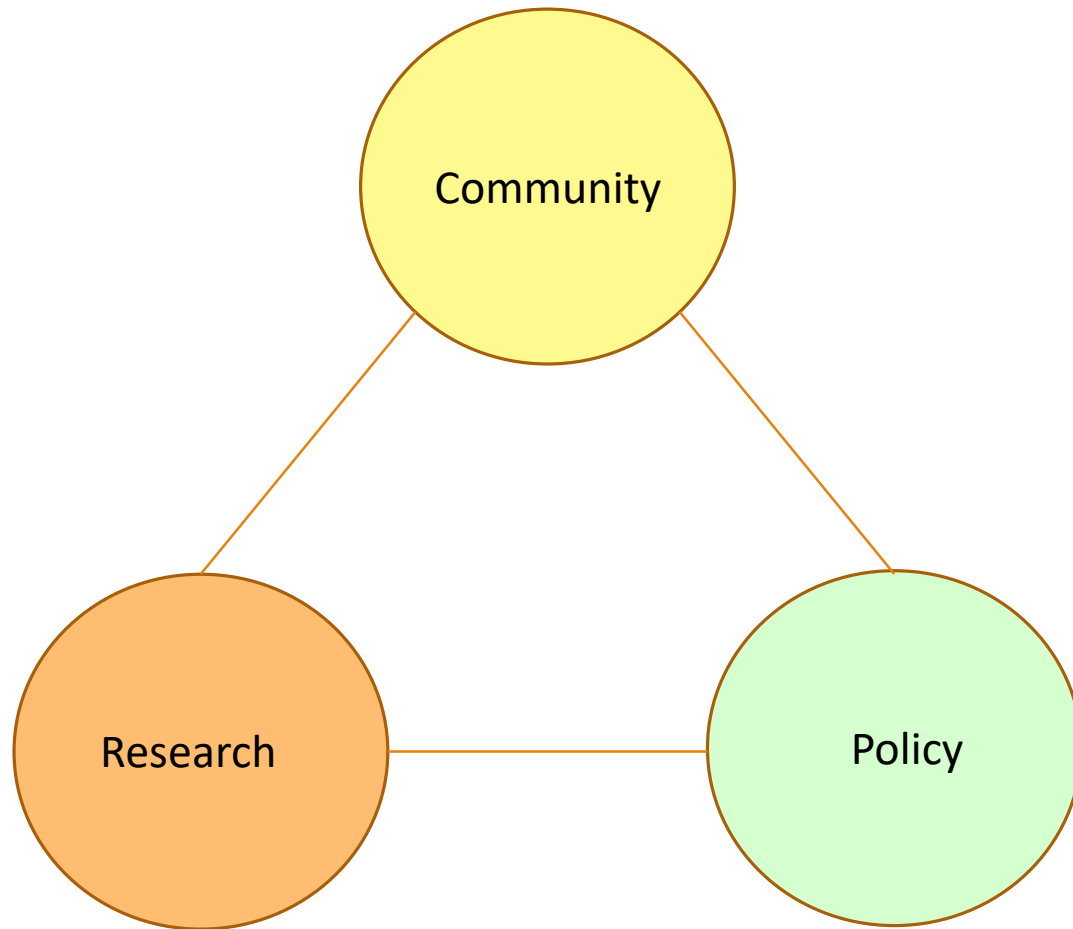
- Integrated knowledge
- Transforming this knowledge to action

# Formation of the Question

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- Science-policy interface
- Creating actionable knowledge
- Who else is missing from the picture?





## Current state of Institutional Interactions

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### Features:

- Isolated entities
- Siloed

### Connections are:

- Linear
- Contingent

# Future state: Building Space

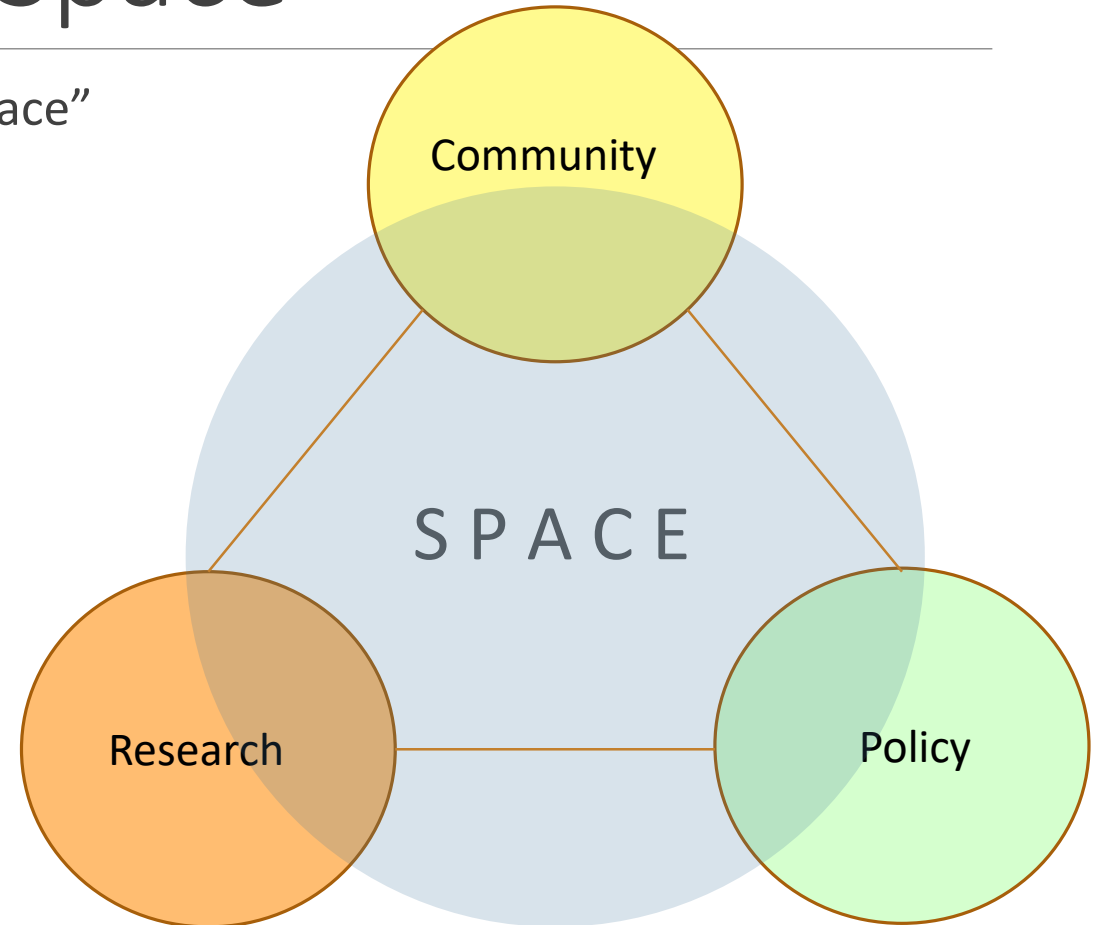
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“We often think about things and place, but not space”

Space is powerful, yet often overlooked

What does this space look like

- Structure
- Function
- Principles



# Understanding Space: What can we learn from physical models?

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- Scale 1: **Structure** - Water molecules
- Scale 2: **Functions** - Soil Cores
- Scale 3: **Principles** - Ecosystems

## Questions:

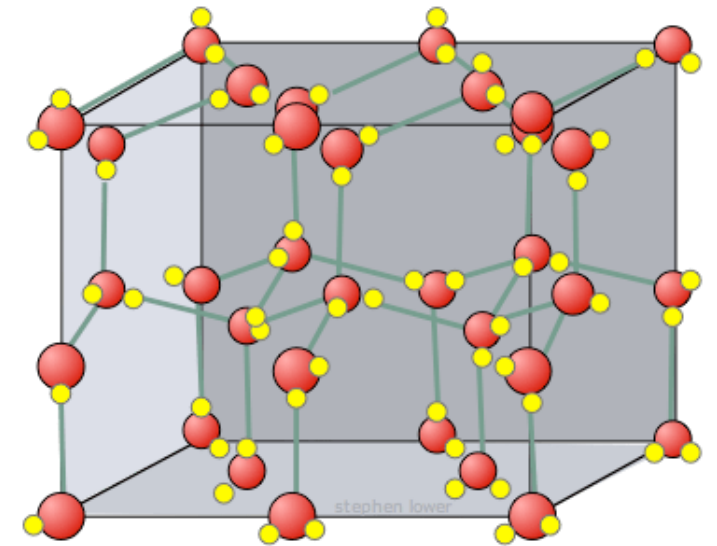
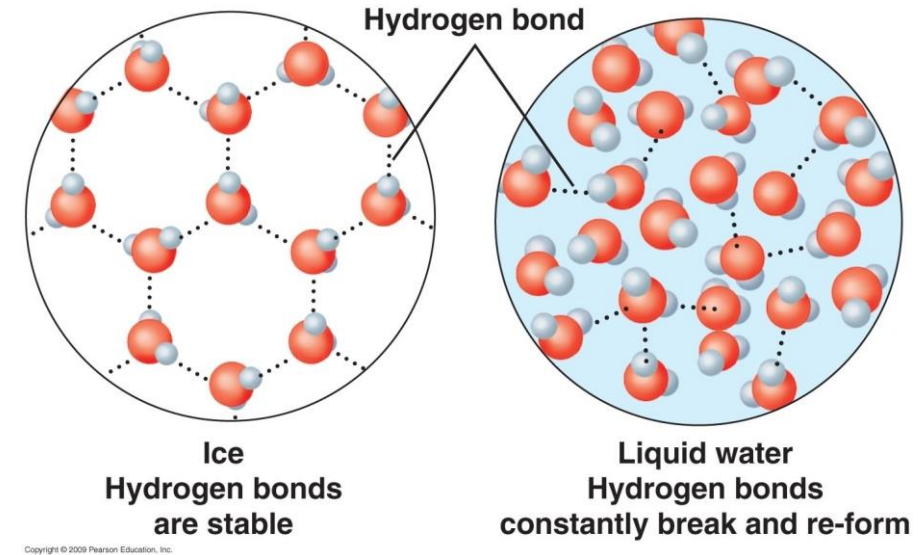
- What does space do?
- What is space for?
- What does it enable to occur?



# Scale 1: Structure Molecular Model

## Structure forms space

1. Structure holds multidimensional space
2. Bonds hold energy
3. Potential rearrangement of energy

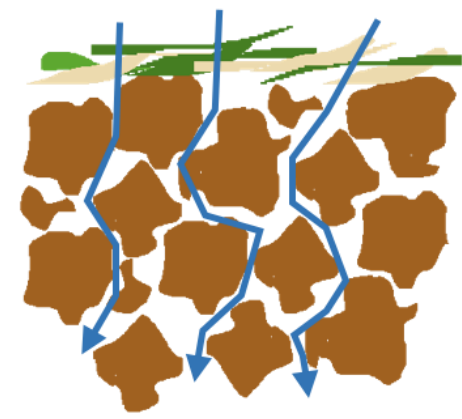


# Scale 2: Function Soil Core Model

## Structure enables functions of space

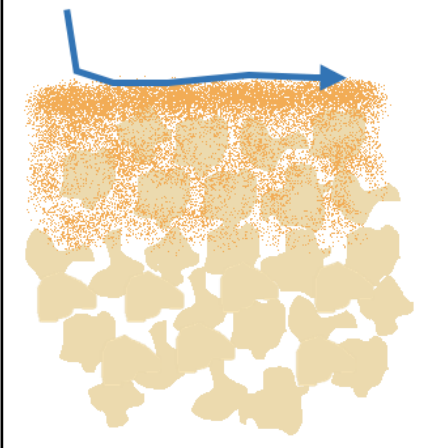
1. Structural irregularities allow for functions
2. Functions of space:
  - Flow
  - Circulation
  - Aeration
  - Expansion/oscillation
  - Drainage/holding capacity balance

Figure 1.



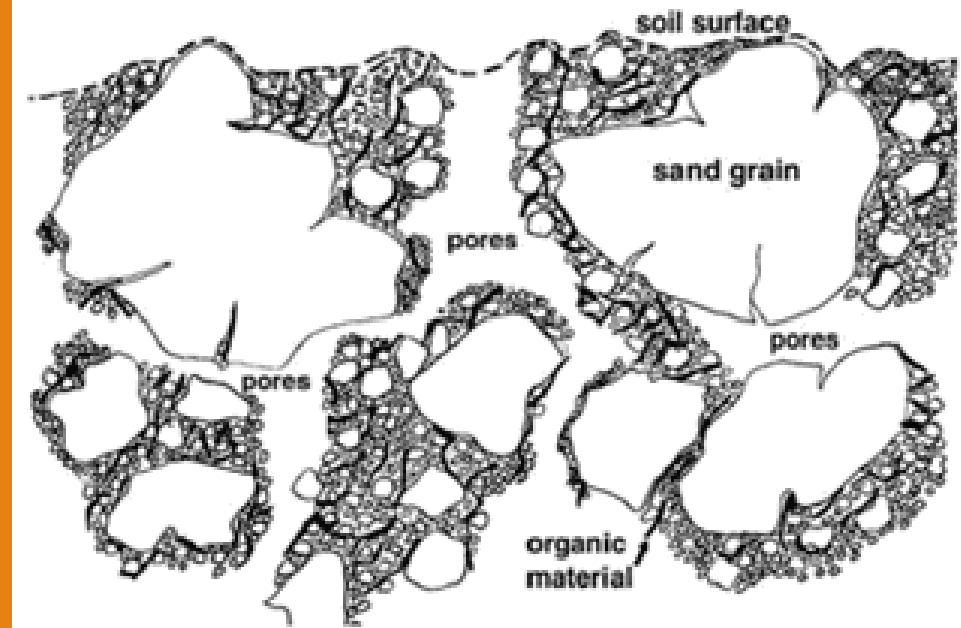
**Healthy Soil**

- Good structure
- Water infiltration into soil pores
- Slows water velocity
- Dark color
- High organic matter
- Soil surface is covered with dead vegetation



**Degraded Soil**

- Weak structure
- No water infiltration soil pores clogged
- Water runs off quickly
- Light color
- Low organic matter
- Soil surface is covered with a soil crust

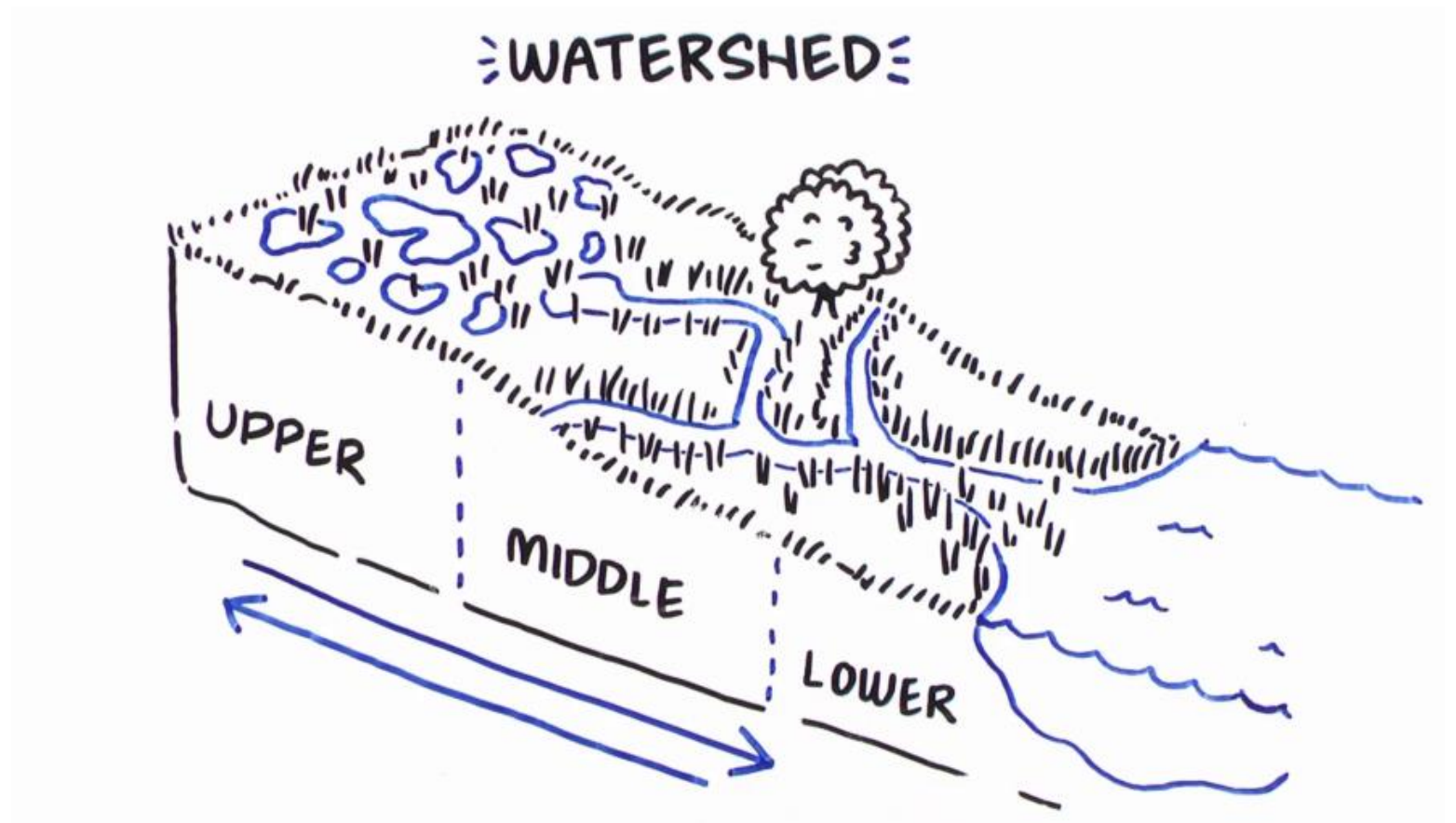




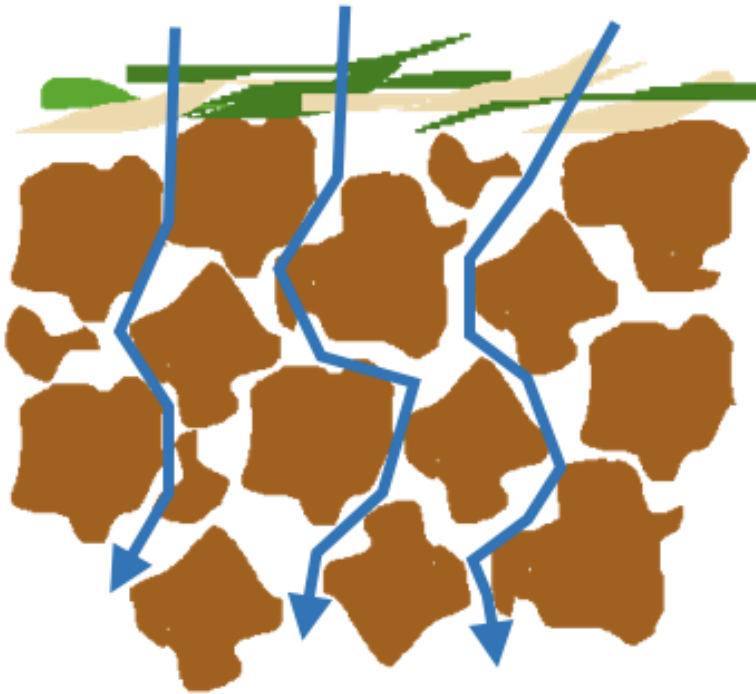
# Scale 3: Physical Laws Ecosystem Model

## Functions in practice

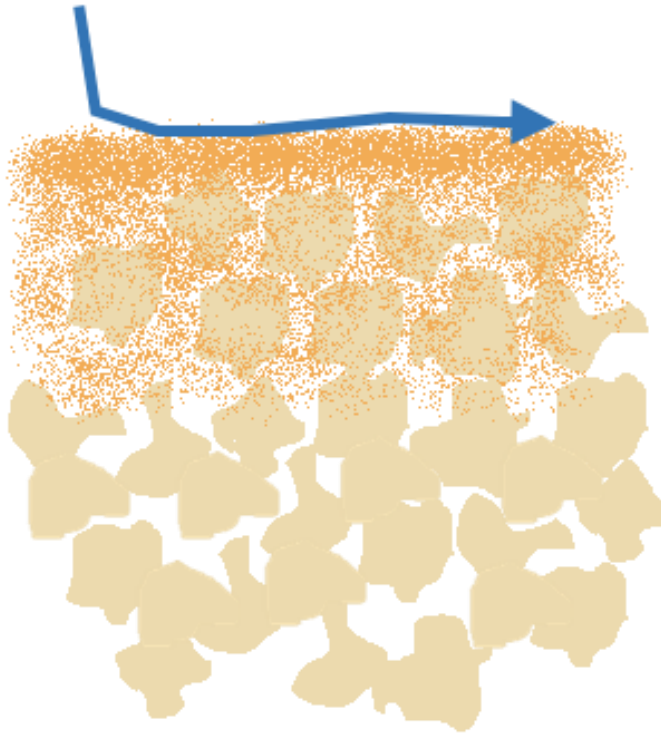
1. Water flows downhill
2. Water flows the path of least resistance



Space



Compacted Space



# What does this mean for institutional spaces?

## Compacted space:

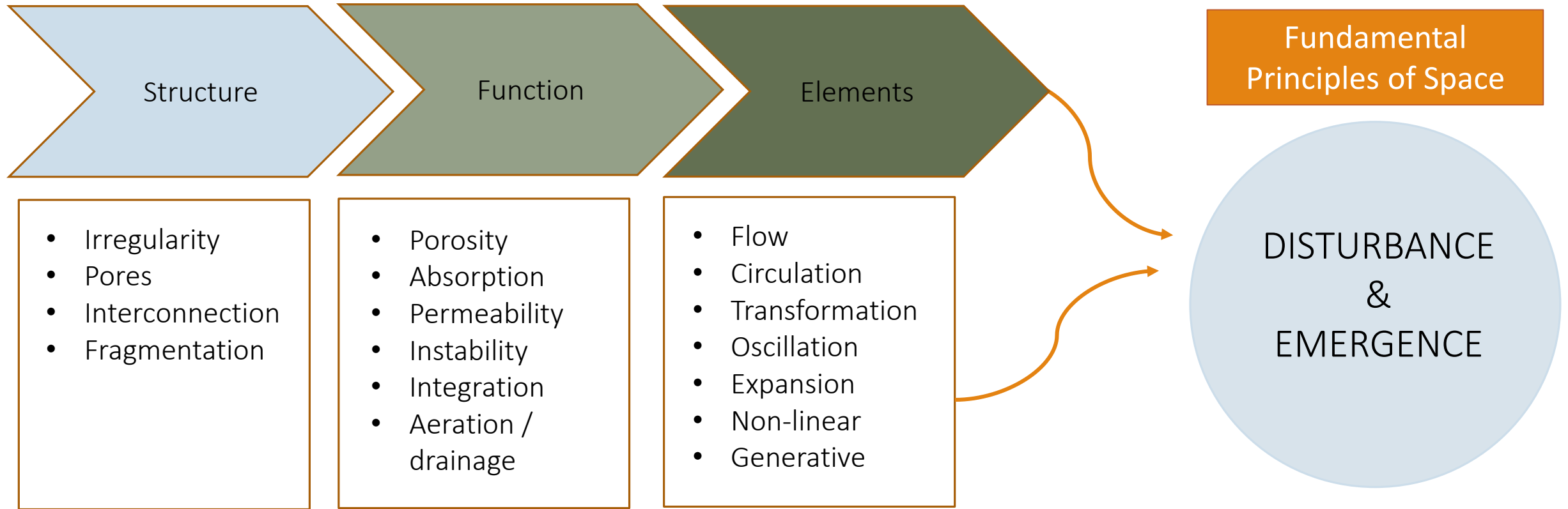
- Diminishes generation, infiltration, circulation of ideas
- Leads to superficial treatment of problems and solutions

## SPACE

- **Embracing irregularity** – creates strong structure to hold space between by retaining autonomy and integrity of actors
- **Enabling flow** – space allows aeration, expansion and contraction of ideas. Room for ideas to generate and circulate freely

# Space: moving knowledge to action

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# Disturbance

- Destabilizing existing institutional paradigms & pretenses that hold us back
- Turning things on their head to reveal the previously unseen
- Rearranging prior conceptions to allow for more authentic engagement
- *Allows for transformation*



# Emergence

- Emergence is transformation
  - “Much coming from little”
  - “The whole is more than the sum of its parts”
- Emergence in socio-institutional spaces is the collective creation of thought and action that is more than what each individual brought to the table
- *Disturbance and the spaces it creates enables emergence*



# Space in practice: Moving knowledge to action

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- “SPACE” allows us to **transform** our existing practices
- Transformative space encompasses disturbance and emergence

*When we build space and **enable** disturbance and emergence, it allows a more **organic process of engagement and possibility** that leads us to places we may never have expected if we stayed within our traditional silos on linear paths*



# Thank you!

My appreciation to:

- Kaja Brix
- Vladimir Alexeev
- Javier Fochesatto & Bob Bolton
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- NSF
- My lovely cohort!