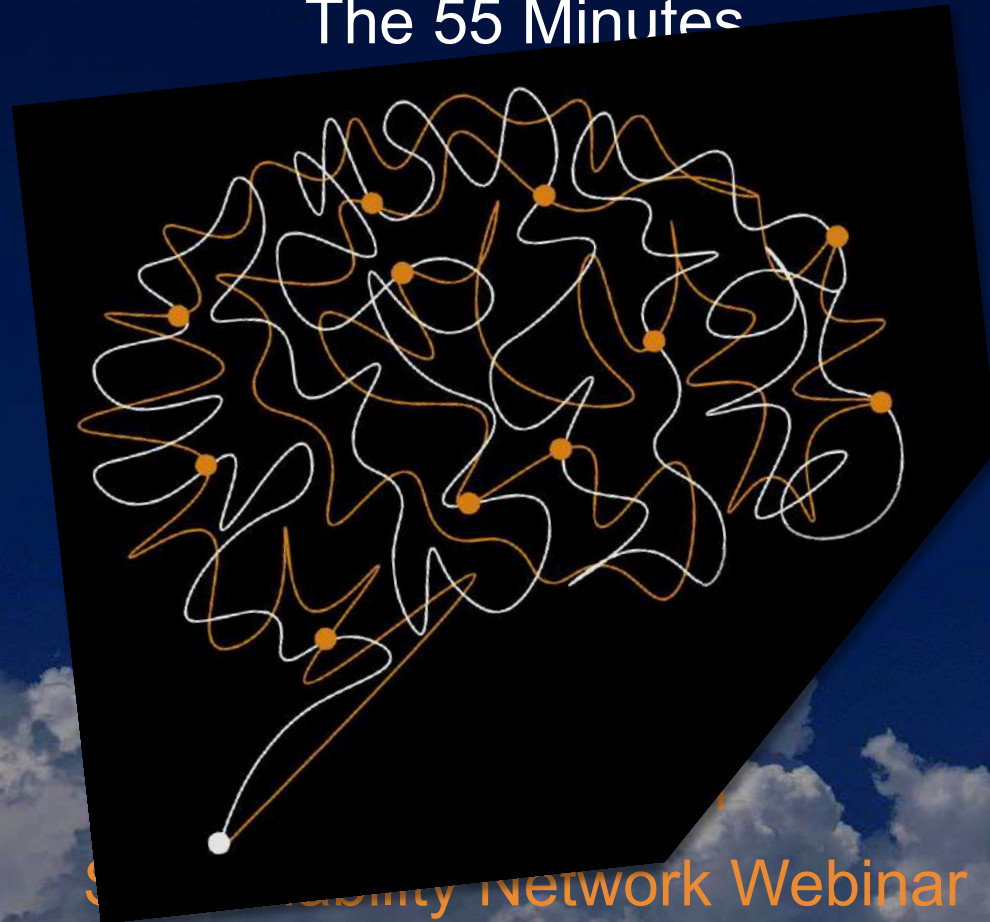


# SYSTEMS, NOT SYMPTOMS

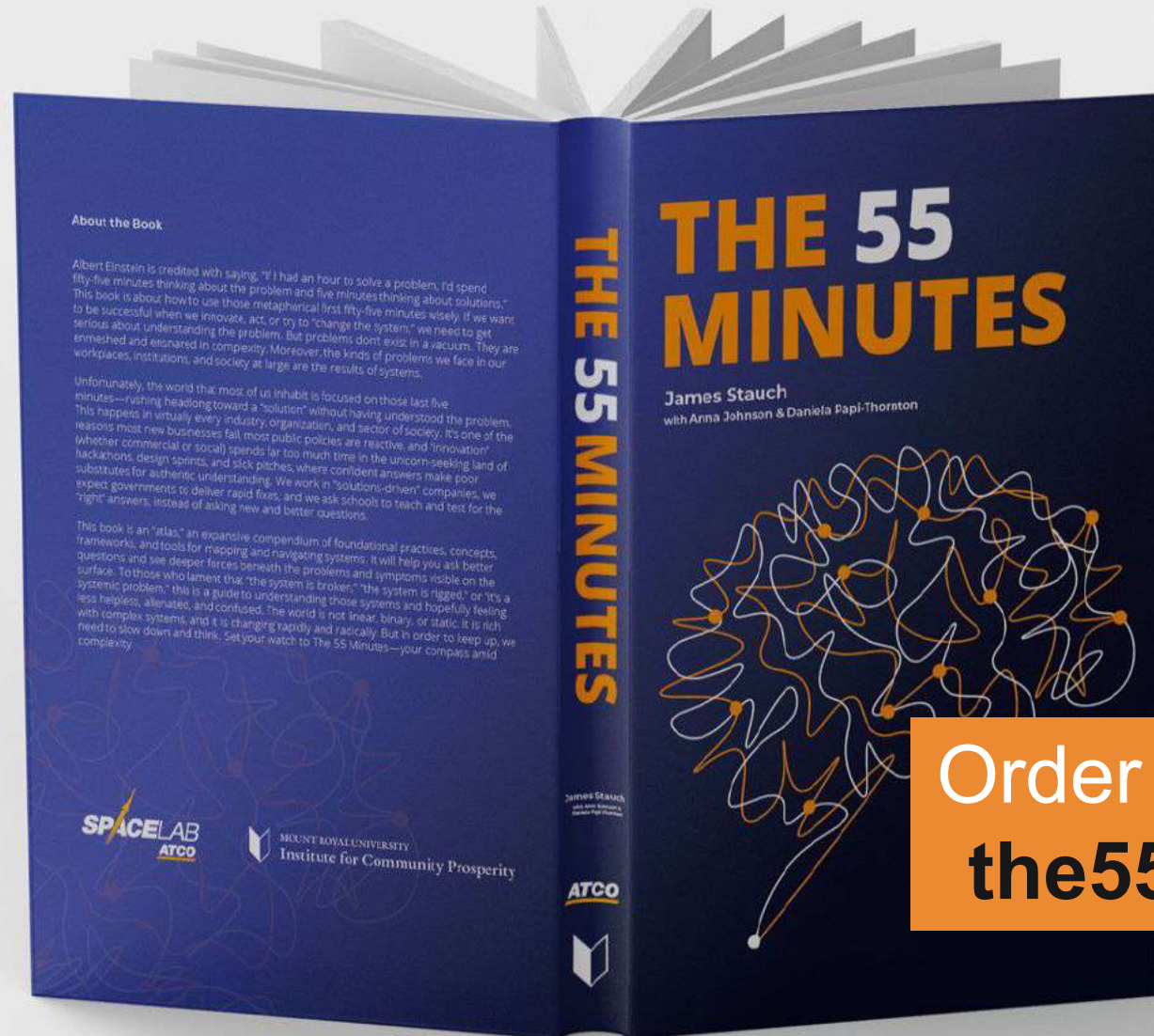
Rethinking environmental challenges through

The 55 Minutes



Security Network Webinar

July 25, 2025



Order or Download at  
[the55minutes.com](http://the55minutes.com)

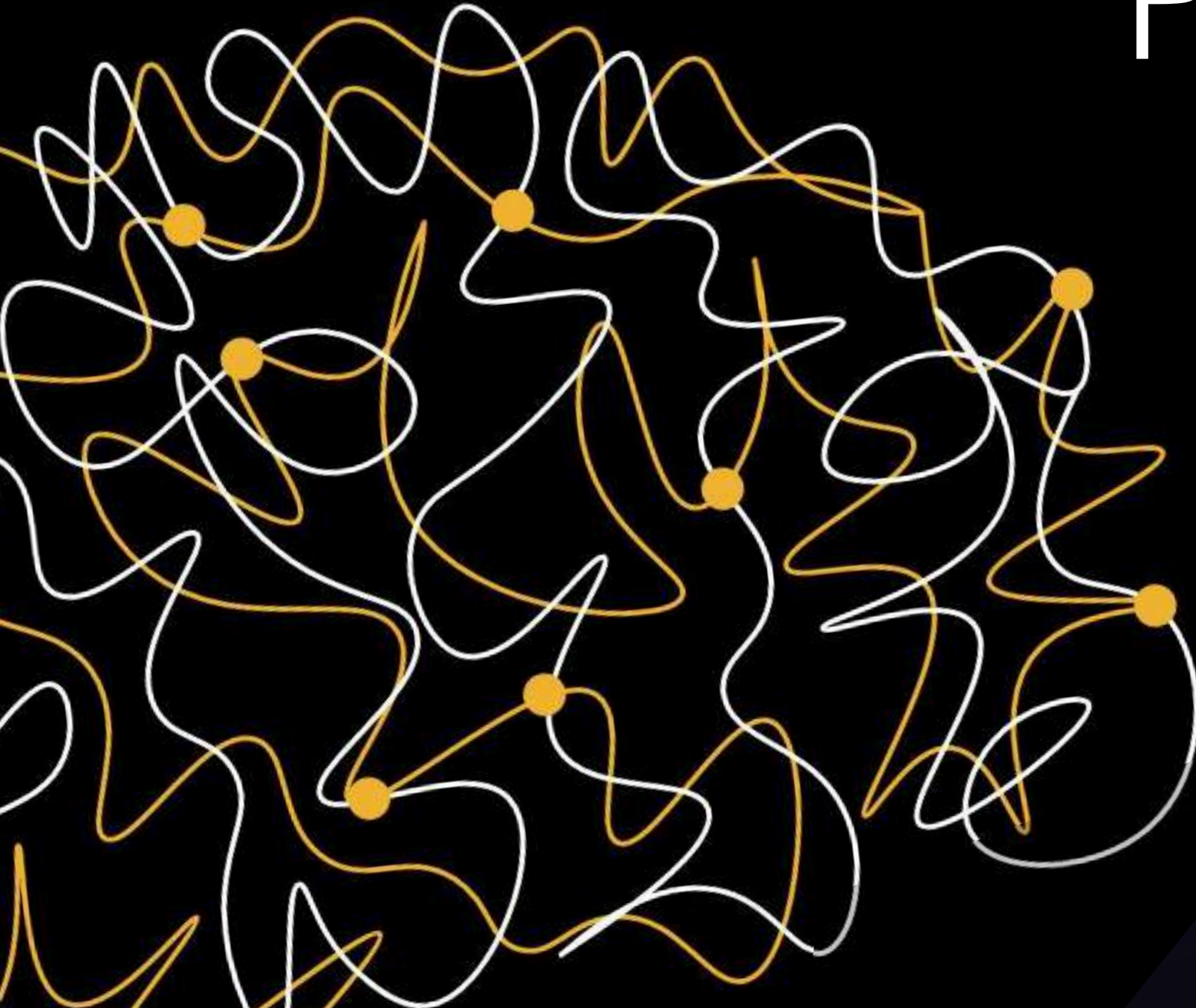
“If I was given an hour to solve a difficult problem, and my life depended on it,...

I would spend the first fifty-five minutes of the hour thinking about the problem and the last five minutes trying to solve it.”

- Albert Einstein (?)



# Producing partners



Institute for  
Community Prosperity

# Who is this for, and how might you use it?

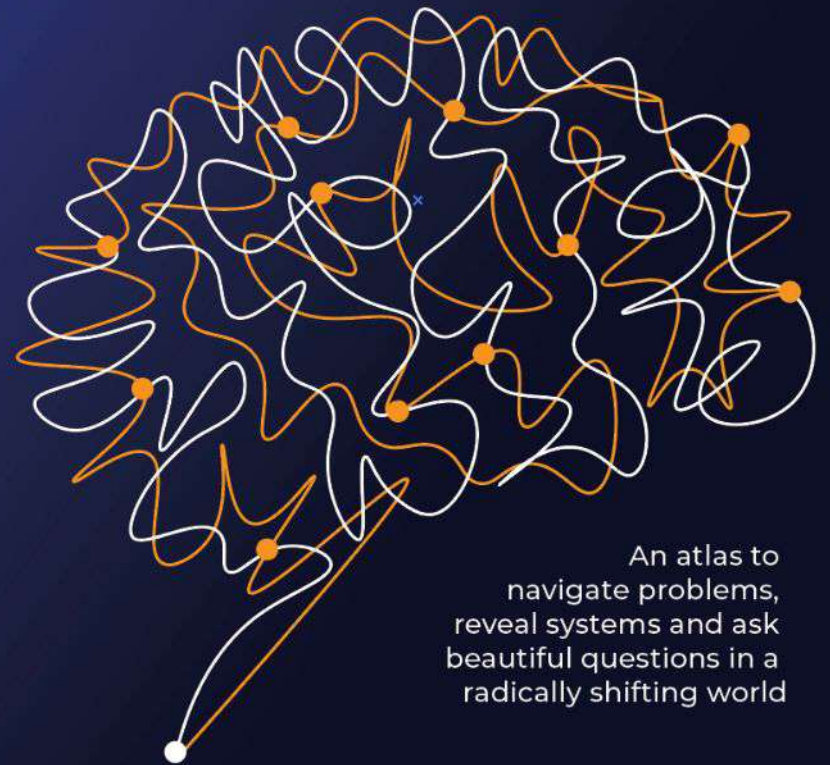


## Starting Point Query

# THE 55 MINUTES

James Stauch

with Anna Johnson & Daniela Papi-Thornton



An atlas to  
navigate problems,  
reveal systems and ask  
beautiful questions in a  
radically shifting world

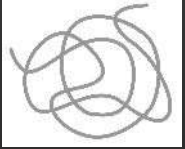
# Foundations



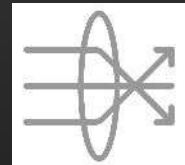
Systems



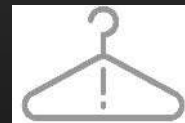
Systems Practice



Problems



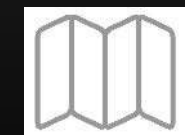
Complexity Check



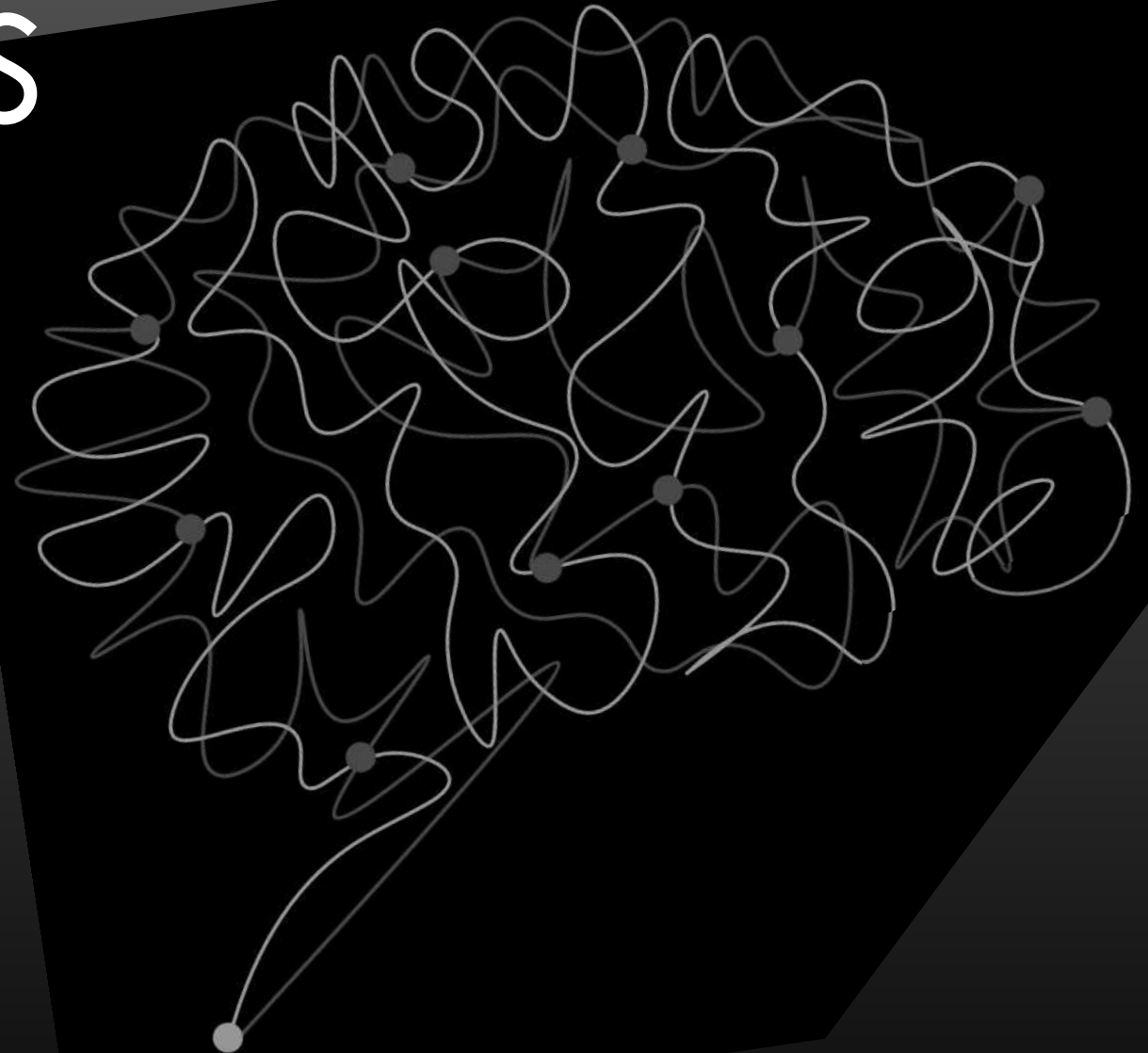
Avoiding Solution Bias



Learning



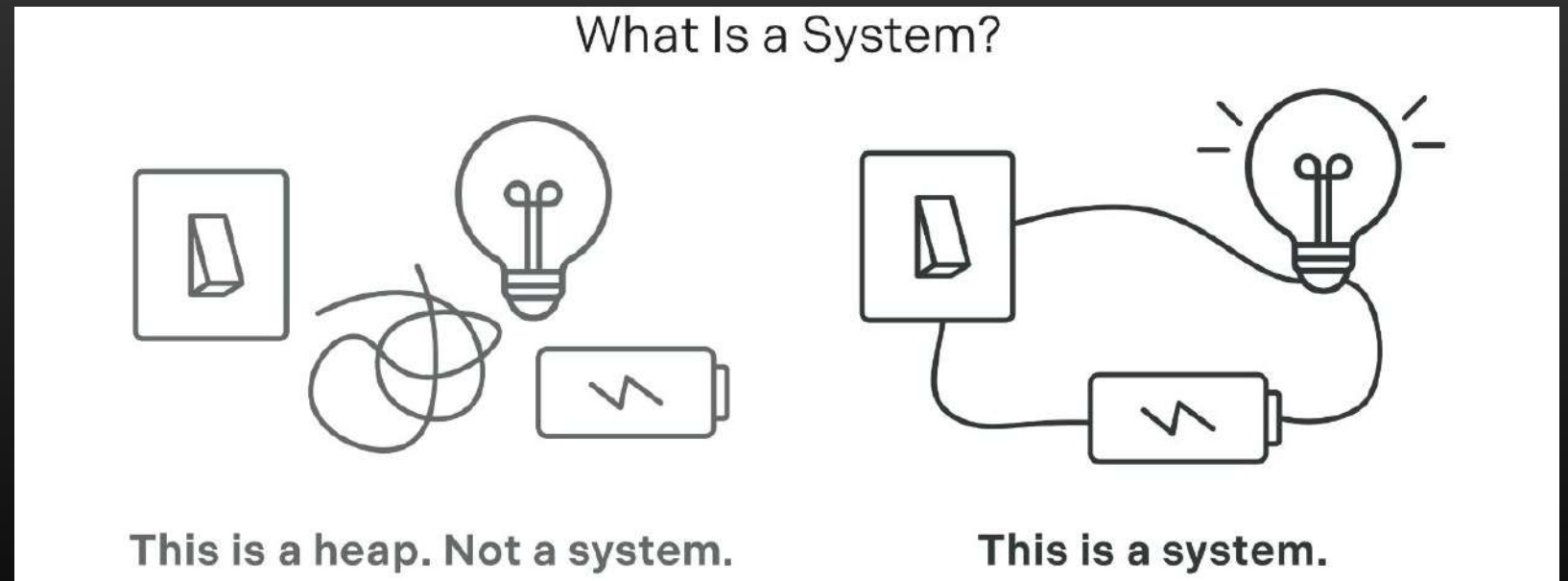
Mapping



# Every system has three components:

1. elements (nodes, parts)
2. interconnections (interactions)
3. function (purpose, emergent properties)

# Systems





Complex systems are everywhere

Systems respond to the surrounding environment

Systems are nested in other systems

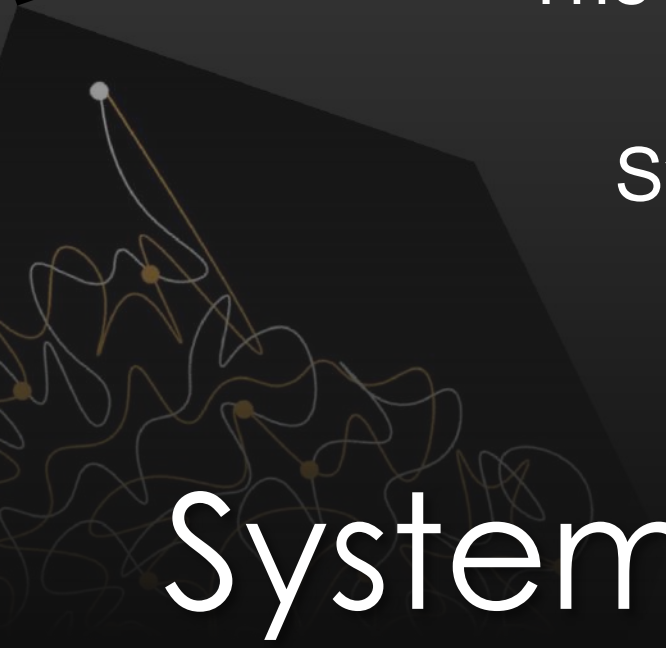
The results of a complex system are frequently not intended

Systems tend to be circular and connected to many other systems

Organizations are complex systems

# Systems

Systems thinking is not new



Complex  
systems are  
everywhere

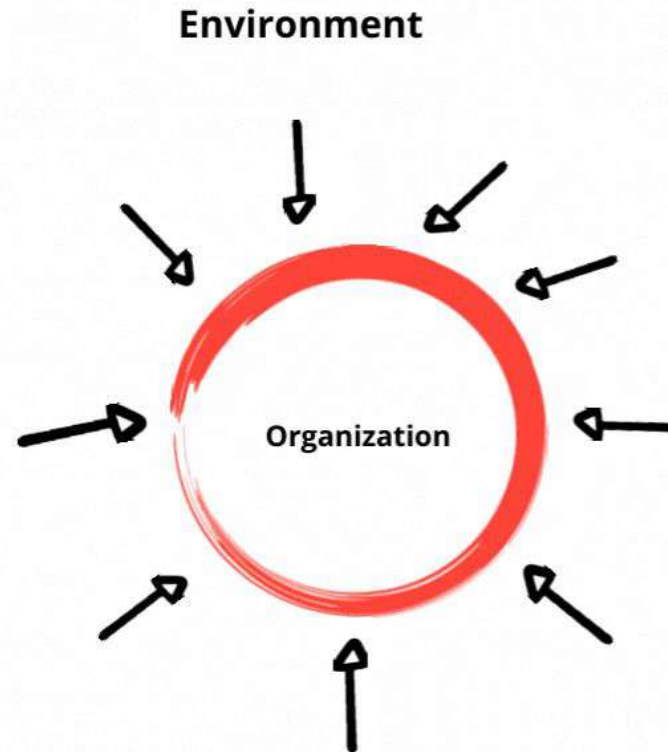


*“To see a world in a grain of sand  
And a heaven in a wild flower,  
Hold infinity in the palm of your hand  
And eternity in an hour.”*

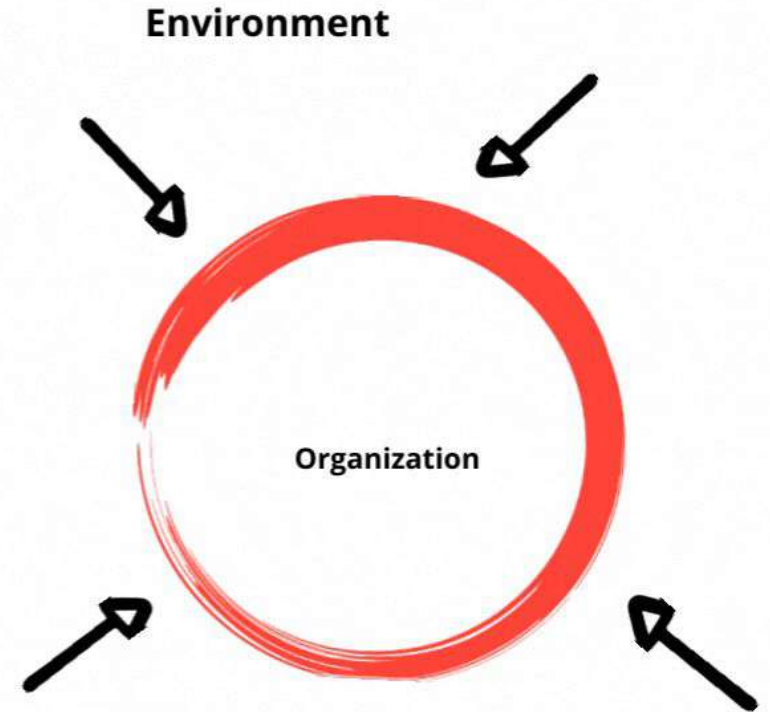
- William Blake, *Auguries of Innocence*

# Systems respond to the surrounding environment

## REQUISITE VARIETY



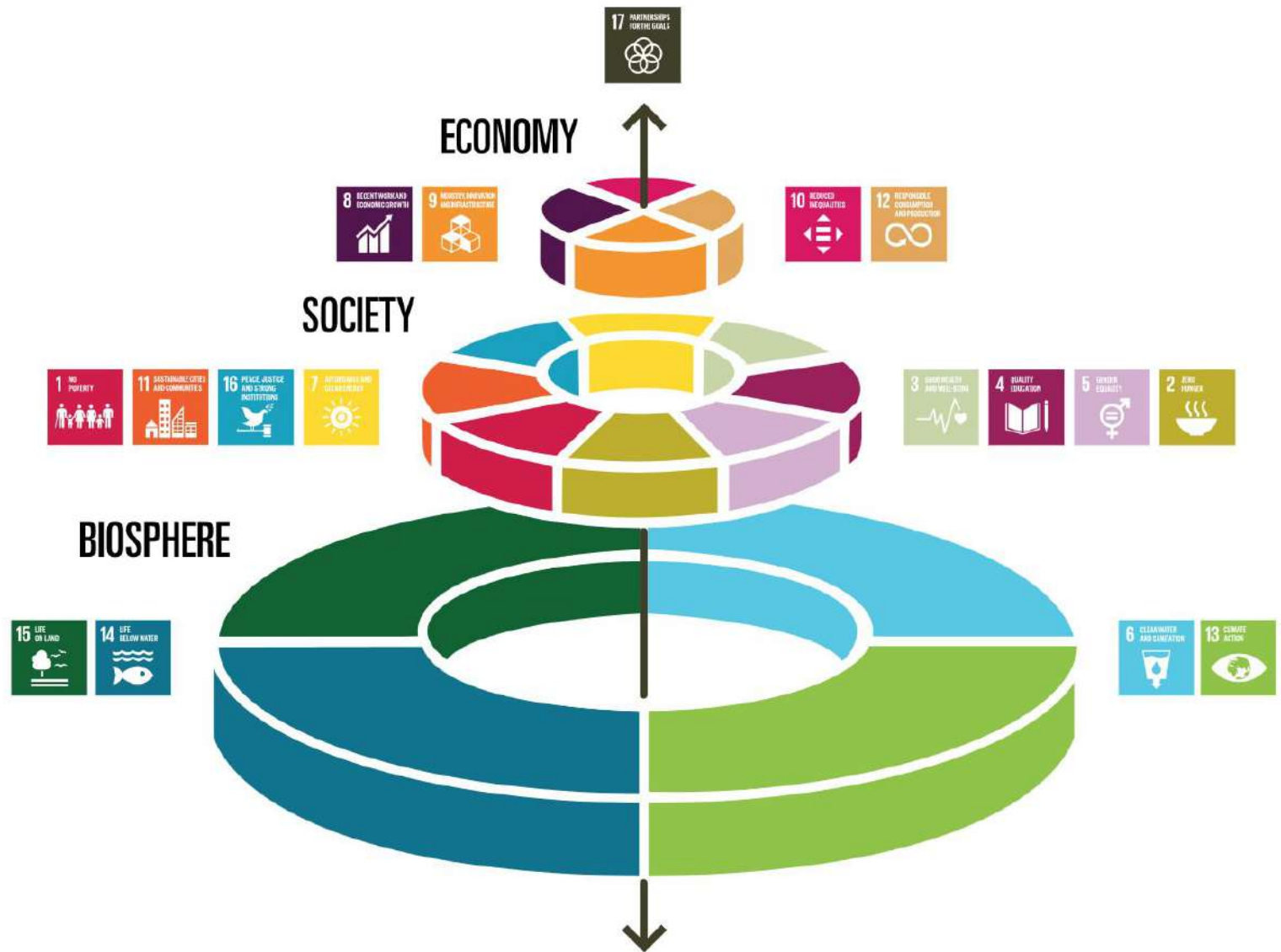
C, Organization responds



D, Organization thrives

Variety of responses (  ) more than Problems (  ) so organization thrives

# Systems are nested in other systems



A visualization of the SDGs that implies that economies and societies are seen as embedded parts of the biosphere.

*Image Credit: Azote for Stockholm Resilience Centre, Stockholm University*

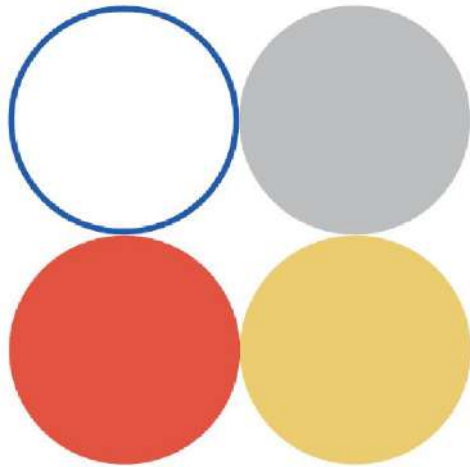
The results of a system are frequently not intended



# Systems tend to be circular, and connected to other systems

## Aging & Thriving In the 21st Century

A Scan and Selective Systems Analysis of Issues, Trends,  
and Innovations Vital to Older Adults in Canada

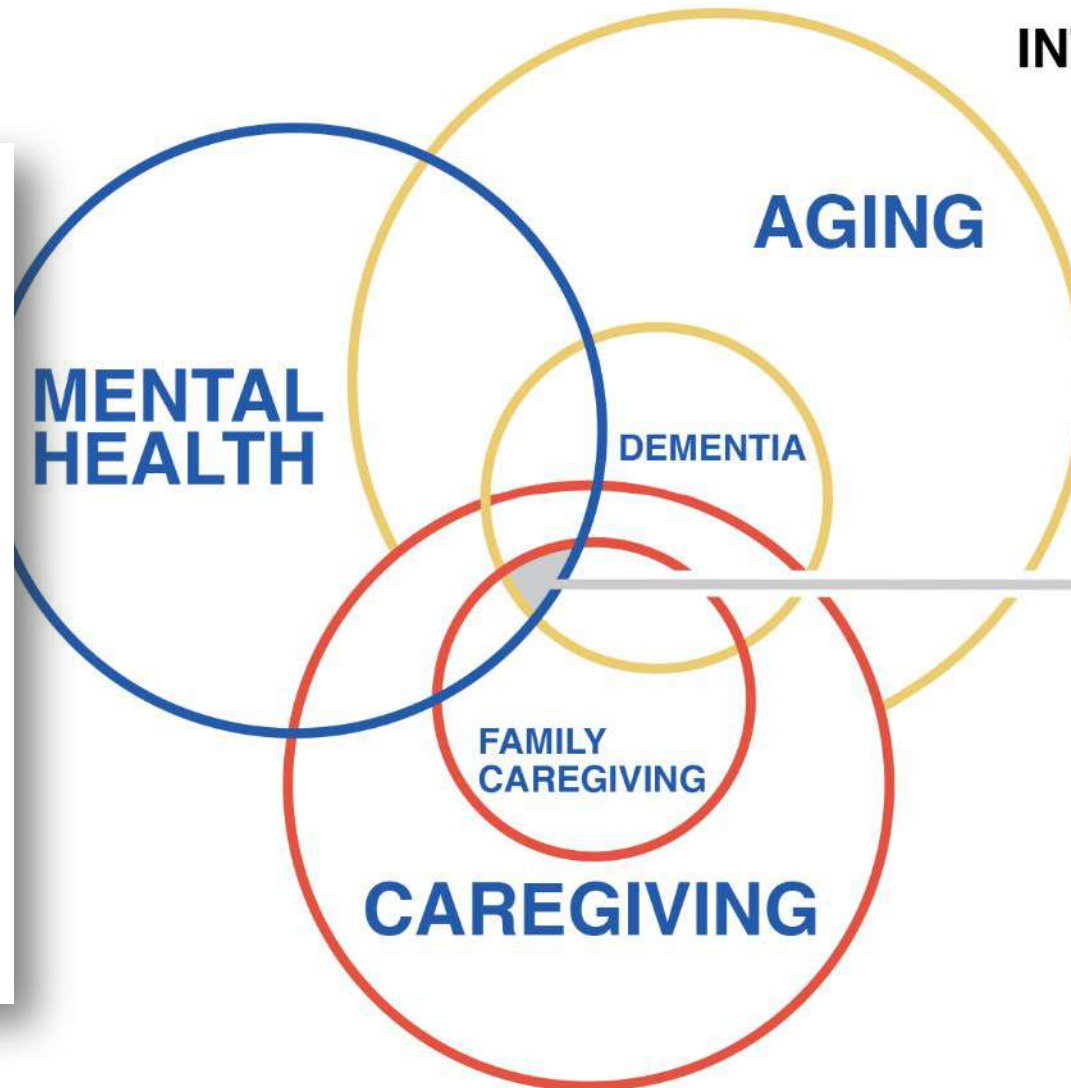


James  
Stauch

Institute for Community  
Prosperity

Mount Royal University  
November, 2021

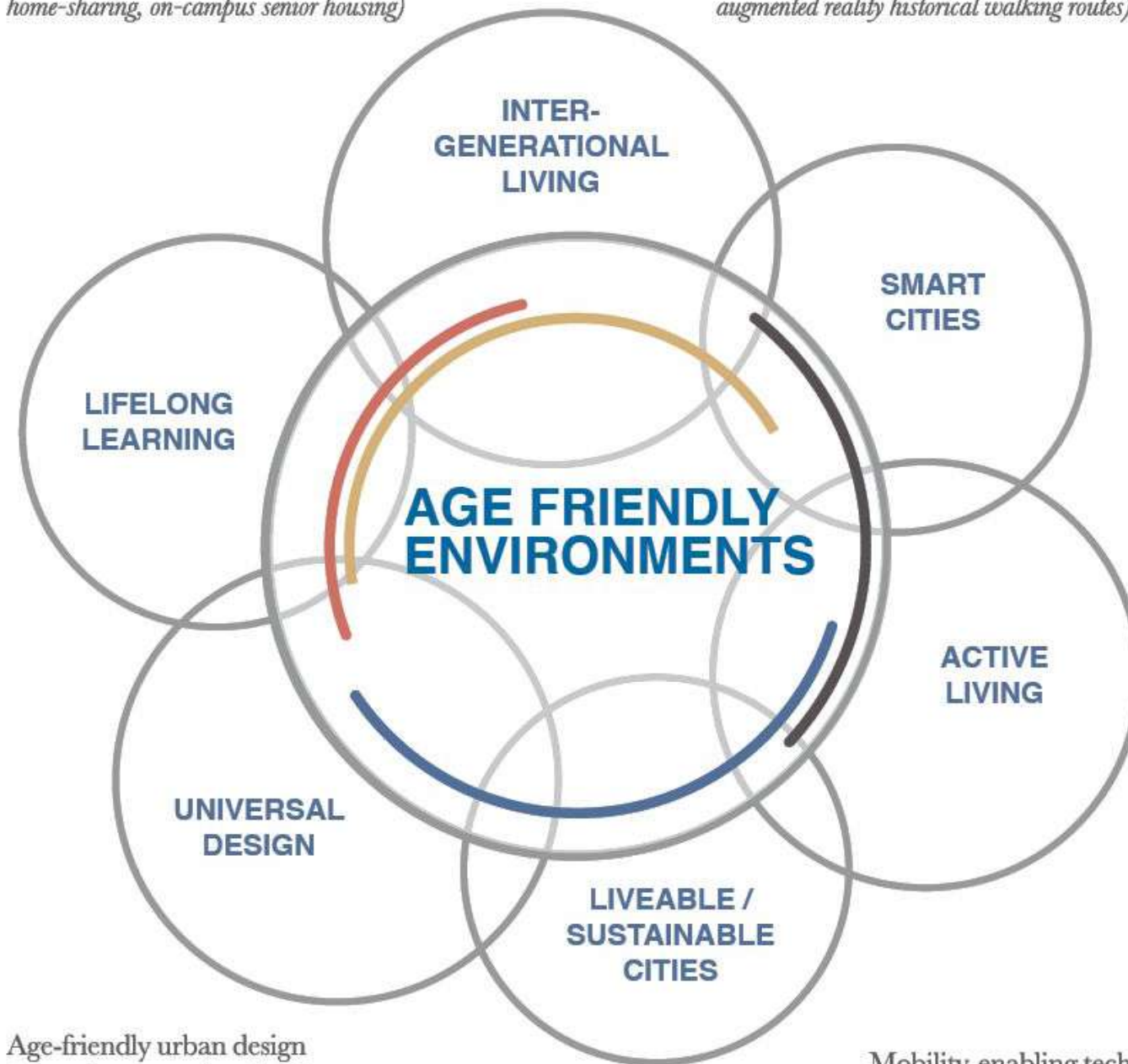
## SYSTEMS SNAPSHOT – AGING IN CANADA: EXAMPLES OF INTERSECTIONS AND NESTED COMPLEXITY (CHALLENGE LANDSCAPE)



Caregiver burnout, mental fatigue, risk  
of PTSD; risk of elder abuse

Age-friendly campuses  
(e.g. free or discounted courses, student-senior home-sharing, on-campus senior housing)

Intergenerational participatory design  
(e.g., life writing, map biographies, georeferenced augmented reality historical walking routes)



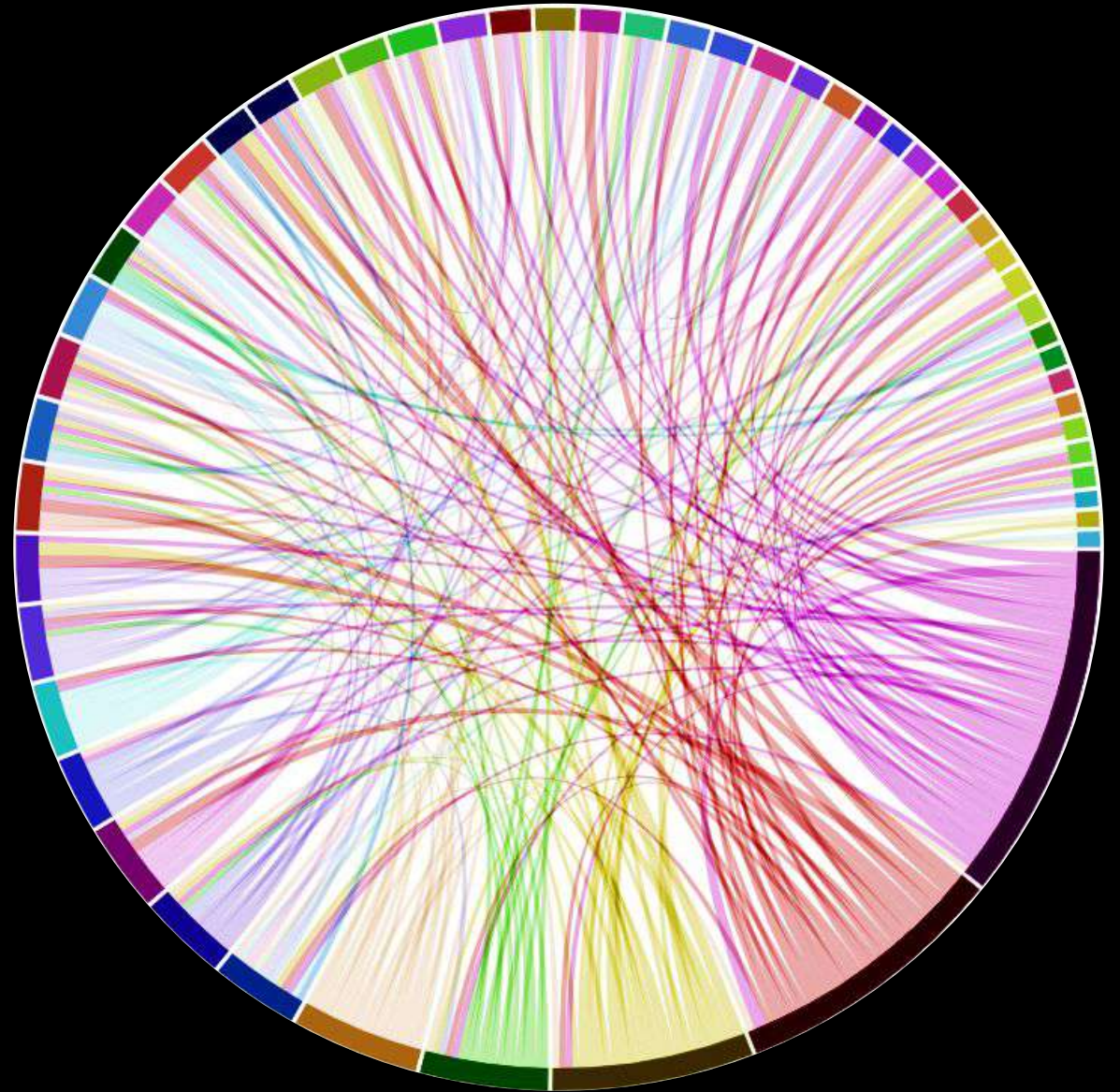
Age-friendly urban design  
(e.g., curb cuts, numbered benches, sound-assisted pedestrian signals)

Mobility-enabling tech  
(e.g., georeferenced fall sensors)

# Organizations are complex systems

*“[Organizations] conceptualized and managed as social systems, and their parts, can respond to the unpredictable changes inherent in turbulent environments and can deal effectively with increasing complexity. They can expand the variety of their behavior to match or exceed the variety of the behavior of their environments because of the freedom of choice that pervades them. They are capable not only of rapid and effective passive adaptation to change but also of active adaptation. They can innovate by perceiving and exploiting opportunities for change that are internally, not externally, stimulated.”*

– Heinz von Foerster, physicist, philosopher,  
and cyberneticist

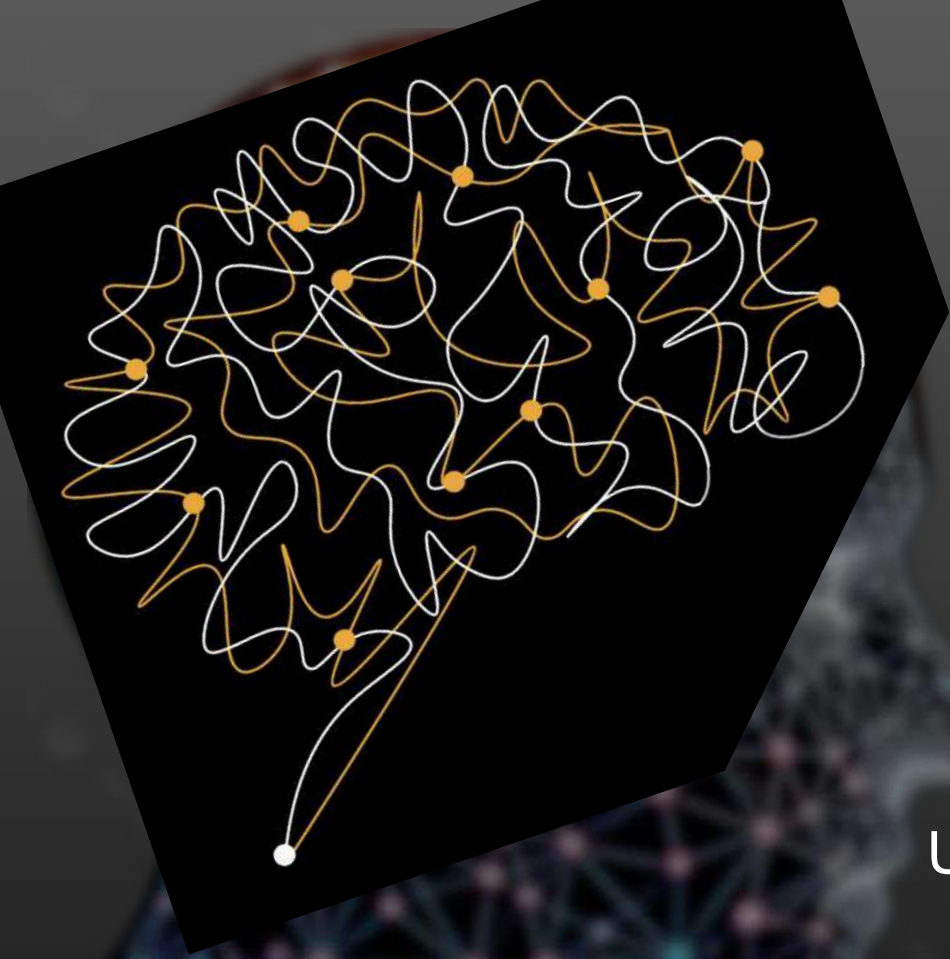


Systems  
thinking is  
not new

ANI TO PISI



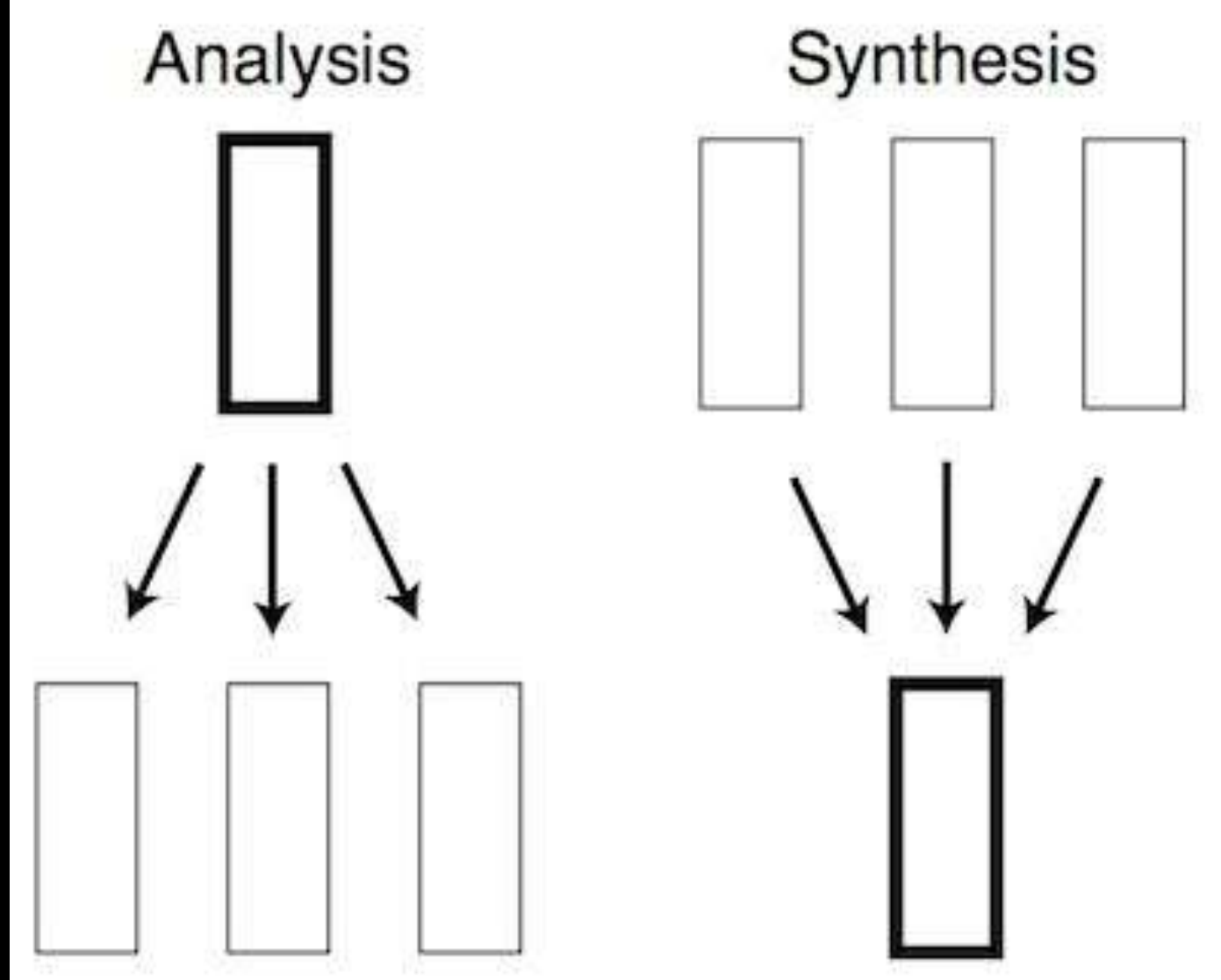
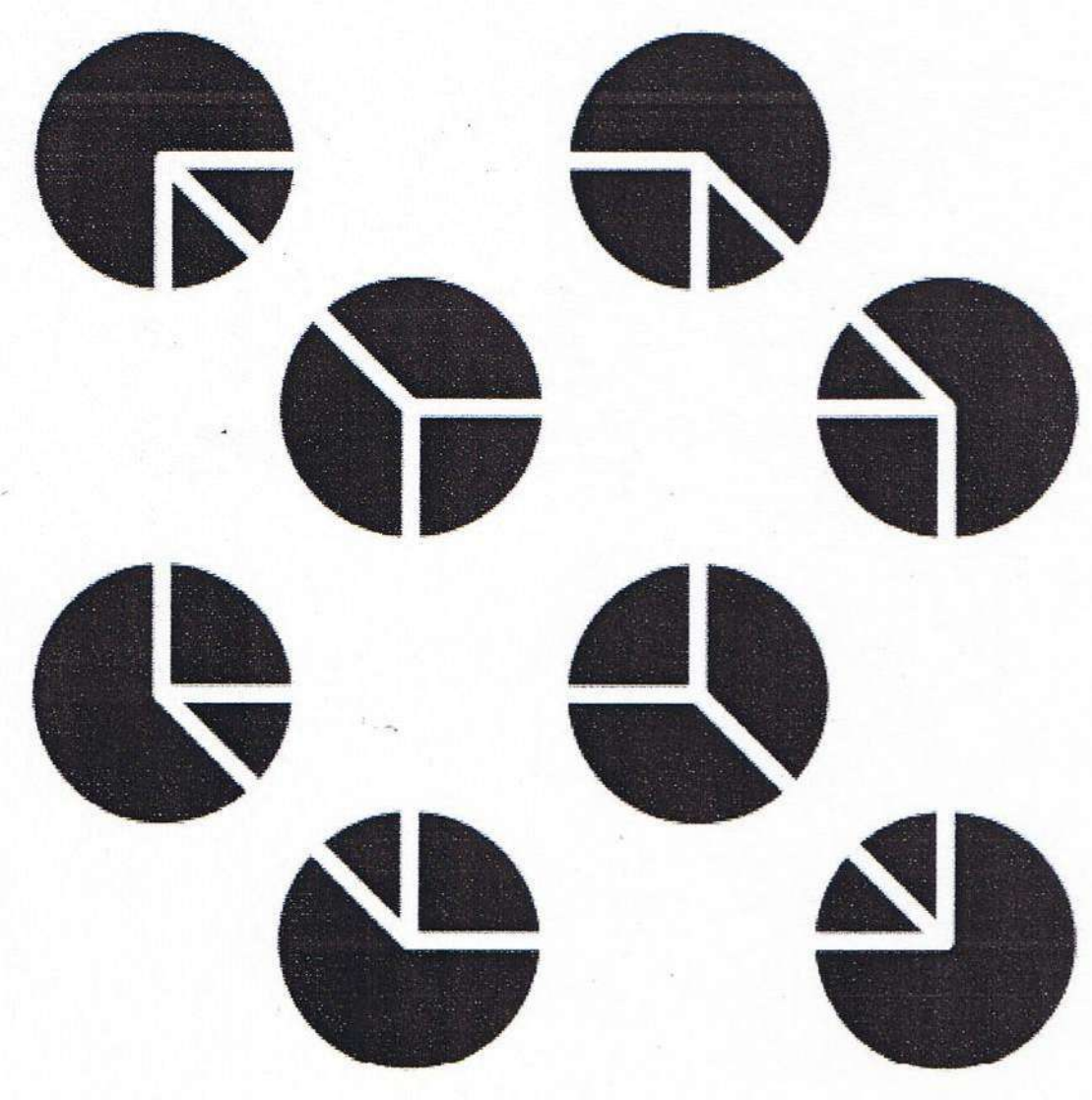
Photos: *Mount Royal University*  
Story: Roy Bear Chief



# Systems Practice

- Think about thinking
- See objectivity as a vector, not a destination
- Embrace complexity
- Ask beautiful questions
- See relationships as paramount
- Zoom in, zoom out
- Recognize patterns and sense signals
- Embrace 'probably' and 'good enough'
- Work across, outside of, and against disciplines
- Unsettle yourself: Question assumptions and mental models
- Be reflexive: Pay attention to feedback in your self-system
- Expect ambiguity, paradox, and surprise
- Synthesize, and look for wholes
- Engage, don't just study
- Embed diversity
- Nurture resilience and build antifragility

# Synthesize, and look for wholes



# What's your problem?

The problem is well understood. We know what causes it, and there is solid evidence that our proposed actions will have the intended effects.

What is the nature of the challenge?

We are not really sure we understand the problem fully, let alone the solution.

There is a high level of consensus among stakeholders and experts about what to do.

How are people engaging with the challenge?

There is a significant diversity of opinion and even conflict among stakeholders and experts about what to do.

The problem is relatively self-contained and not intertwined with its broader environment, which is stable and predictable (political, social, and economic).

What is the nature of the environment?

There are many diverse and dynamic interconnections between the problem and the broader environment, which itself is unstable and dynamic (political, social, and economic).

It is a short-term goal.

What is the nature of your intended goal?

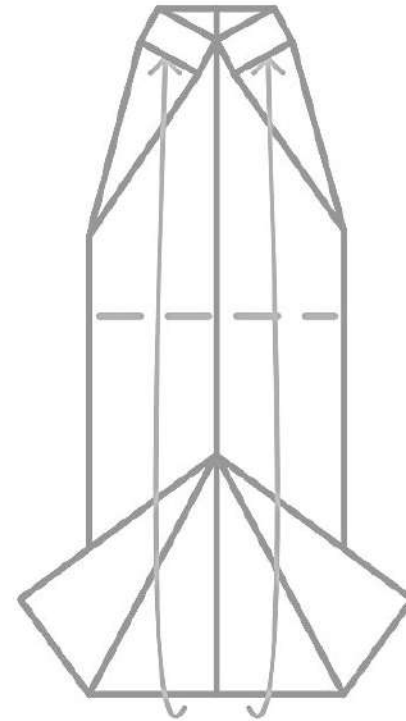
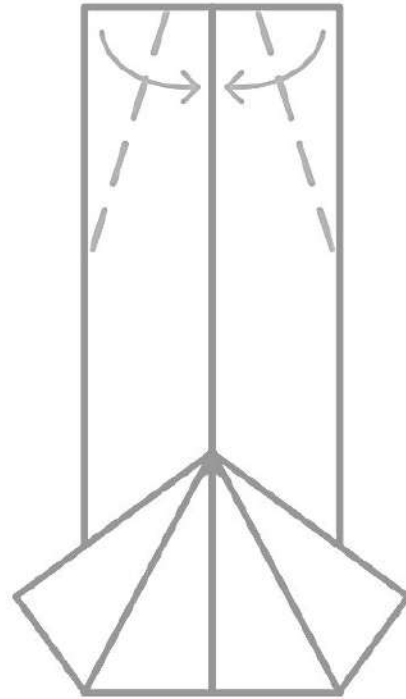
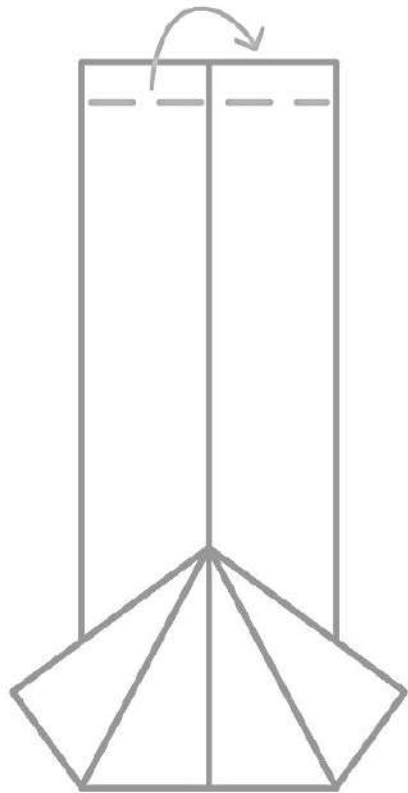
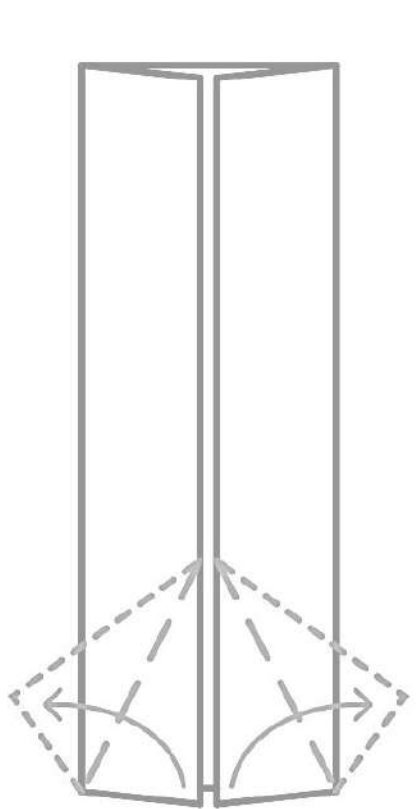
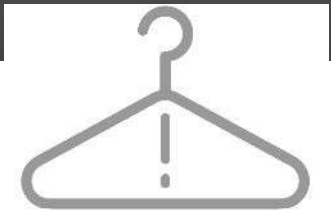
To make sustained change at a broad scale.

I can probably use other approaches to develop a solid strategy.  
*For example, run an effective vaccination campaign*

Add it all up. Which side do you lean toward?

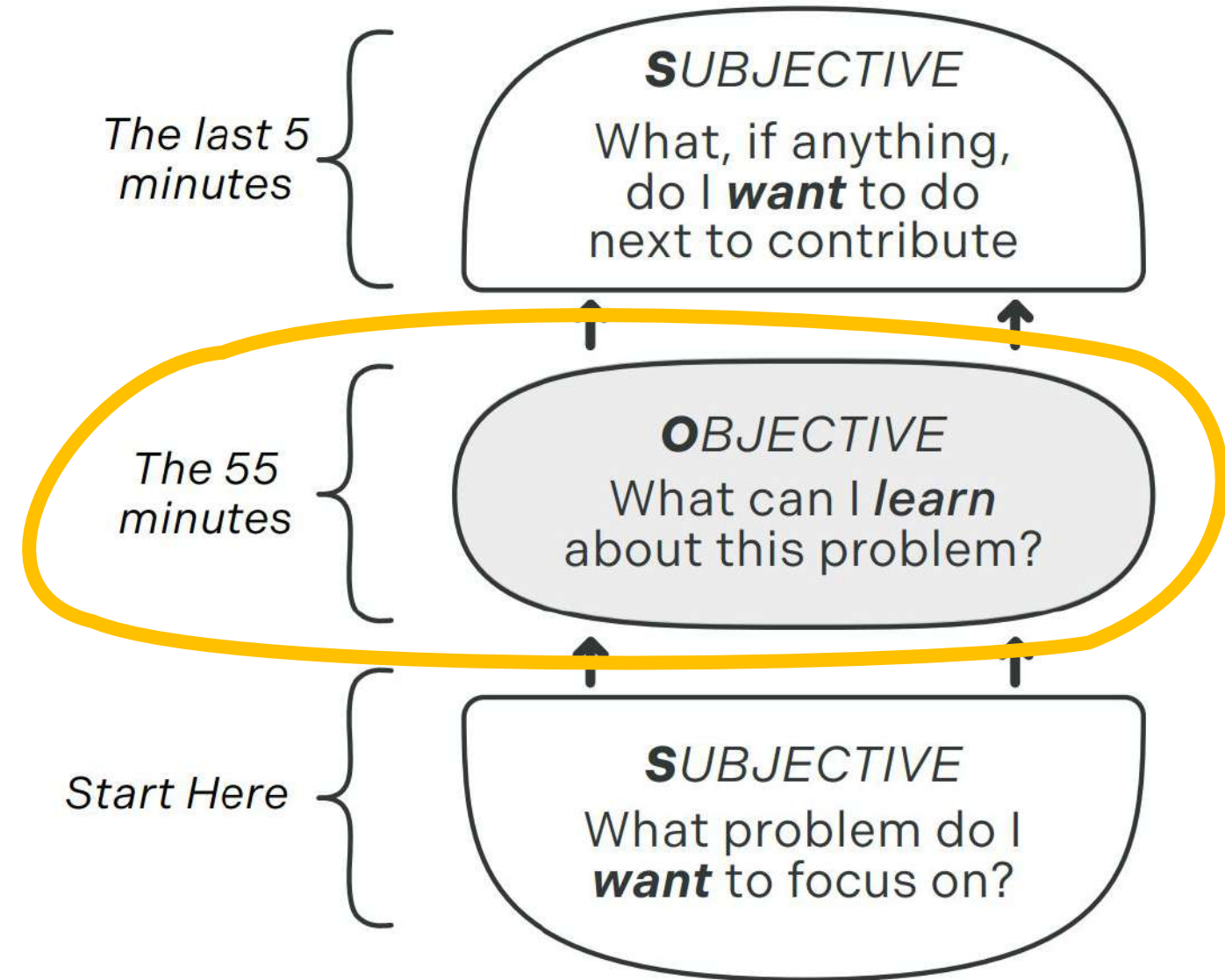
A systems practice could be highly useful for helping your team grapple with this messy problem.  
*For example, children are prepared and are able to lead happy and healthy lives*

# Hanging Up Your Solution

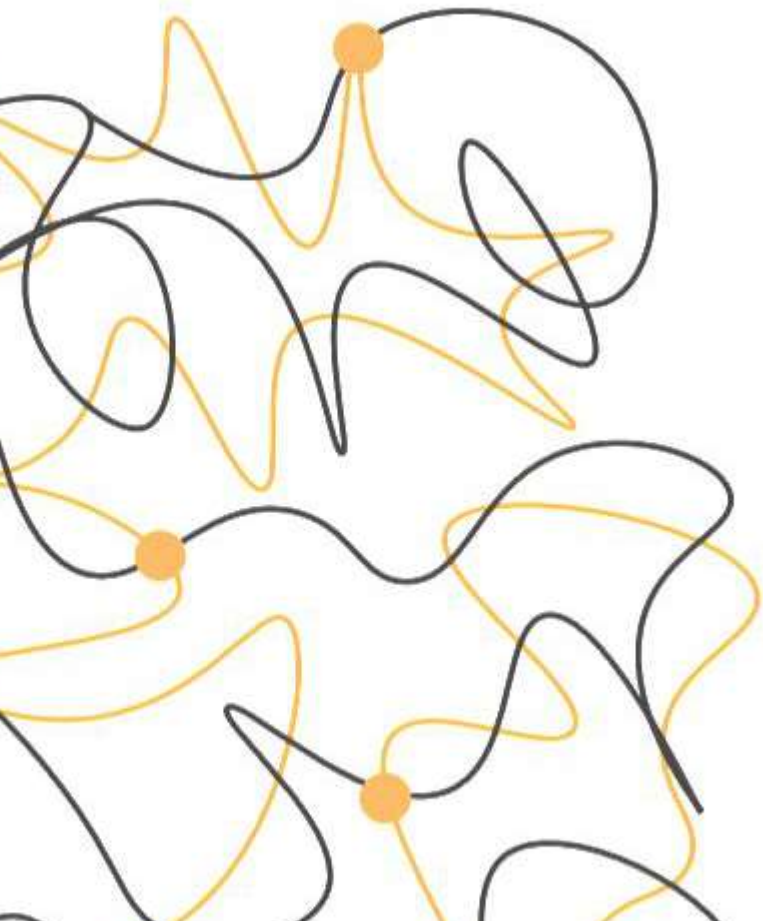




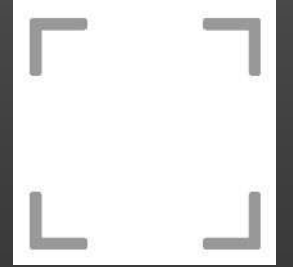
# The SOS Sandwich



# Tools



# FRAME

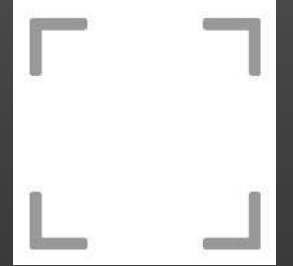


Where do we  
focus and how  
do we set  
boundaries?



- 5Rs Framework
- Problem Framing Canvas

# FRAME



Where do we  
focus and how  
do we set  
boundaries?

# PROBLEM FRAMING CANVAS

"If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and five minutes thinking about solutions".

Albert Einstein



**First-cut problem statement:**

Whose problem is it?  
(a human view)  
What is the need?  
Why is this a problem?

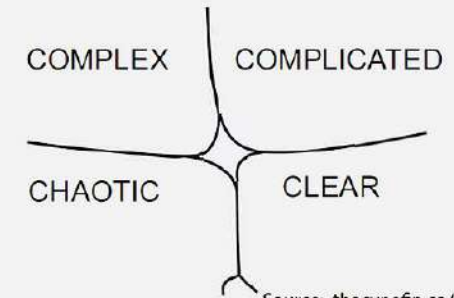
**Is there a problem behind the problem?**

Any insights from the 5 whys?

**Problem framed as an opportunity question -  
How Might We.....?**

Question that has the potential to spark at least 10 ideas about potential responses

**What type of problem is this?**



**Draw out the problem - create a rich picture**

What is the story of this problem?  
How does the problem 'work'?

**Frame the problem in three different ways:**

**Who cares about the problem or has a stake in it?**

**Does anyone benefit from the problem as a problem?**

**Any changes to your first cut problem statement?**

What does this picture reveal about how you 'see' the problem?

Based on my knowledge + experience, my top of mind three 'best guess' answers / solutions to the problem are:

**Assumptions:**

**Assumptions:**

**Assumptions:**

**What does success look like for responding to this problem?**

**Low Cost Test:**

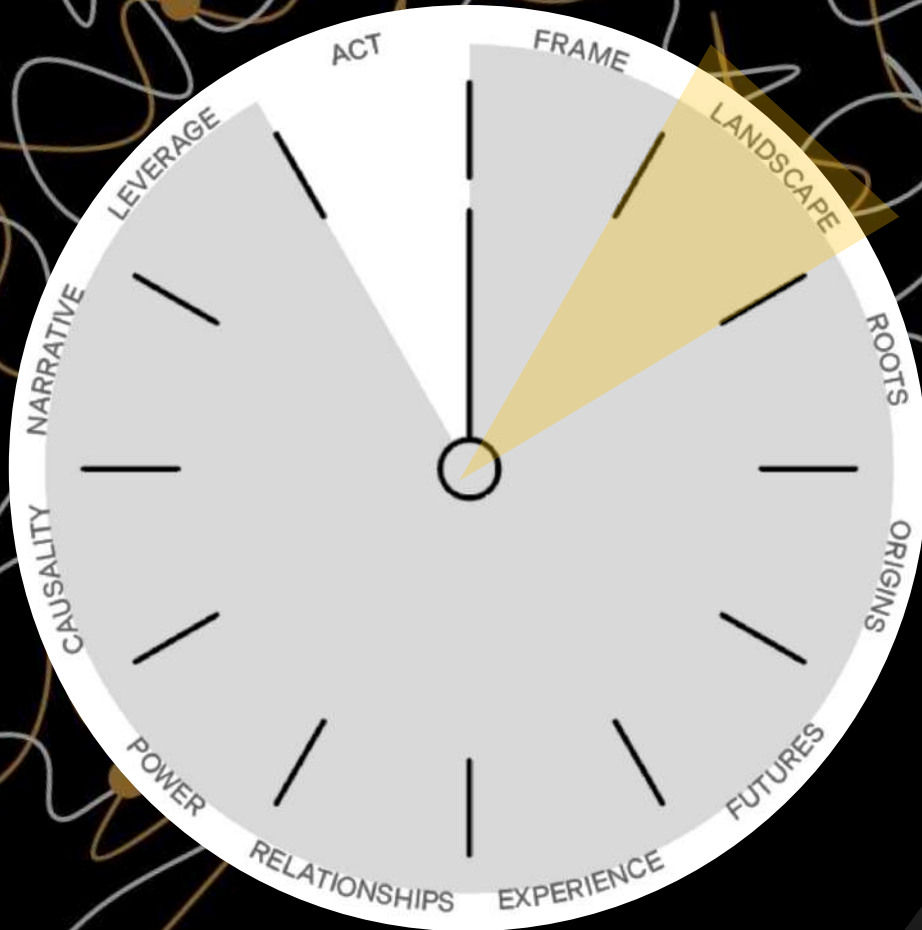
**Low Cost Test:**

**Low Cost Test:**

# LANDSCAPE



What are the  
contours of  
the current  
system?

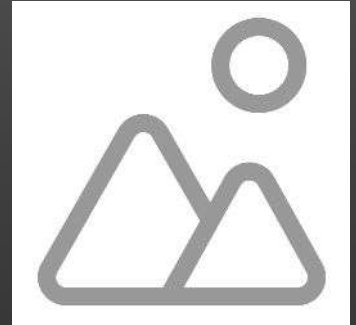


- Impact Gaps Canvas

- Multi-level Perspective (MLP)

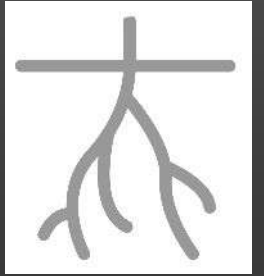
# •Asset Maps

# LANDSCAPE



# What are the contours of the current system?

# ROOTS

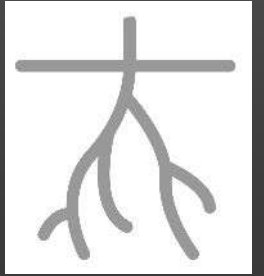


What's  
beneath the  
surface?



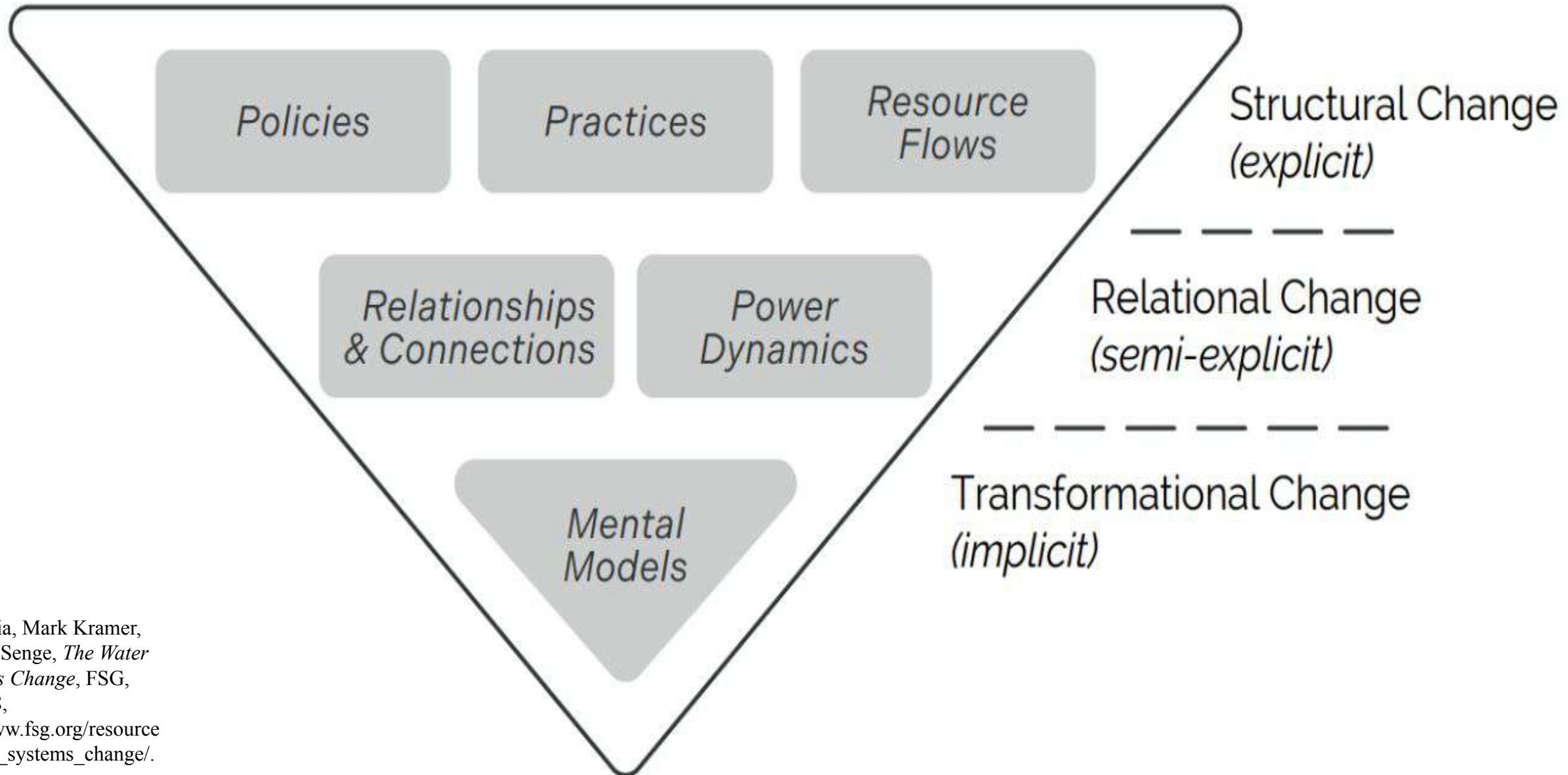
- Six Conditions
- Iceberg Model
- Five Whys

# ROOTS

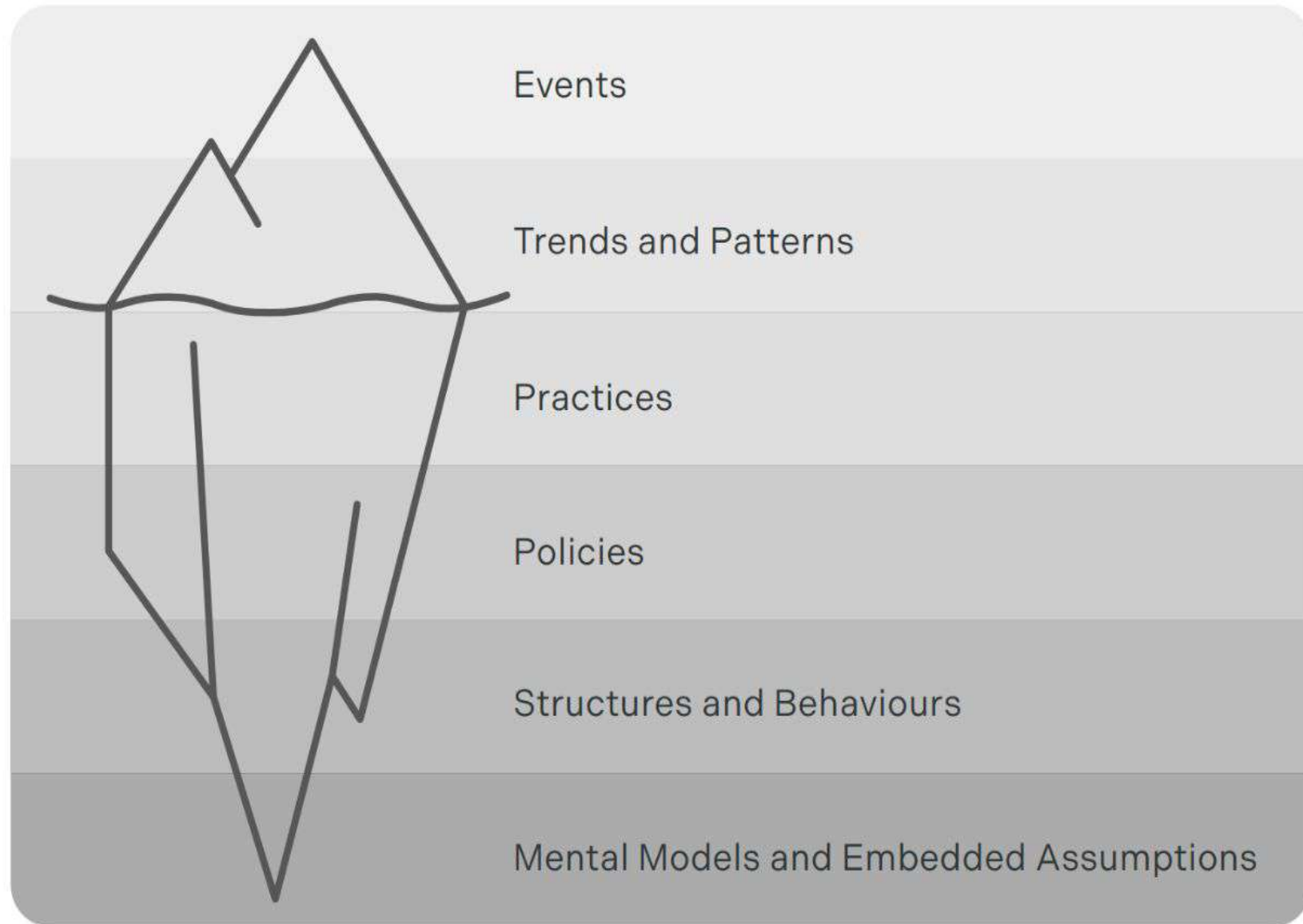


What's  
beneath the  
surface?

# Six Conditions of Systems Change



# Iceberg Model



Adapted from Goodman, *The Iceberg Model*, and Sweeney and Meadows, *Systems Thinking Playbook*.

An iceberg diagram with a yellow sky and blue water. The visible tip of the iceberg is white and contains the 'EVENT' and 'PATTERN' sections. The submerged part is blue and contains the 'INSTITUTIONAL BEHAVIOUR & STRUCTURES' and 'MENTAL MODELS & CULTURAL ASSUMPTIONS' sections. Blue lines connect the text boxes to the corresponding parts of the iceberg.

## SYSTEM SNAPSHOT – AN 'ICEBERG' VIEW OF LONG-TERM CARE

### EVENT

Canadian Forces dispatched to long-term care facilities during COVID-19 first wave report that residents are dying in alarming numbers and that many of those still living are dwelling in deplorable conditions (unattended, dehydrated, disoriented, lying in their own urine/feces, etc.)

### PATTERN

- Over 80% of first wave COVID-19 deaths were in long-term care facilities, by far the highest rate among OECD countries
- 27% of infected residents in LTC have died of COVID-19 (over 15,000 residence to date)
- Intensified social isolation, a major determinant of health

### INSTITUTIONAL BEHAVIOUR & STRUCTURES

- Accountability gap (governments failed to act on over 150 commissioned reports and studies)
- Profit motivation of commercial LTC can lead to corner-cutting
- Non-profit LTC lacking financial flexibility to respond nimbly to emergencies
- Constitutional division of powers creates jurisdictional confusion

### MENTAL MODELS & CULTURAL ASSUMPTIONS

- Systemic ageism
- Institutionalizing the 'indigent' (alms-based and 'out of sight, out of mind')
- 'Social contract' that preferences personal responsibility over societal responsibility

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### SYSTEM SNAPSHOT – AN 'ICEBERG' VIEW OF LONG-TERM CARE

#### PRACTISES

- Overcrowded facilities (as many as four to a room)
- Overworked, underpaid and undertrained staff (often working multiple shifts at different facilities, spreading the virus in the process)
- Lack of PPE (prioritized for hospitals) and poor infection control
- Lax regulatory oversight and spotty inspection
- Inconsistent procedures and preparedness across facilities

#### POLICIES

- Patchwork of provincial regulatory regimes
- Low public expenditure (1.3% of GDP in Canada compared with OECD average of 1.7%)
- Lack of public home care alternatives (Canada spends only 0.2% of GDP on home care, the second lowest allocation in the OECD)
- Voluntary accreditation of LTC facilities
- Lack of certified training or rigorous standards for paid caregivers

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# ORIGINS



How did we  
get here?



# ORIGINS

- Timeline Mapping and Change Over Time Graphs
- Adaptive Cycle / Mobius Loop



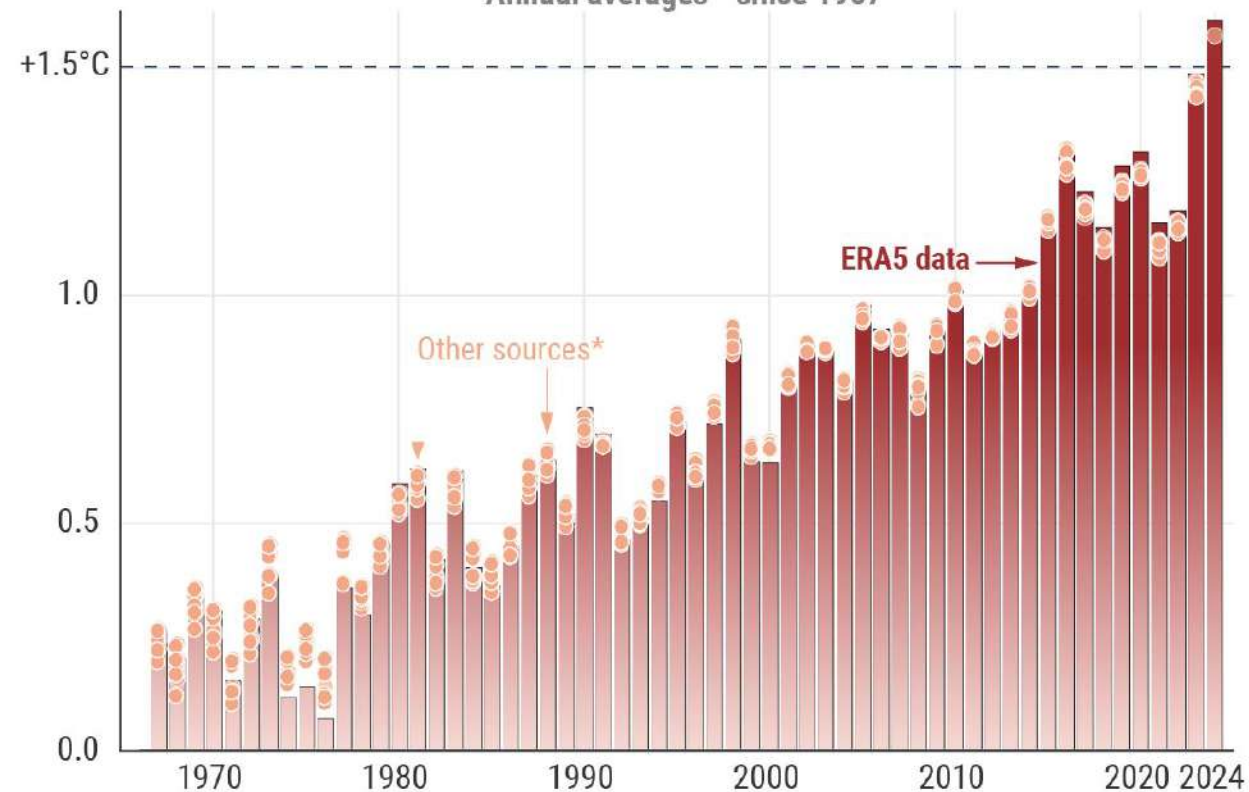
How did we  
get here?



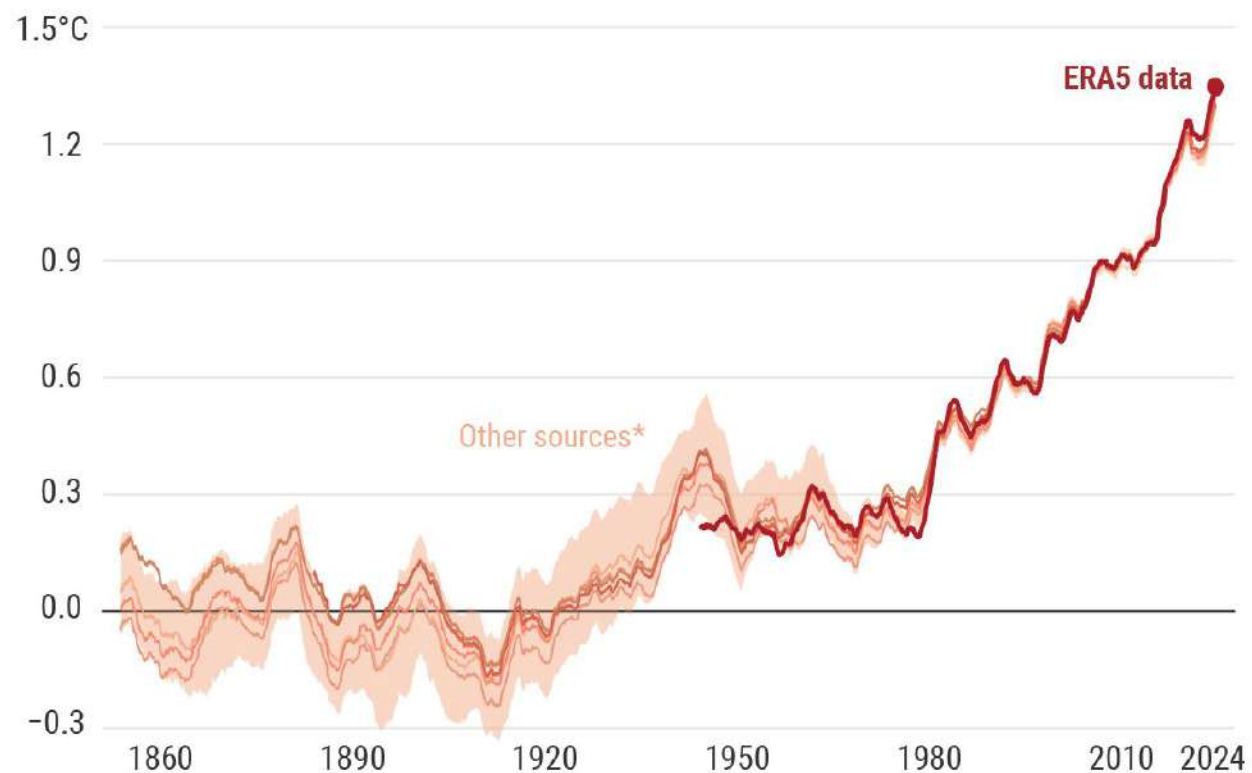
## Global surface temperature increase above pre-industrial

Reference period: pre-industrial (1850–1900) • Credit: C3S/ECMWF

Annual averages - since 1967



5-year averages - since 1850



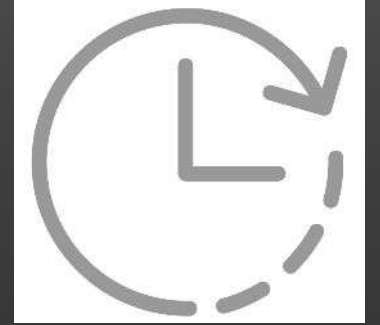
\*Other sources include JRA-3Q, GISTEMPv4, NOAA GlobalTempv6, Berkeley Earth and the HadCRUT5 ensemble mean. Shading shows the range of the HadCRUT5 ensemble.



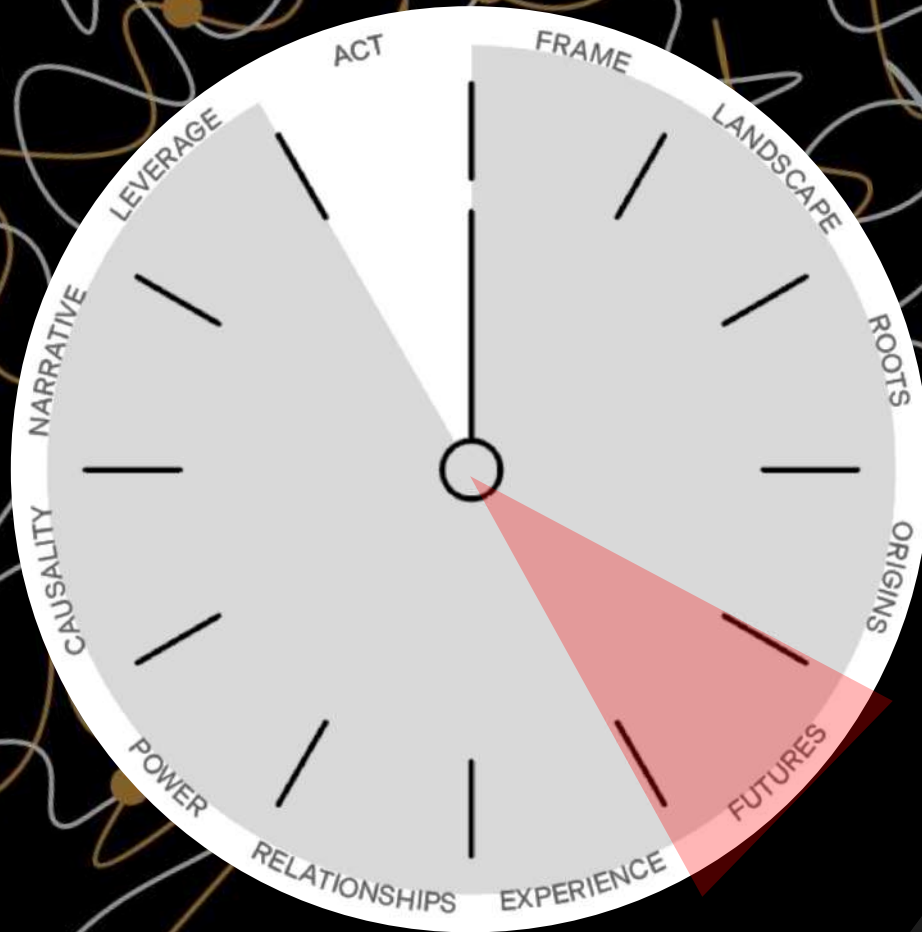
PROGRAMME OF  
THE EUROPEAN UNION



# FUTURES

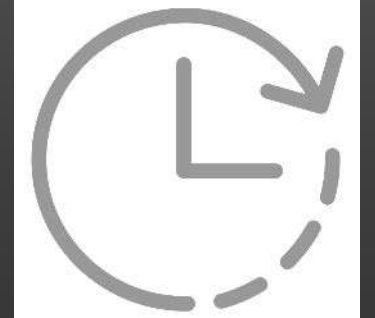


Where  
might we  
be going?



- Trend Mapping
- Phase Transitions and S-Curve Frameworks:
  - Second Curve
  - Two Loops
  - Three Horizons
- Premortem Analysis
- Backcasting

# FUTURES



Where might we  
be going?



# EXPERIENCE

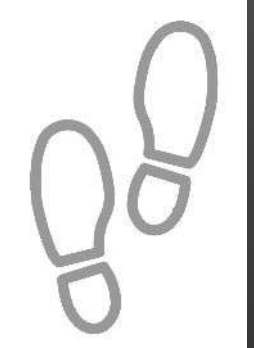


How is the  
system  
experienced by  
those within it?



- Journey Maps
- Ethnography

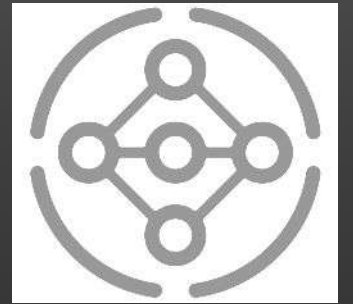
# EXPERIENCE



How is the system experienced by those within it?



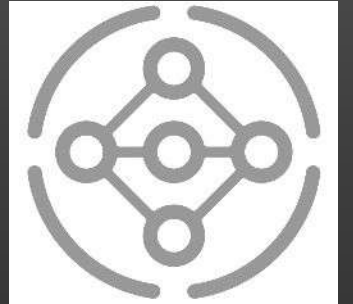
# RELATIONSHIPS



Who is involved  
and how are  
they connected?

# RELATIONSHIPS

- Actor and Network Maps:
- Matrix frameworks
- Concentric circle maps
- Network maps

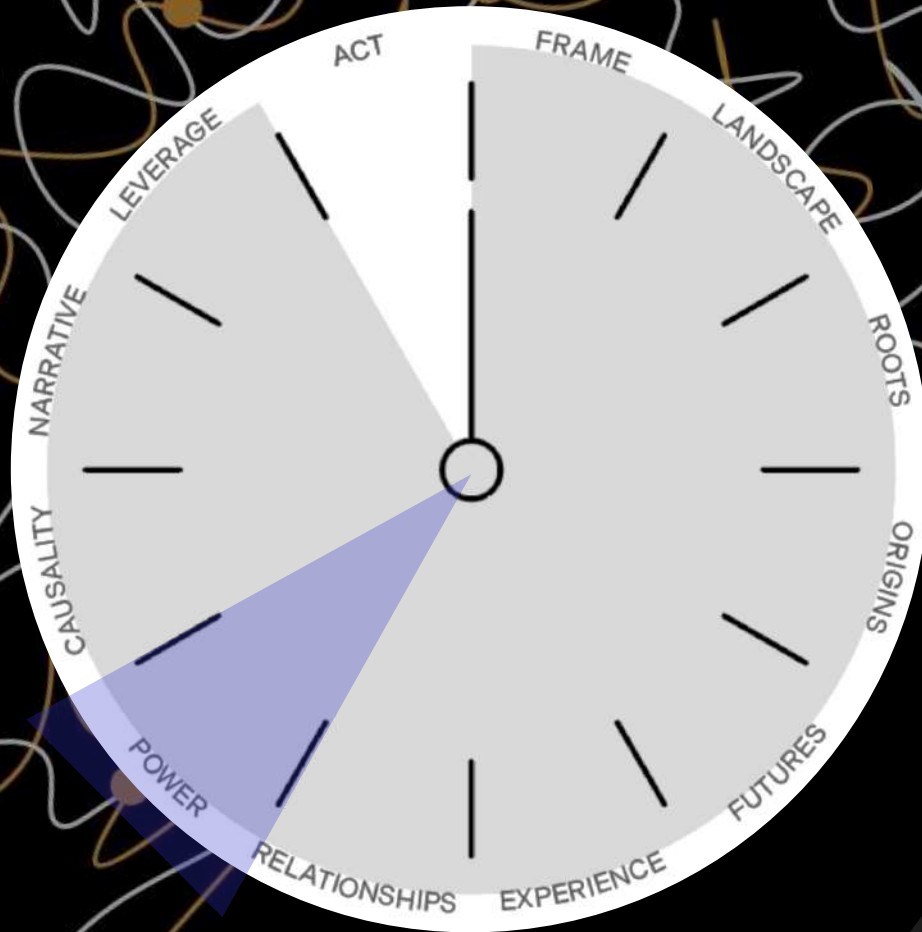


Who is involved  
and how are they  
connected?

# POWER



Who and what  
holds influence?



- Force Field Analysis
- Ladder of Participation
- Stakeholder Power Analysis
- Powercube

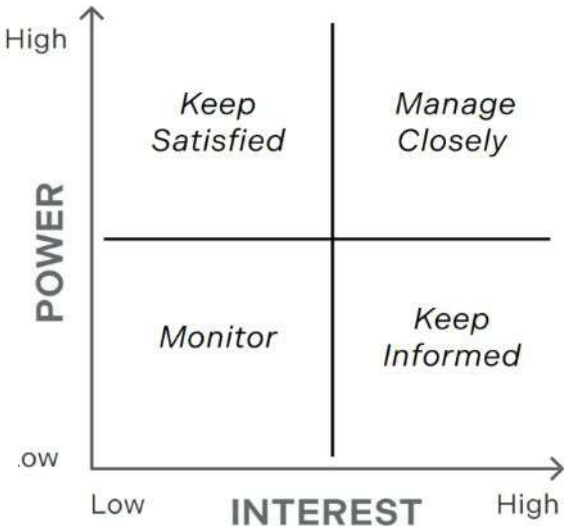
# POWER



Who and what holds influence?

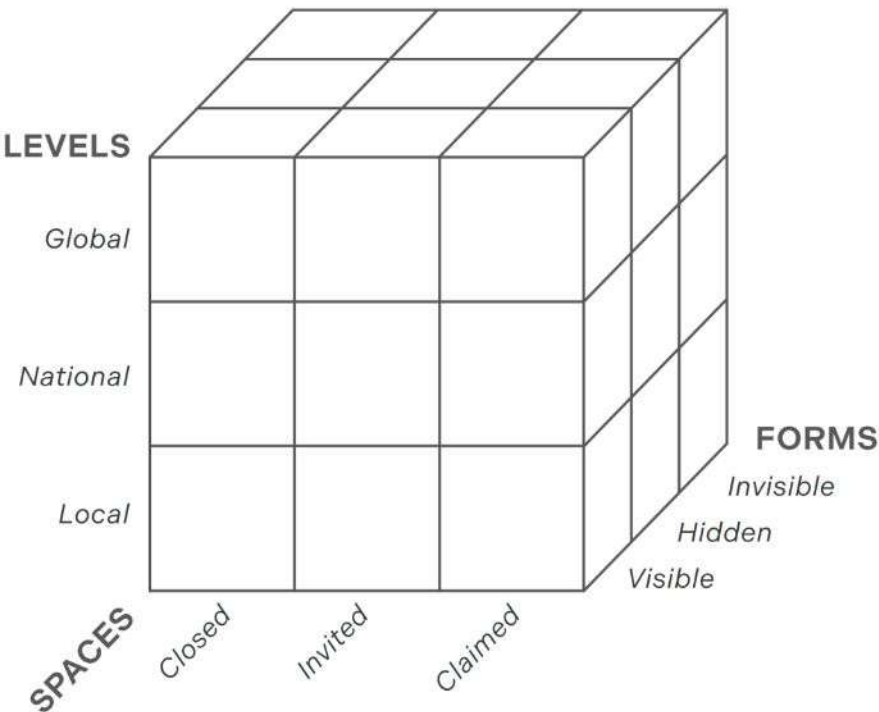
Based on Freeman, *Strategic Management*, and Murray-Webster and Simon, “Making Sense.”

# Stakeholder Power Analysis (Power-Interest Grid)



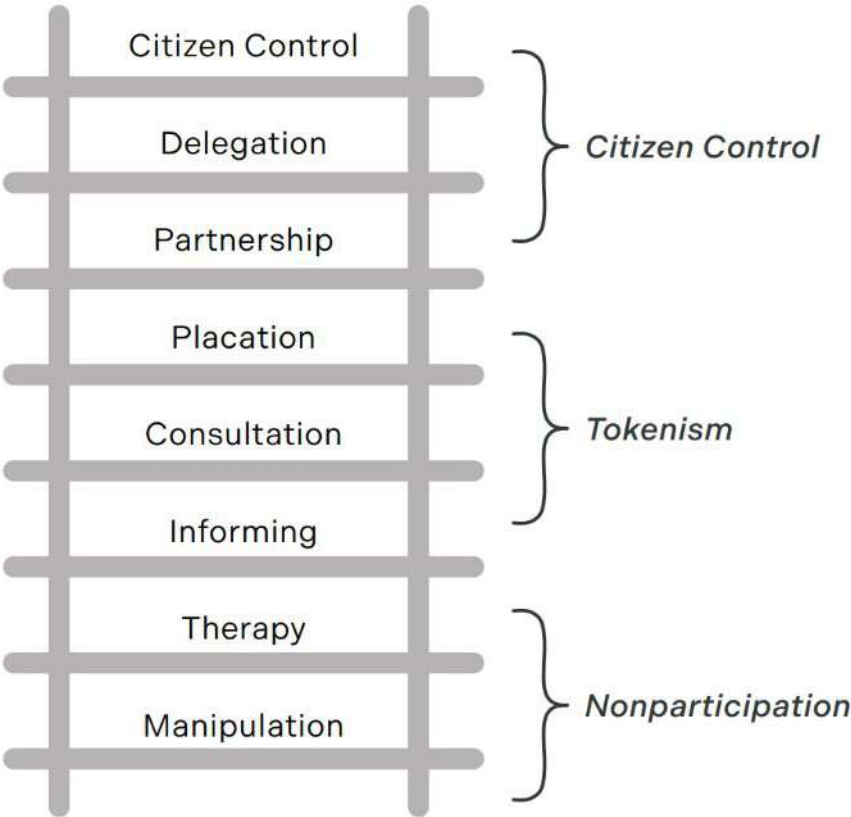
John Gaventa, “Finding the Spaces for Change: A Power Analysis,” *Institute for Development Studies Bulletin* 37, no. 6 (2006): 23–33.

## Powercube



Sherry R. Arnstein, “A Ladder of Citizen Participation,” *Journal of the American Institute of Planners* 35, no. 4 (1969): 216–24.

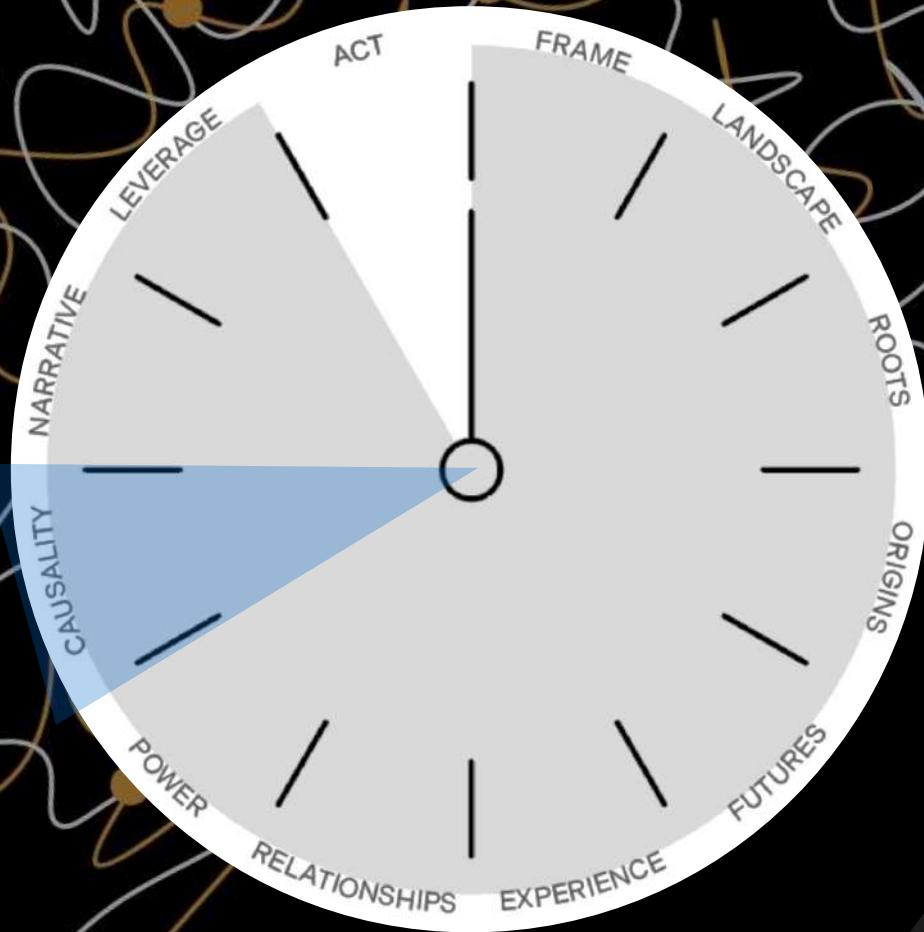
## Ladder of Participation



# CAUSALITY

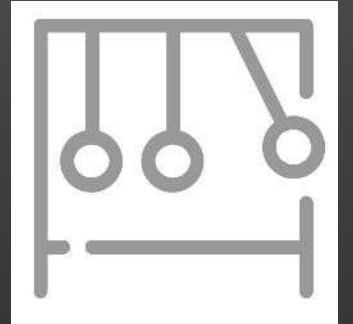


What causes  
what to do  
what?

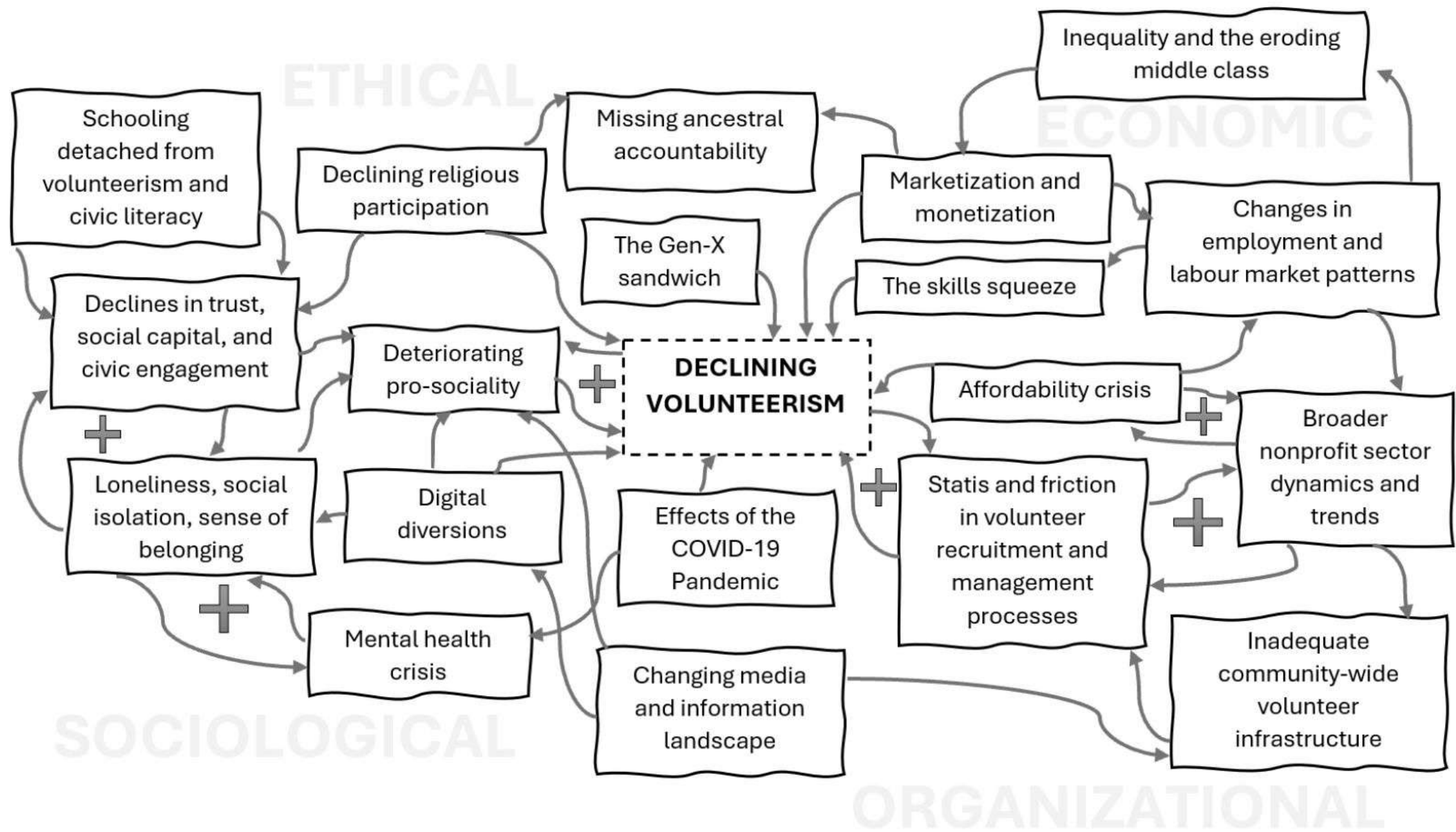


- Causes, Cascade, and Fishbone Diagrams
- Stock and Flow Diagrams
- Causal Loop Diagrams

# CAUSALITY

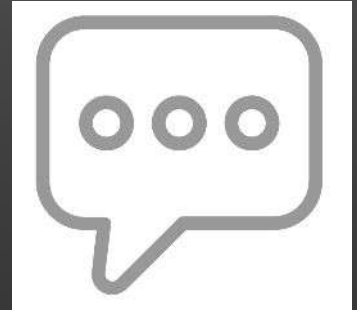


What causes what  
to do what?

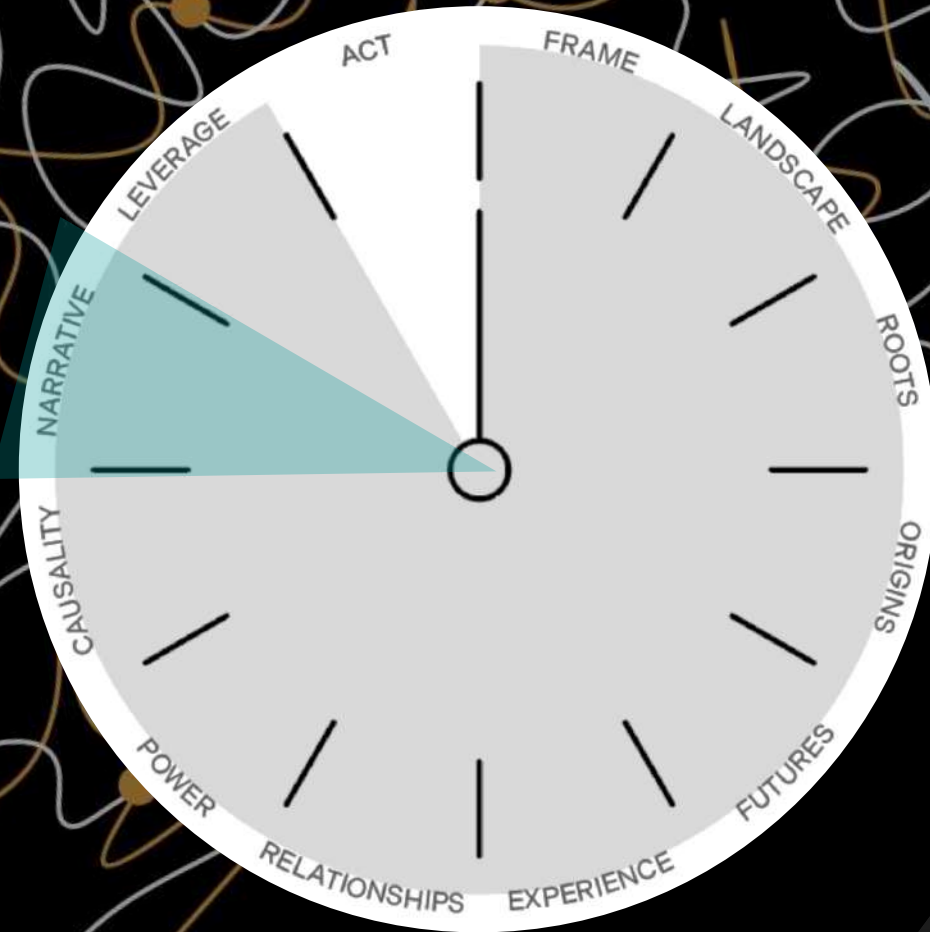


*Diagram: Causal Map of Factors Contributing to Declining Volunteerism* (Stauch, forthcoming)

# NARRATIVE



What ways of  
thinking keep  
the problem in  
place?

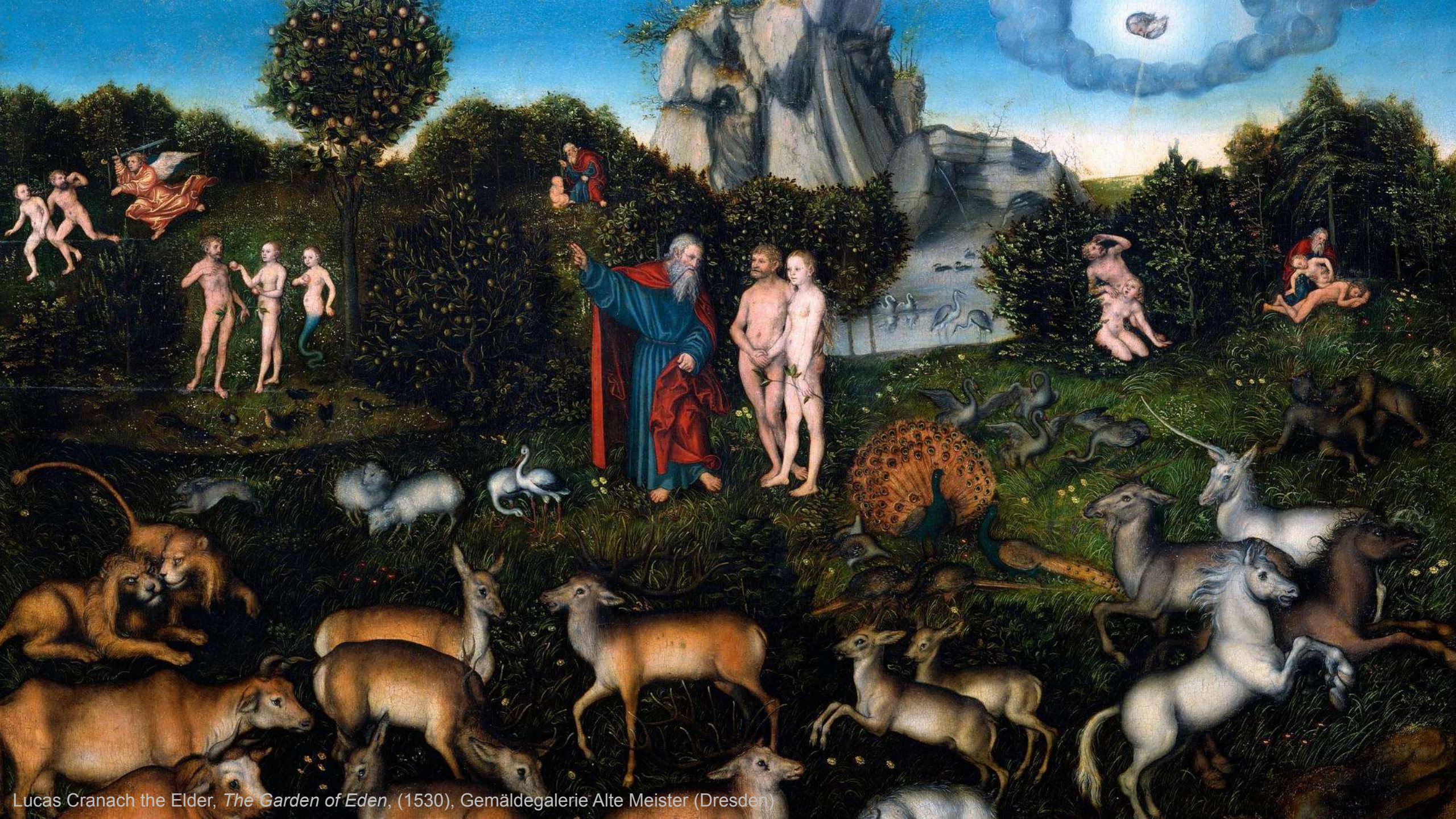


# NARRATIVE



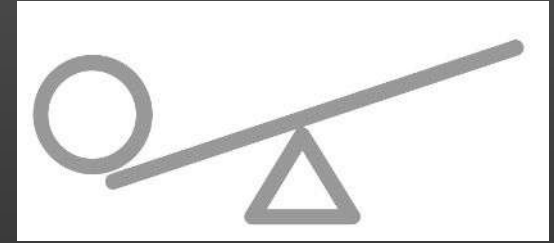
- Causal Layered Analysis
- Rich Pictures

What ways of thinking  
keep the problem in  
place?



Lucas Cranach the Elder, *The Garden of Eden*, (1530), Gemäldegalerie Alte Meister (Dresden)

# LEVERAGE

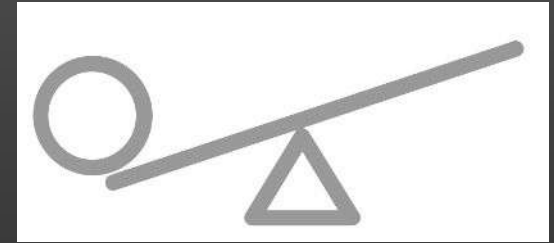


Where in the system might change be possible?

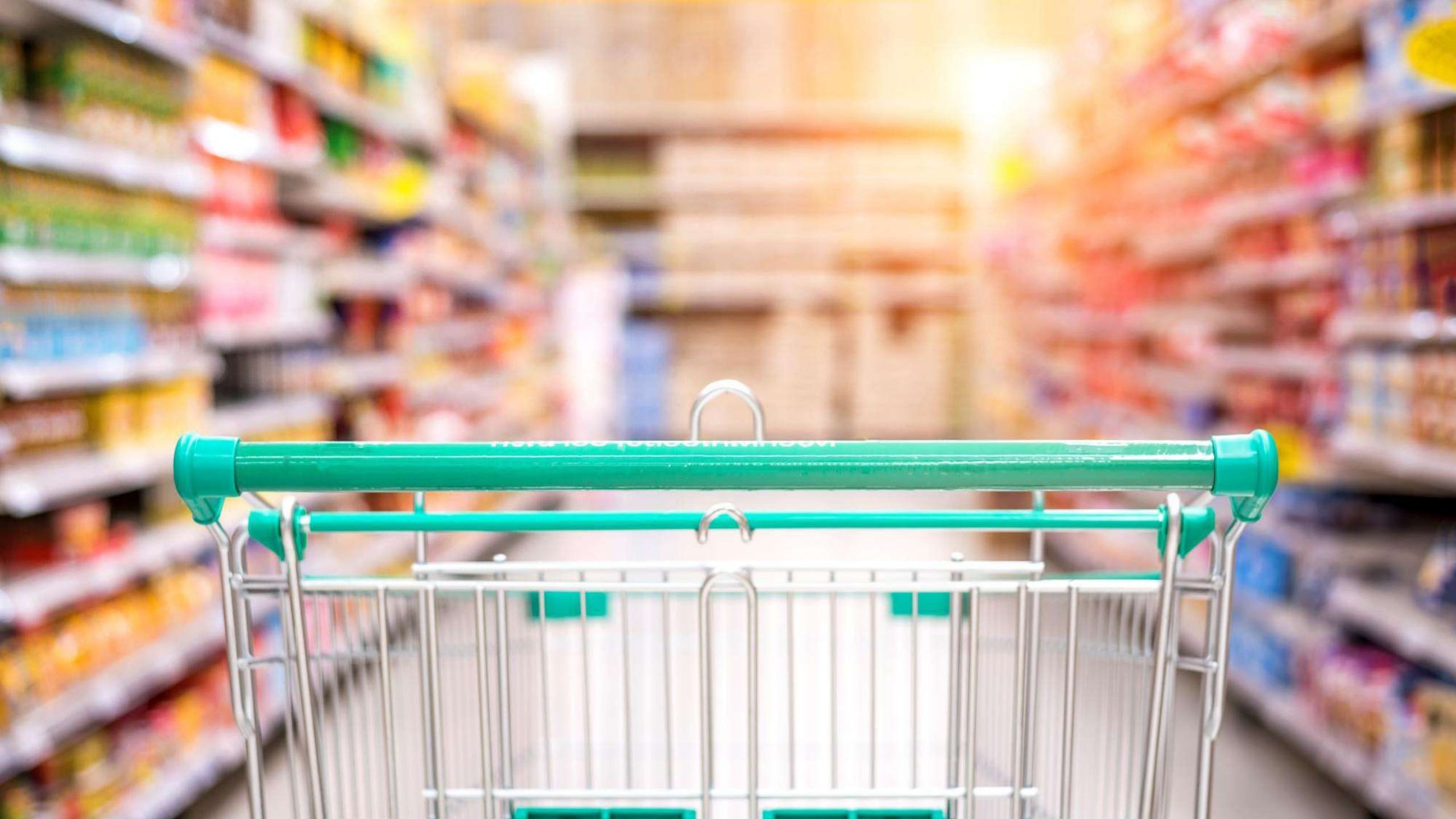


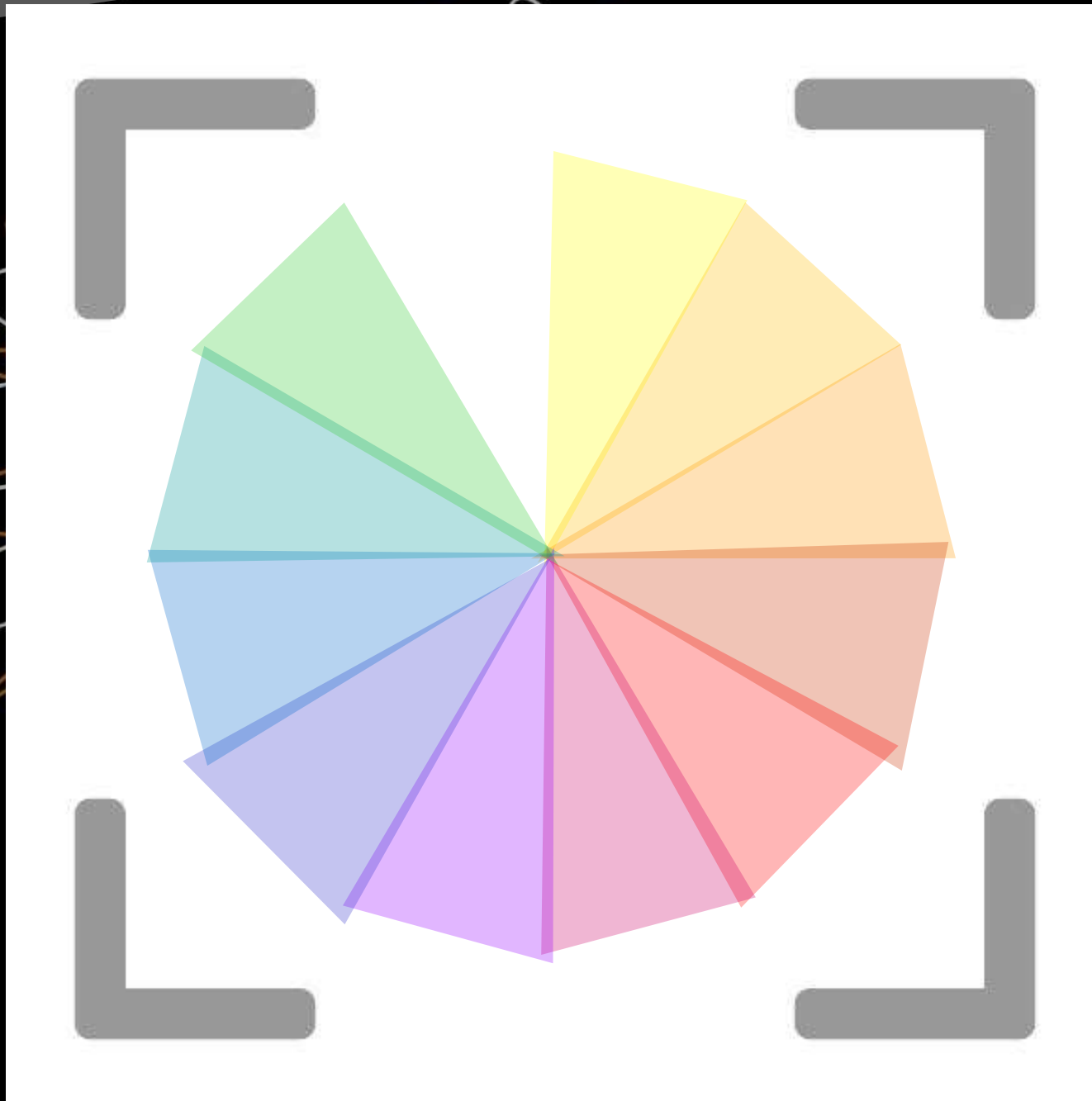
- Impact Gaps
- Leverage Points
- Theory of Change

# LEVERAGE



Where in the system  
might change be  
possible?

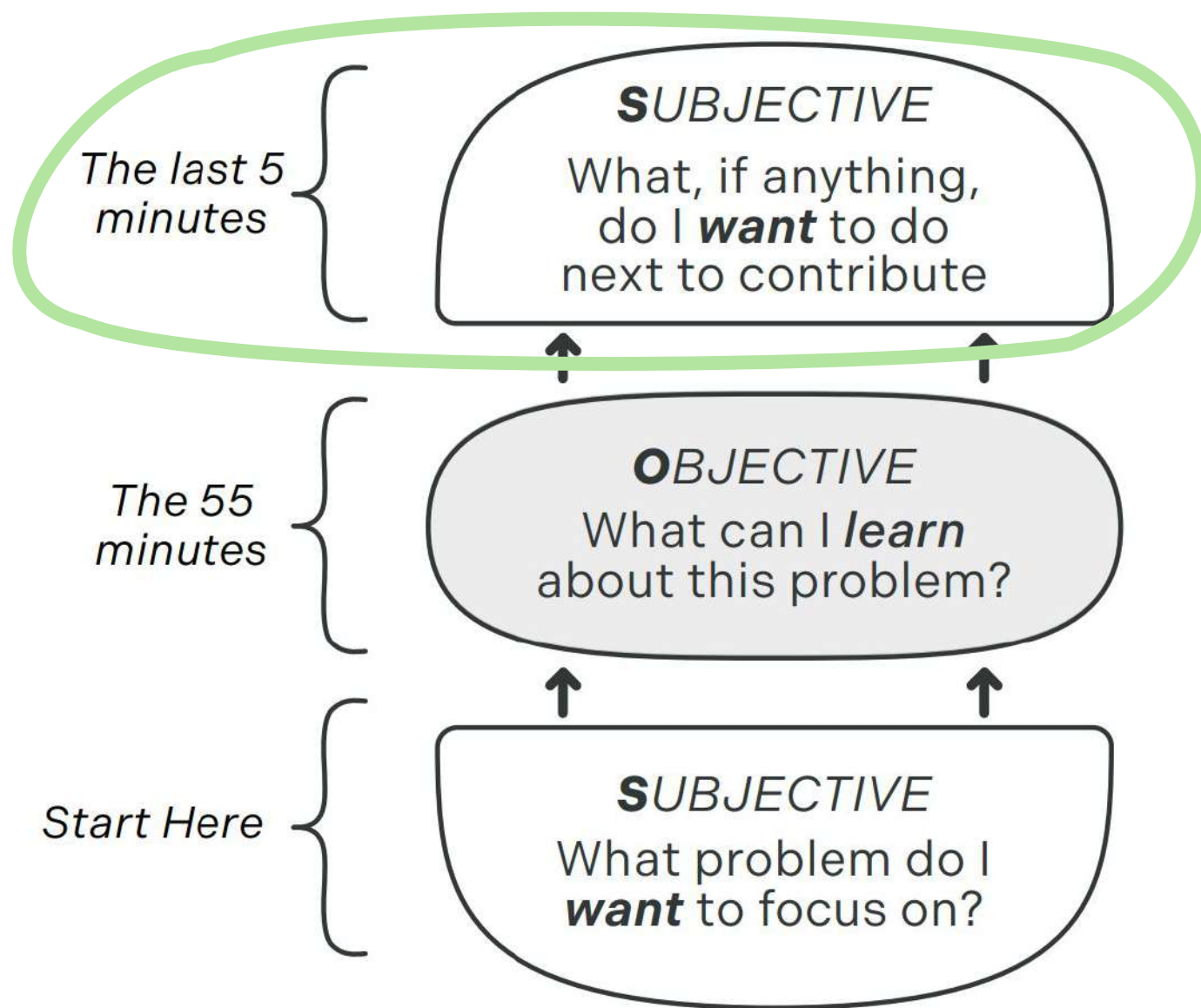




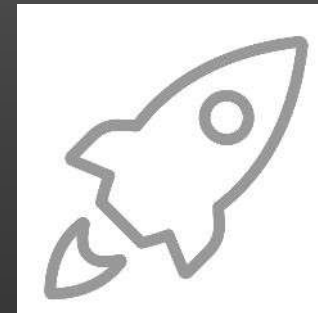
REFRAME?



## The SOS Sandwich



# ACT



Reflection

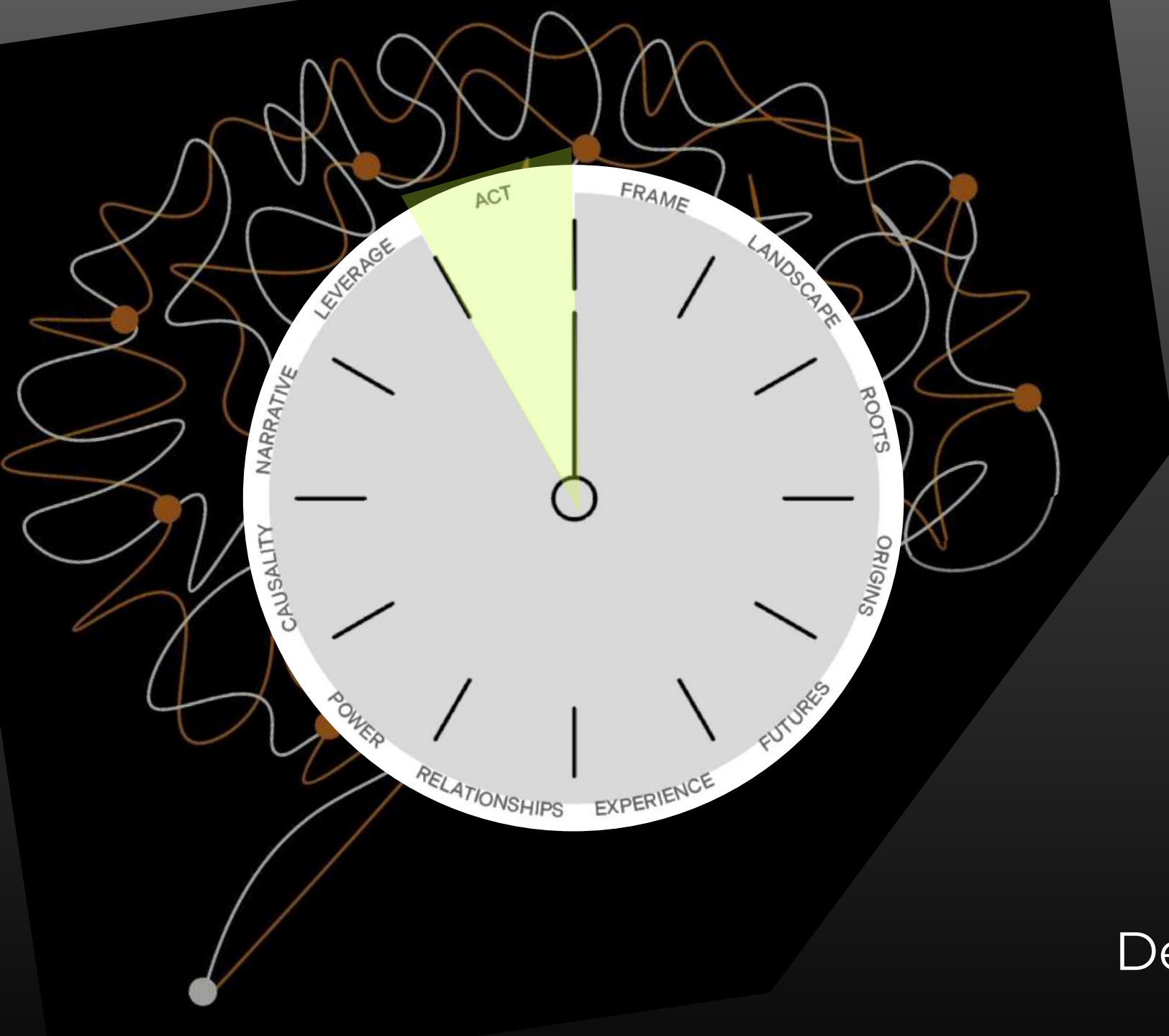
Design

Scaling

Collaborating

Measuring

Deepening your learning



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