DESIGN FOR THE POSTHUMAN ERA

Thinking in complex systems

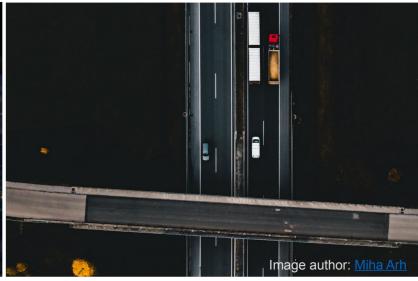
Session 01.02.2021 University Wide Arts Studies

1. Introduction

Socio-technical systems are systems that exhibit both physical and social complexity.





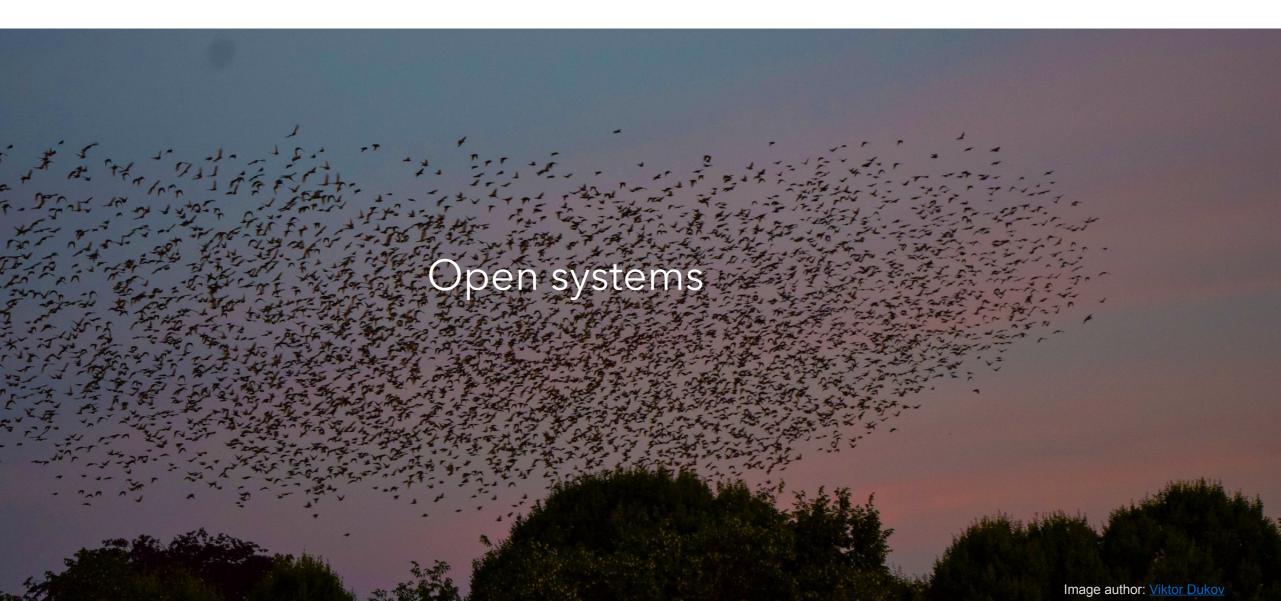


1. Introduction

"Urgent need for new thinking about the differentiated nature of human influences in complex interactional systems, and about the nature of such systems and agency within them, when new phenomena are conceived in non-anthropocentric ways."

Braidotti & Bignall, 2018

2. The complexity turn



2. The complexity turn

The complexity turn in social sciences

Recognizing inter-connectedness.

Challenging claims on:

- Linear causalities
- Regularities
- Predictability
- Manageability



3. Complex systems

Complexity approaches combine system and process thinking (Thrift, 1999).

Complex systems analyses investigate how systems adapt and co-evolve as they organize through time.







Emergence

Complexity occurs where there are emergent features –a complex system is more than the sum of its parts.

Cudworth and Hobden, 2011



Emergence

Large numbers behave differently from small numbers.

Resnick, 1997



Self-organisation

Complex systems consist in a network of production processes. Each component of the network takes part in the production or transformation of other components.



Tipping points

Sudden transitions in a system when surpassing a particular threshold.

- Non-linear dynamics
- Limited predictability
- Positive feedback loops



Evolutionary dynamics

Ecological systems are on the edge of chaos without a natural tendency towards equilibrium.

The system is in constant change.



4. Systems thinking: Key components

COMPONENTS	QUESTIONS
Multiple perspectives	Who/what are the key actors?What are their goals/motivations?What are the different ways in which the situation can be framed?
Interconnections	 How do the different actors interconnect? What is the nature of the relationship among them? What pattern emerge?
Boundaries	 What are the scope and scale you are designing for? Are other boundaries possible/feasible? What constitutes an improvement (and for who/what)?
Influences	 What drives the system in particular directions? Can you identify drivers, trends, enablers, blocks? Which leverage points are you going to focus to leverage change?

5. Final remarks

A posthuman system, "operates in an open space throughout which things-flows are distributed, rather than plotting out a closed space for linear and solid things"

Deleuze & Guattari, 1987

6. References

Braidotti, R., & Bignall, S. (Eds.). (2018). Posthuman ecologies: Complexity and process after Deleuze. Rowman & Littlefield.

Cudworth, E., & Hobden, S. (2011). Posthuman International Relations: Complexity, Ecologism and Global Politics. London and New York: Zed Books.

Deleuze, G., & Guattari, F. (1987). A thousand plateaus: Capitalism and schizophrenia. Trans. by Massumi, B.)., University of Minnesota, Minneapolis.

Luhmann, N. (1995). Social systems. stanford university Press.

Maturana, H. R., & Varela, F. (1981). Autopoiesis. Autopoiesis: A theory of living organization, 21-35.

Thrift, N. (1999). The place of complexity. Theory, Culture & Society, 16(3), 31-69.

Urry, J. (2005). The complexity turn. Theory, culture & society, 22(5), 1-14.