



Energy systems & Systems Theory

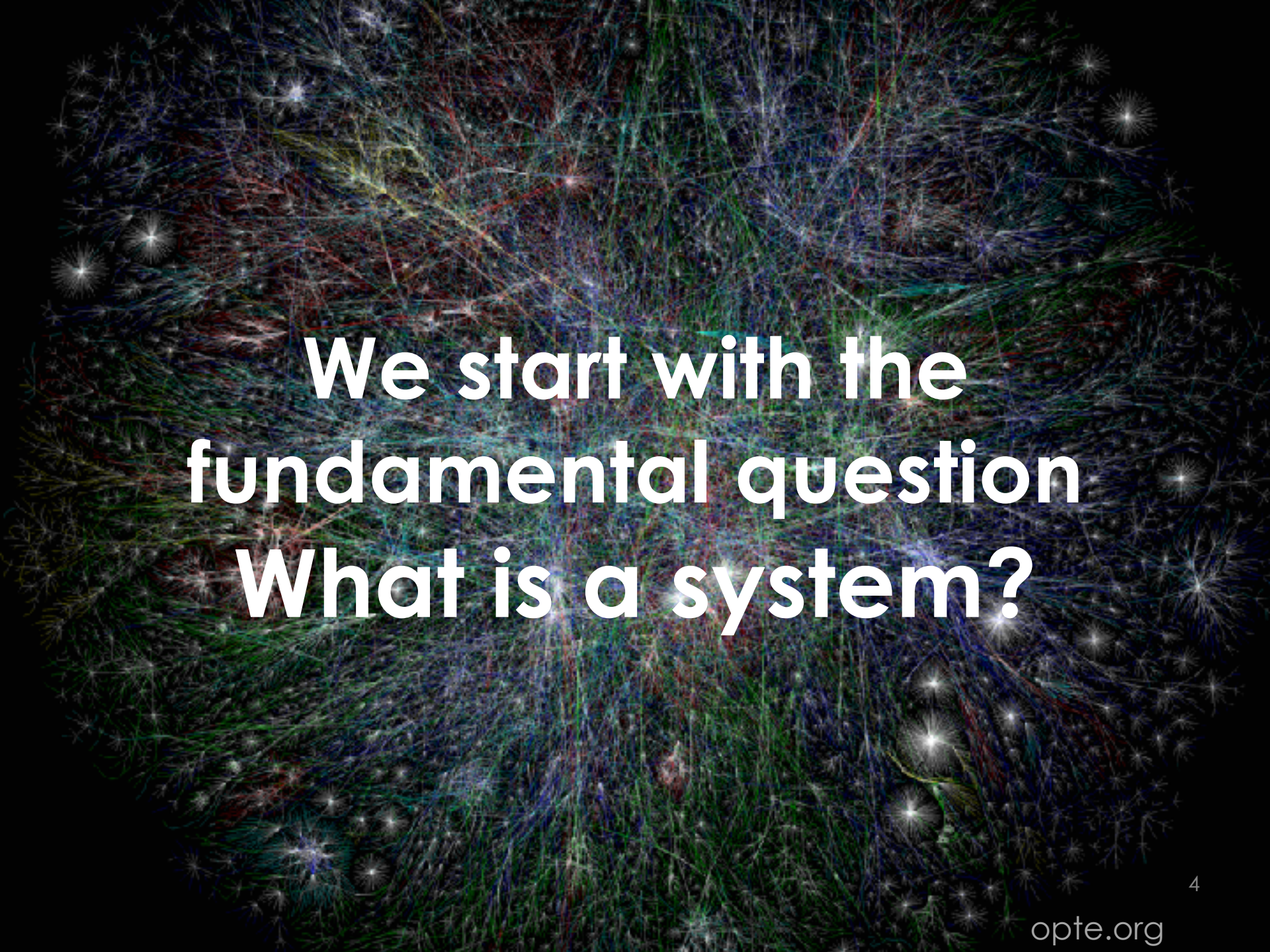
Petter Johansson

pettjoh@kth.se

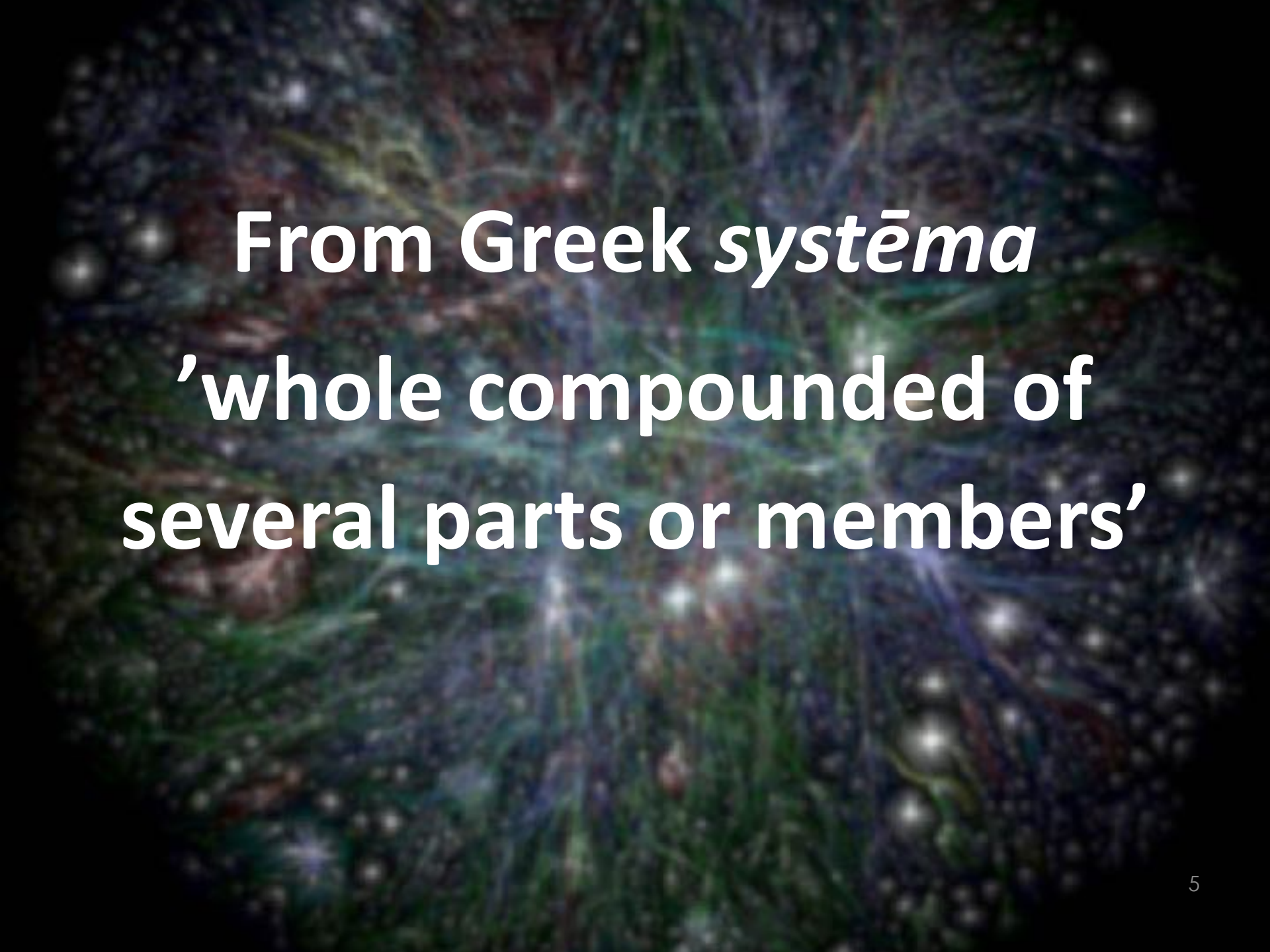


Laying the Electrical Tubes





**We start with the
fundamental question
What is a system?**



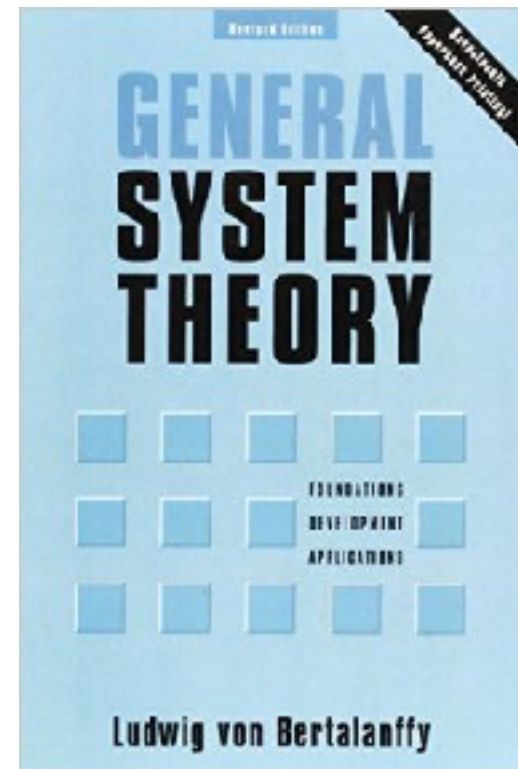
From Greek *systema*
'whole compounded of
several parts or members'

Allgemeine Systemlehre!

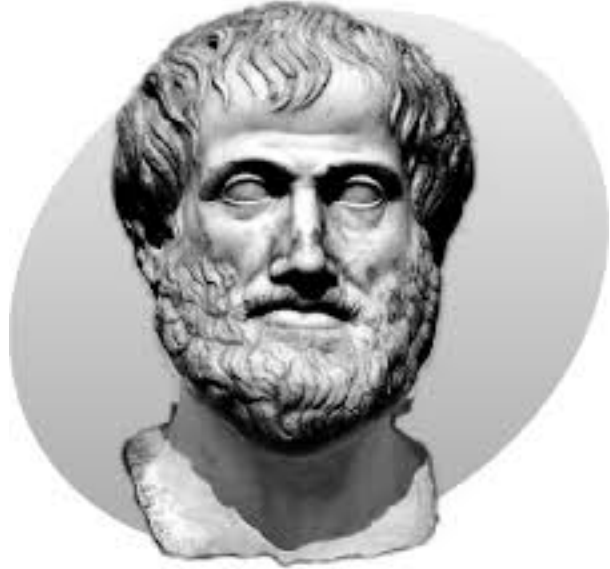


Common factors in systems

- Inputs & outputs
- Processes (transform inputs to outputs)
- Feedback
- Holistic
- Goal seeking
- Boundary
- Environment
- Hierarchy
- Affected by entropy
- Have equifinality



Holistic



Aristotle: "The whole is greater than the sum of its parts"

- Health of overall system depends on subsystem functioning
- A holistic problem solving framework

Goal-seeking

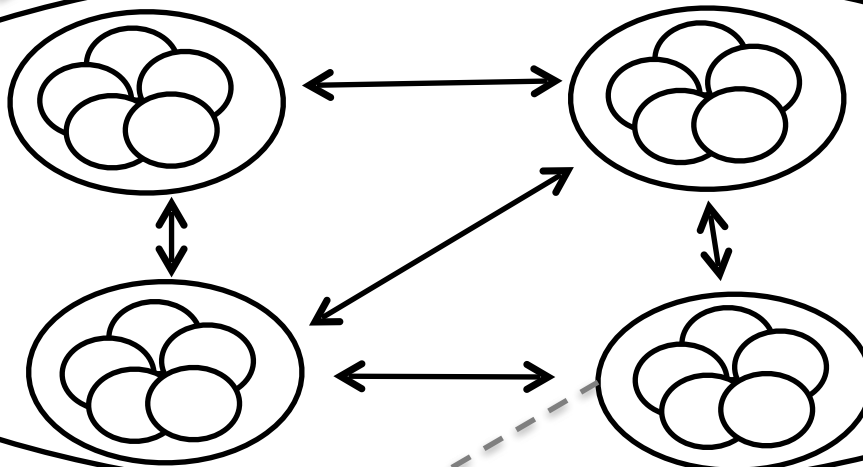
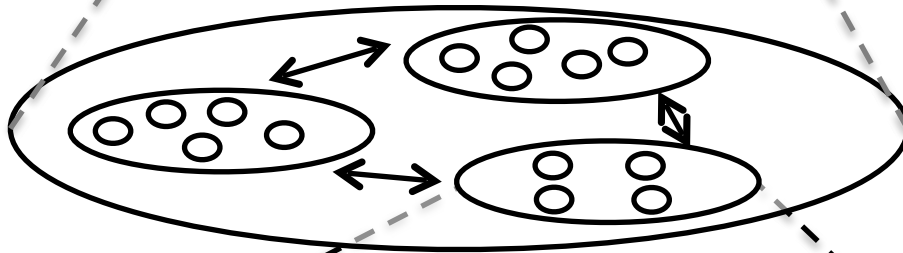
- A system has a goal or purpose
- Requires a decision making process

Equifinality

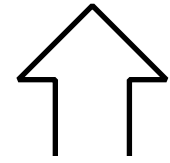
- The ability for systems to achieve goals in different ways
- Equifinality vs "one best way"



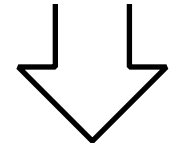
Hierarchy



More general



More detail







pettjoh@kth.se