

Emergence and Solidification-Fluidisation

Emergence
and
Solidification-
Fluidisation

B. Heiden &
B.
Tonino-Heiden

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2-3 September 2021



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Motivation and Introduction:

- Order/Freedom in Humanity
- Paradigm of Selfassembly/Selforganisation arises

Aim and goal:

- Answer: 'What are some of the driving forces for NI/AI development and processes, that may also be extended systemically in a wider or more universal sense?'

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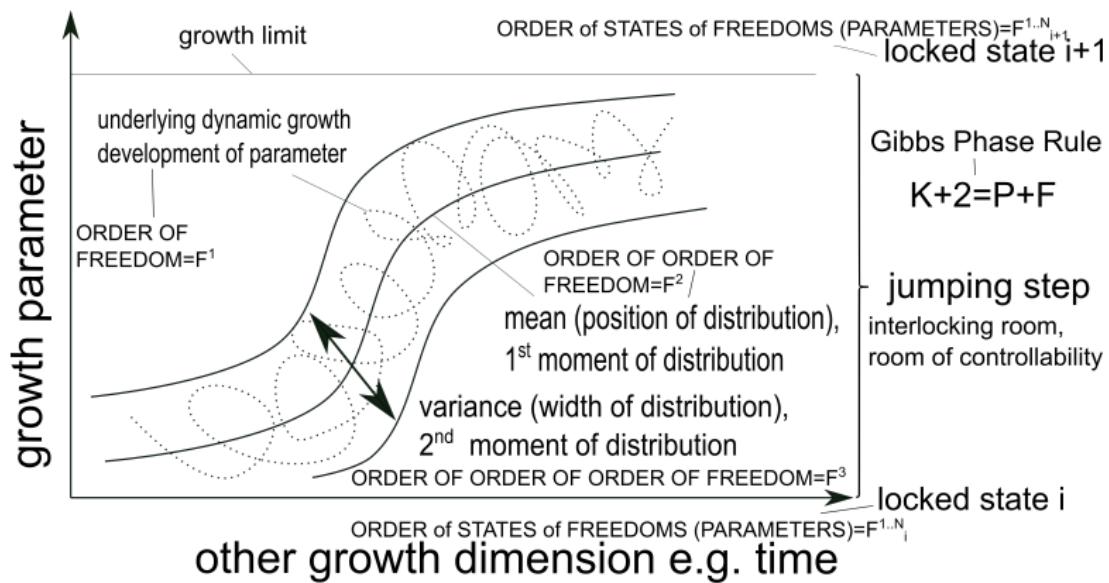


Figure 1: Growth laws in connection to self-contained order and order development, which relate to the 6th main sentence of thermodynamics

6th Main Sentence of Thermodynamics I

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- Order occurs in 'order jumps' and stays there relatively stable (attractor)
- Can be described by 'phase change'
- Degrees of Freedoms are affected → analogous to Gibbs Phase Rule

Generalisation of 6MS as **Emergence Sentence:**

- How emergence is created: By order increase due to permutation relation increase in growth processes or back coupled processes of orgitons (cybernetic units) - also for holons

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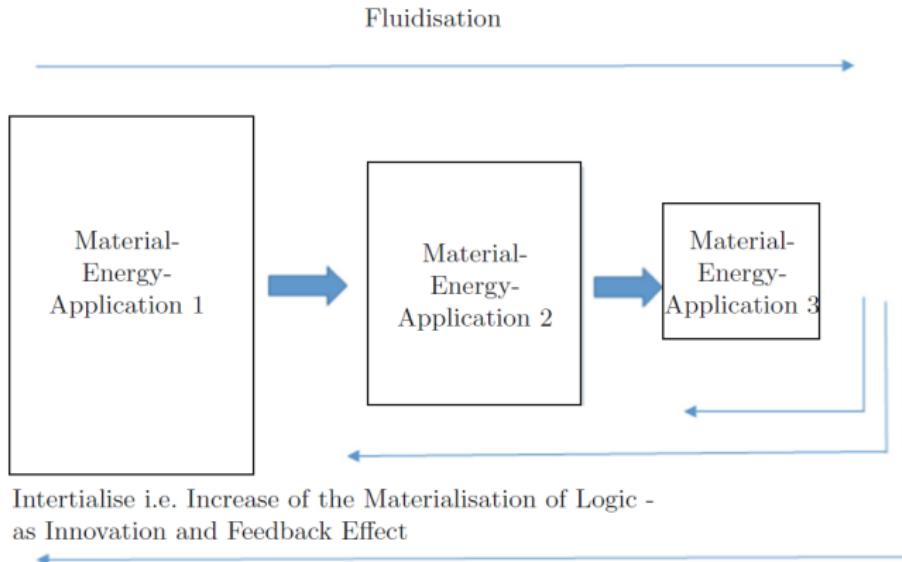


Figure 2: Solidification-fluidisation theorem

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Hybridisation

Cosmological thesis:

- Gedankenexperiment (thought experiment): Chronons, smallest 'time' particles → become smaller when universe expands.
- → Laws of physics emerge → property of far reaching communication and influence (better total-part integration/interaction) → controllability increase

Quantum Computing:

- Control of Computers with smaller 'bits' (qubits) → much faster computation (far reaching in computation time)
- → controllability increase (material science, quantum simulations etc.)

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Conclusion:

- Emergence & Solidification-Fluidisation Theorem introduced → general widely universal qualitative systemtheoretic concepts
- Hybridisation of both

Outlook:

- Mathematical formulation
- Computer simulation
- Connection with quantitative measures/theories:
Graph-/orgiton-/holon-/bifurcation-theory,
entropy-definitions, fractal notations, Poincaré maps and
other chaostheoretical concepts

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Thank you cordially for your attention!



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PS.: The presentation can later also be found at:
<http://www.dr-heiden.com/Vortraege.htm>

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