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Studium Generale

WUR

Convenor CERES course 'Complexity in and between eco- and social systems'

About Complexity

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Complex adaptive systems

Complexity

- The 3 variables in simulating flock of birds
 - Separation
 - Alignment
 - Cohesion

Complexity

- Complexity theory: chaos, fractals, bifurcation, strange attractors
- Edward Lorenz: 'Predictability: does the flap of a butterfly's wings in Brazil set off a tornado in Texas?'

Complexity

- Sensitivity to initial conditions

= the system gets a history

Complexity

- Attractors:

1: point attractor

2: closed loop attractors

3: strange attractors

Complex Adaptive Systems CAS

- Historical lines of descent
- Self organization
- Example

CAS

- The system is healthy as long as it communicates what it is supposed to communicate, as long as its subsystems perform their operations at the right moments in time, and as long as each subsystem additionally self-controls its structural organization with reference to its operation.

Thank You

