

Developing an Eco-social Enterprise

Session 5

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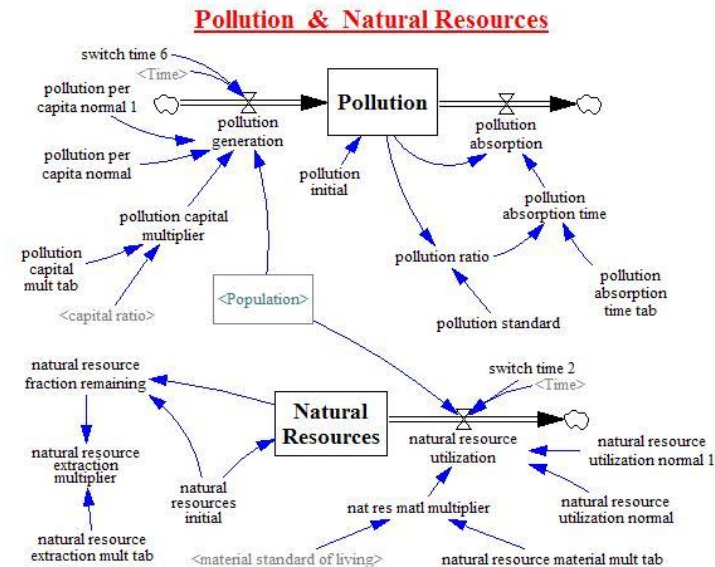
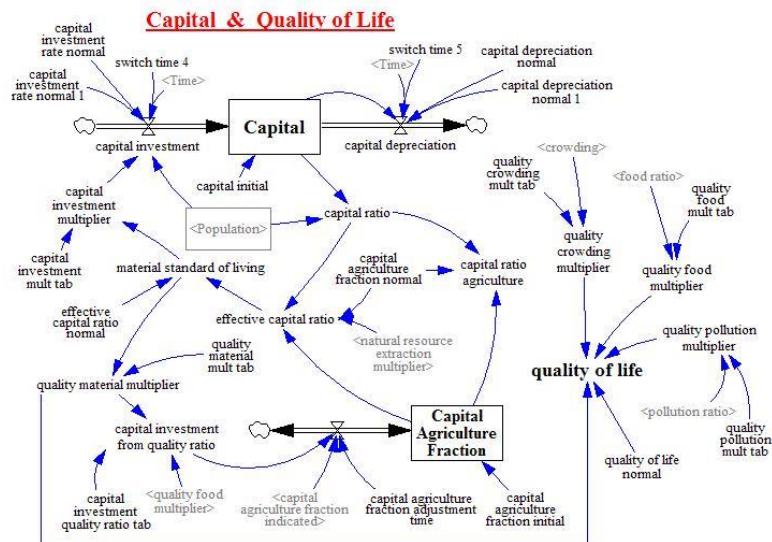
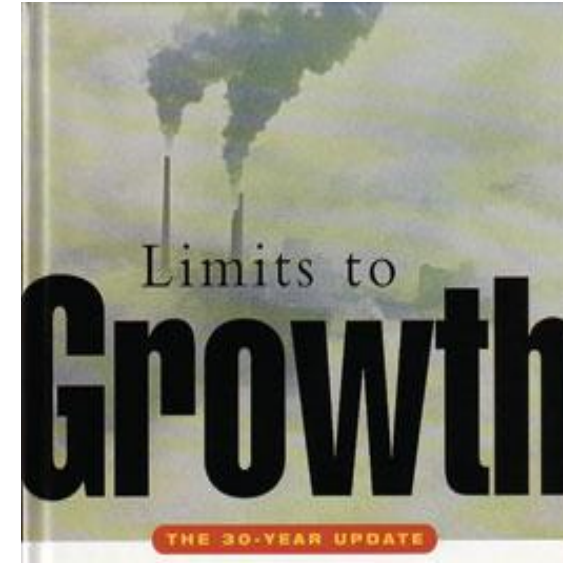
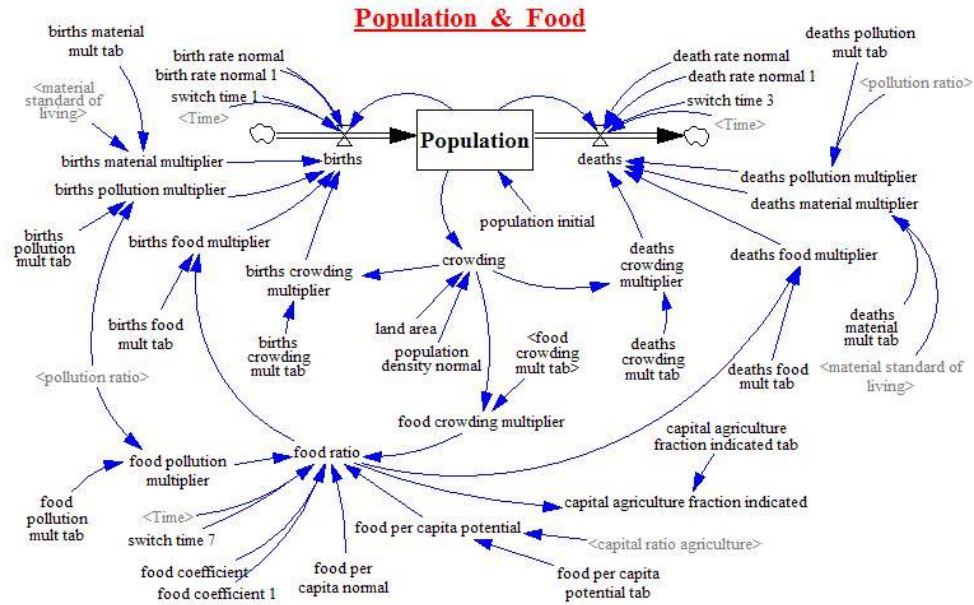
Simple systems

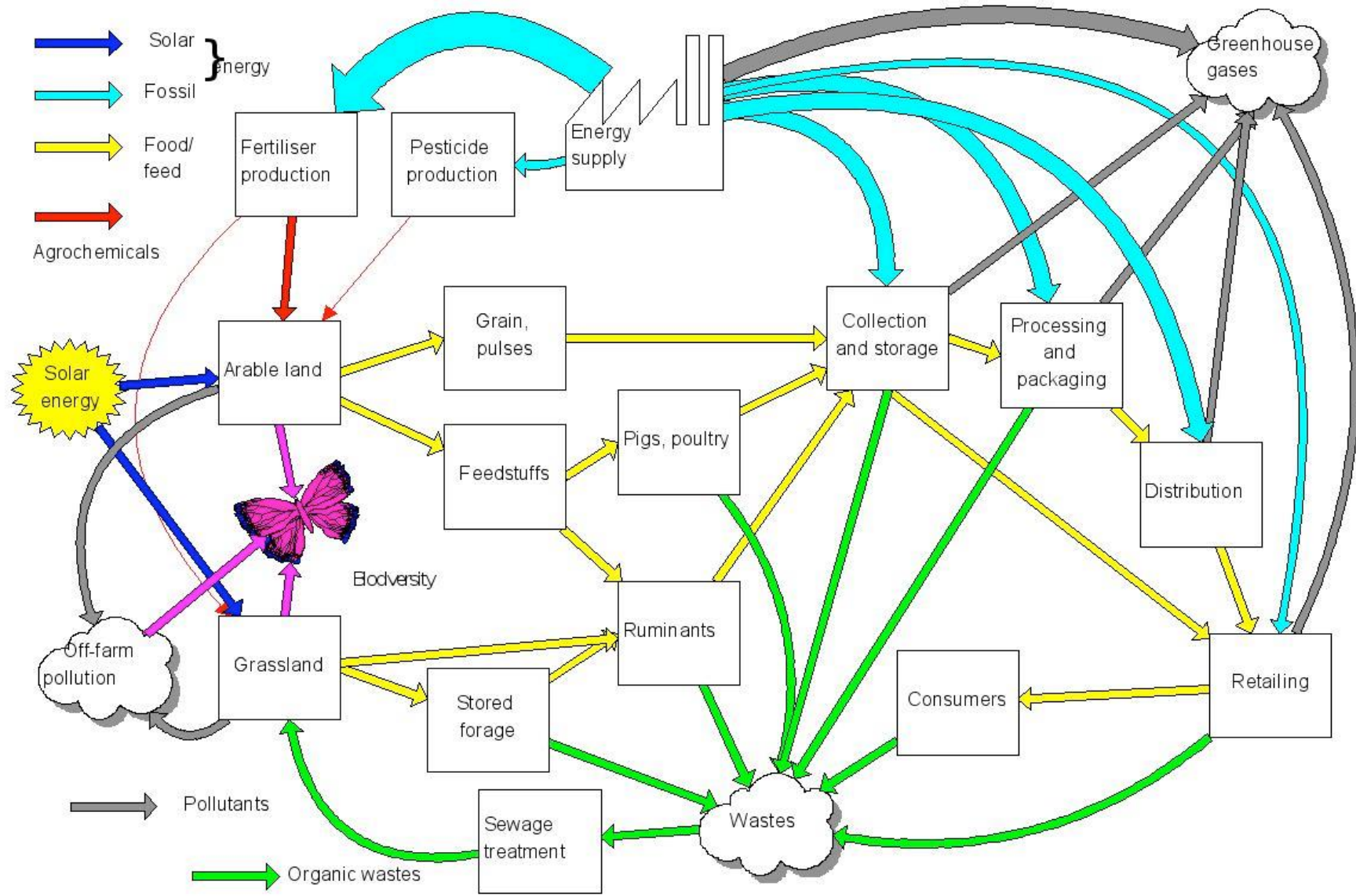


- Predictable;
- Mechanical;

"Reductionism produced a "machine view" of the world, a view captured in the work of Sir Isaac Newton. Metaphorically the world was likened to a sealed clock, a closed system, perpetually running on fundamental laws like "to everything action there is an equal and opposite reaction." **Hutchins, Systemic Thinking, 1995**

Complex systems





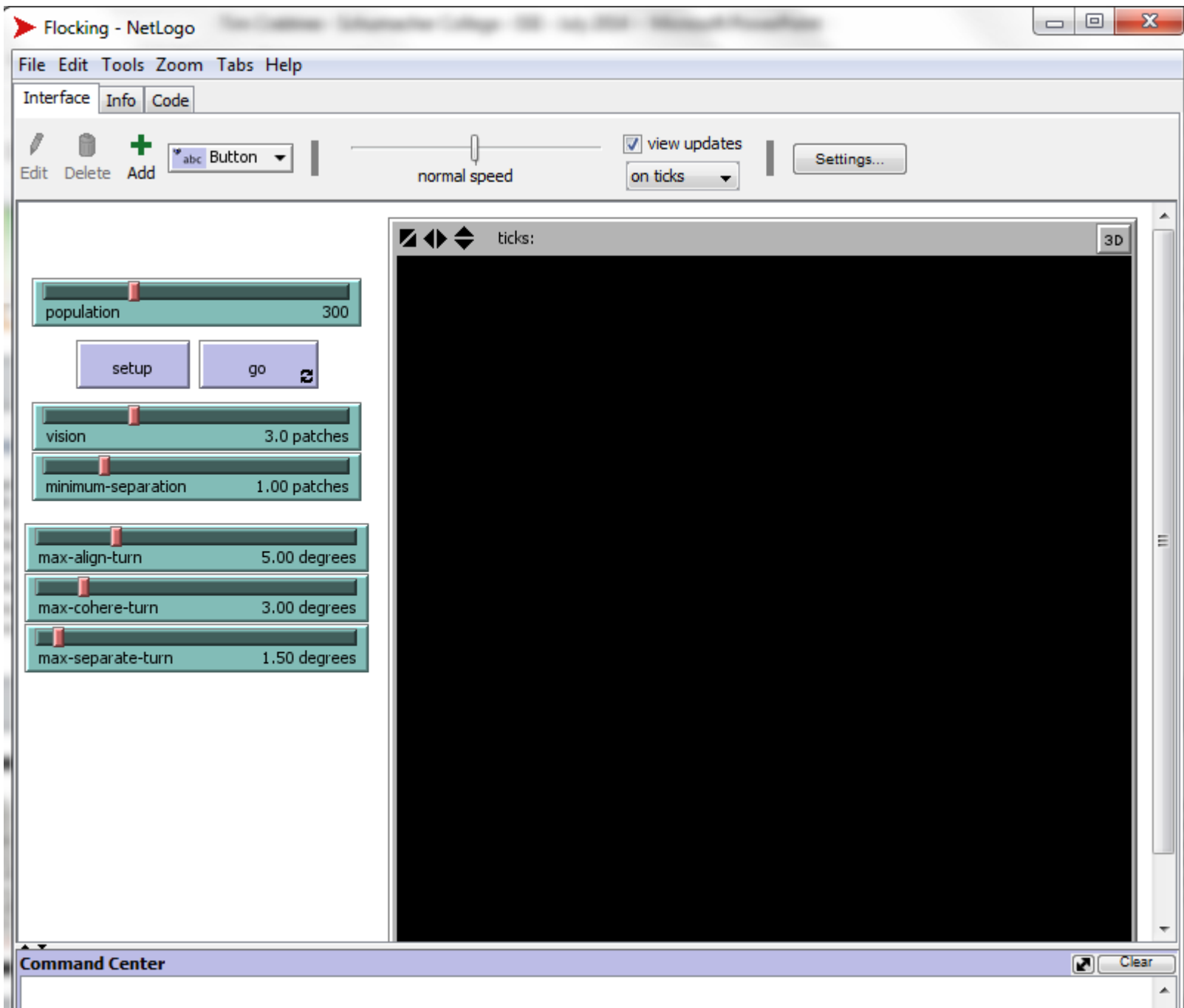
Complex behaviour

- Complexity theory builds on Systems Theory
- Complex systems are non-linear and their specific behaviour is unpredictable
- Complex behaviour arises from *interaction*
- Complexity theory focuses on *relationships*
- The distinguishing feature of complex systems is that they can *create new order*



amazing starlings murmuration (full HD) -www.keepturningleft.co.uk

<https://www.youtube.com/watch?v=eakKfY5aHmY>



Question:

What difference do you perceive between the video of starlings in flight and the computer simulation?

Patricia Shaw:

Systems theory & complexity science

“We make representations of the relatively stable patterns emerging in our ceaseless activity so that we can look at them together and agree on changes we can identify and plan for. This is why organisations, institutions and the civic realm are full of models, 2 by 2 matrices and mappings of various kinds.

But representations can never capture real complexity because that complexity is a flow in time not a static image or model. The representations are always not just inadequate but useful approximations, they can really mislead and falsify - taking them literally easily leads to frustration.”

'Complexity Thinking' approach

- ***Self organising***: encouraging a system which will spontaneously emerge as the actions of autonomous participants come to be interlinked and co-dependend on each other.
- ***Evolutionary***: the system will be able to change its structure and processes as it adapts to maintain its viability within a changing, dynamic context. In other words, the system will be designed to learn from its experiences.

From representations of systems to participation in dynamic processes

- We are immersed in problems of organised complexity – these are situations where you have a moderate number of variables, but strong non-linear interactions amongst those variables.
- This involves dealing simultaneously with a sizeable number of factors which are interrelated into an organic whole.

Patricia Shaw

We are used to thinking/seeing/experiencing in terms of a world of separate THINGS apart from ourselves that need to be managed.

- *Things* are clearly defined, identifiable, separate, bounded, stable, graspable, measurable, countable entities.
- They may be material *things* or intangible conceptual *things* such as organisations, jobs, managers, systems, leaders, resources, strategies, plans, goals, targets, budgets, meetings, cultures, visions.....
- Such *things* can be connected, arranged, ordered, organised *by design* into structures.
- Such ordering connections are *universal, linear, rational, sequential, predictable, neutral*.

Complexity invites us to think/see/experience in terms of a world of **PATTERNED FLOW** in which we are inextricably immersed.

- This dynamic flow is not uniform but patterned as events and activities emerging in webs of interdependent relating.
- Patterning (irregular regularities) emerges spontaneously through self-organisation at many scales simultaneously.
- Such self-patterning processes are local, reciprocal, non-linear, lateral, unpredictable, improvisational in which both individual and social identities are emerging simultaneously.

Some questions

- What are the limitations of strategies, business plans, “theories of change” and predictions of outcomes, in a world that is complex and unpredictable?
- How do we keep organisations “alive” and generative, taking inspiration for example from the Latin American notion of continuous “*formacion*”? How also do we maintain our own levels of commitment, well-being and satisfaction in our work?
- How can we resist the expectation that we should seek to scale up initiatives in the conventional way rather than through a process of networked growth in clusters of organisations?