

## **Steering, Self organization: A viable form of intervention or contradictory ways of framing the world?**

1. Steering and self-organization are contradictory ways of framing the world.
  - like the wave/particle duality of light
  - correct and incorrect
  - what you “see” depends on how you test it, which depends on how you frame things...
  - I find it pretty hard not to “see” self-organization as more “correct”...
2. “Steering” has different meanings with respect to different types of systems

## **systems**

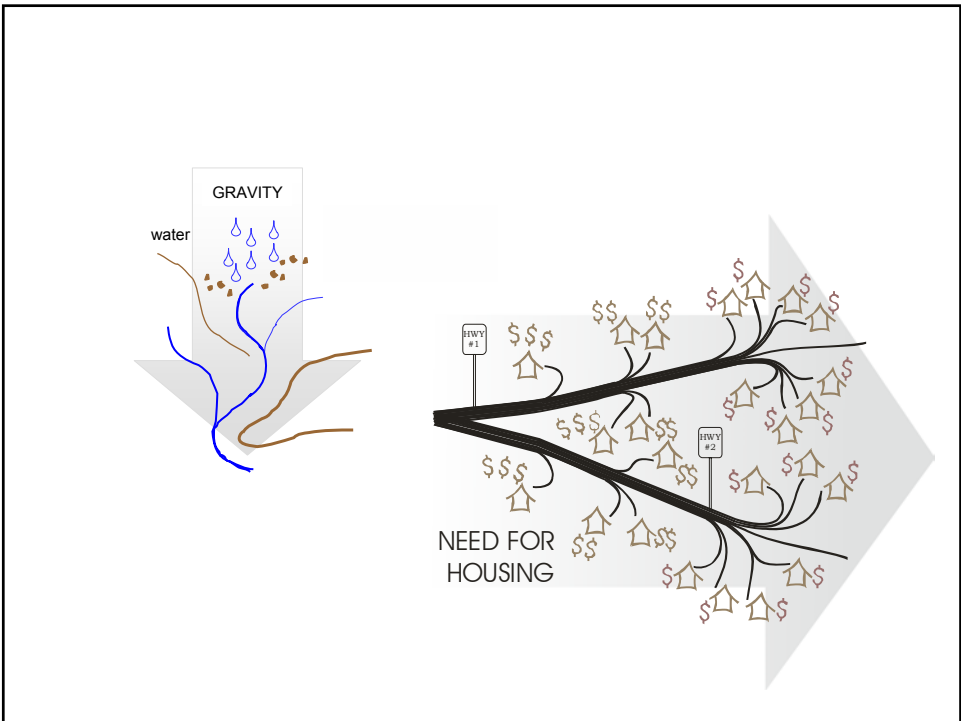
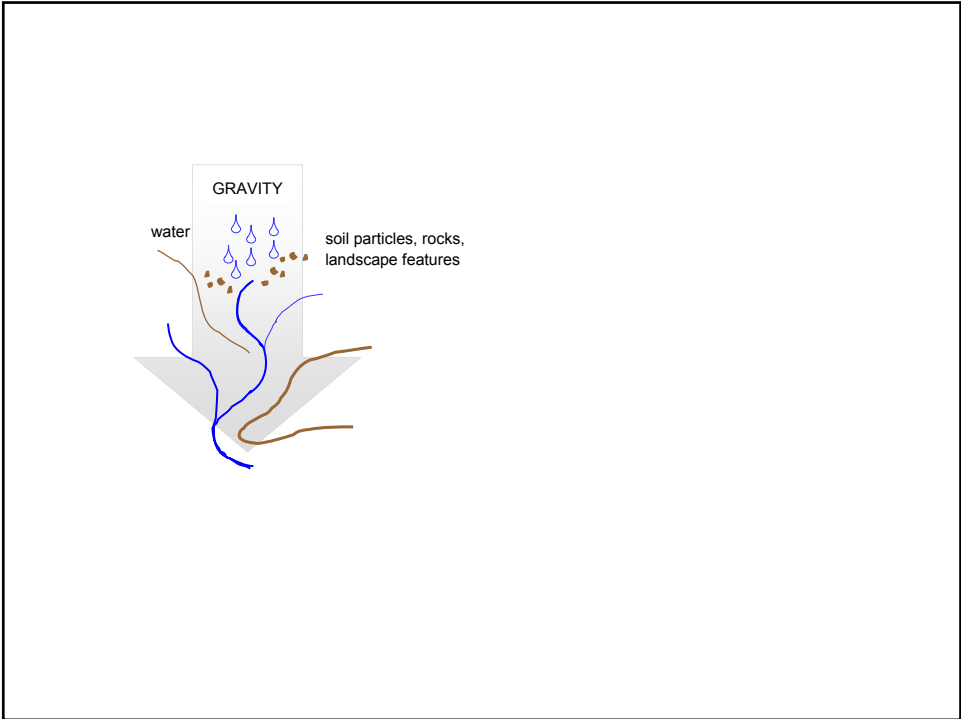
- ...are "complexes of elements standing in interaction" (Von Bertalanffy 1968).
- ... are "a way of looking at the world" (Weinberg 1975).
- rather than draw boundaries, identify and describe processes of generation and continuation
- consider these factors as challenges *and* as opportunities

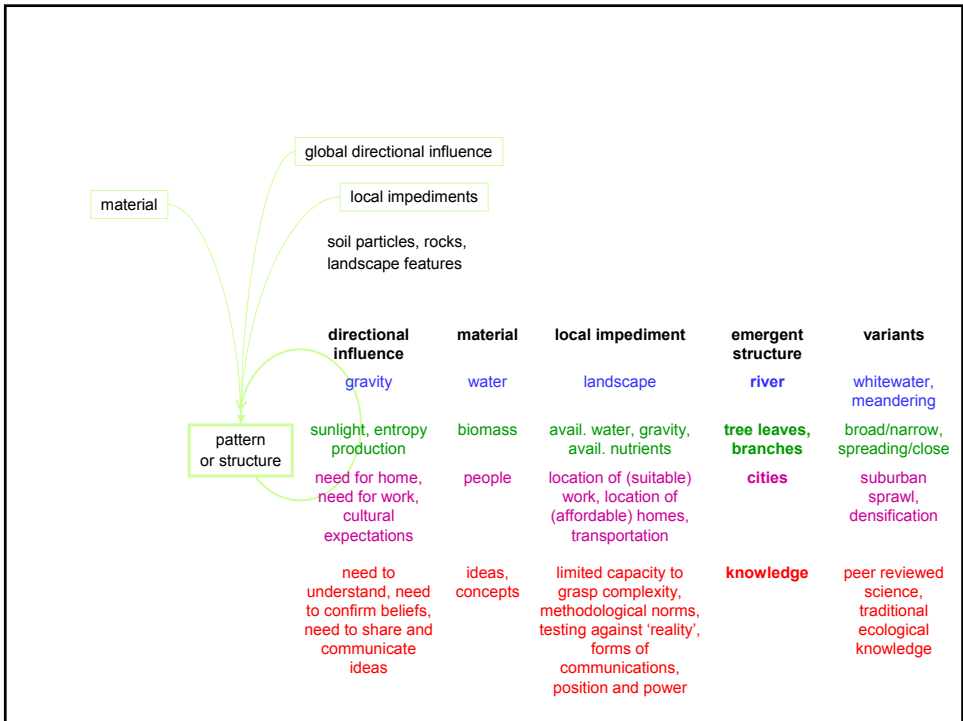
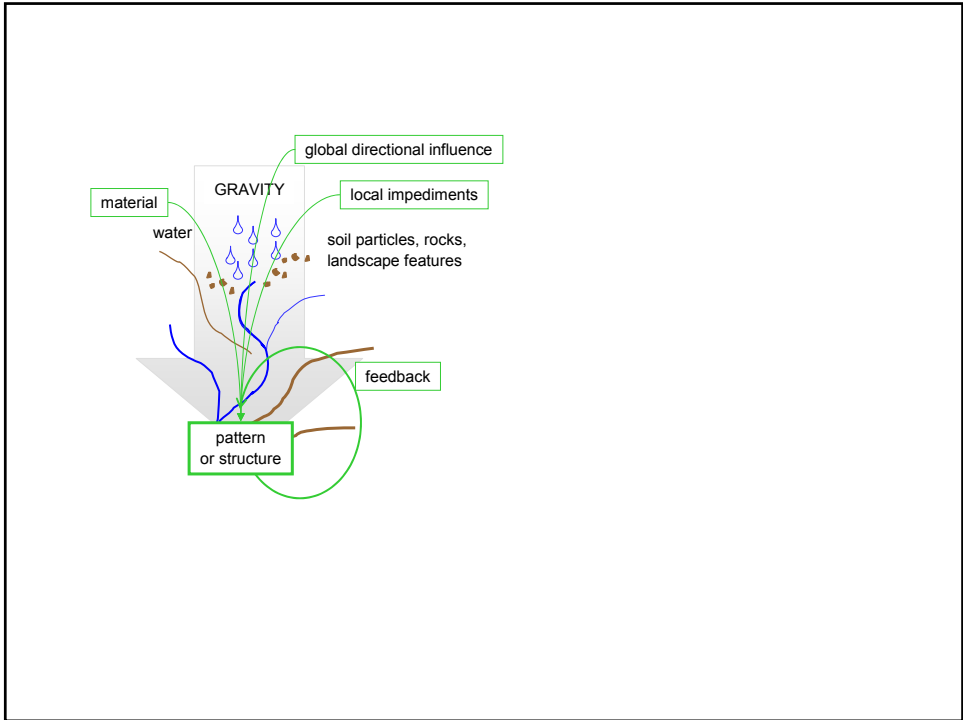
## self-organizing systems

- “It is difficult, probably impossible, to find a precise definition of what is understood by a self-organizing system. Nevertheless it is an important and useful idea” (Andrew 1989: 24).
- “On an intuitive level, self-organization refers to exactly what is suggested: systems that appear to organize themselves without external direction, manipulation, or control” (Dempster 1998: 41).
- identified in many different domains, with many different generative parameters, ranging from lasers and dissipative structures to organisms, ecosystems, urban form, knowledge...
- but are these, all of these, self-organizing...?

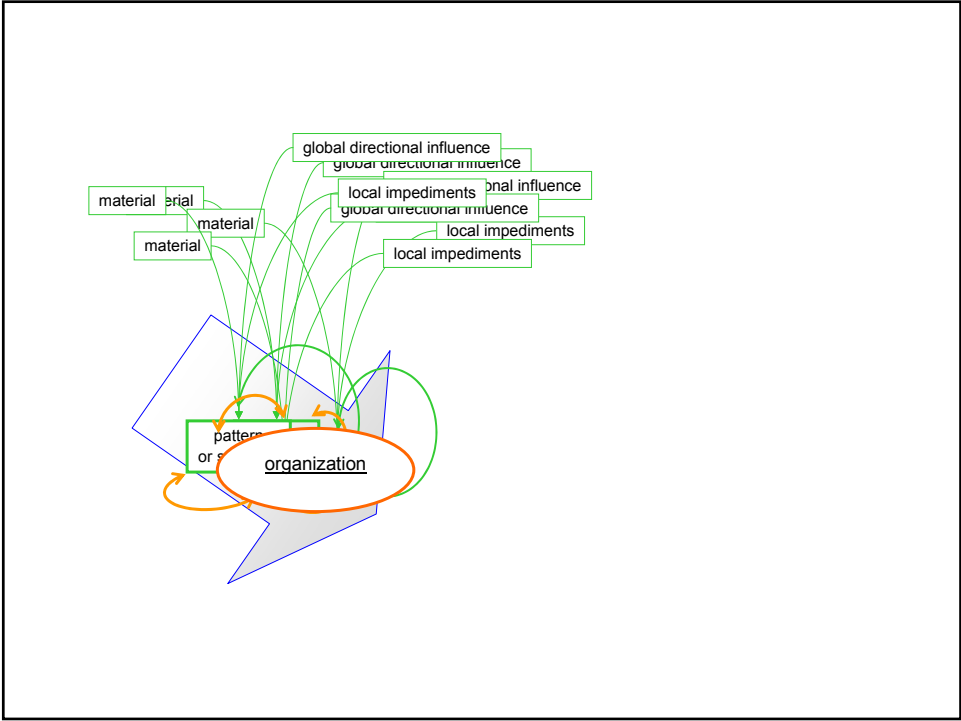
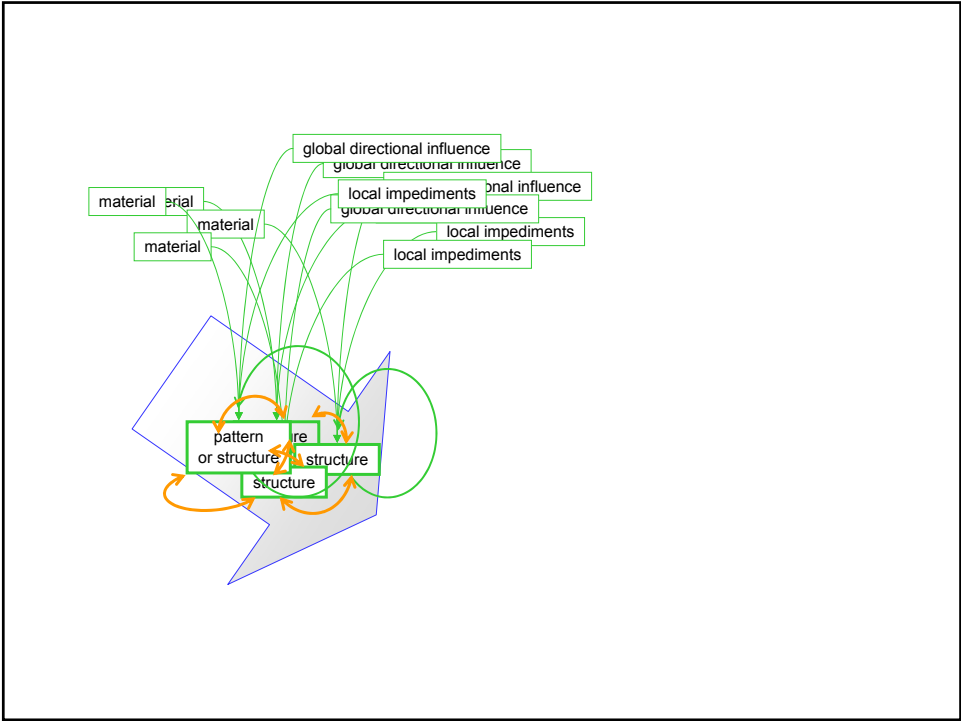
## types of self-forming systems

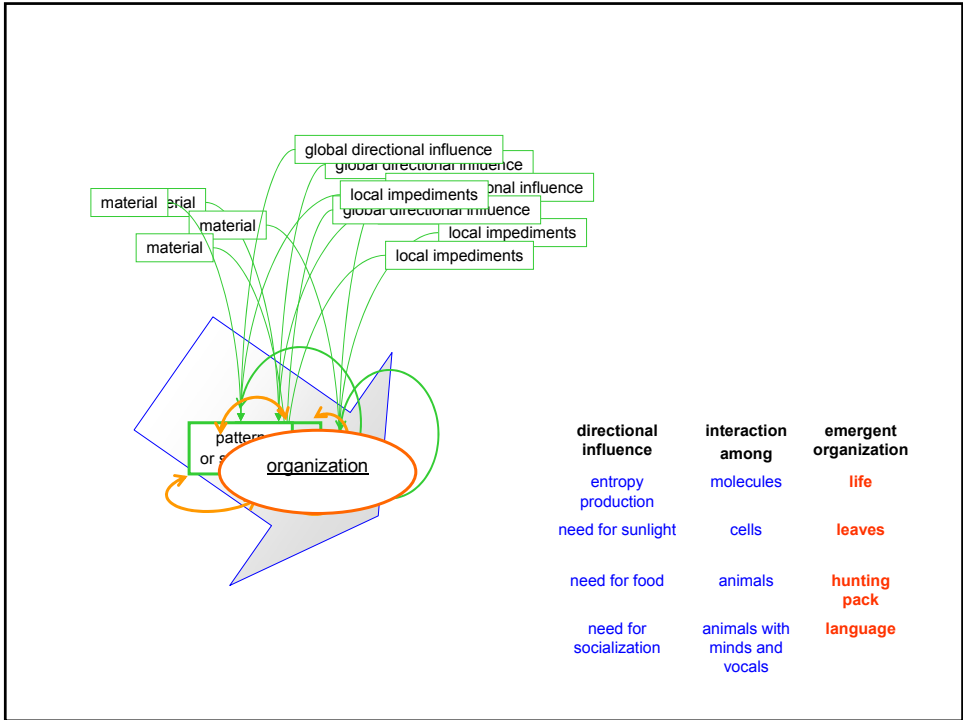
system type	generative factors	emergent quality
self-ordering systems	global-local interactions	structure
self-organizing systems	and feedback and interaction	and organization
self-producing systems	and information and poiesis and structural coupling	and complex organization, embodiment evolution
self-determining systems	and agency and awareness	and intention





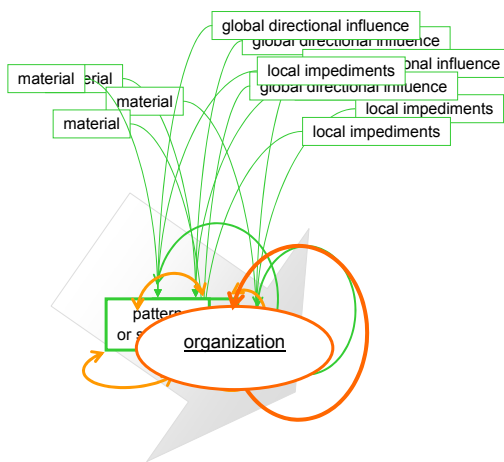


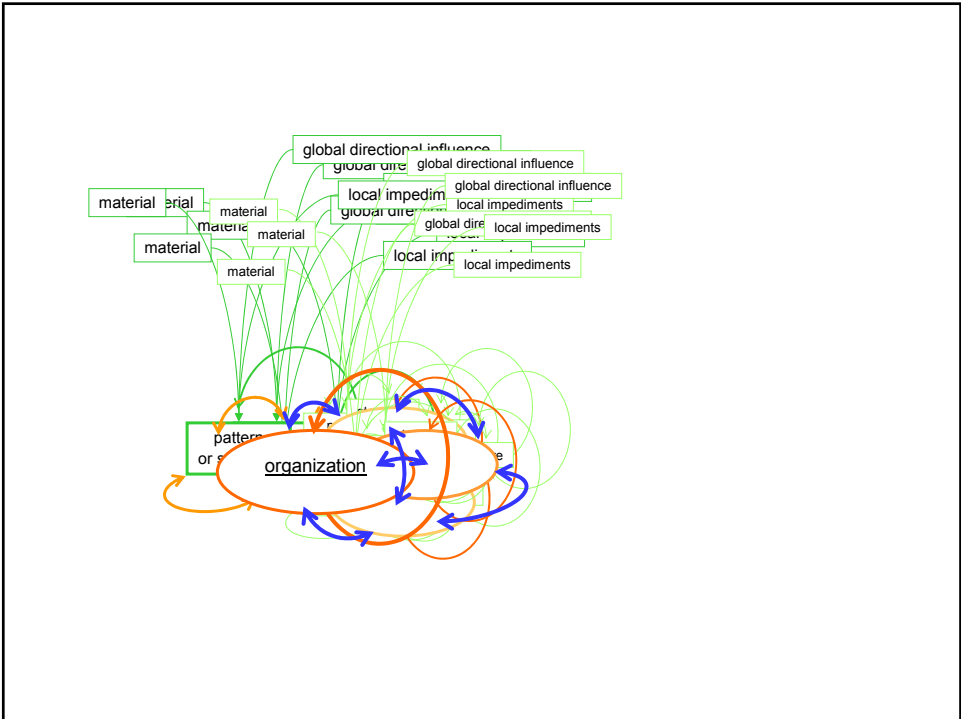
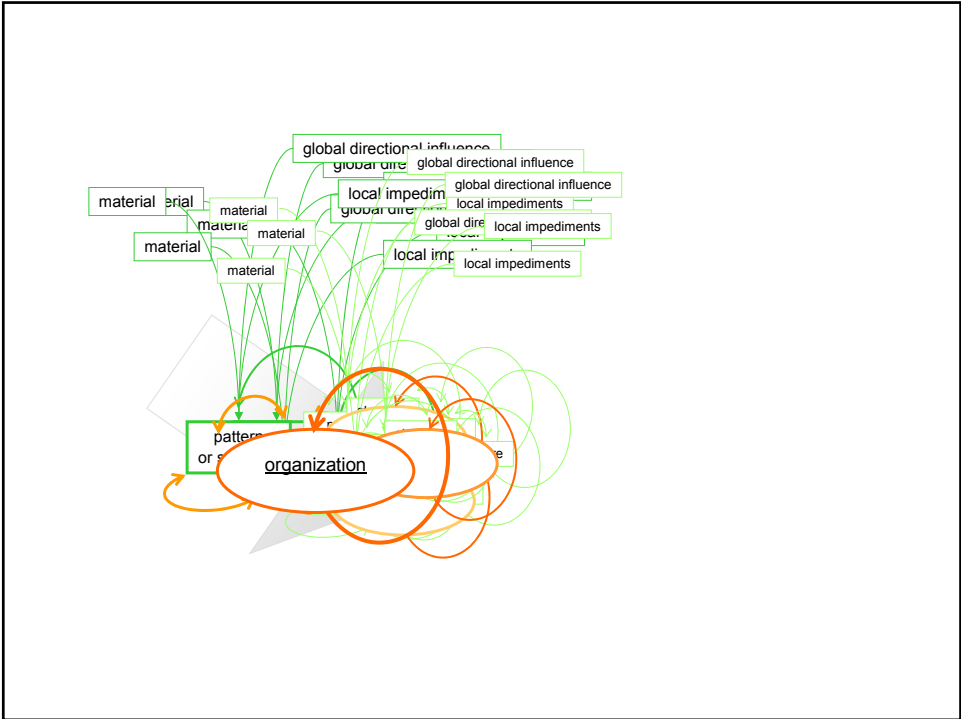


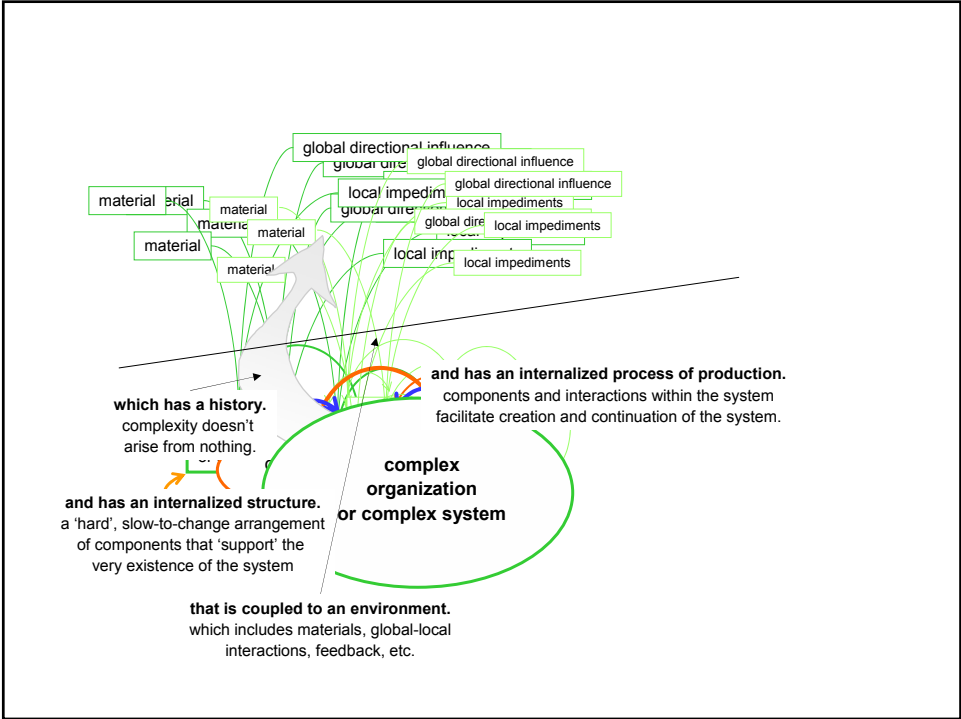
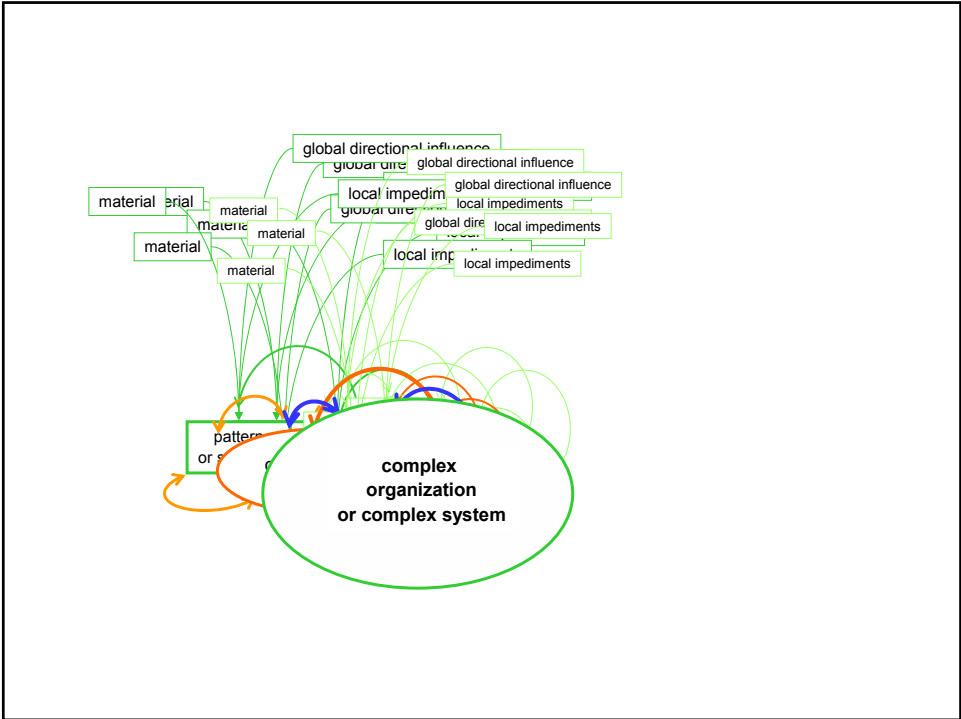


global (directional) influence	structural material	local (impeding) influences	feedback, interaction	emergent structure	structural variants
gravity	water	landscape	water & water; water, soil, rocks, etc. & landscape	river	whitewater, meandering
sunlight, entropy production	biomass	avail. water, gravity, avail. nutrients	among cells, leaf shape and sunlight gathered and water transpired	tree leaves, branches	broad/narrow, spreading/close
need for home, need for work, cultural expectations	people	location of (suitable) work, location of (affordable) homes, transportation	work/home locations; economies of scale, "keeping up with the Joneses"	cities	suburban sprawl, densification
need to understand, need to confirm beliefs, need to share and communicate ideas	ideas, concepts	limited capacity to grasp complexity, methodological norms, testing against 'reality', forms of communications, position and power	'successful' results & 'successful' careers; 'successful' methods chosen as 'best' methods;	knowledge	peer reviewed science, traditional ecological knowledge

and then things start getting a little more complex...









## types of self-forming systems

system type	generative factors	emergent quality	“steering” means:
self-ordering systems	global-local interactions	structure	controlling
self-organizing systems	and feedback and interaction	and organization	influencing
self-producing systems	and information and poiesis and structural coupling	and complex organization, embodiment evolution	triggering
self-determining systems	and agency and awareness	and intention	encouraging

### “steering” ...

- self-ordering: 'steering' = controlling
  - if one can overcome/direct (i.e. control) global/local influences
- self-organizing: 'steering' = influencing
  - if one can alter global-local interactions or feedbacks or interactions...
- self-producing: 'steering' = triggering
  - if can create change in the system's environment that would trigger a subsequent (self-produced) change in the system.
- self-determining: 'steering' = encouraging
  - if can entice or educate, provide incentives/disincentives
- **BUT**
  - unintended consequences
  - system may (will?) respond in unexpected, potentially contrary ways

global (directional) influence	structural material	local (impeding) influences	feedback, interaction	emergent structure	structural variants
need for home, need for work, <b>cultural expectations</b>	people	location of (suitable) work, <b>location</b> of (affordable) homes, transportation	work/home locations; economies of scale, <b>"keeping up with the Joneses"</b>	<b>cities</b>	suburban sprawl, densification
need to understand, need to confirm beliefs, need to share and communicate ideas	ideas, concepts	limited capacity to grasp complexity, <b>methodological norms</b> , testing against 'reality', <b>forms of communications, position and power</b>	' <b>successful</b> ' results & ' <b>successful</b> ' careers; ' <b>successful</b> ' methods chosen as ' <b>best</b> ' methods;	<b>knowledge</b>	peer reviewed science, traditional ecological knowledge

- ## what to do...?
- global-local influences:
    - > attend to non-hierarchical cross-scalar relationships
      - think about the big-picture in making any little action
  - consider that there **will be** unintended consequences
  - consider how best to choose direction(s)
  - my approaches:
    - alter direction of underlying cultural norms through principled action
    - develop new structures and forms of interaction

