

Ah Complexity! Both friend and foe

Complexity is a good thing: it's a source of innovation through novel combinations and adaptability - through diversity and distributed problem solving.

Complexity can be a bad thing: it can cause managerial overload, opaqueness, brittleness, and system flips.

Metaphors for understanding the difference between concepts:

Simple Following a recipe

- The recipe is essential
- Recipes are tested to assure replicability of later efforts
- No particular expertise; knowing how to cook increases success
- Recipe notes the quantity and nature of “parts” needed
- Recipes produce standard products
- Certainty of same results every time

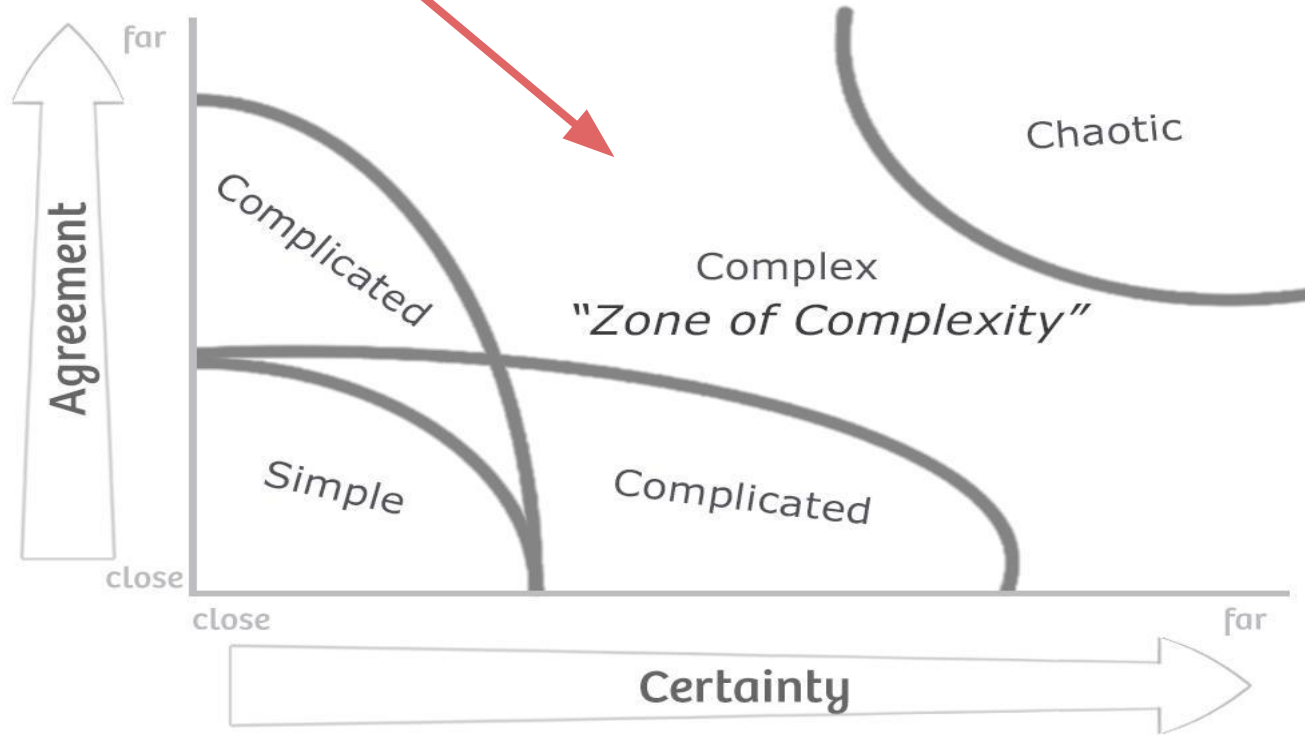
Complicated Rocket to the Moon

- Instruction is critical and necessary
- Sending one rocket increases assurance that next will be ok
- High level of expertise in many specialized fields + coordination
- Separate into parts and then coordinate
- Rockets similar in critical ways
- High degree of certainty of outcome

Complex Raising a Child

- Instructions have only limited application
- Raising one child gives no assurance of success with the next
- Expertise can help but is not sufficient; relationships are key
- Can't separate parts from the whole
- Every child is unique
- Uncertainty of outcome remains

The workplace of social innovators



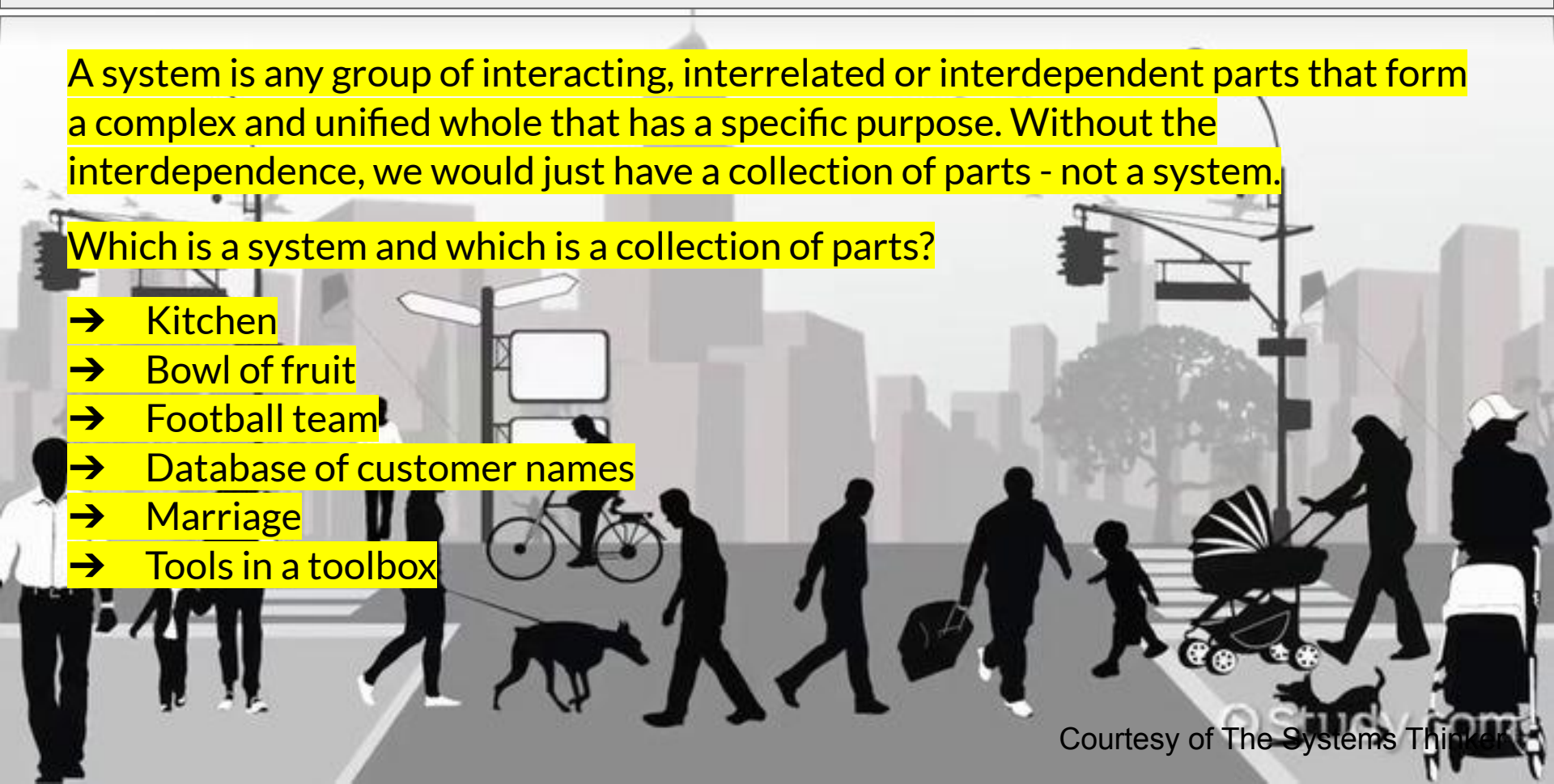
The Stacey Matrix was developed and published by Ralph Douglas Stacey, 2002

What is a system?

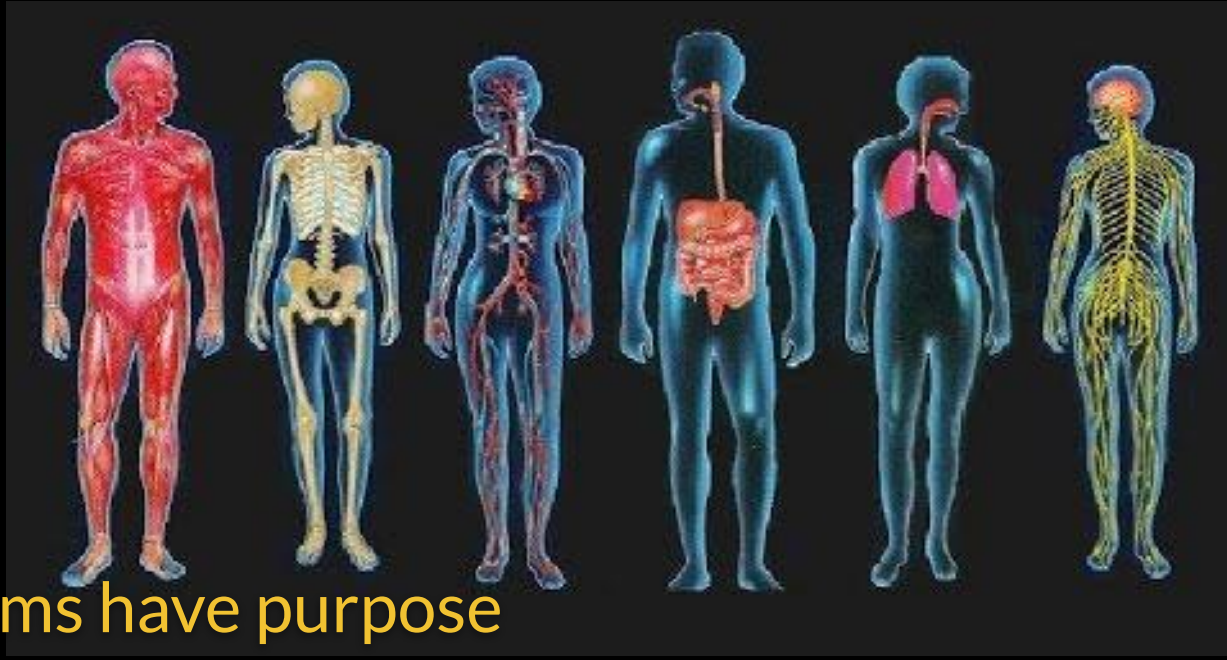
A system is any group of interacting, interrelated or interdependent parts that form a complex and unified whole that has a specific purpose. Without the interdependence, we would just have a collection of parts - not a system.

Which is a system and which is a collection of parts?

- Kitchen
- Bowl of fruit
- Football team
- Database of customer names
- Marriage
- Tools in a toolbox

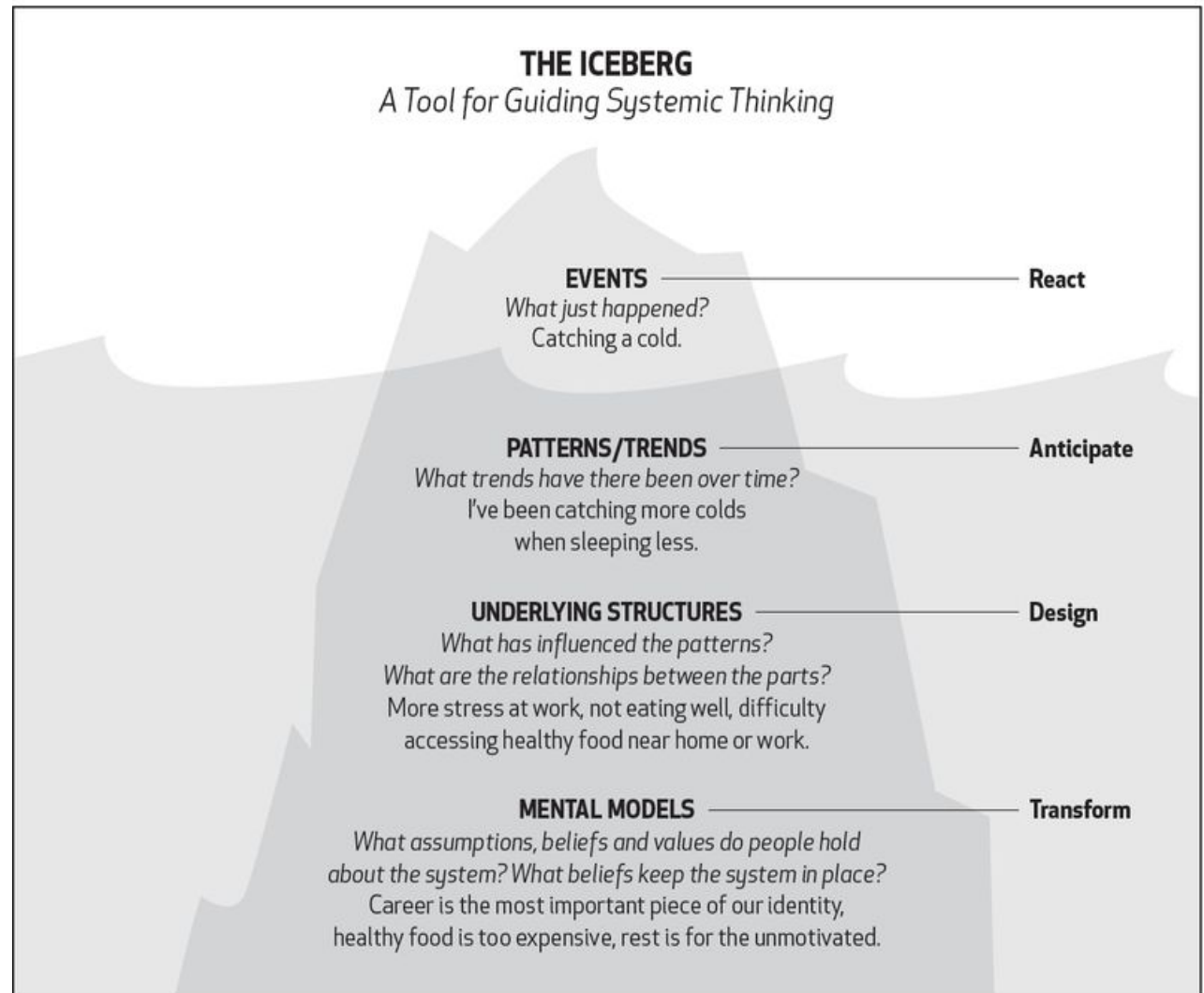


Courtesy of The Systems Thinker



- Systems have purpose
- All parts must be present for the system to perform
- The order or arrangement of parts impacts how the system performs
- Systems maintain stability through feedback

Understanding the whole



Complex Systems are overwhelming but rather than try to work them out, systems theorist Donella Meadows encourages us to dance with them

The Dance

1. Get the beat.
2. Listen to the wisdom of the system.
3. Expose your mental models to the open air.
4. Stay humble. Stay a learner.
5. Honour and protect information.
6. Locate responsibility in the system.
7. Make feedback policies for feedback systems.
8. Pay attention to what is important, not just what is quantifiable.
9. Go for the good of the whole.
10. Expand time horizons.
11. Expand thought horizons.
12. Expand the boundary of caring.
13. Celebrate complexity.
14. Hold fast to the goal of goodness.