Better health through less healthcare; a systemic approach

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23-07-2024

Alan Turing Institute
AI for Multiple Long-term Conditions
AIM RSF

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System transitions

TNO innovation for life

Complex systems

- Non-linear
- Nested systems
- Self-organization
- Feedback loops
- Unpredictable

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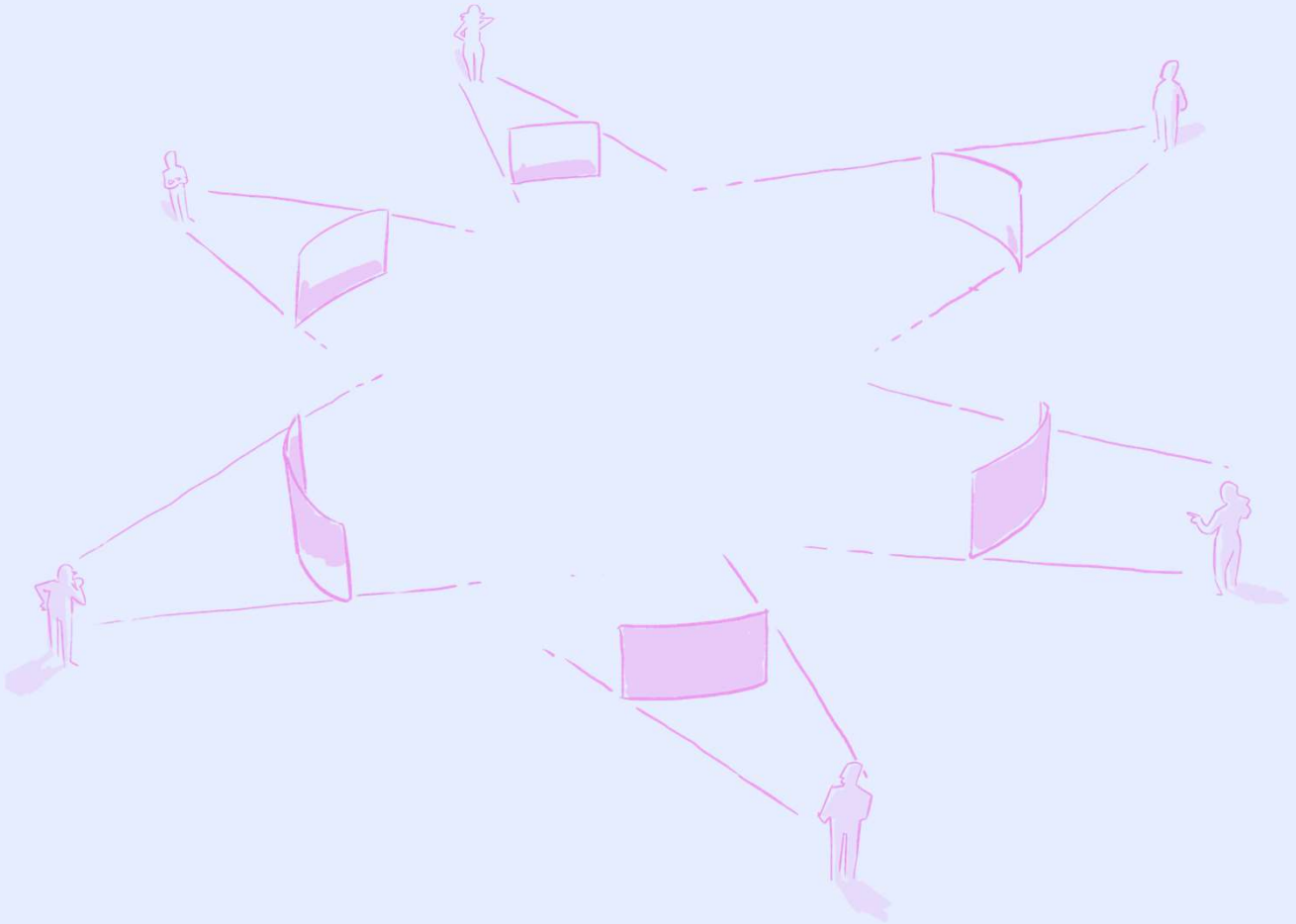

Integrating perspectives

Perspective = Angle + Lens

“Don’t look at the world, Look at your lens.”

Edward W. Said in ‘Orientalism’

Unlock process

UNLOCK common purpose

UNLOCK transdisciplinary capacity

UNLOCK Deep System Intelligence

UNLOCK Pathways to system transitions

Phase 0

Explore wicked problem

Phase 1

Foundation transdisciplinary work

Phase 2

Root causes

Paradoxical tension fields

Archetypical recurring patterns

Phase 3

Ecologies of transformations

Transition paths with ‘end’goals

Let’s start the movement !

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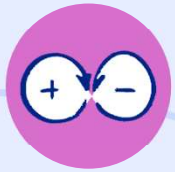

Archetypical recurring patterns

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- 8-12 experts
- Large diversity of perspectives
- Selection in advance based on profile
- 8-12 days in 2-3 months
- System practitioner & system team coach lead the table
- Content & interaction: System focused work (transdisciplinary work) continuously interwoven into the program
- Involvement of the entire ecosystem

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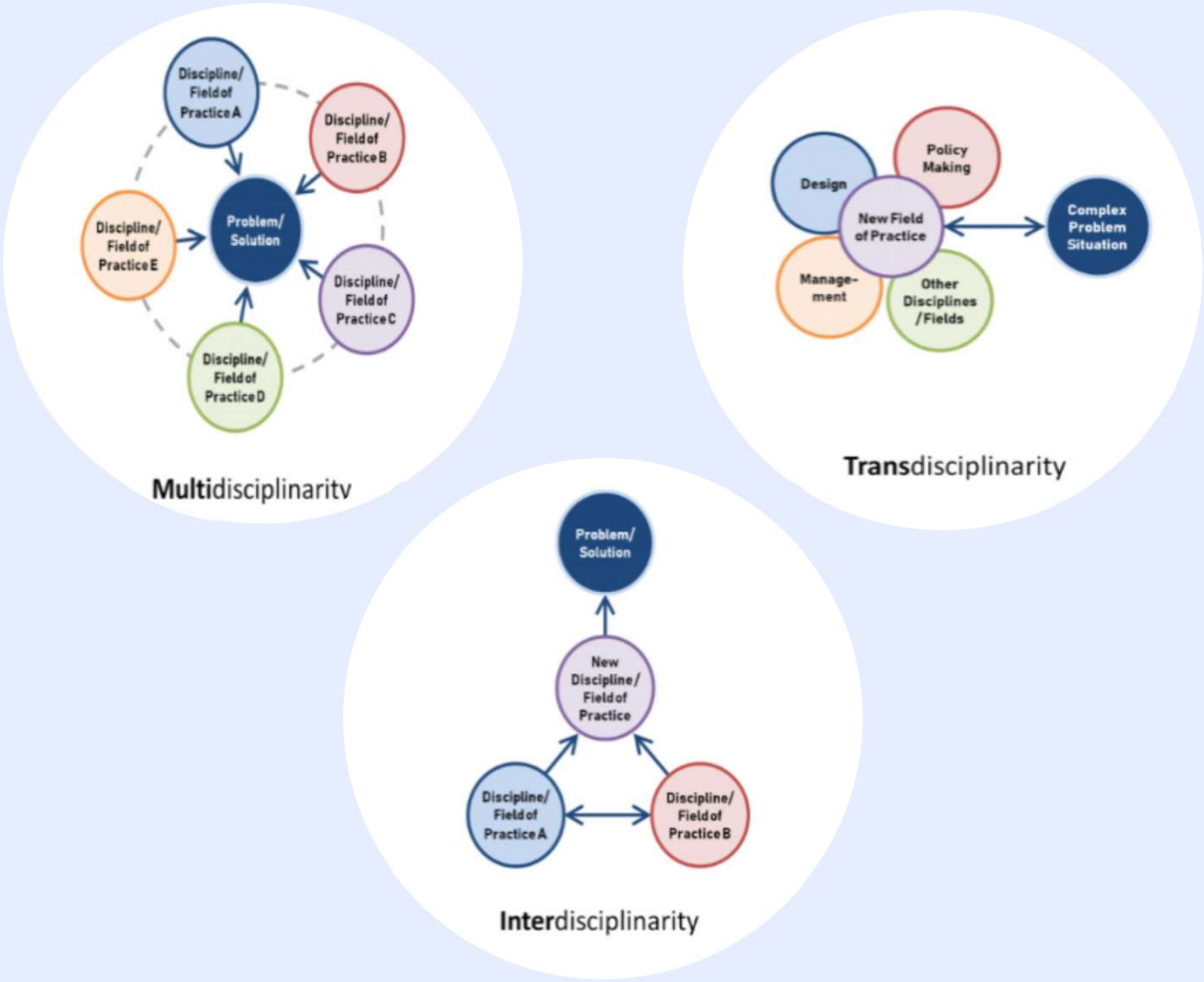

1+ 1 = 3

- Transdisciplinarity places interactions in an integrated system with a social purpose, resulting in a continuously evolving and adapting practice*
- The sum of transdisciplinary collaboration is more than can be explained by the addition of its parts

*McPhee et al, 2018.

Better health through less health care

How do we set a
‘stable unhealthy system’ in motion?

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Many societal health problems are converging

Currently,
>50% overweight,
>25% mental illness
(The Netherlands)

Currently
10+ million Dutch
people with
chronic
disease

Currently,
3+million Dutch
employees with
vulnerable
labour market
position

Currently,
1.5+ million employees
with burn-out
complaints
(The Netherlands)

Currently,
5.4% of the Dutch
population is at risk of
poverty

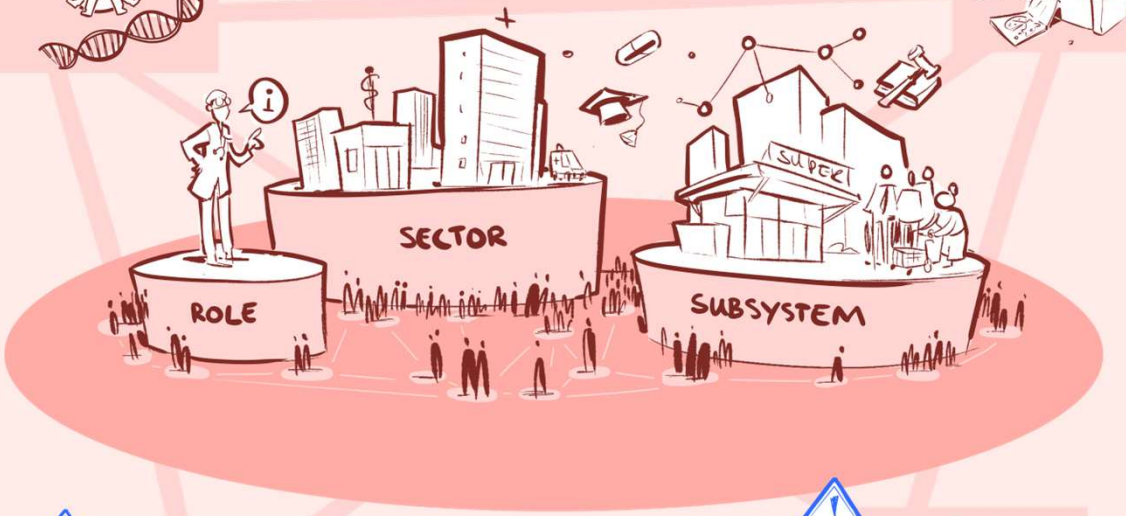
By 2060,
1 in 3 people may be
needed in healthcare
(currently 1 in 7)
(The Netherlands)

RIVM - https://www.vzinfo.nl/chronische-aandoeningen-en-multimorbiditeit/leeftijd-en-geslacht
TNO - Burn-out gerelateerde klachten opnieuw gestegen | TNO
WRR - https://www.wrr.nl/adviesprojecten/houdbare-zorg/documenten/rapporten/2021/09/15/kiezen-voor-houdbare-zorg
SER - https://www.ser.nl/-/media/ser/downloads/adviezen/2023/arbovisie-2040-deel-1.pdf

Nested systems

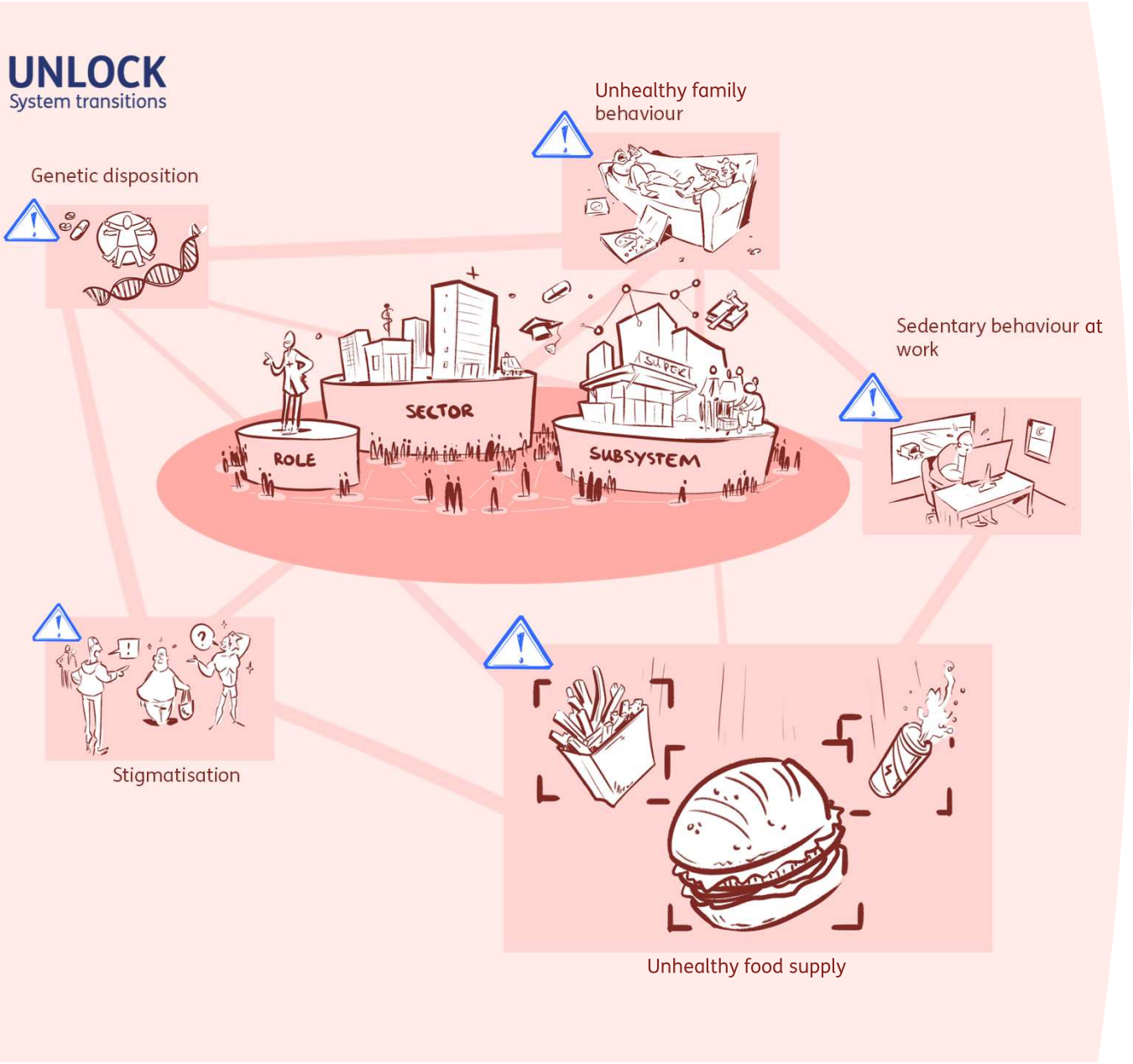
Biological

Social



Psychological

Economical



‘Obesogenic’ society

Obesity, a complex and multifactorial disease and a ‘gateway’ to >200 other diseases.

“Is being fat your own fault?“

No, many factors are interdependent driving the system towards

“an unhealthy stable state”

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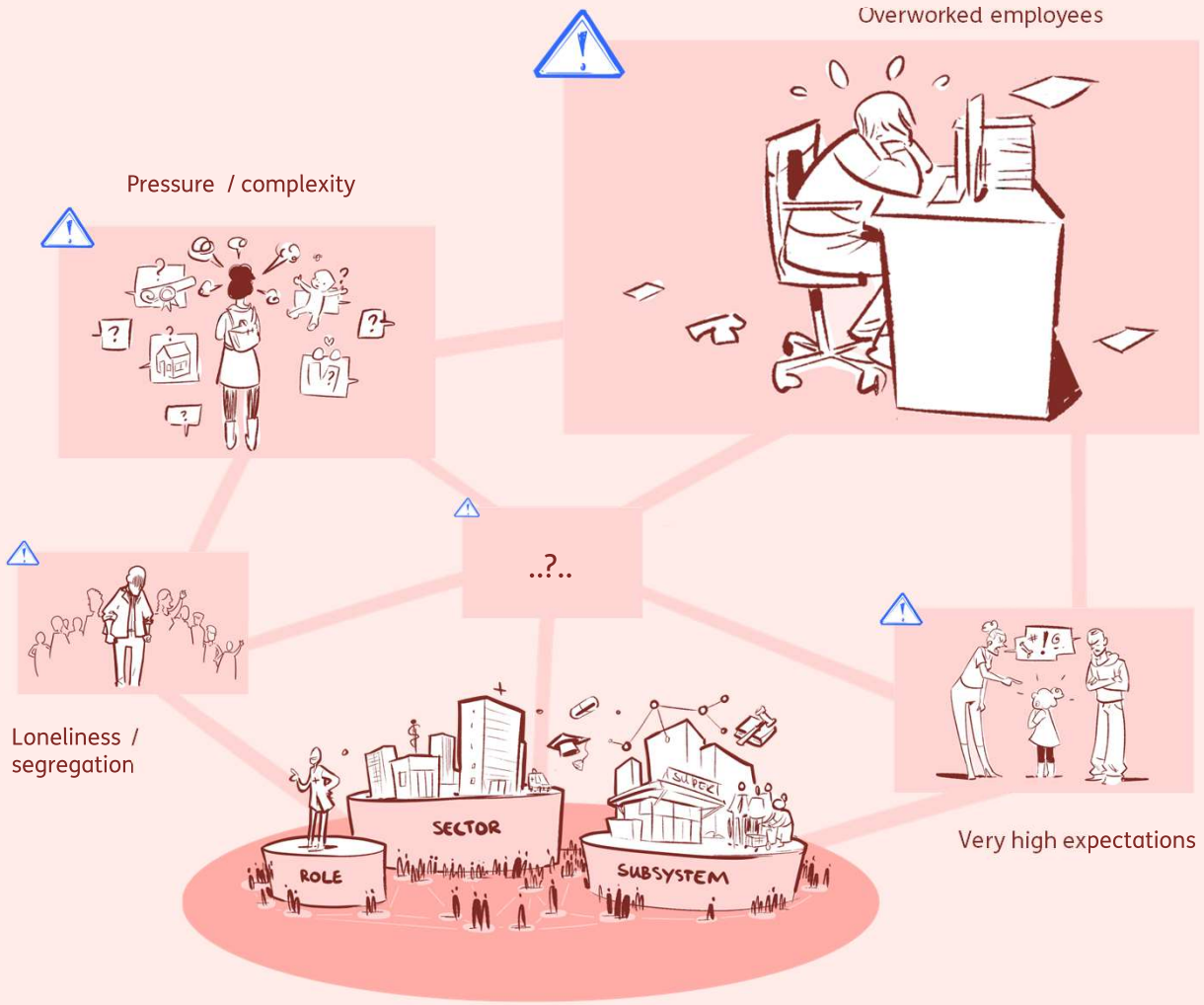

Burn-out, a collective problem?

Again, many factors are interdependent driving the system towards

“an unhealthy stable state”

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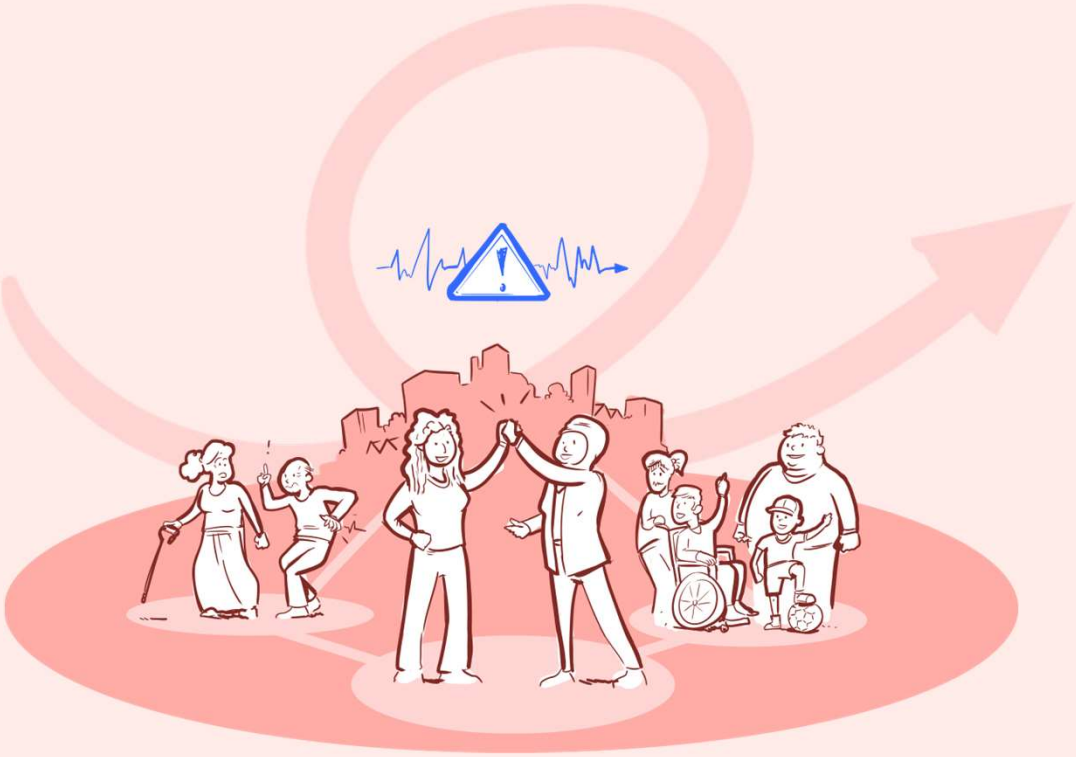
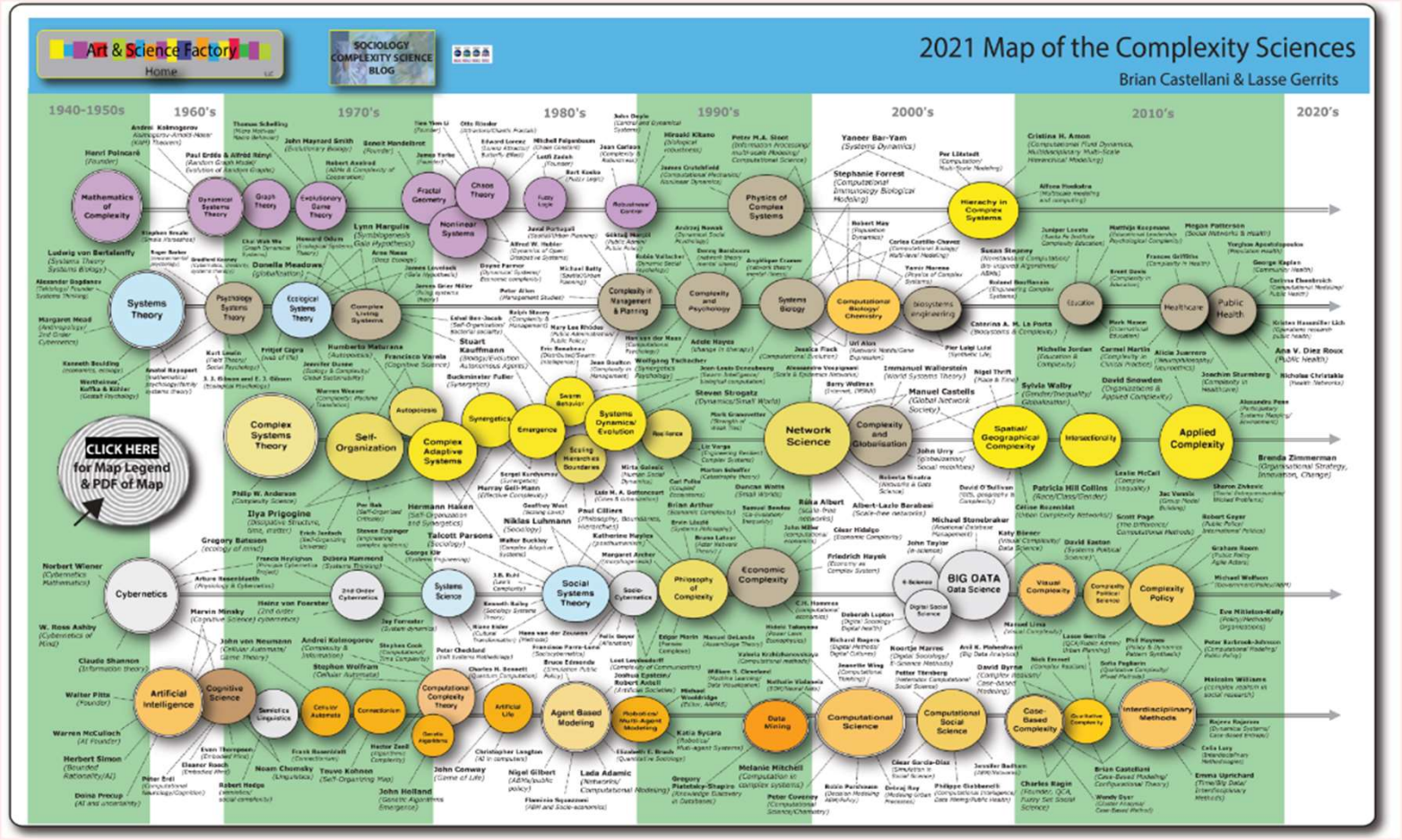


Leading question

"How do we transition towards a society with a focus on prevention and sustainable health"

A case study into

1. System thinking
2. System analysis
3. System transition



Castellani, Brian (2018) "Map of the Complexity Sciences." Art & Science
https://www.art-sciencefactory.com/complexity-map_feb09.html

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What is a system?

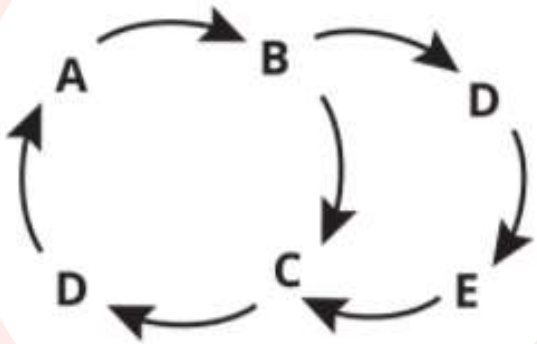
“ a system consists of multiple elements of which the whole cannot be divided into separate parts without losing its purpose ”

“ a system is not the sum of the behaviour of its separate parts, it is the product of their interactions ”

If Russ Ackoff had given a TED Talk... (youtube.com) ;
Capra and Luisi, The systems View of Life; 2014 Cambridge Univ. Press

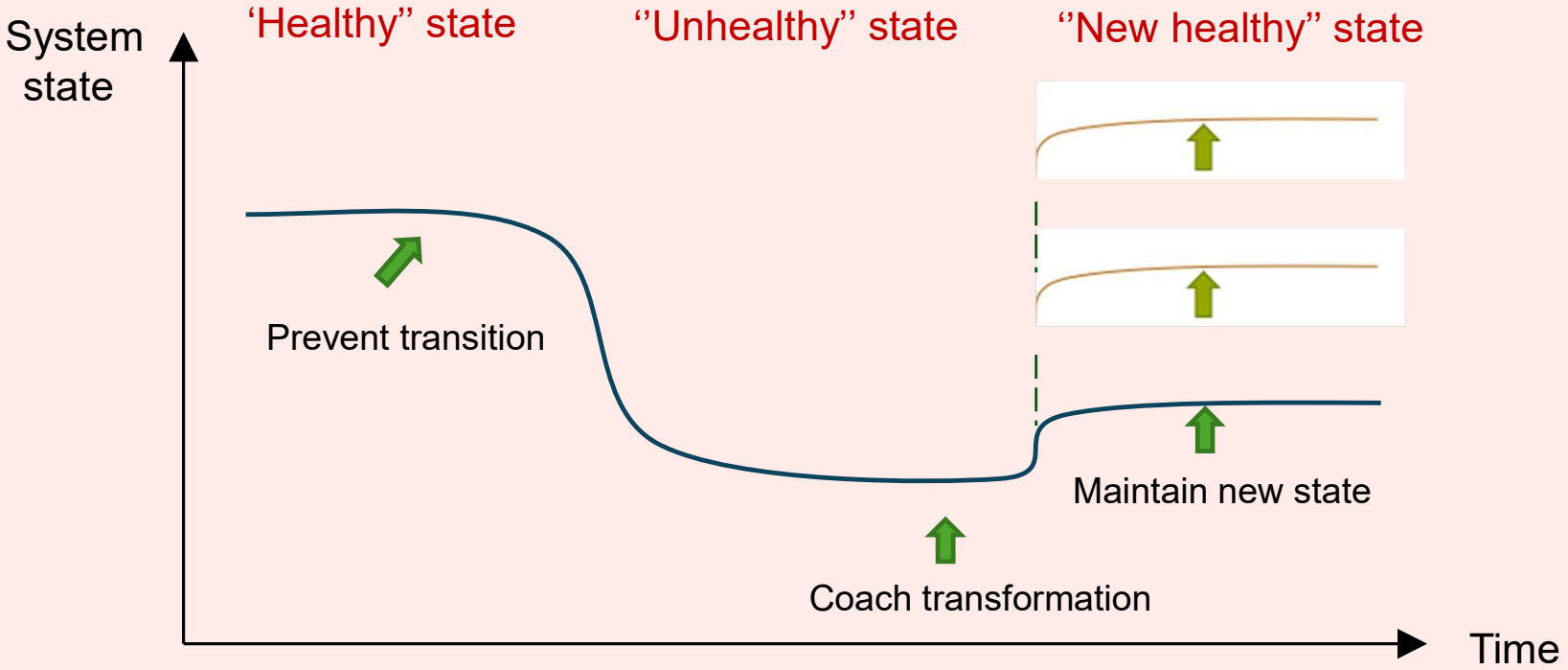
Linear → Circular

A → B → C → D



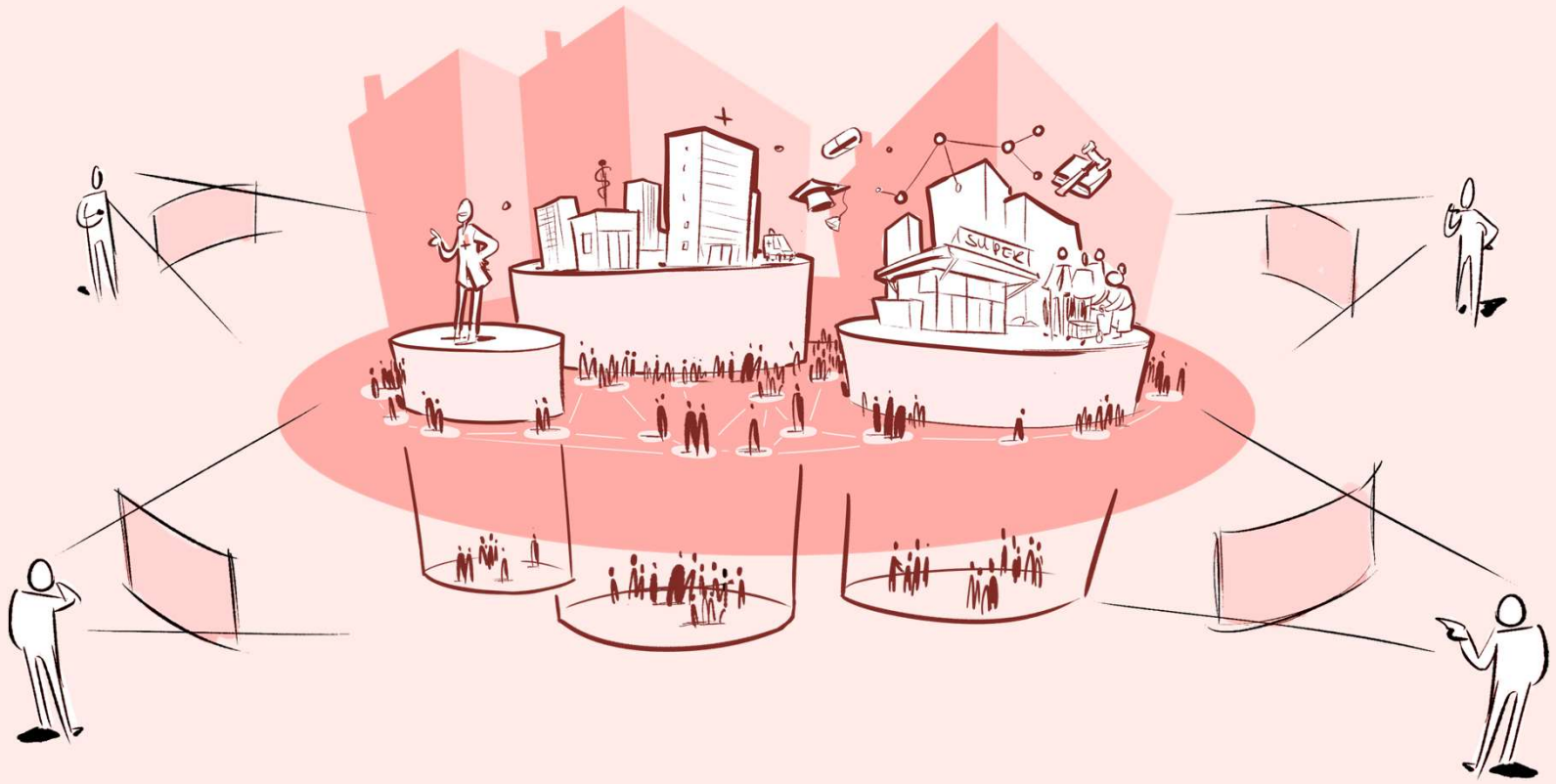
Complex systems

non-linear, self-organisation, transitions

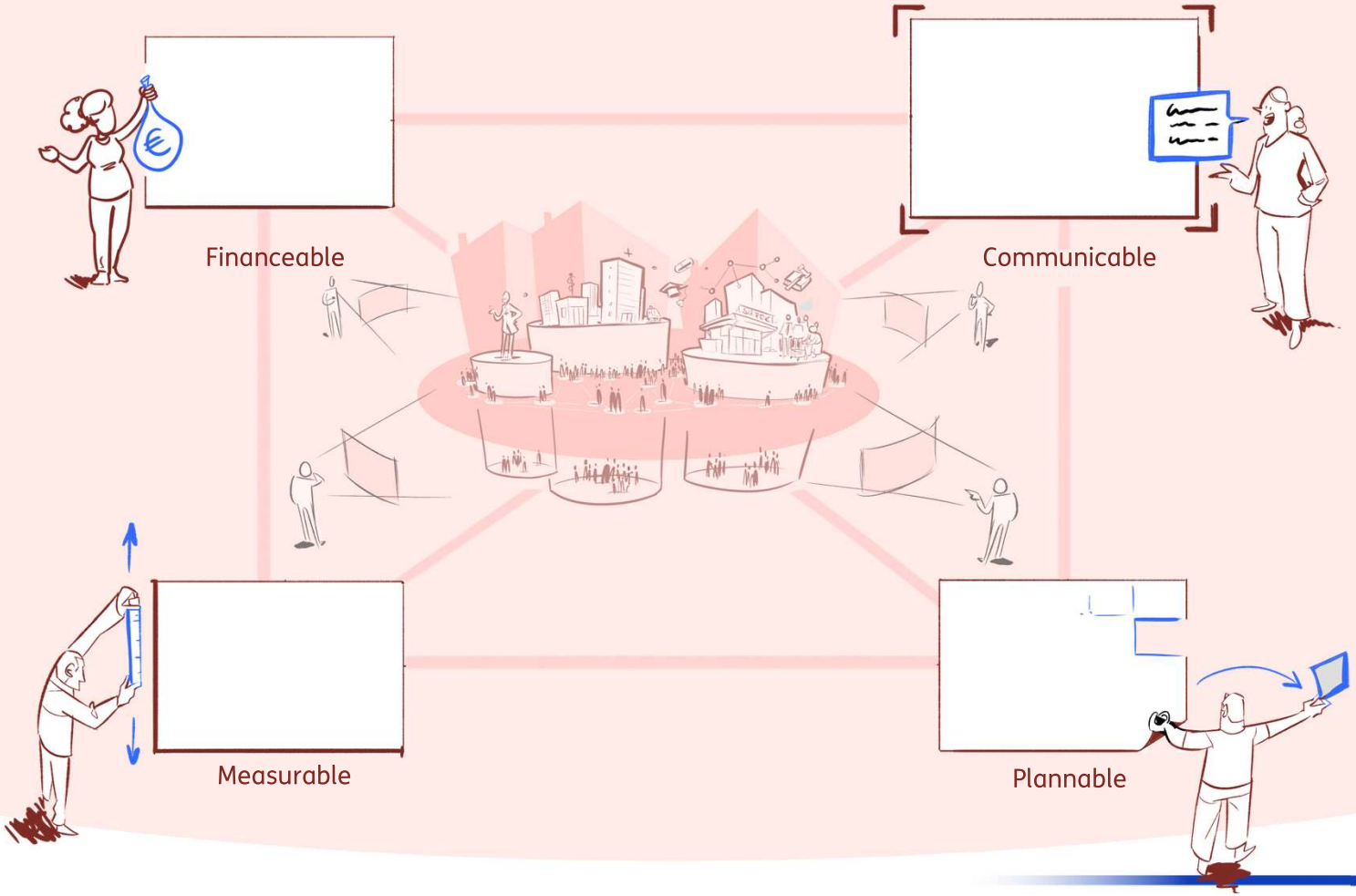


vWietmarschen, Wortelboer, vdGreef, JClinEval. 2016

Many silos, many perspectives



Thinking in healthcare ‘products’



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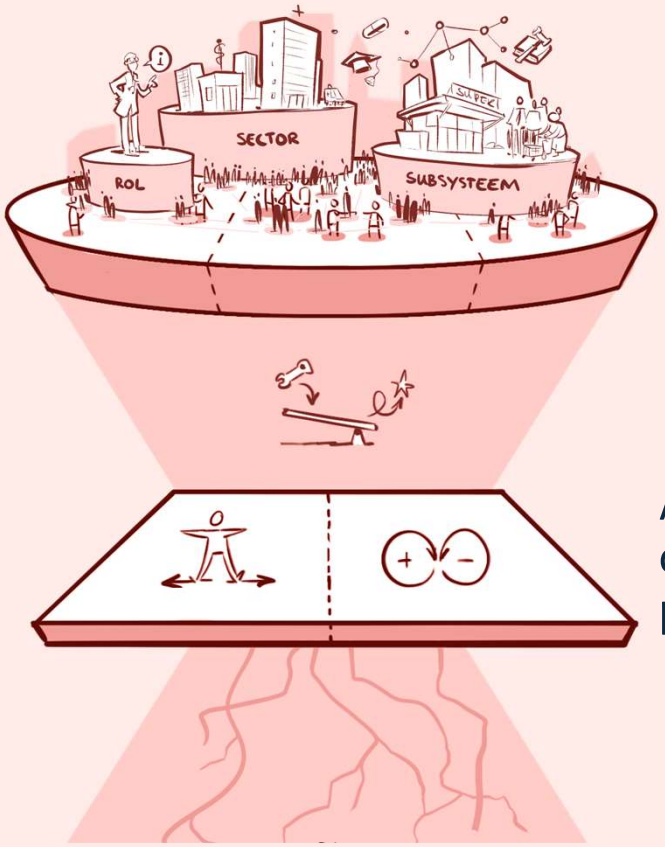
What do we see below the surface?



Are there any paradoxical tension fields ?

Are there any dysfunctional patterns?

What are the root causes based on e.g. mindsets, cultural paradigms, worldviews?

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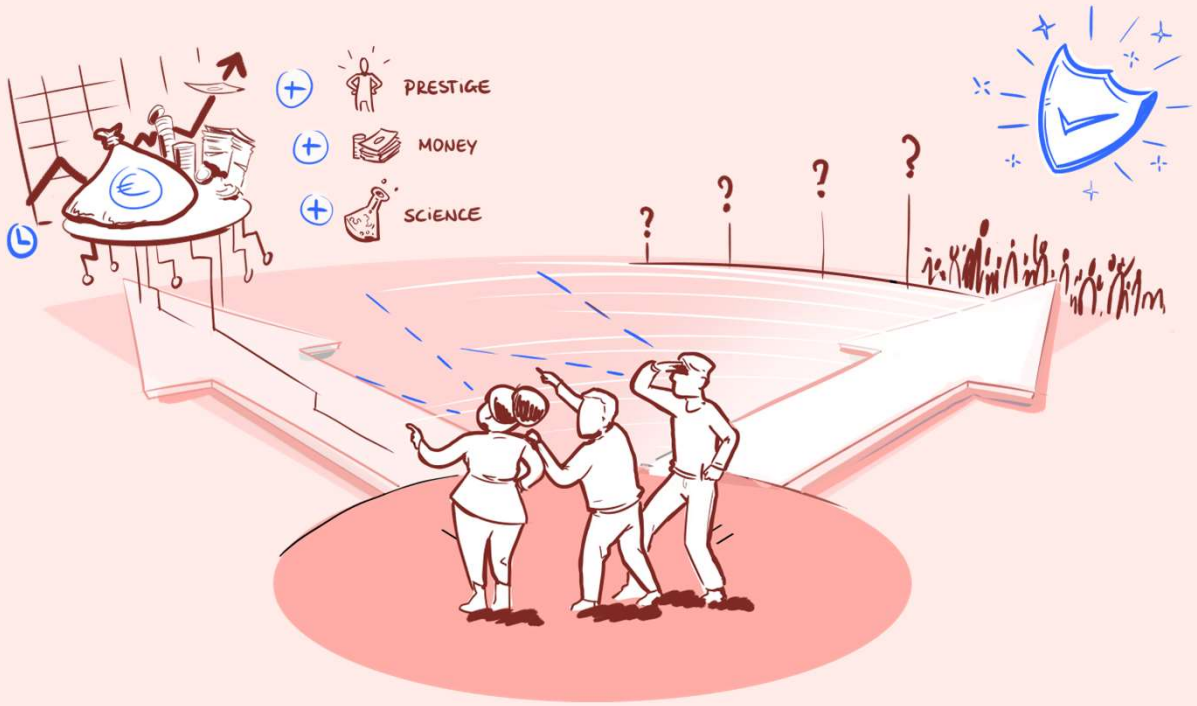
Successful in healthcare

Not successful in prevention



System archetype:
an ingrained, dysfunctional behavior or pattern of the system that hinders the system to improve

Dysfunctional patterns:

Example:

“Success to the successful”

More care results in more care

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Paradox:
an apparent contradiction that sheds light on possible solutions

Paradoxical tensions:

Example:

"Better health through less care"

Historically, the developed approach in healthcare is to treat visible symptoms and 'repair damage'

But ..., for lifestyle complex diseases this approach is no longer effective.

We are in need of measures outside of health care!

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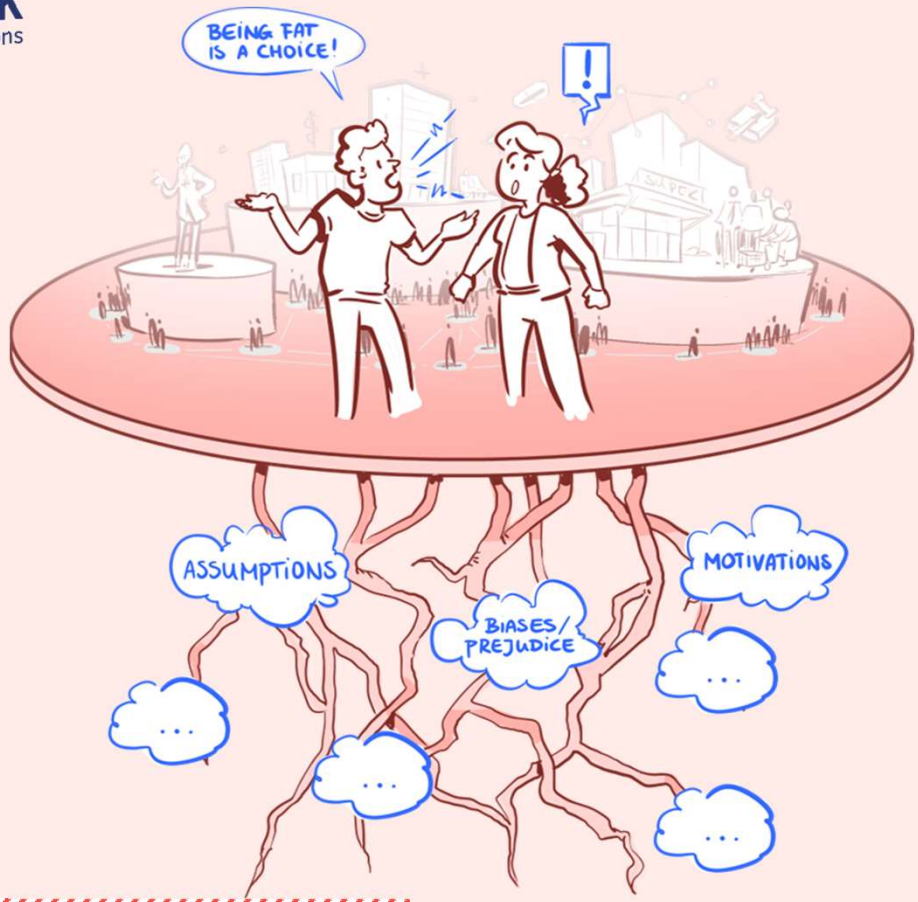

Root cause:
Deeply rooted causes due to mental models such as mindsets, cultural practices and worldviews

Root causes

Root causes reinforce (dys)functional patterns and paradoxes.

Example:

People are naturally empathetic and focused on short-term solutions. Most people like to do something good ... However, if this mindset leads to problems, tackling 'root causes' is necessary.

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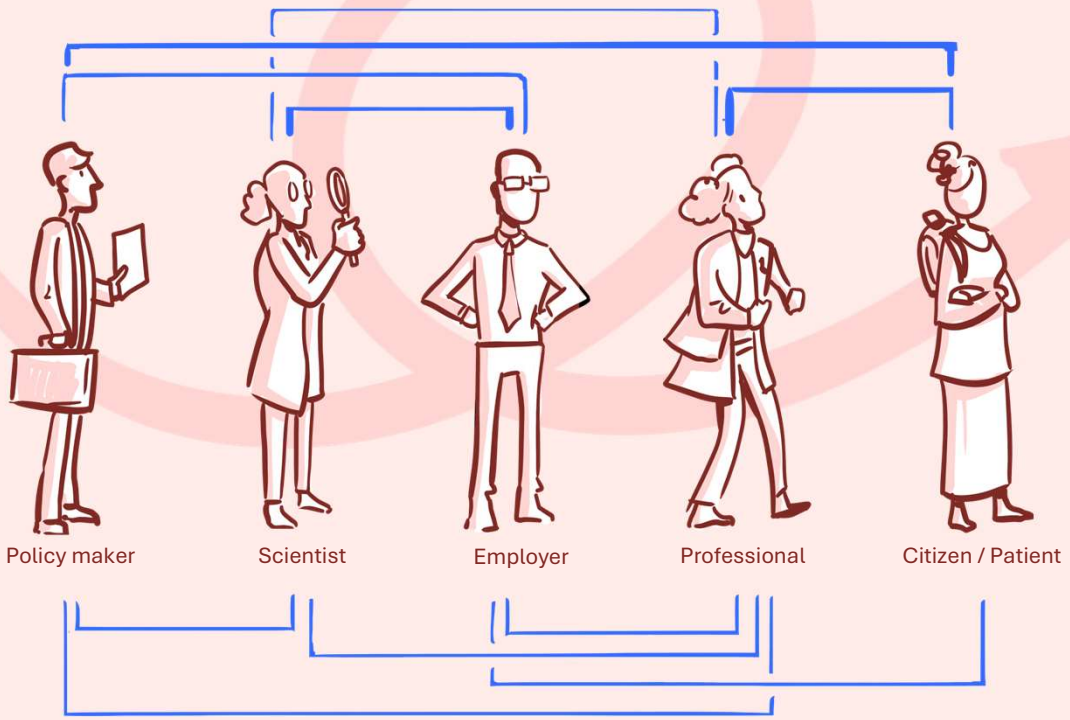


System thinking:
A system has no clear input or output.
Every change affects the entire system.
The interactions determine the outcome .

From linear thinking towards system thinking

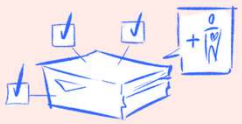
Some essentials

- Explore! every element in the system has an effect on the whole.
- Wat is your role? Relationships between the parts determine the outcome
- Not one party is in control, the system organizes itself
- Evolutionary systemic study designs (instead of controlled)
- New scientific methods needed focusing on guidance and effectiveness

System transition routes

System transition I:
Balance money and attention for prevention and care.

Towards **regulation focusing on health and wellbeing**



Towards health as a **collective interest and responsibility**

Towards **being fit before treatment**

Towards a healthier and resilient society'

Towards **appropriate prevention for the right person**

Towards **a heathier living environment**

Towards **the embedding of systems science**

System transition II:
All take responsibility to maintain health and wellbeing

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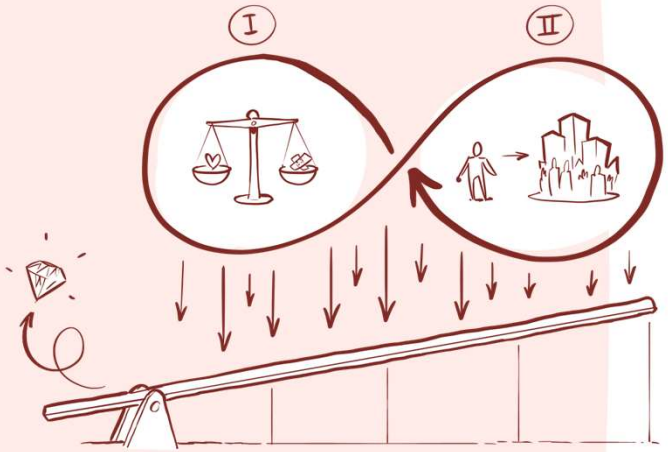
Towards action perspectives

Example: Balance money and attention for prevention and care



1. Health & Wellbeing is a collective responsibility, which does not belong to the private market
2. See unhealthy behaviour as a symptom of societal problems instead of an individual issue.
2. Shape prevention from the need of every citizen, employee or employer, instead of fitting into existing supply.
3. Science must reinvent itself to give prevention and collective care at least the same amount of attention and creativity as the medical domain.

Meadows D, Thinking in Systems, 2008

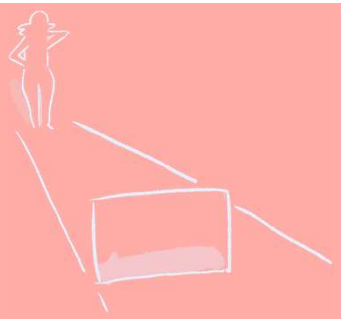
Start tomorrow!

Eg. Policy makers can already start with, e.g.

- Focus on health in all policies, crossing domains
- Start societal discussion on a working definition what is "Right to health"
- Support long term programs removing barriers, and stimulate preventative health initiatives
- Facilitate shaping trans-domain data-infrastructures and learning using systems science
- Boost local initiatives, facilitate co-creation and exploration
- Be aware and take care of every (side) effect for all elements within the system

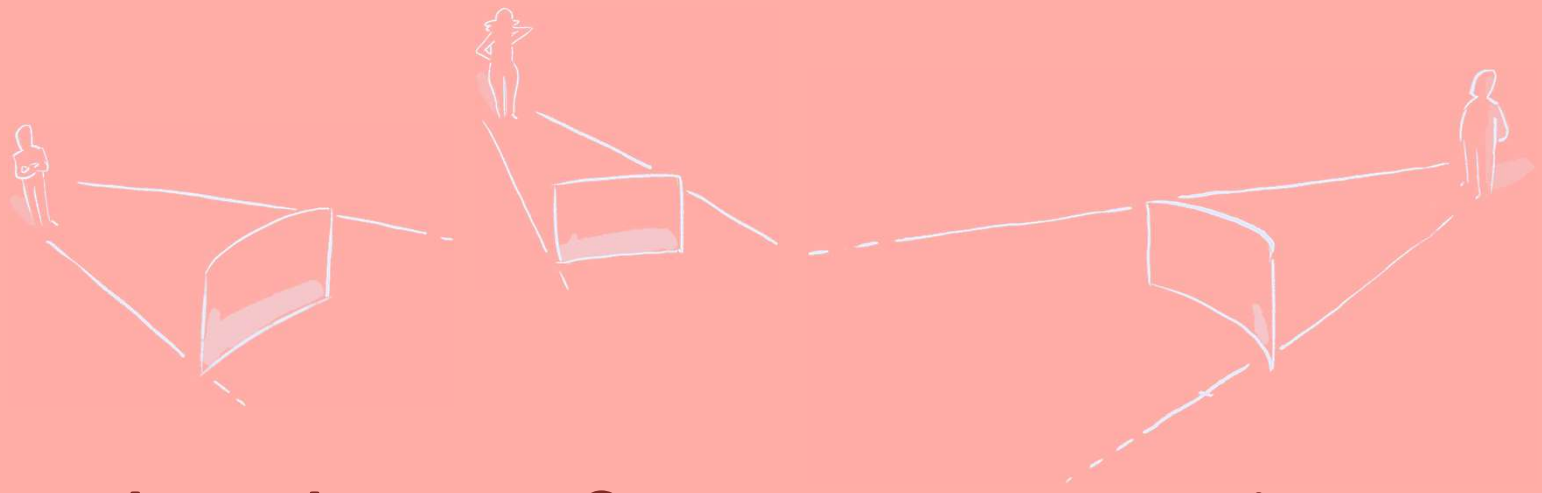
Eg. Scientists can already start with, e.g.

- Embrace systems thinking and transdisciplinary working
- Put more attention on systems science towards prevention and collective care from a systems view of life



“A change in purpose changes the behavior in a system profoundly, even if every element and interconnection remains the same.”

- Donella Meadows -



Thank you for your attention

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