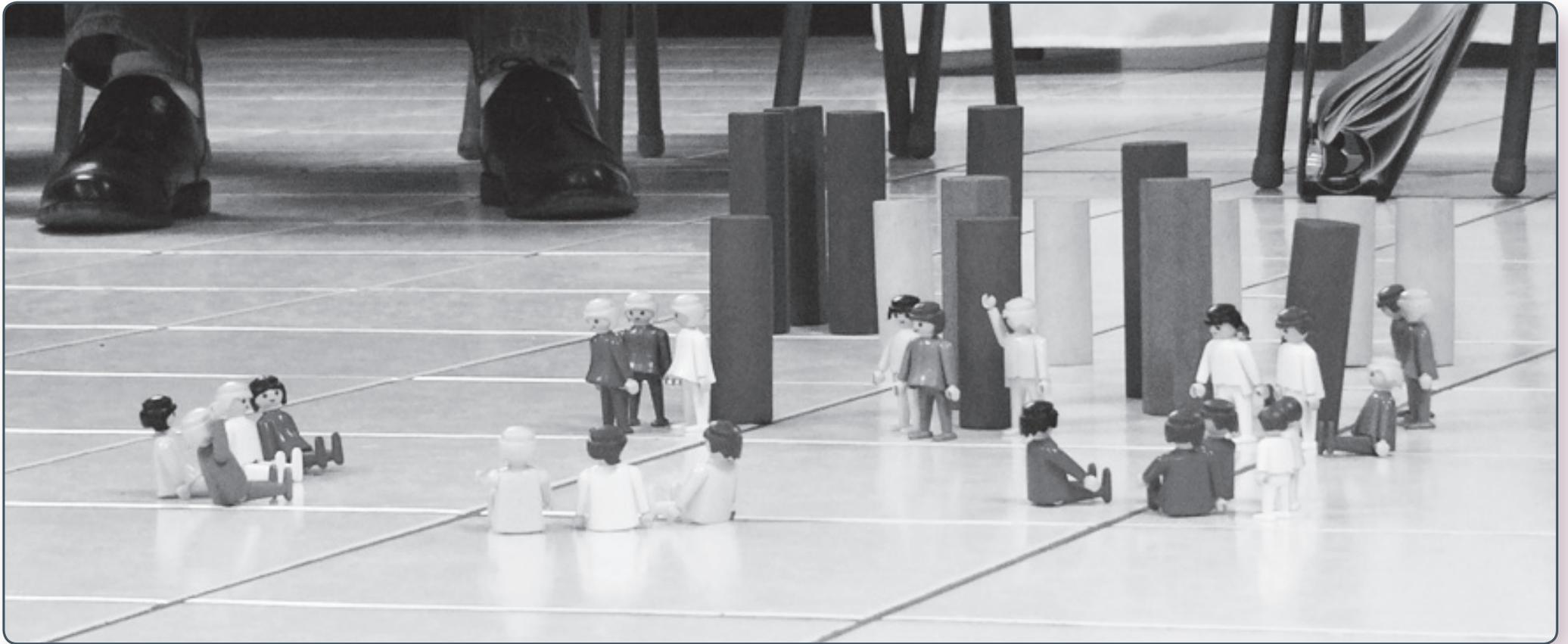


Systemic principles



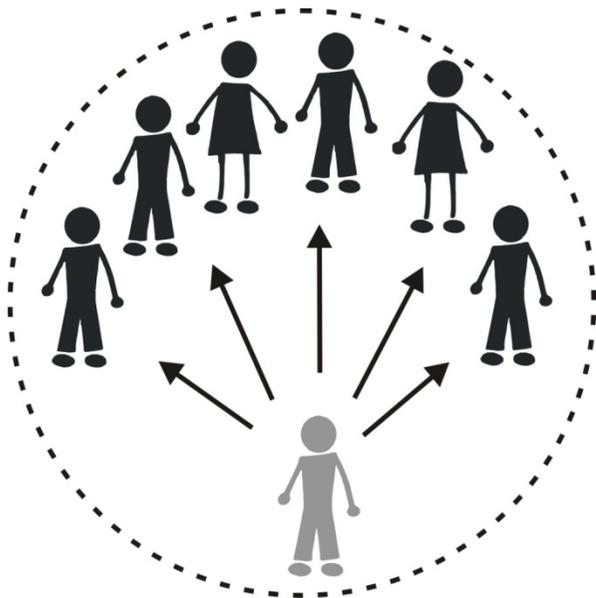
Facilitator: Rita Muckenhirn

Principles of a system (1)

A system only exist with an observer

Observer system:

- There is **no system without an observer**
- A system is always the **invention of an observer**
- The observer is **part of the system**.



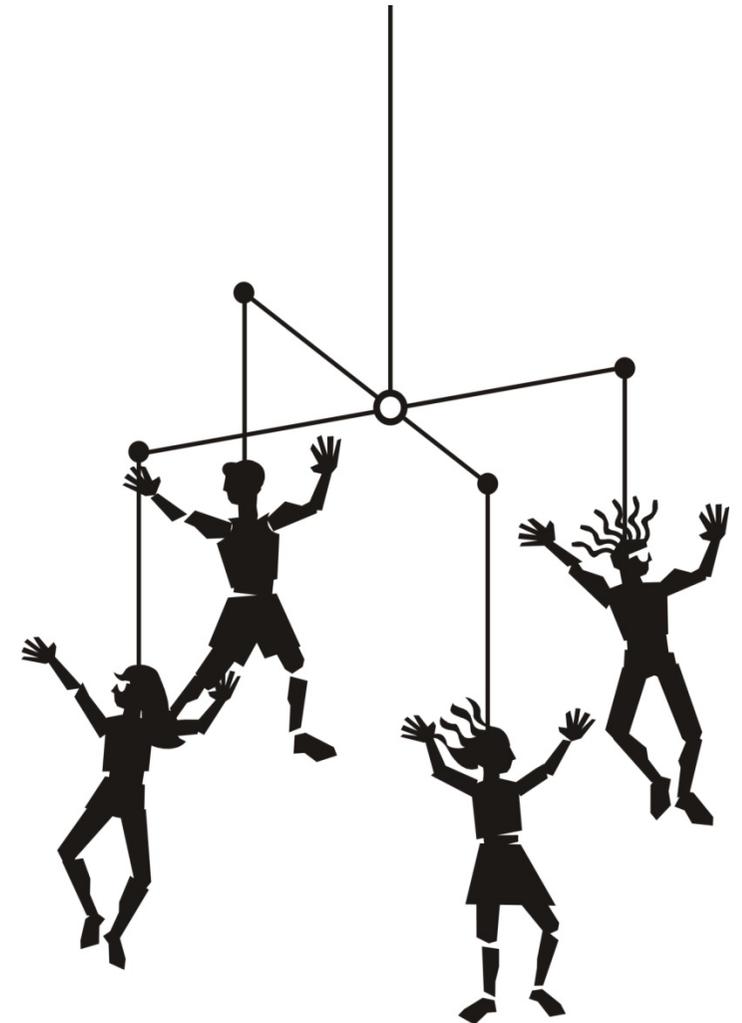
Reflection:

What does this mean for us as development agents, activists, external evaluators, facilitators...?

At what moment does an intervention start?

Principles of a system (2)

A change in **one element** of the system **influences** the **whole system**.



Principles of a system (2)

Butterfly effect (Chaos theory)

“A situation in which an action or change that does not seem important has a **very large effect**, especially in other places or around the world:

... even slight imbalances in starting conditions lead to huge final variations in outcome because of the fundamental instability of the system.

... the flapping of a butterfly’s wings in one part of the world can cause a hurricane on the other side of the globe.”

Cambridge Dictionary

Source: <https://dictionary.cambridge.org/dictionary/english/butterfly-effect>

Principles of a system (2)



“(with reference to chaos theory) the phenomenon whereby a **minute localized change** in a complex system can have **large effects elsewhere.**”

Oxford Languages 12/10/20

Reflection:

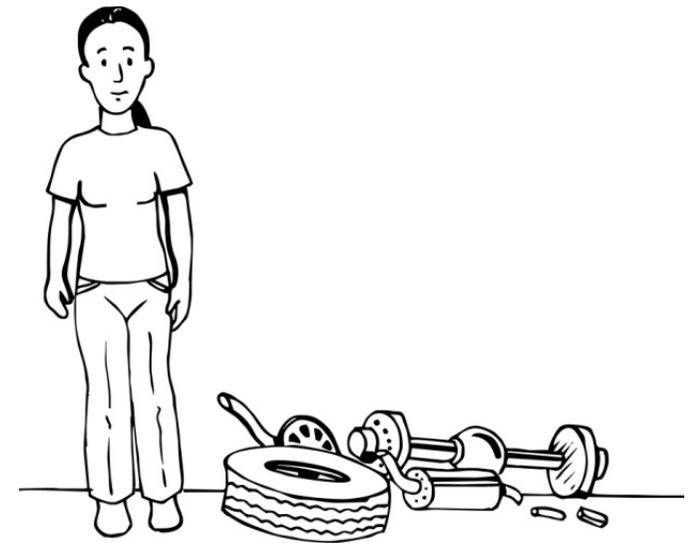
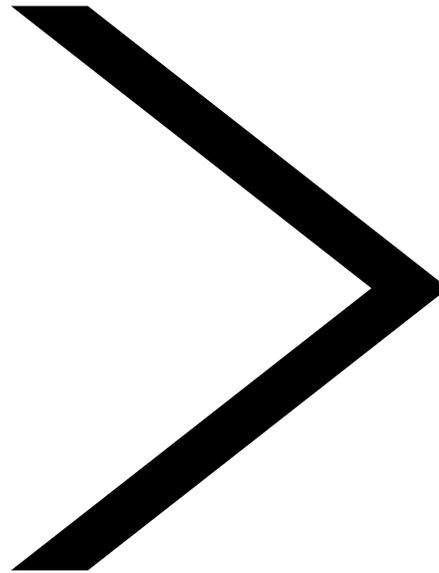
Which is our butterfly?

Which is the leverage point... the most effective element or place to intervene in the system (organization, community...)?

Principles of a system (3)

The **whole** is **different** from the **sum of its parts**.

A **system** is **more** than the **sum of its parts**.



Synergies or oversummativity

Principles of a system (3)



Reflection:

How can we generate synergies between the elements of the system and with other systems to achieve our purpose?

How do these principles apply to the 7 essential organizational elements?



All essential elements are interconnected

Organizational development is more than the sum of organizational elements.

Reflection:

Which element do I want to use as an entry point?

How does my intervention on this element positively and negatively affect other elements?

How do these principles apply to SDGs?



All SDGs are interconnected

Sustainability is more than the sum of SDGs

Reflection:

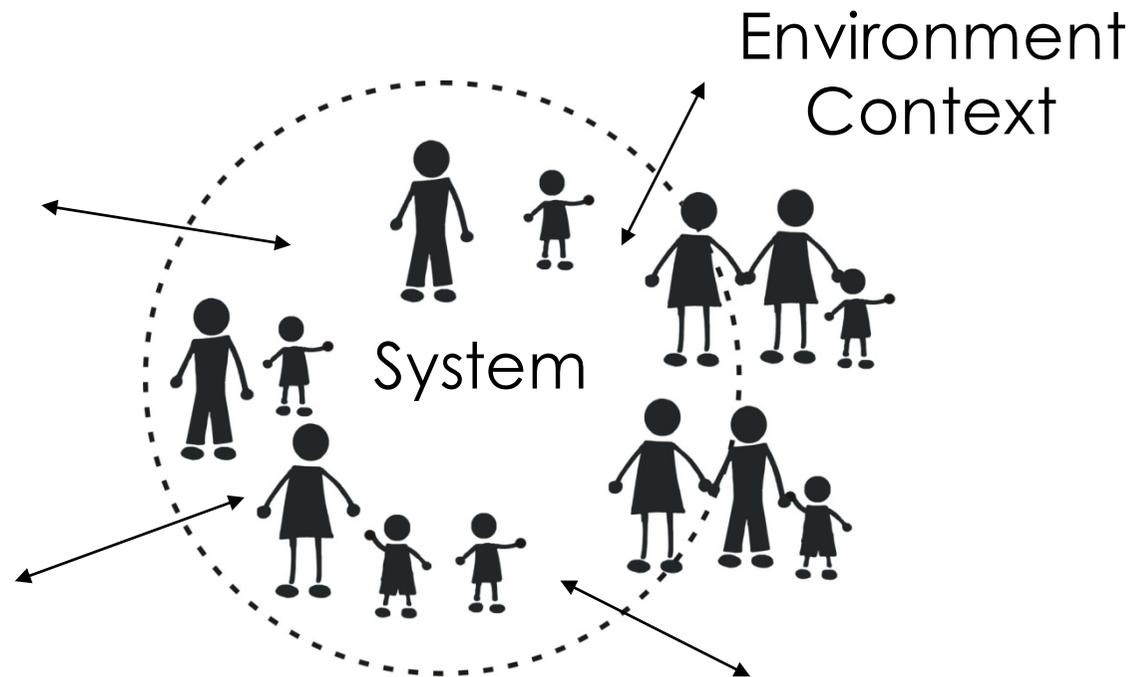
Which SDG do I want to use as an entry point?

How does my intervention on this SDG positively and negatively affect other SDGs?

Principles of a system (4)

Concept “**open system**”

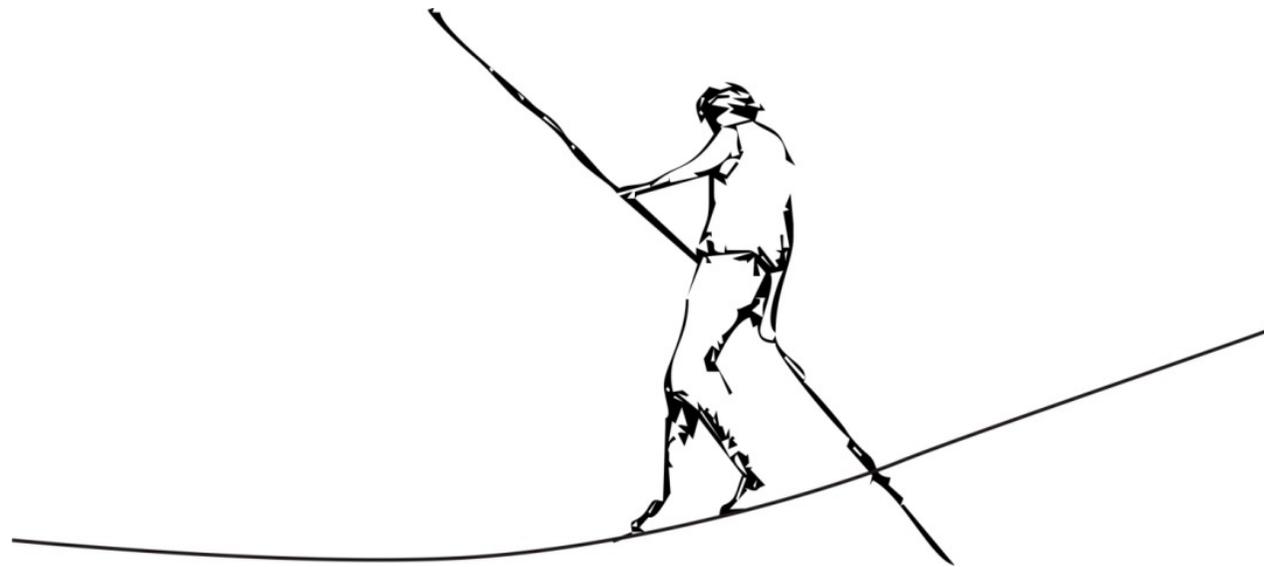
Systems live in **constant exchange** with their environment.



Principles of a system (5)

A **living** system has

- the capacity for **self-regulation** and
- the ability to **maintain a stable state**.

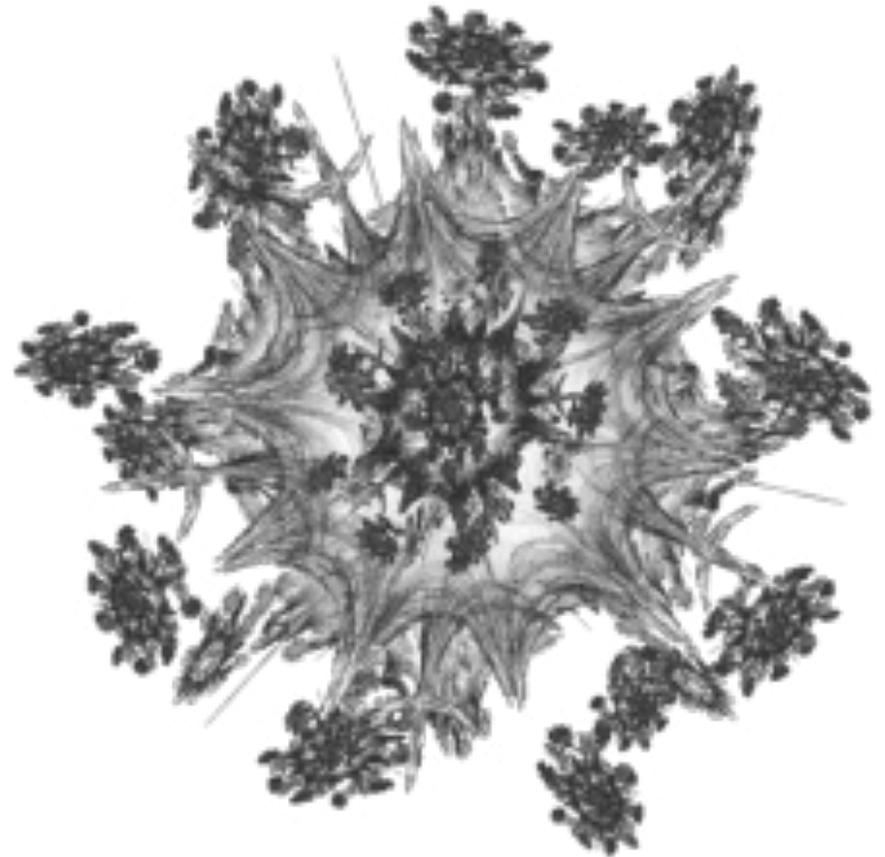


Homoeostasis

Principles of a system (6)

Diversity of requirements:

Internal regulation mechanisms must be as diverse as the environment with which they interact (reciprocal action).

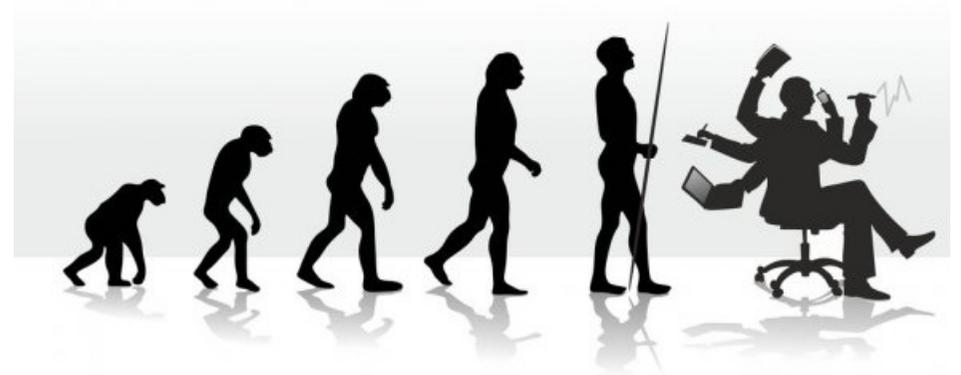
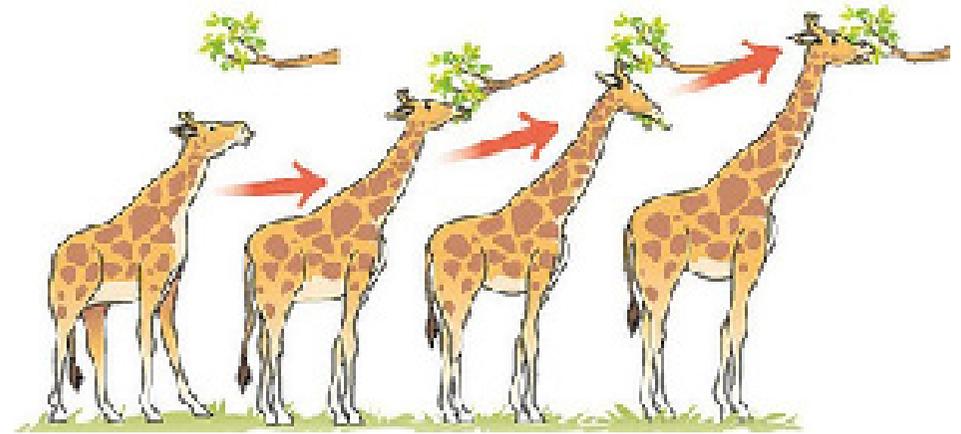


Principles of a system (7)

Evolution of the system:

Capacity of systems

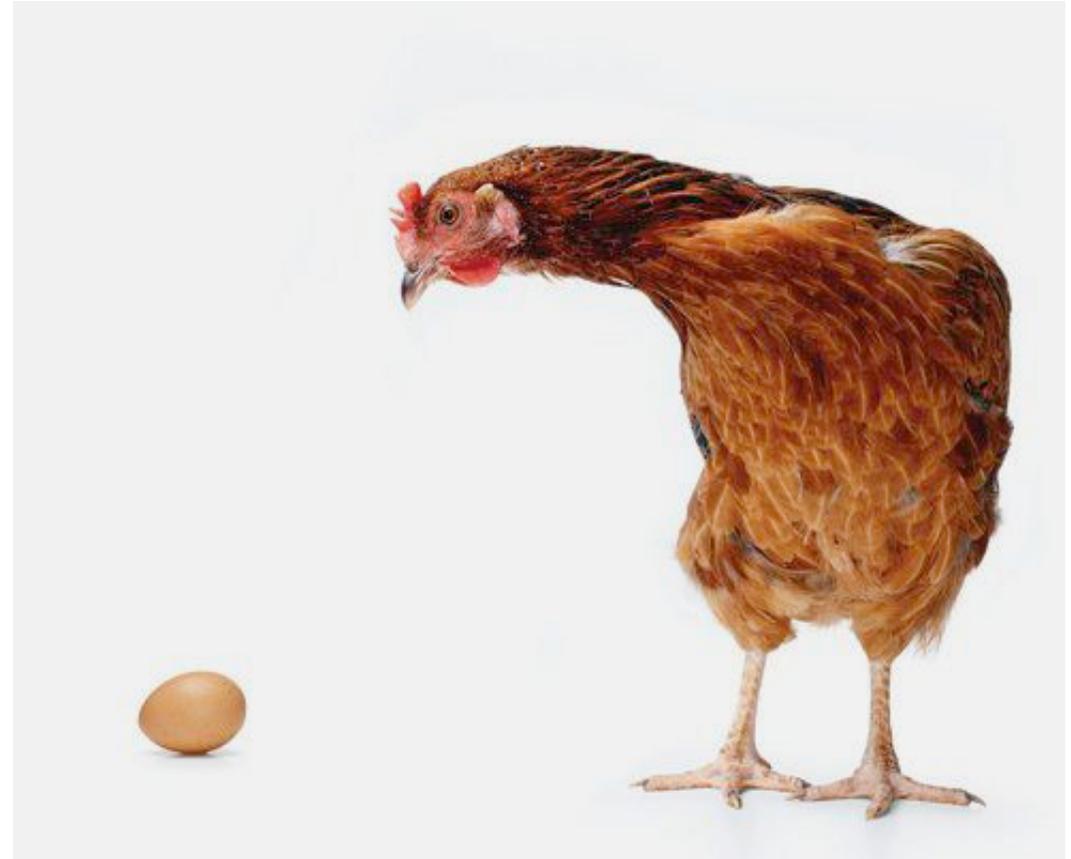
- to **develop**,
- to **change**,
- to **adopt more complex forms** of differentiation and integration.



Principles of a system (8)

Reflection:

- Can we really define with certainty what is the cause of this effect?
- Or does this effect eventually become a cause and reinforce the problem?
- Which comes first, the chicken or the egg, the cause or the effect?



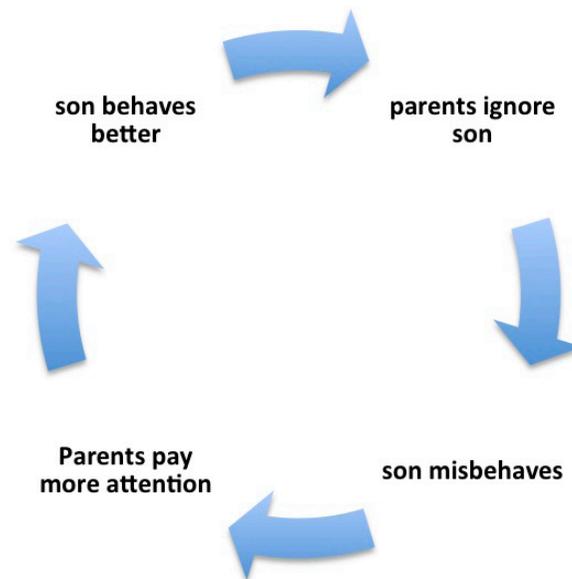
Graph "Chicken or egg": <https://www.popsci.com/science/article/2013-02/fyi-which-came-first-chicken-or-egg/>

Principles of a system (8)

Circular causality - Definition

A consequence of causes and effects leading back to the initial cause that confirm or change it.

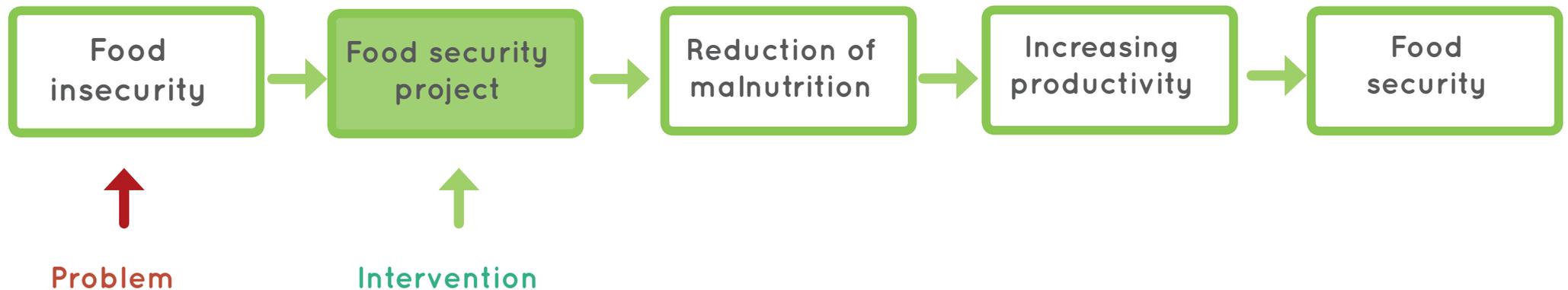
Simon et al. 1984; de Shazer 1998



Graph "Behavior": <https://tsamchoenetsang11.wordpress.com/2012/06/17/circularity-in-the-systems-theory/>

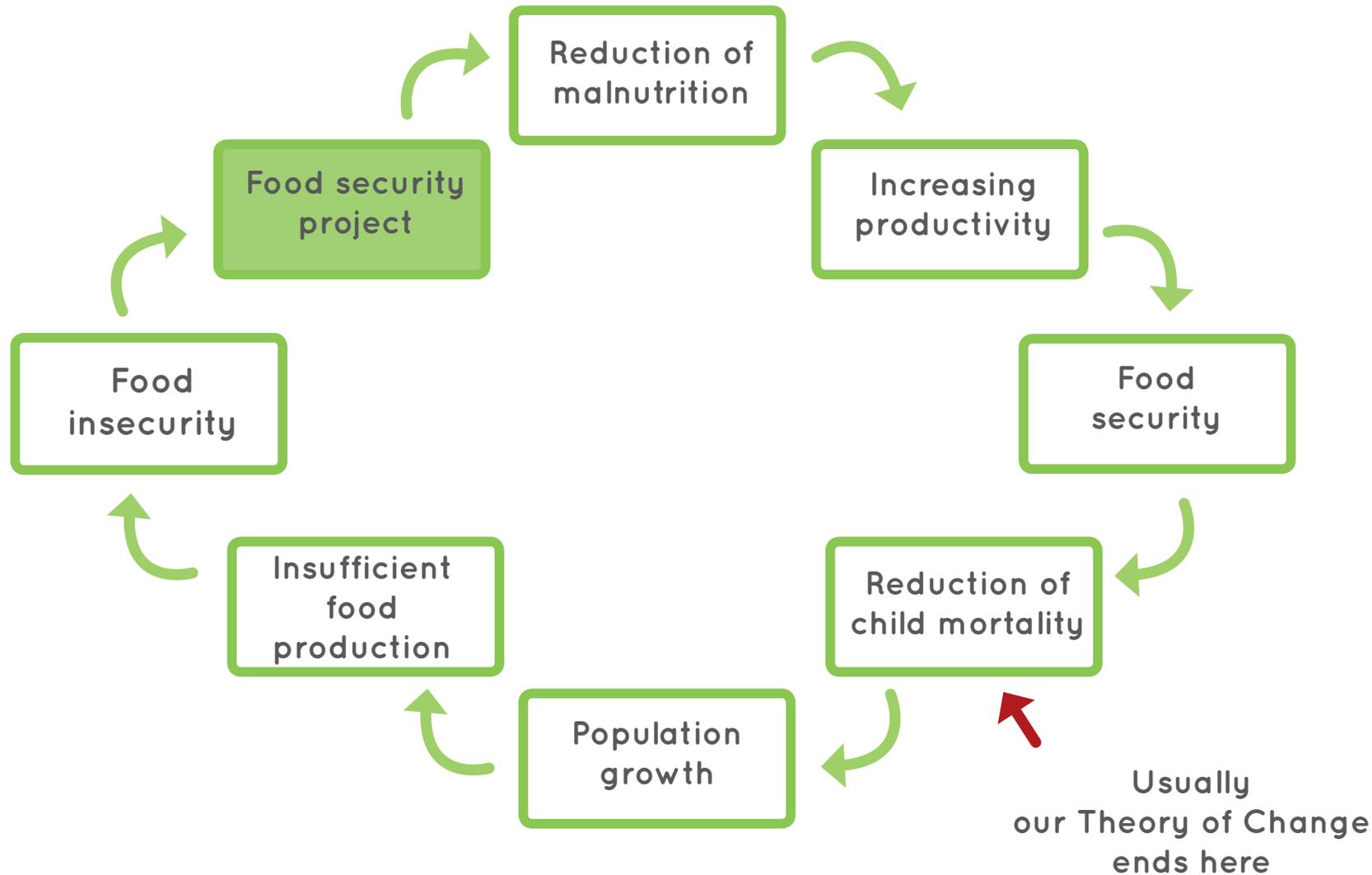
Principles of a system (8)

Linear causality



Principles of a system (8)

Simple circular causality... simple assumptions



Principles of a system (8)

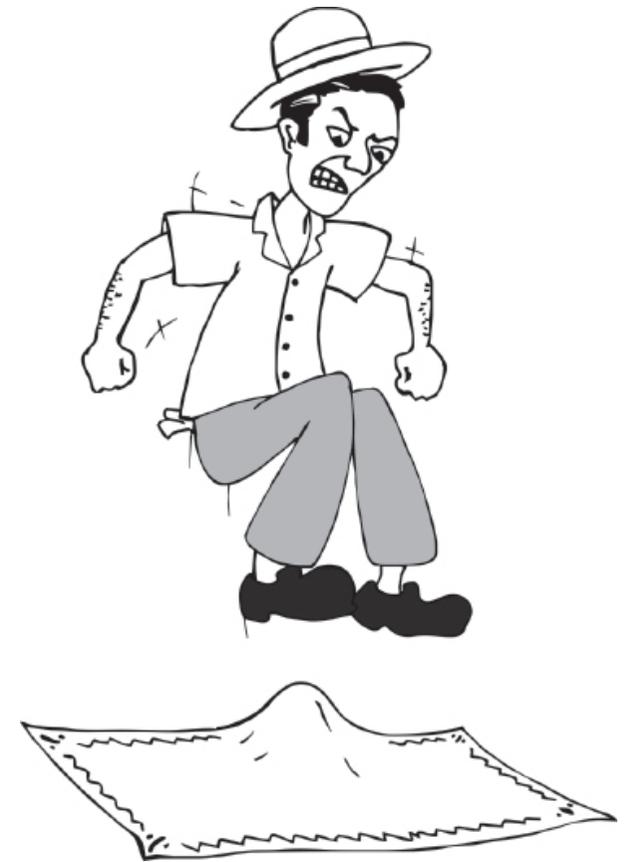
Today's problems stem from yesterday's "decisions"

"A carpet merchant saw that his most beautiful carpet had a lump in the centre. He planted himself on the lump to flatten it, and he got it.

But the lump reappeared elsewhere.

He jumped on it again, and disappeared momentarily to reappear somewhere else.

The merchant jumped again and again, rubbing and ruining the carpet in his frustration; until finally he lifted a corner of the carpet and saw a grumpy snake come out."



Principles of a system (8)

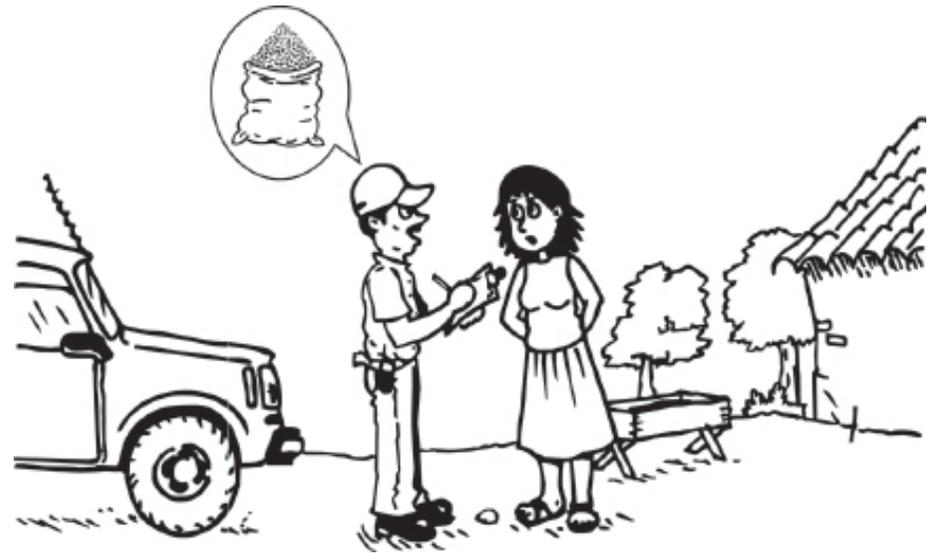
The more you press, the more the system presses

The more we strive to improve things, the more effort is required

“The more I worked, the more work there was.”

“The more credit we gave them, the more debt, delinquency and dependency increased.”

“The more food we gave, the less food families produced.”

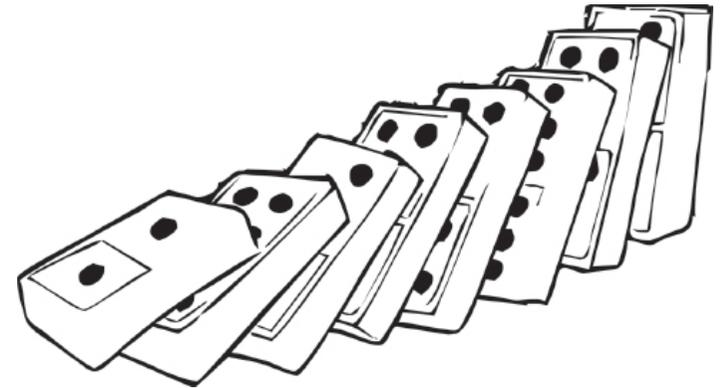


Principles of a system (8)

Behavior often improves before it gets worse

“A man sitting in an armchair pushes a giant domino that threatens him from the left. He seems to say... “I can finally relax”.

Of course, he doesn't see that the domino knocks over another domino, that it knocks over the next domino, and that the series of dominoes revolves around the chair and finally falls on him from the right.”

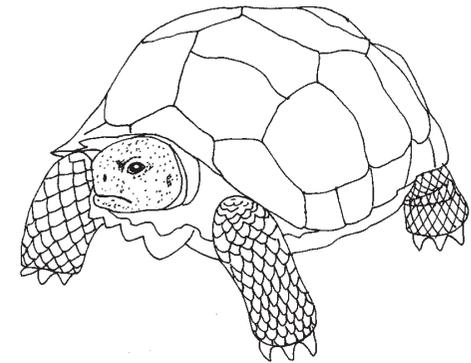


Interventions can also make things worse, because changes generate fields of tension and conflict.

Principles of a system (8)

Cause and effect are not close in time and space.

The fastest path can become the slowest.



The cure can be worse than the disease.



Let us consider paradoxes and ambiguities
as normal and to be expected

Sources

In addition to the already cited sources, the presentation is based on insights from the following authors:

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