

Designing Feedback Loops to

Wolfgang

Wiltrude

Höschele

Brussels,

October 8,

2019



When we are confronted with complex systems, we often get into arguments like the blind men confronted with the elephant.

When we are confronted with complex systems, we often get into arguments like the blind men confronted with the elephant.

The purpose of this workshop is to

When we are confronted with complex systems, we often get into arguments like the blind men confronted with the elephant.

The purpose of this workshop is to

–present a method designed to bring together many partial knowledges in order to overcome blind spots and to find solutions to shared problems within complex systems,

When we are confronted with complex systems, we often get into arguments like the blind men confronted with the elephant.

The purpose of this workshop is to

- present a method designed to bring together many partial knowledges in order to overcome blind spots and to find solutions to shared problems within complex systems, and

- apply that method to the issue of promoting shared mobility.

About me

About me

Borders are there to be crossed!

About me

Borders are there to be crossed!

-Countries

About me

Borders are there to be crossed!

-Countries

-Disciplines

About me

Borders are there to be crossed!

-Countries

-Disciplines

-Professional settings

About me

Borders are there to be crossed!

-Countries

-Disciplines

-Professional settings

-Gender expectations

About you

About you

What kind of people are in the room?

About you

What kind of people are in the room?

-Transportation planners?

About you

What kind of people are in the room?

-Transportation planners?

-Local administrators?

About you

What kind of people are in the room?

-Transportation planners?

-Local administrators?

-Businesspeople in shared mobility?

About you

What kind of people are in the room?

-Transportation planners?

-Local administrators?

-Businesspeople in shared mobility?

-People in local politics?

About you

What kind of people are in the room?

-Transportation planners?

-Local administrators?

-Businesspeople in shared mobility?

-People in local politics?

-Activists concerned about mobility?

About you

What kind of people are in the room?

-Transportation planners?

-Local administrators?

-Businesspeople in shared mobility?

-People in local politics?

-Activists concerned about mobility?

-Other?

Language of Systems Graphics

Language of Systems Graphics

- Systems elements (e.g., population of an endangered species, quality of a pasture, profit of a business, satisfaction of a person...)

Language of Systems Graphics

- Systems elements
- Relationships (effects) among systems elements

Language of Systems Graphics

- Systems elements
- Relationships (effects) among systems elements
 - Positive (black arrow)

Language of Systems Graphics

- Systems elements
- Relationships (effects) among systems elements
 - Positive (black arrow)
 - Inverse (red arrow)

Language of Systems Graphics

Examples...

Reinforcing (positive) feedback loop:
Population growth or decline

Reinforcing (positive) feedback loop:
Capitalist profit or loss

Balancing (negative) feedback loop:
Eating and being eaten

Balancing (negative) feedback loop:
Human resource use

Competition: reinforcing feedback loop that can lead to t

Competition: reinforcing feedback loop that can lead to

Language of Systems Graphics

The same method of graphic representation can be used for all kinds of systems – such as ecological, biological, social, economic, political, and technical systems.

Example: Positive feedback loop leading to construction

Example: Positive feedback loop leading to construction

Note that this process can run in reverse as well, leading

How can we construct similar feedback loops in favor of