FISHERY

- 1 round = 1 year

BEHAVIOUR OVER TIME - PATTERN
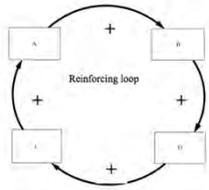

a. Exponential growth
b. Goal-seeking
c. S-shaped
d. Oscillation
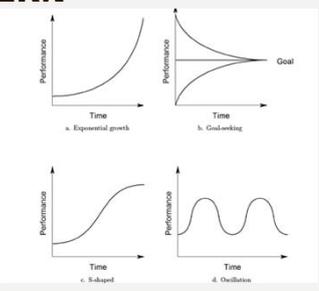
REINFORCING LOOPS

- Variable (A, B,C,D)
- Links (lines between A and B, B and C, …)
- Symbols
  - +: the more of A the more of B
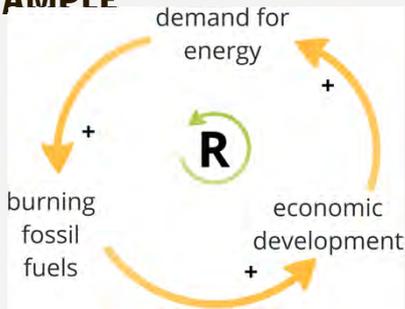 - -: the more of A the less of B
- Loop: once in a circle

REINFORCING LOOPS - EXAMPLE

REINFORCING LOOPS EXAMPLE

REINFORCING LOOPS EXAMPLE
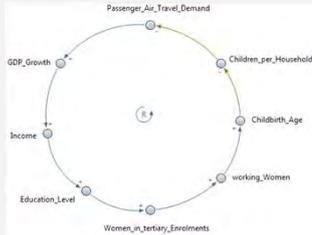
REINFORCING LOOPS EXAMPLE
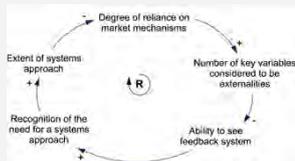
REINFORCING LOOP - EXERCISE

- Population
- Life Expectancy
- (Health) Goods & Services
- productivity

REINFORCING LOOP - SOLUTION
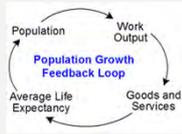
BALANCING LOOPS
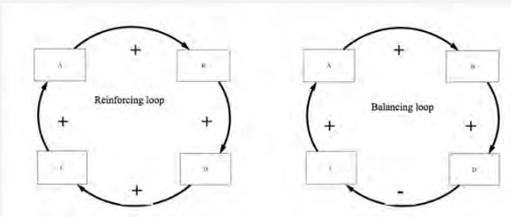
BALANCING LOOPS EXAMPLES

Figure 3: An Example Balancing Loop

BALANCING LOOPS EXAMPLES

Causal loop example (1)
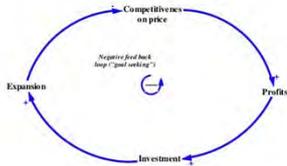
BALANCING LOOPS EXAMPLE
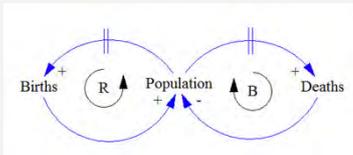
BALANCING LOOPS EXAMPLES

GOAL SETTING LOOP

desired
state

+

gap

action

current
state

+

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GOAL SETTING LOOP

Target level of coffee in
the cup

S

Gap between the
target and actual
levels

O

S

Physical action

Actual level of coffee in
the cup

S

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GOAL SETTING LOOP

My Work Life

Interesting
Projects

+

Interest

+

Success

R

Work

+

+

Results

+

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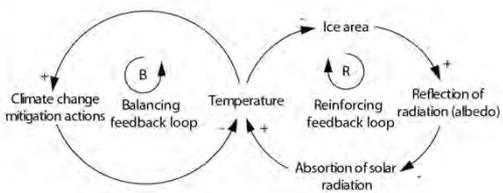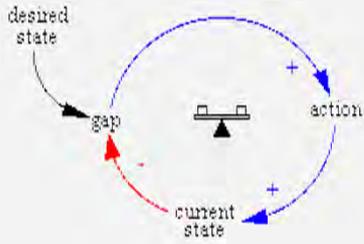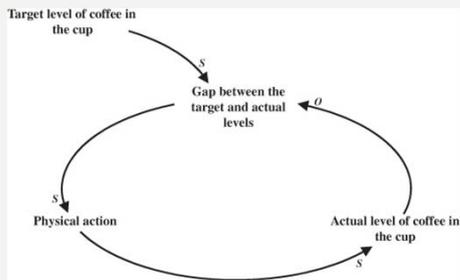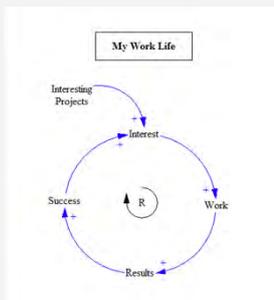
SYSTEM THINKING – DELAYS
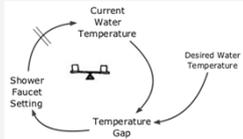
DELAYS
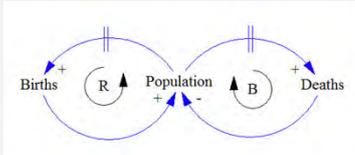
DELAYS
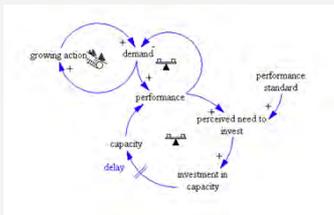
SYSTEM THINKING BOT

Employee-Supervisor Reinforcing Loop
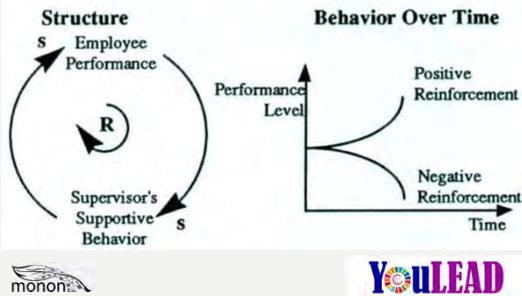
SYTEM THINKING BOT

Inventory Control Balancing Loop
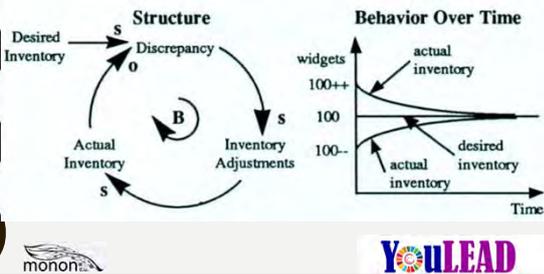
„SHIFTING THE BURDEN"
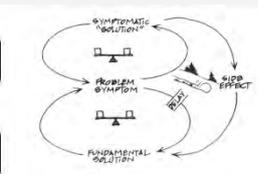
- Sometimes called: addiction
- How to fix it?
  - Employ symptomatic
  - AND
  - Fundamental solution

  To bring immediate cure and
  long lasting solutions …

DEVELOP A GUIDING STAR AND A NEAR STAR

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GUIDING STAR

- …a vision that is framed as the desired future system toward which your team is working. It will serve as a navigational tool for the long haul as your team impacts the system and adapts over time.
  - 20 – 50 years in future …
  - Not necessary limited to your sector / organization / idea
- **Formulation:** *Our guiding star is a [name of the system] that produces [desired condition]*

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NEAR STAR

- near star is a 5- to 10-year goal that is framed as a distant, but foreseeable outcome that could be attained.
- It should be a significant step toward the guiding star.
- It is provisional since it is highly likely that your near star will be revised as you continue to learn new things about the ever-changing system along your systems journey.

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GUIDING AND NEAR STAR EXAMPLE

GUIDING STAR

- A system that eradicates the worst forms of human exploitation in corporate supply chains.

NEAR STAR

- A new standard of corporate supply chain practice that will increase responsibility and decrease the risk of labor abuse.

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GUIDING STAR & NEAR STAR EXAMPLE

GUIDING STAR

Youth of Nepal will appreciate living in Nepal using their own resources in a sustainable manner to live a happy and dignified life engaged in formal and informal work activities. Workplaces do not endanger native culture or the natural environment. A robust education system allows people to be more accountable and responsible, and provides them with the diverse cultural and humanistic values, household, life, and social competences and the whole portfolio of vocational skills. Empowered young people will be inspired to dedicate their knowledge, skills, creativity and energy to a shared vision of Nepal.

NEAR STAR

Youth in rural Nepal find dignified formal or informal work in their home district. They are aware of social pressures and expectations but are empowered to follow careers that enrich them and society.

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FRAMING QUESTION

- Which question would you like to ask, when you do the systems analysis

- **Example: Why have efforts to provide local employment failed?**

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ENABLERS & INHIBITORS

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SAT-ANALYSIS

Structural
• Physical and social environment
• Both: nature and built

Attitudinal
• Widely held beliefs, norms, intergroup relations
• i.e. Individualism, Group traumas, fears, etc.

Transactional
• Processes used by and interactions among key people
• Lobbying, influence of community elders,

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ENABLERS & INHIBITORS

• Brainstorm 20 minutes and write down each enabler / inhibitor on a post it
• Cluster and find headlines
• Select 4 – 6 each

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UPSTREAM / DOWNSTREAM ANALYSIS

- Structural
  - ...
  - ...
- Attitudinal
  - ...
  - ...
- Transactional
  - ...
  - ...

- Theme:

- Theme:

- Structural
  - ...
  - ...
- Attitudinal
  - ...
  - ...
- Transactional
  - ...
  - ...

TYPES OF LOOPS (ACUMEN)

LOOP TYPE: VICIOUS
(Things are getting worse and worse)

When the **literacy rate** is low, qualifying for jobs becomes difficult which increases the **level of unemployment**. High **unemployment** leads to the number of households existing at or below the **poverty level** to increase. As poverty increases people are more likely to prioritize income-generating activity over education, which further decreases the **literacy rate**.

LOOP TYPE: VIRTUOUS
(Things are getting better and better)

When a **parent** extends **trust** to a child, the **child's freedoms** are increased. As the child experiences the enjoyment of increased freedoms, their **desire to maintain** these extra privileges increases. As their desire to have **privileges** increases, their **responsible behavior** is also increased, which in turn increases the parent's trust in the child.
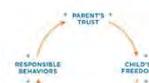
TYPES OF LOOPS (ACUMEN)

LOOP TYPE: STABILIZING
(Keeping things from getting worse)

As the **use of fossil fuel** increases, the **reserves of fuel** are depleted, which leads to an increase in commodity **price (of fossil fuel)**, which then results in a decrease of fossil fuel use.

LOOP TYPE: STAGNATING
(Keeping things from getting better)

When a student shows an improvement in the **quality of** their **classroom behavior**, the **teacher's expectation** of that child's behavior increases (now they know what the child is capable of). As the teacher's expectations rise, the likelihood that the **teacher** will make the **effort to engage and praise** the child is diminished. When the child does not receive praise for their effort, their behavior deteriorates.

CREATING LOOPS (SCRIBING OUT THE PROCESS)

- Pick a factor
- Look downstream … and downstream … eventually you will come back to the cause
- Notice and DOCUMENT how each factor relates to the next one
- Name the loop and categorize (virtuous, vicious, stabilizing, stagnating)
- Create loops for all "important stories"

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TIPPS FOR GOOD LOOPS

- Frame factors as nounse that can increase or decrease
    - Legitimacy of the government, feelings of exclusion
- Ask what is missing in the story (avoid big gaps)
- Describe what is (not what you want to be)
- "No full description of the system is complete without the story of ……." → are you done?

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