



# Healthy schools in complex adaptive systems

Stef Kremers

Professor of Health Promotion

Head of Department of Health Education and Promotion

Faculty of Health, Medicine and Life sciences

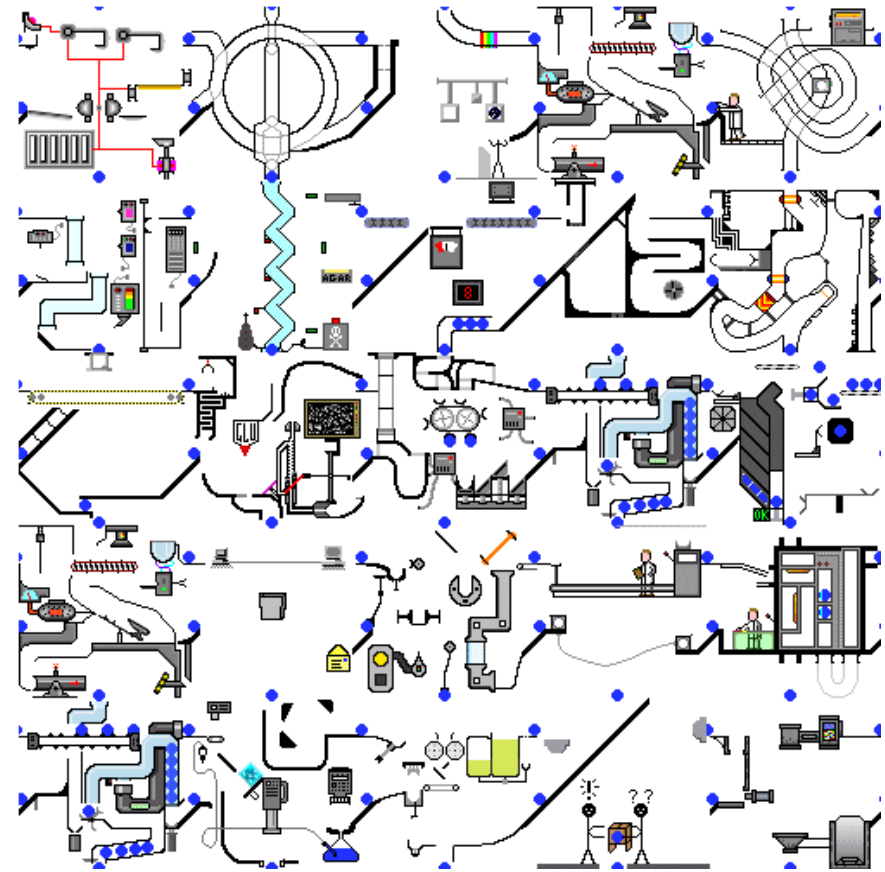
NUTRIM School of Nutrition and Translational Research in Metabolism

Maastricht University

The Netherlands

# Dynamic research paradigm

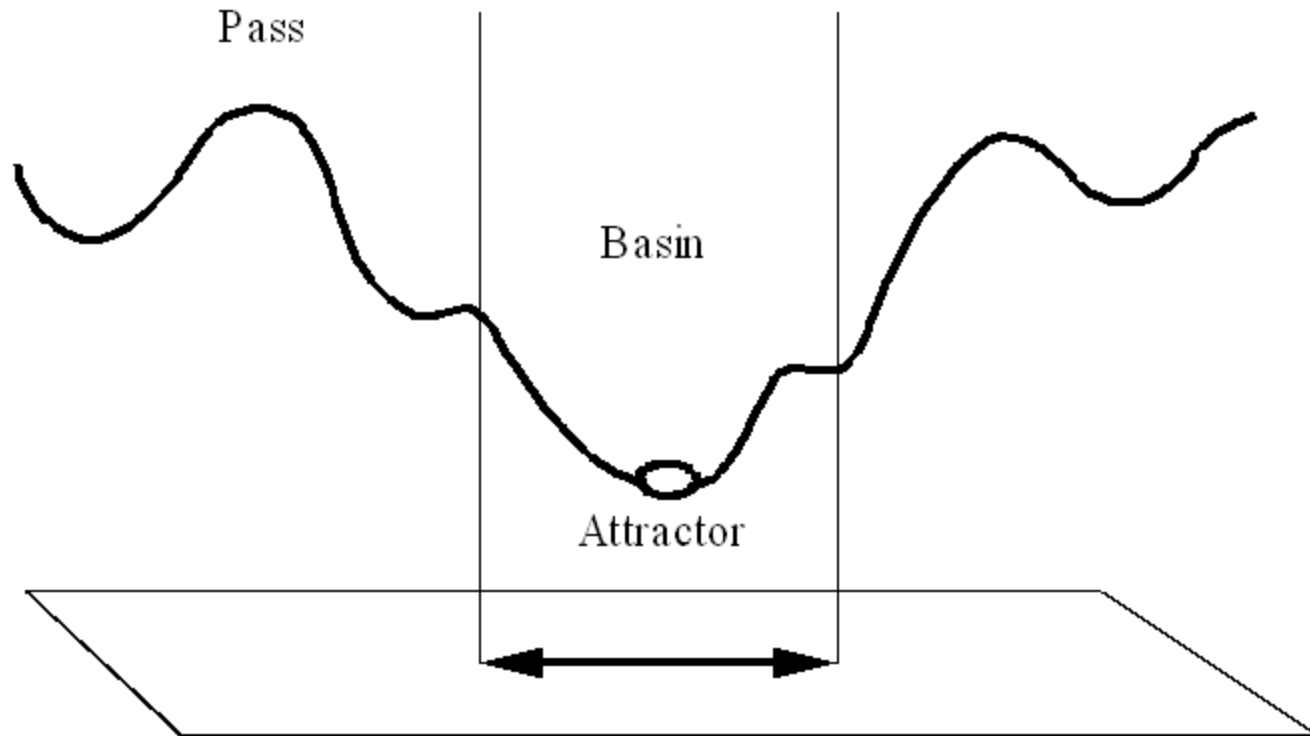
- Attractor landscape
- Systems perspective
- Mutual adaptation



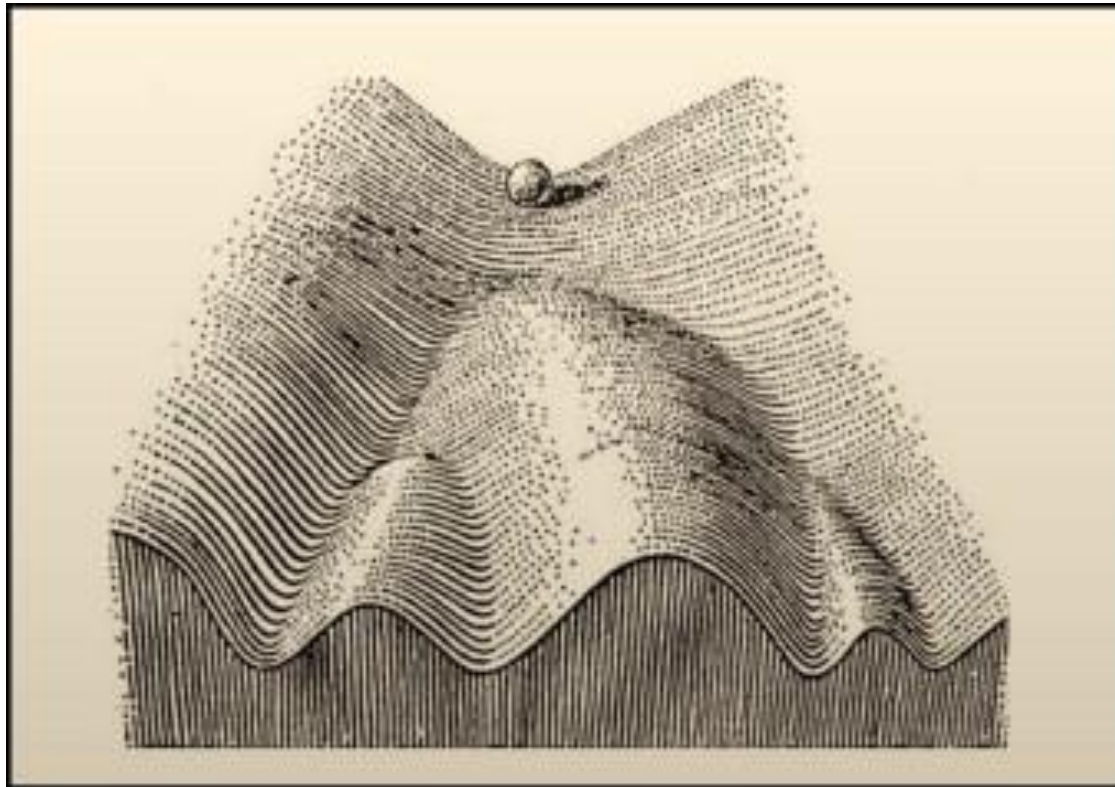
*The COVID-19 lockdown policies  
from a systems perspective*



# Attractor Landscape



# Attractor Landscape



# Implementation: A systems perspective

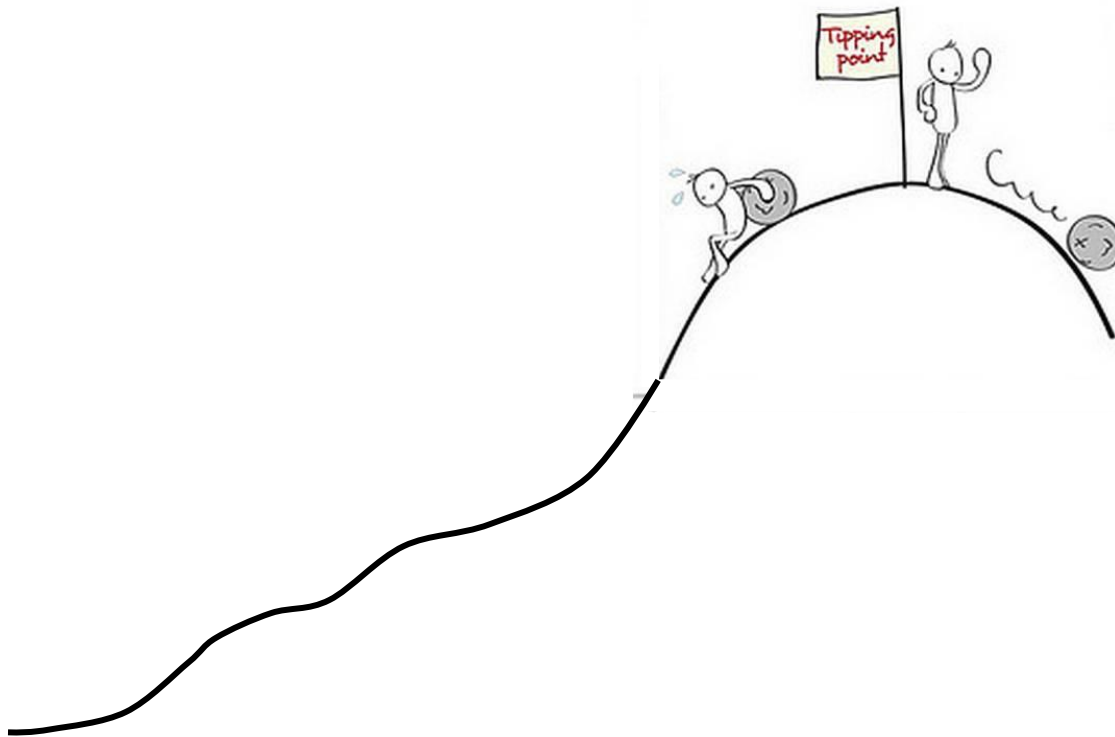
- The school itself is a complex adaptive system as it is characterized by a large number of interacting institutional elements
- The school is part of a larger system, interacting with other microsystems and macrosystem elements



# Implementation: A systems perspective

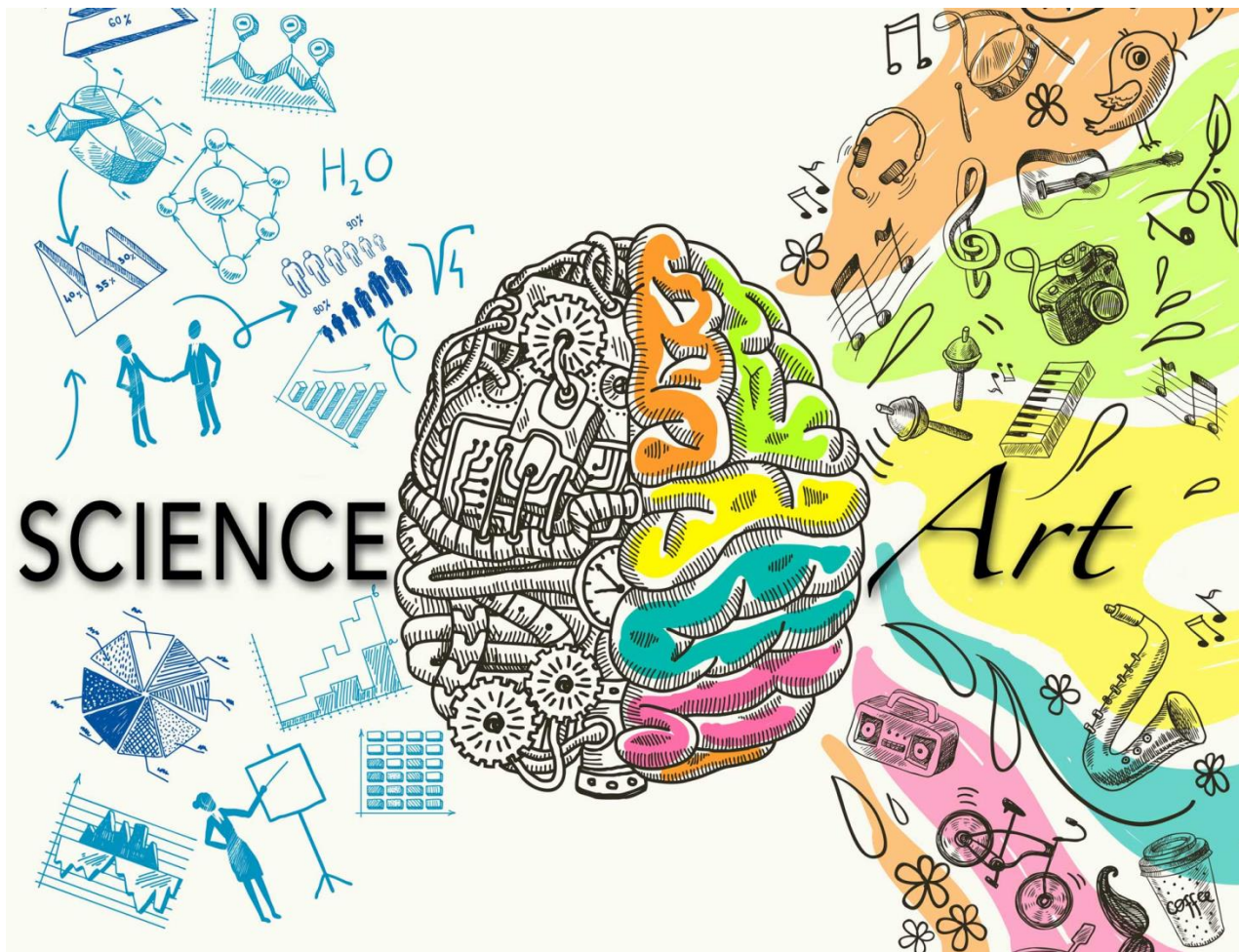
- Each implemented change will work differently in each setting; there is **always** an interaction between intervention and context
- An intervention that is conceived as an add-in (rather than an add-on) to existing system is more likely to be implemented and sustained successfully
- A process of change does not have a linear cause-effect relationship: e.g. small actions can produce large impact ('tipping-points')

# Tipping point





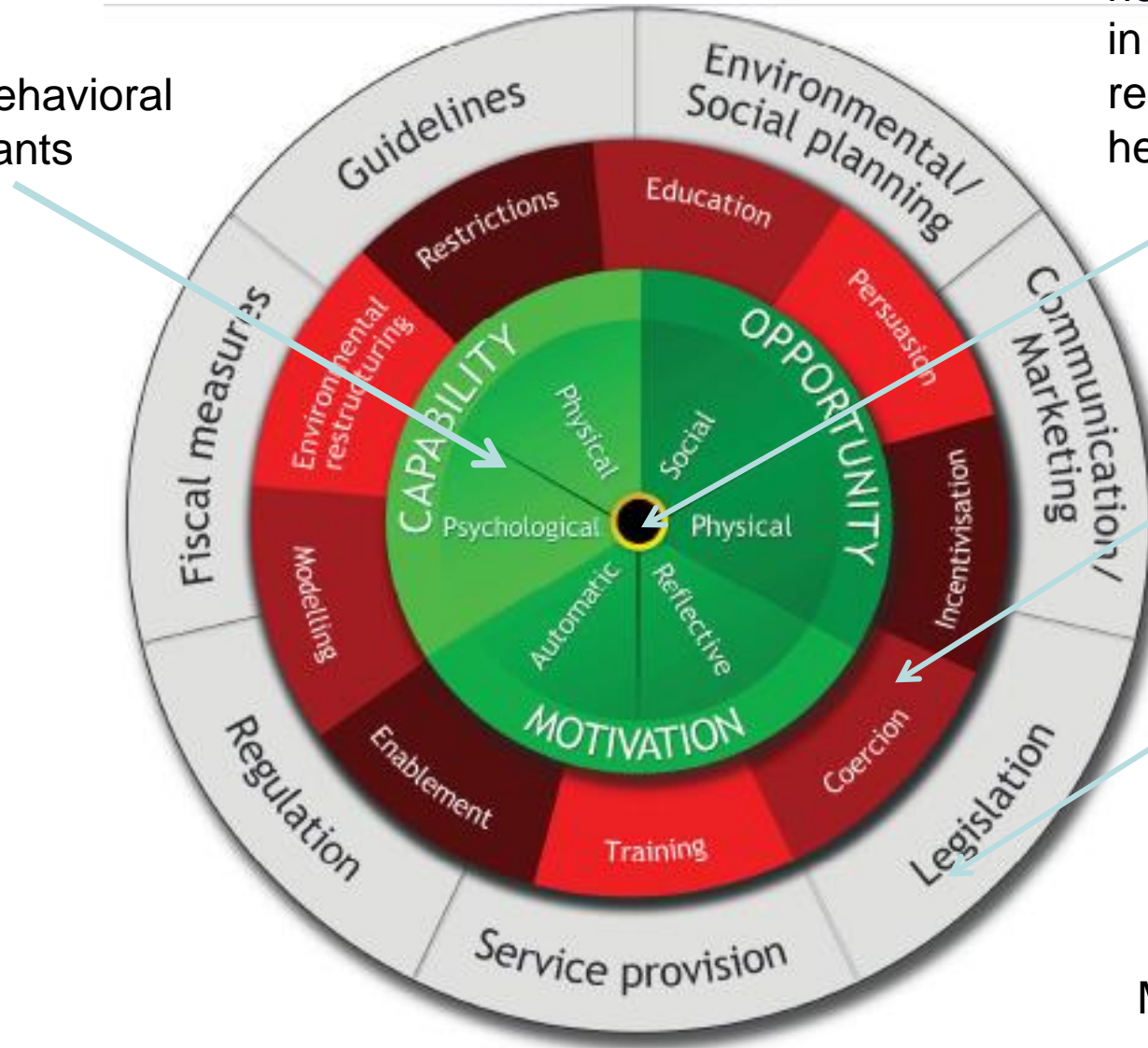
# The science and art of school health promotion



# The Behavior Change Wheel

Step 1: Behavior that needs to be changed in order to prevent, reduce or solve health problem

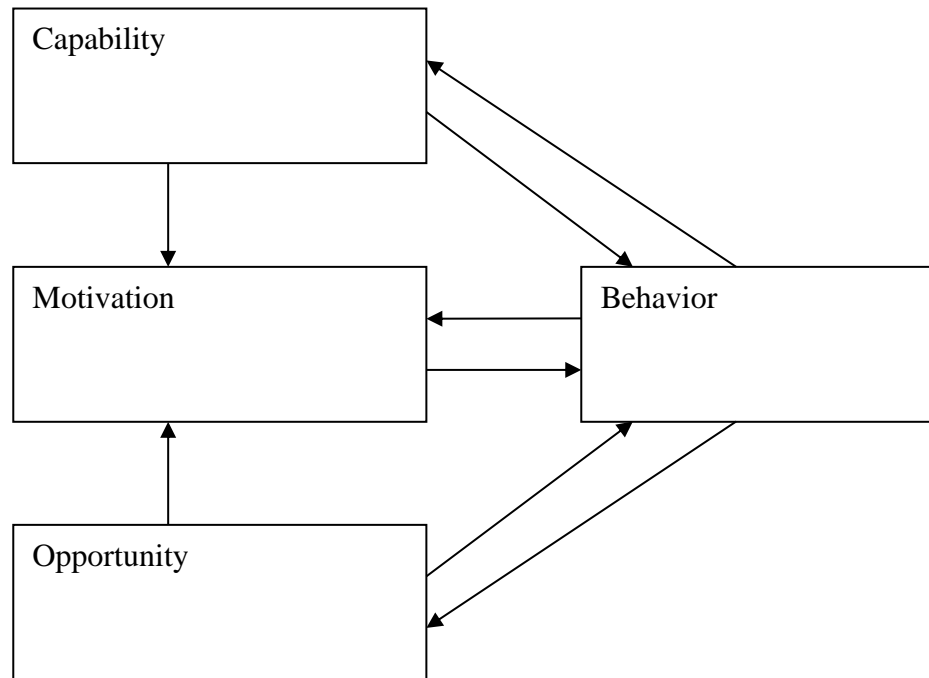
Step 2: Behavioral Determinants

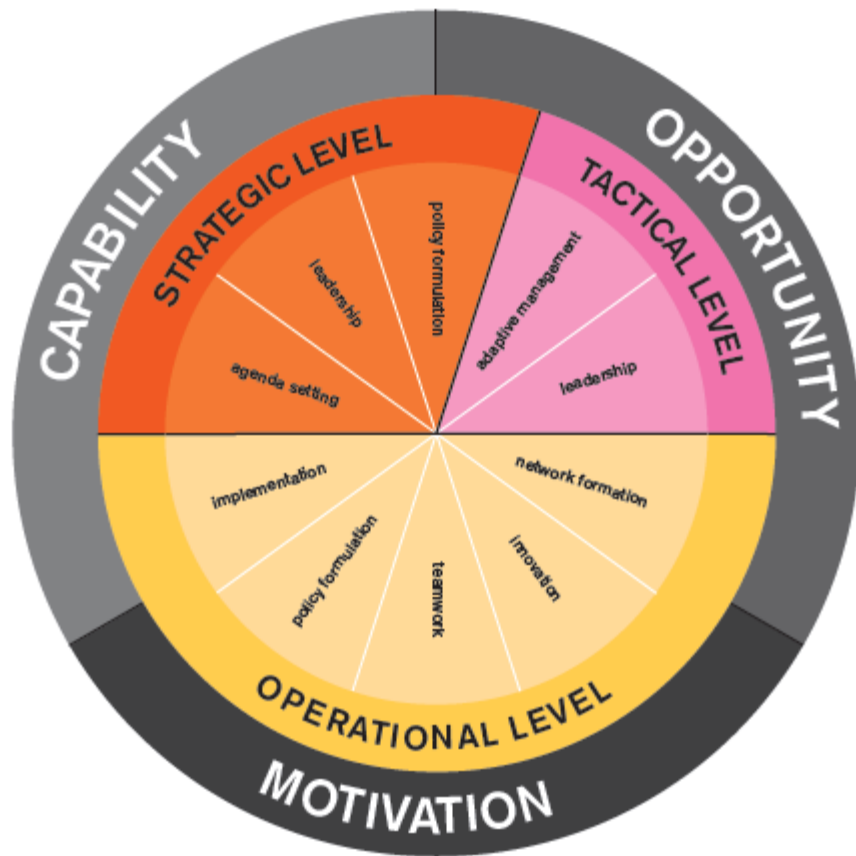


Step 3: Intervention functions

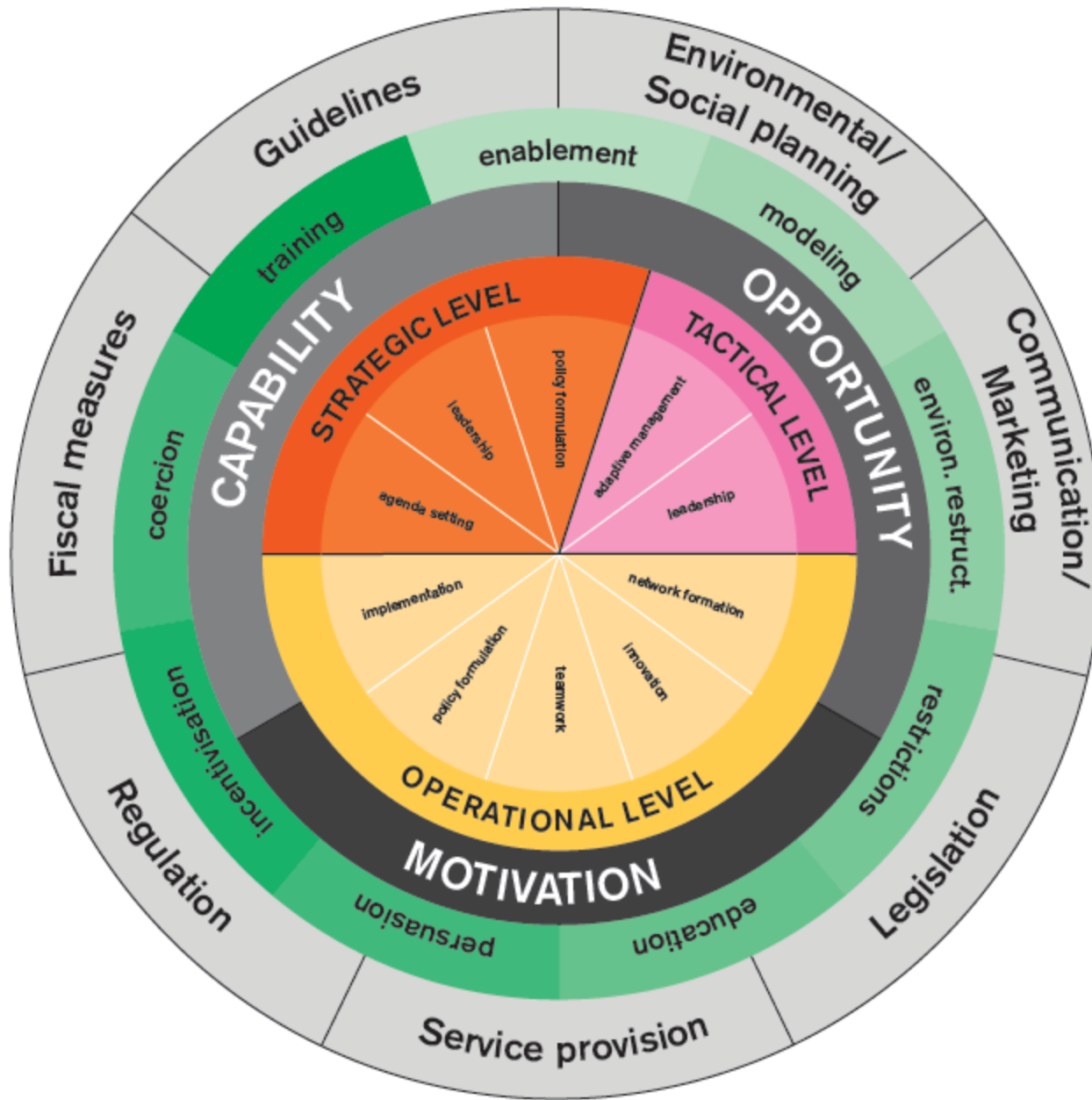
Step 4: Policy categories

# COM-B system

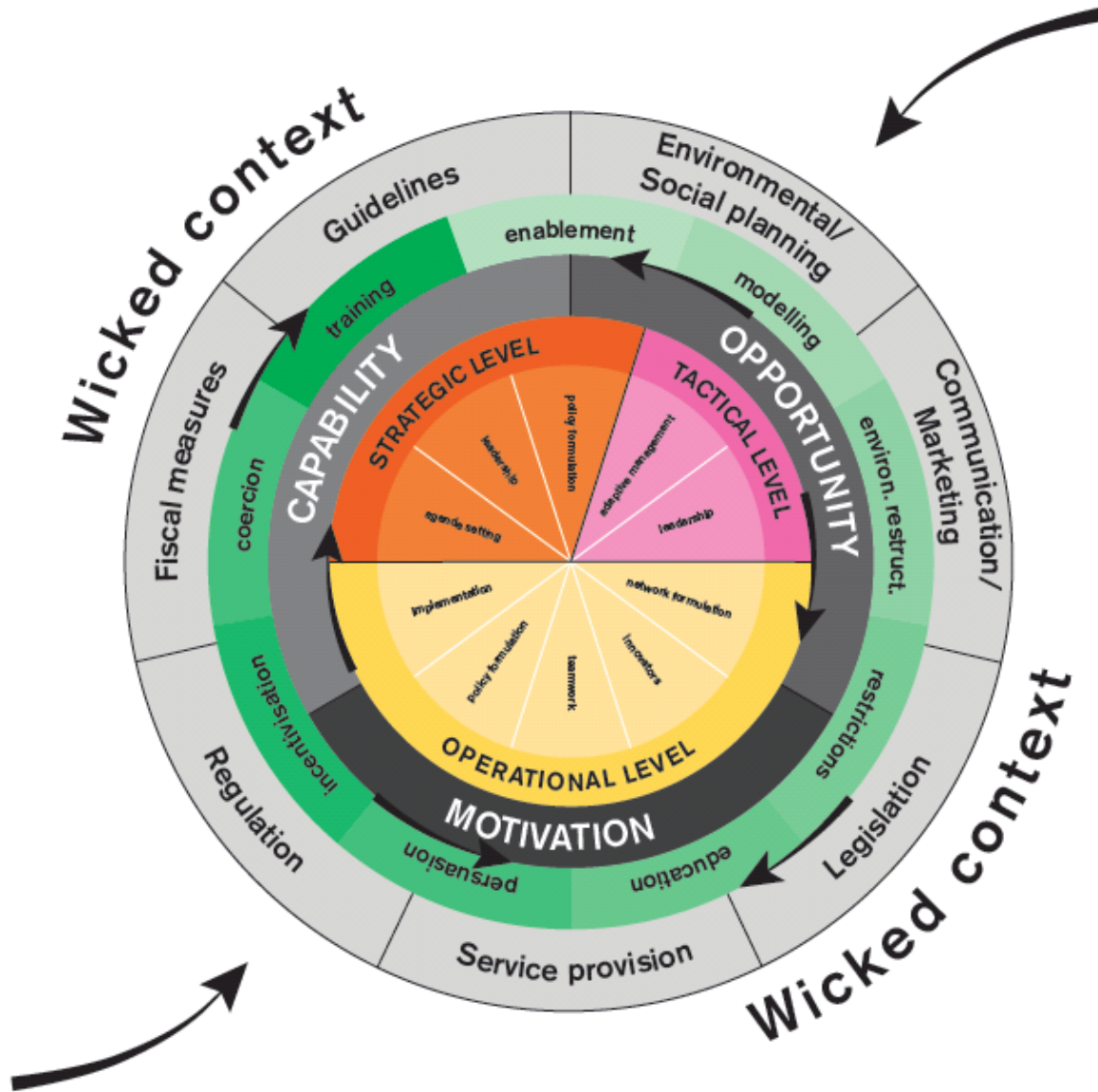








# Putting the wheel in context



# Behavior Change Ball



Hendriks, A-M., Jansen, M.W.J., Gubbels, J.S., De Vries, N.K., Paulussen, T., Kremers, S.P.J. (2013). 'Reinventing the Wheel': Proposing a theoretical framework for integrated health policy making with an application to childhood obesity. *Implementation Science*, 8, 46.



# School health promotion as a balancing act

Top-down	Bottom-up
Detailed protocol	General guideline
Fidelity	Adaptation
Add-on	Add-in
Static	Dynamic
Linear	Non-linear
Disruptive	Non-disruptive
Elements	Functions
Intervention package	Co-creation
Setting	System
Outcome	Output
RCT	Action-oriented research



# School health promotion as a balancing act

<b>Top-down</b>	<b>Bottom-up</b>
Detailed protocol	General guideline
Fidelity	Adaptation
<b>Add-on</b>	<b>Add-in</b>
Static	Dynamic
Linear	Non-linear
<b>Disruptive</b>	<b>Non-disruptive</b>
Elements	Functions
Intervention package	Co-creation
Setting	System
Outcome	Output
<b>RCT</b>	<b>Action-oriented research</b>



# Health promoting schools in Europe

State of the art



S·H·E  
Schools for Health in Europe

Date of document: 28 November 2019 (revised 2020)

Authors: Nina Bartelink and Kathelijne Bessems

Place: Maastricht, The Netherlands



This report has received funding  
under an operating grant from the  
European Union's Health  
Programme.

Bartelink &  
Bessems, 2019

# SHE monitoring report 2020:

## Country-specific results of Hungary

Schools for Health in Europe Network Foundation  
October 2020. All rights reserved.



This report has received funding under an operating grant from the European Union's Health Programme.

### Tailored translation of the HPS approach on seven spectra in schools in Hungary

The tailored translation of the HPS approach creates a variety of choices regarding the optimal implementation of the HPS approach in a specific context. This variety can be illustrated by seven different spectra. A detailed explanation of each spectrum can be found in the fifth SHE factsheet<sup>3</sup>. Figure 2 shows the estimation from the SHE national coordinator of Hungary of the general placement of schools on the seven different spectra.

**Figure 2.** The Health Promoting School spectra in Hungary



*This refers to the level of involvement of stakeholders (e.g. pupils) in the decision-making and implementation of the HPS approach*



*The place on the spectrum refers to the number of HPS core-component that are addressed in the HPS-approach*

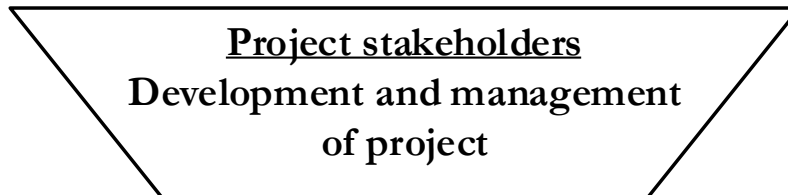


*This relates to the development of the new or the adoption of existing interventions resulting from the HPS approach*

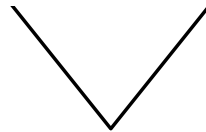


*This relates to the level of disruptiveness of interventions as part of the HPS approach. Non-disruptiveness refers to small changes that can smoothly enter, while disruptiveness means large health promoting changes that can create a positive disruption in the school system.*

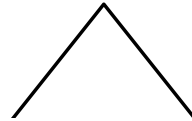
## TOP-DOWN



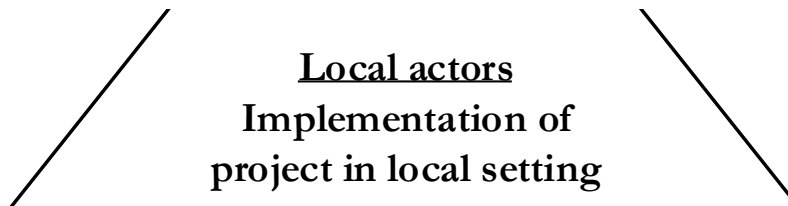
Adaptation of project goals  
and methods to meet local needs



## Mutual adaptation



Adaptation of local practices  
to meet project requirements

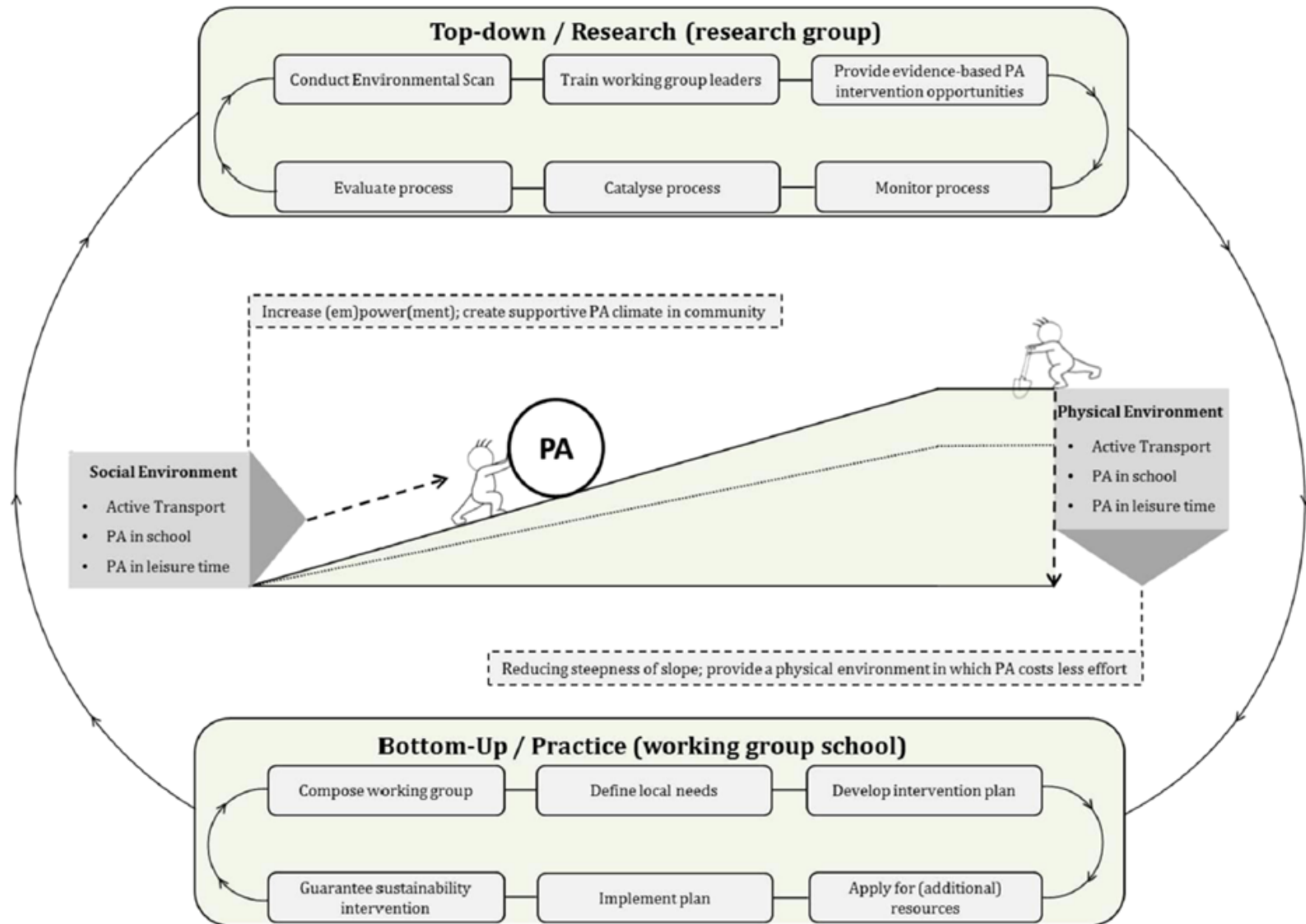


## BOTTOM-UP

# Mutual adaptation

- Implementation of a change will be more successful and will lead to greater ownership and commitment
- Bottom-up approach is needed as target group and intermediaries know best which changes are most appropriate
- Top-down approach is needed as the experts involved have specific knowledge, skills and experiences, which may lead to more effective changes
- Challenge for the health promoter: adaptive management in a *wicked* context (Rittel & Webber, 1973)

# Mutual adaptation

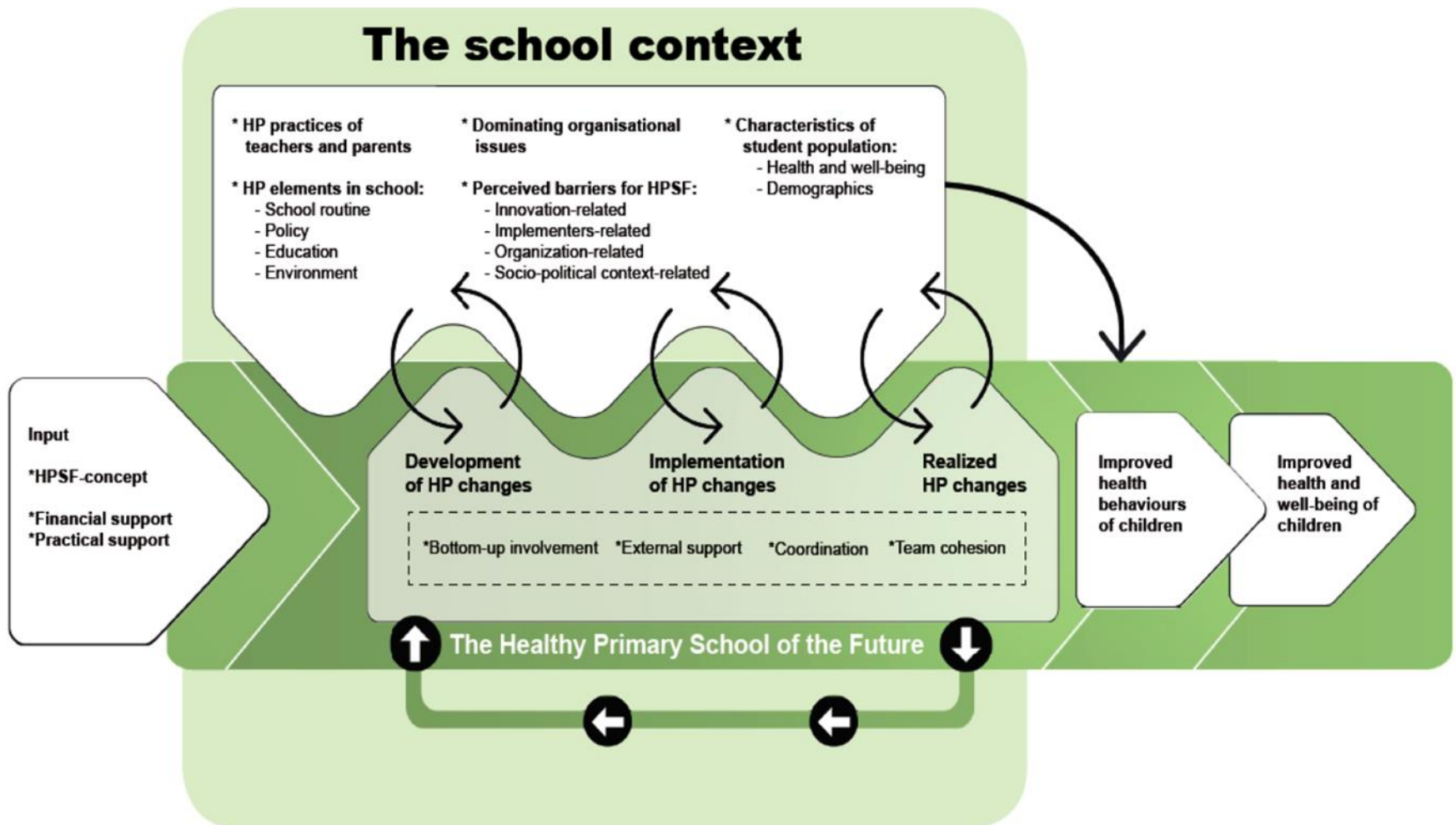


# Contextual Action-oriented Research Approach

- Understanding the systemic context is a prerequisite for understanding the implementation process
- Focus on principles (functions) rather than on ingredients (elements)
- Monitoring and evaluation are not external observations of strategies to implement changes, but become a strategy themselves
- The attitude of the researchers is not neutral and fully objective, but involves joining in discussions and giving support
- Regular feedback provides valuable guidance to the process of change



# Contextual Action-oriented Research Approach



# Thank you for your attention



- [s.kremers@maastrichtuniversity.nl](mailto:s.kremers@maastrichtuniversity.nl)

# References





# From preschool to adulthood



**Healthy  
Universities**

# KRACHTVOER, IN FASES NAAR GEDRAGSVERANDERING

Klik op de interactieve delen en ontdek wat Krachtvoer jou te bieden heeft.



<https://www.krachtvoer.nu/docenten>



# Support our work to improve the health and wellbeing of children and young people

## Strategic

Sharing knowledge and changing the relationship to healths

## Engaged

Accelerating research to improve health for all

## Ethical

Reducing health inequalities and promoting well-being

## International

Developing a network and sharing knowledge for action

## Partnership

Act on the ecosystems of children and young people by connecting health and sustainable development

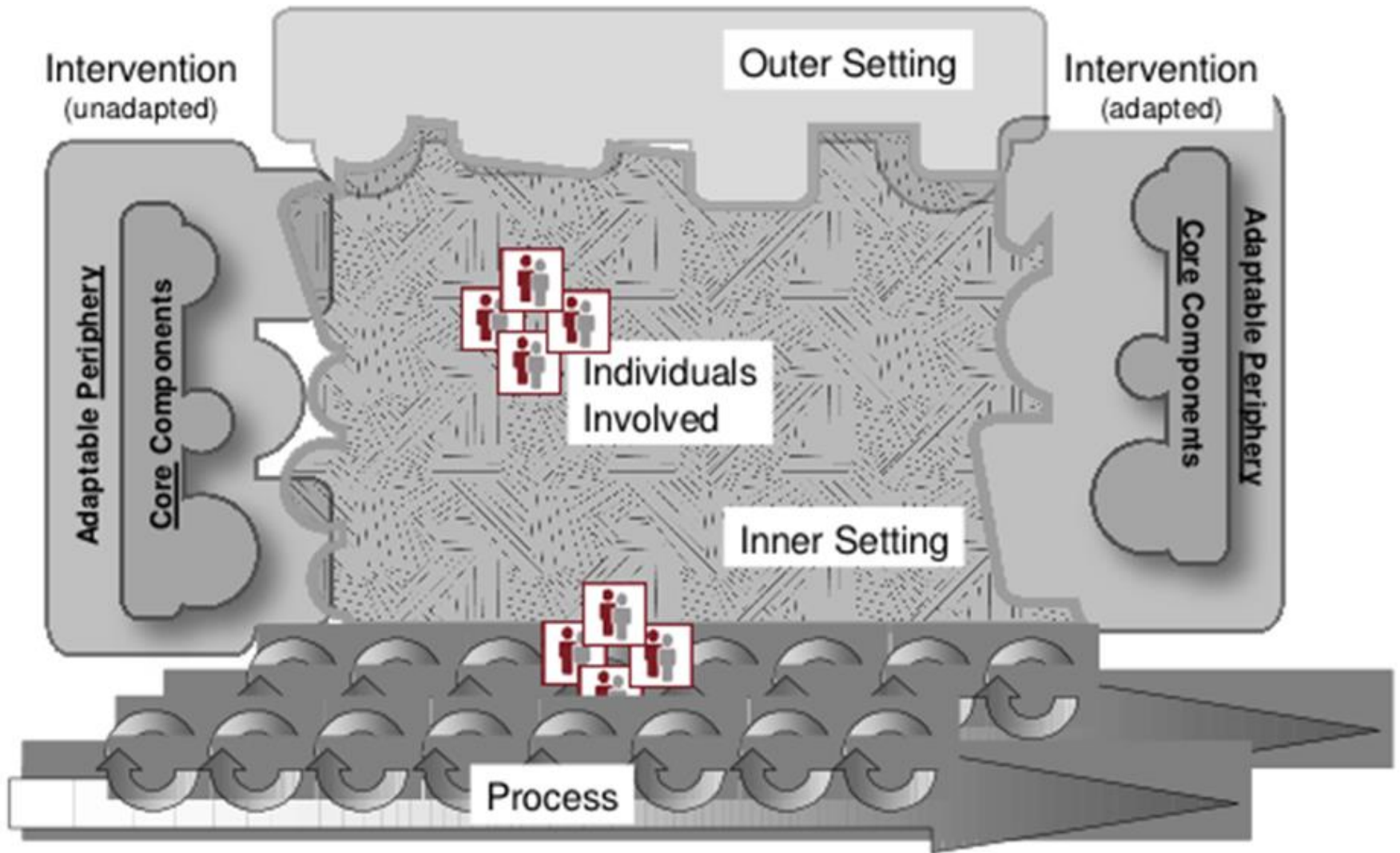


En partenariat avec la MGEN,  
mutuelle membre du groupe VVV.

Phone : +33 6 10 44 33 82  
[www.unescochair-ghe.org](http://www.unescochair-ghe.org)  
[info@unescochair-ghe.org](mailto:info@unescochair-ghe.org)

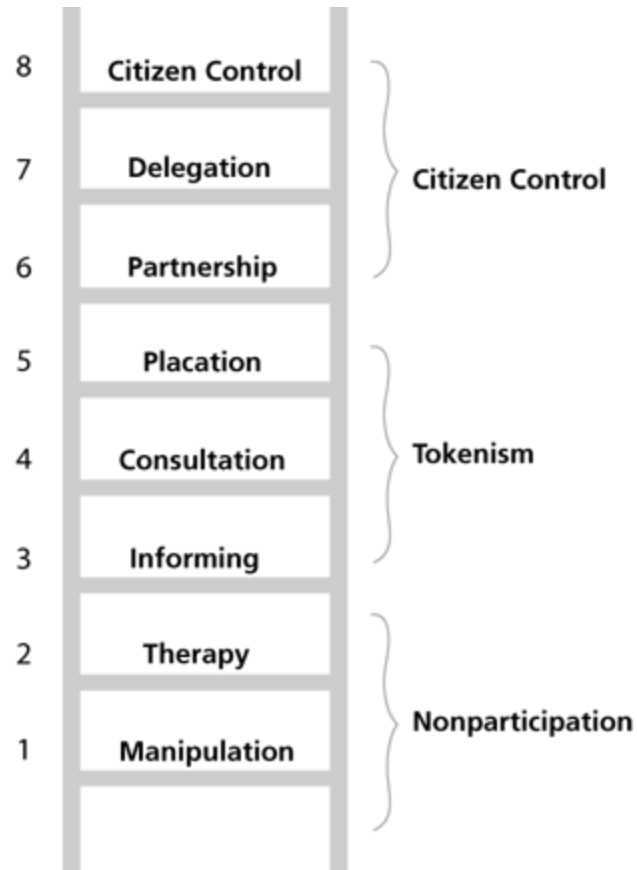






Consolidated Framework for Implementation Research (CFIR) (Damschröder et al., 2009)

# Participation ladder



**Arnstein's Ladder (1969)**

Degrees of Citizen Participation