Finnish Institute of Occupational Health

Well-being through work

Finnish Institute of Occupational Health

Developmental Work Research in occupational safety research

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Contents

- A case of Brazilian jewellery production and the question of production concepts
- How to move from analyses and recommendations to changing practices, organisation and culture?
- Developmental Work Research / Change Laboratory and the Cycle of expansive learning
- Activity system(s) as a unit of analysis
- The principle of Double Stimulation and examples

Acknowledgements: Special thanks to prof emeritus Jaakko Virkkunen!

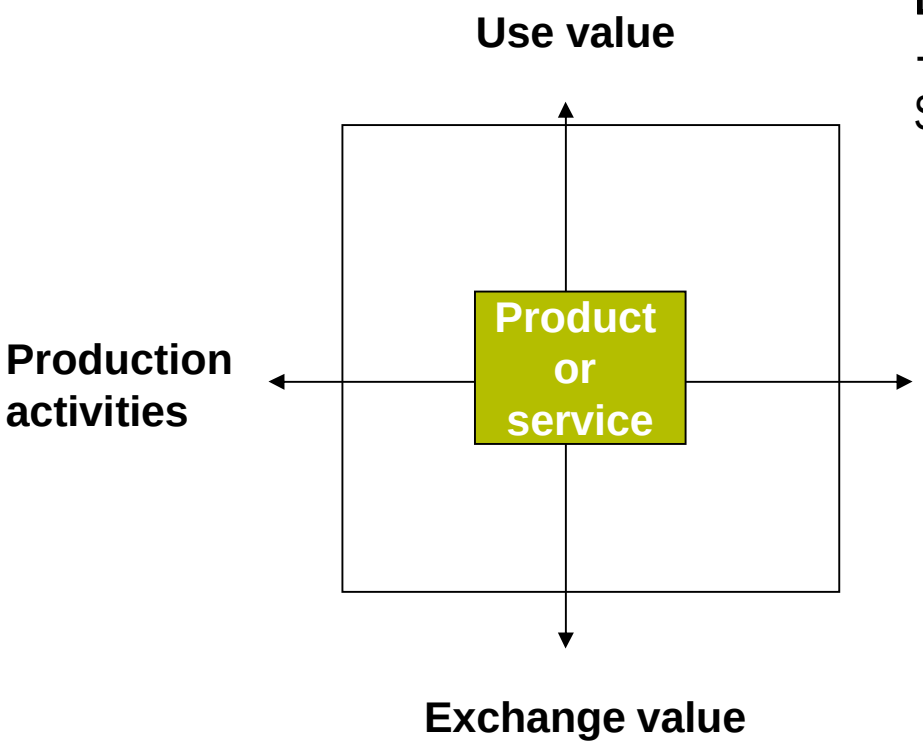
A story from Brazilian jewellery production (Coluci et al, 2016)

- A complex production chain in a city in São Paulo state, involving formal and informal employers, distributors and vendors, including domestic precarised work (A survey to school children: 8340 students worked in jewellery, in average 6,9h per day (Vilela & Fereira, 2008)
- Publishing these news led to cutting funding resources for jewellery companies, and new public commission for erasing child labour, but it did not manage to control the outsourcing in the jewellery production.
- Other problems: ergonomic and chemical risks, heavy metals to urban drainage system
- Question: what to do with the complexity of these problems?

Possible alternatives for jewellery production

- ”Following the rules” –but, the business might die?
- Continuing as before
- A third path: developing, in a participative way, a new **production concept** that has potential for overcoming the actual health & safety problems.

Production concept = principle or logic to balance different contradictory demands in work (Virkkunen 2007)



Differences and similarities to:
-Organisational culture (eg Weick and Sutcliffe 2007)

Developmental Work Research can be used to analyse and develop production concepts

Back to jewellery case

- Researchers need to find a common aim and purpose with the jewellery companies
- Dialogue with practitioners is crucial

-> Safety researchers need to go beyond the safety field!

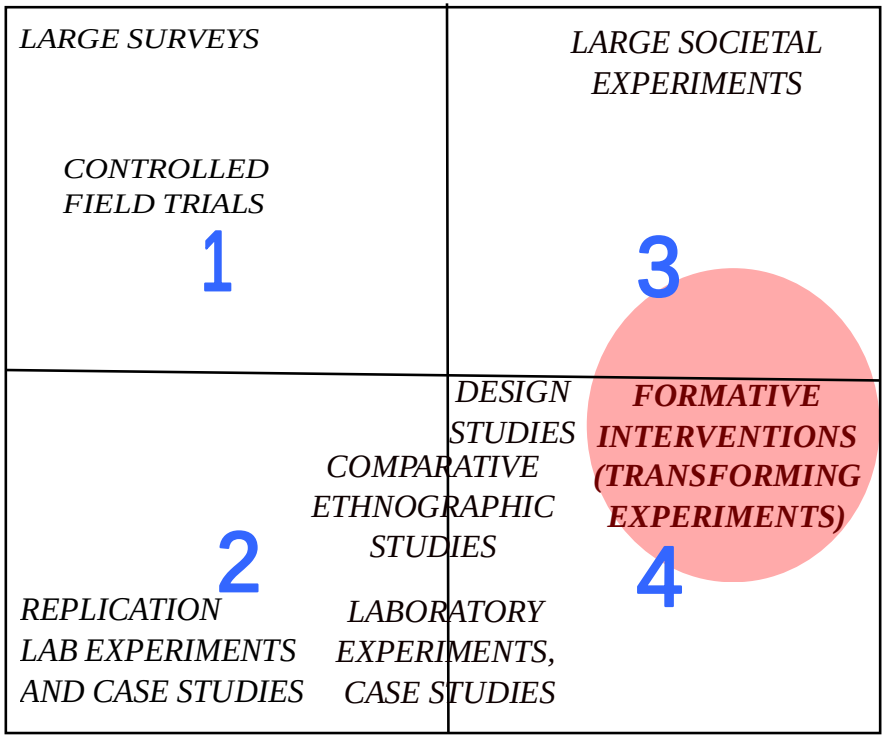
In general: How to move from analyses and recommendations to changing practices, organisation and culture?

- Diagnostic research and training separately? Or,
- Participatory analysis and development together?
  - -> Safety researchers need to go beyond the safety field!
  - -> Are dialogue and co-configuration taken and developed as crucial elements of safety research?
  - ->The Five Whys (Leino & Helfenstein, this course)
- Double challenge to find tools that help participants do two things at the same time: explain what is going on and why and produce something new.
  - -> Formative Interventions, eg Developmental Work Research

Forms of research in social sciences

LARGE SCALE, STATISTICAL GENERALIZATIONS

HOW THINGS ARE:
DESCRIPTIVE AND CONFIRMATORY PRODUCTION OF EVIDENCE

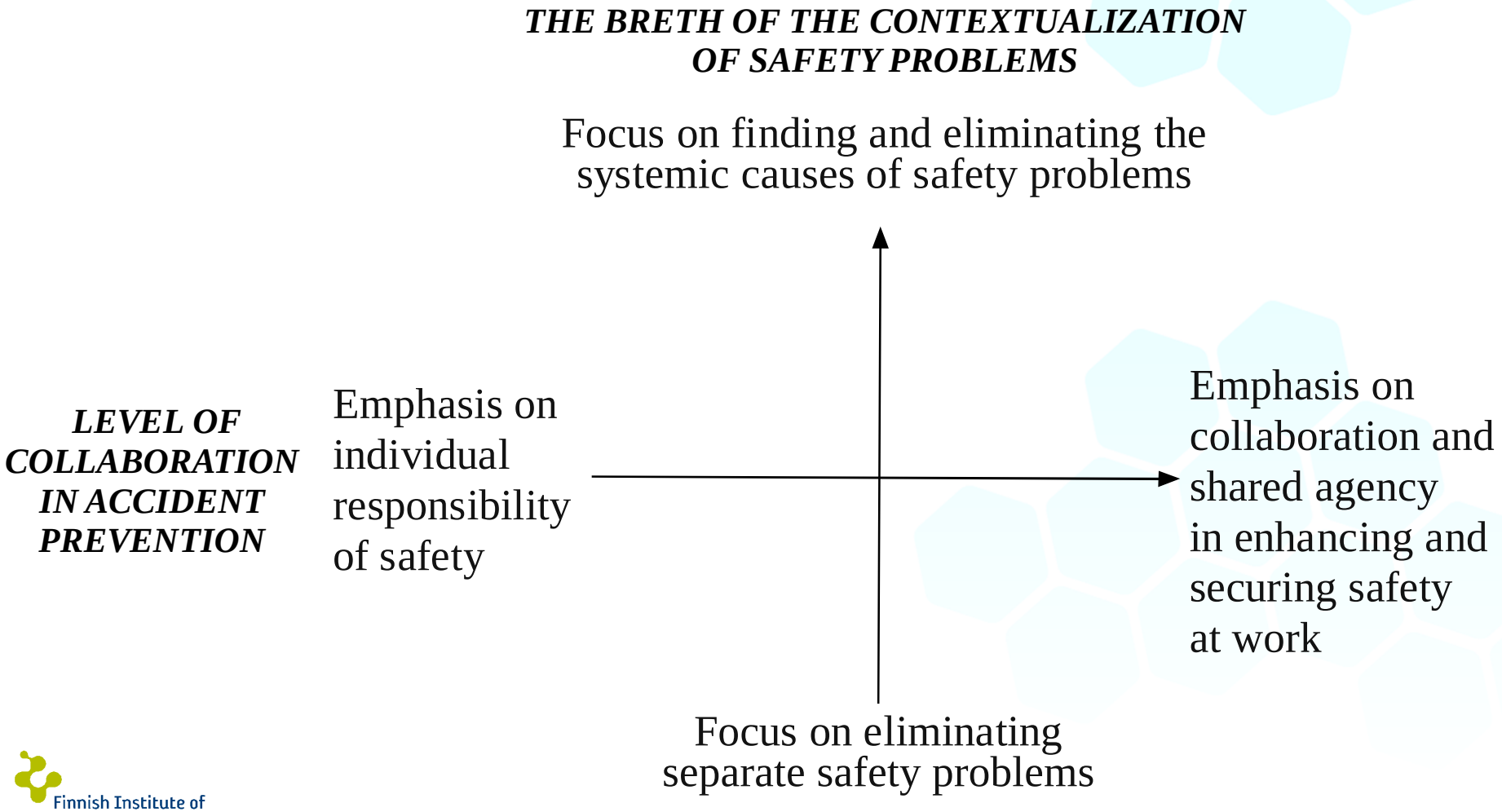


HOW THINGS MIGHT BE:
EXPLORATORY CREATION OF NEW IDEAS AND PRACTICES

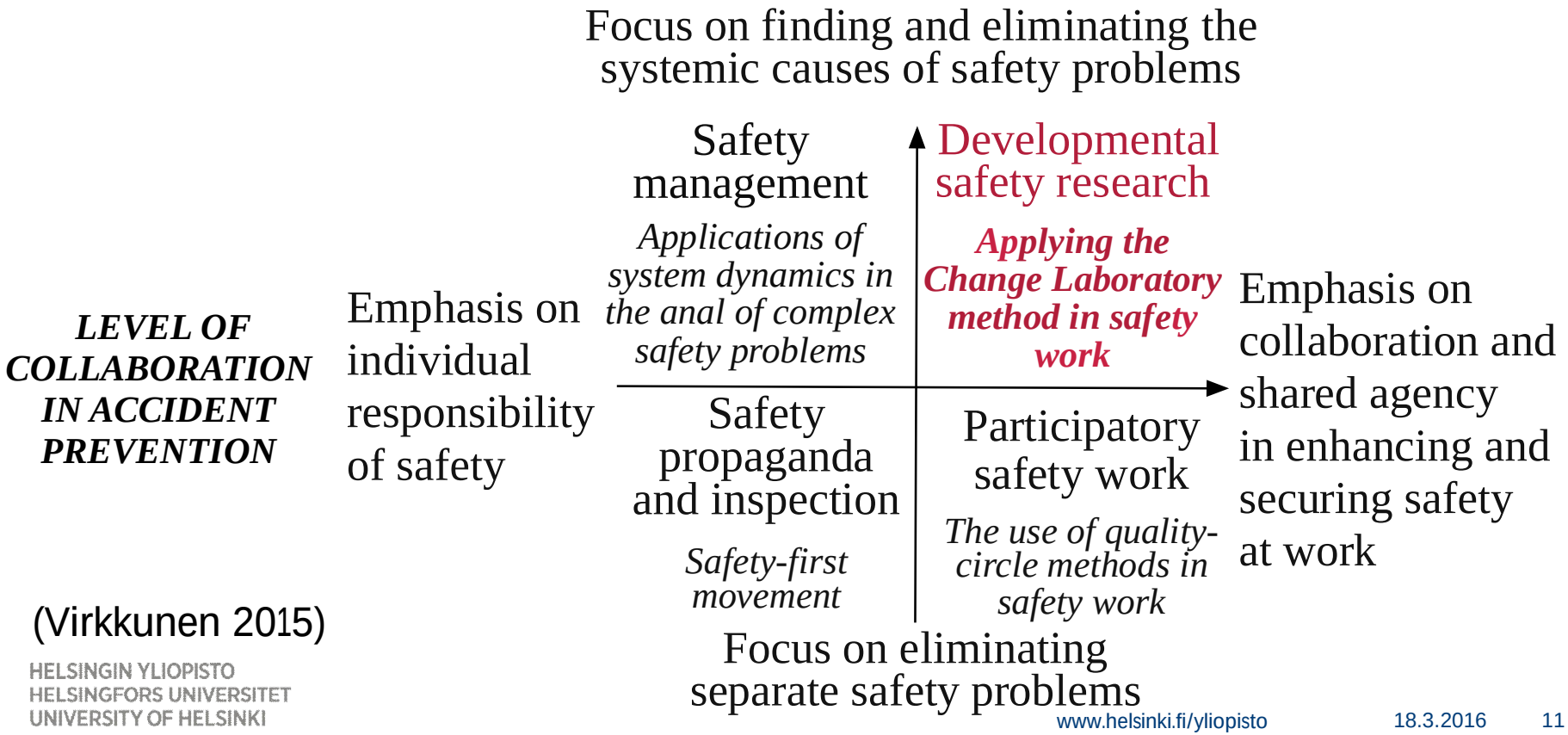
SMALL SCALE, IN-DEPTH EXPLANATION

(Virkkunen, 2015)

Developmental Work Research in labour-safety work (Virkkunen, 2015)



THE BRETH OF THE CONTEXTUALIZATION OF SAFETY PROBLEMS



(Virkkunen 2015)

Linear controlled change experiments
(Action Research and Design Research)
vs. formative intervention

Approach/ Aspect	***Linear, controlled change experiments (AR, DR)***	***Formative Change Laboratory interventions***
Object	Specific action	Activity system
Process	Carefully designed and controlled by the researchers. Difficulties of execution interpreted as weaknesses in the design that are to be corrected	Co-designed with the partici-pants or even deliberately initiated and driven by local actors. Difficulties of execution are interpreted as strengths in the design that are to be historically and collectively scrutinized
Outcomes	Generalizable standardized solutions	Locally appropriate novel conceptualizations that are generative of new solutions

IOPISTO

(Virkkunen, 2015)

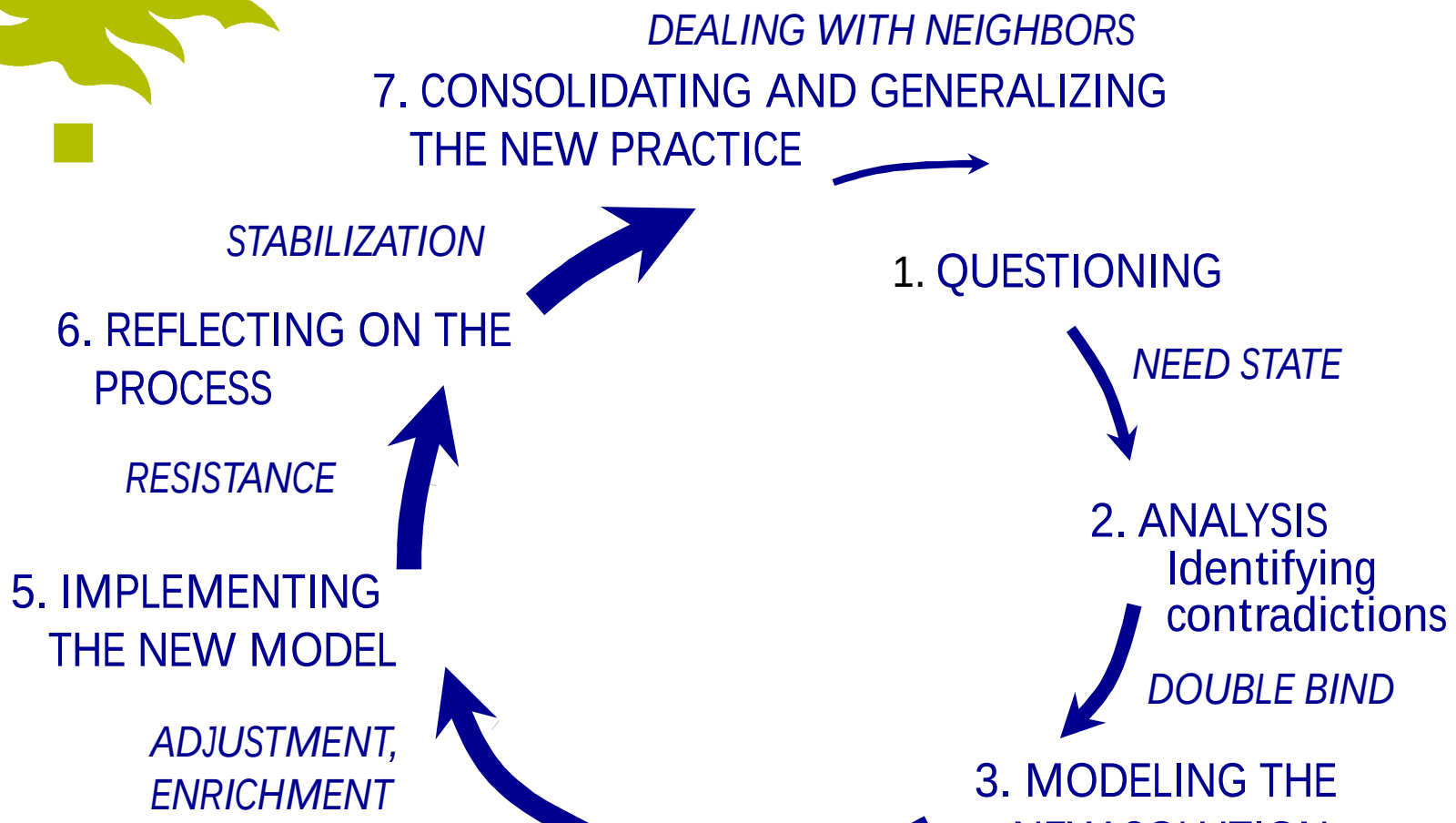
What is Developmental Work Research (DWR)?

- The roots of DWR are in the Finnish collaboration, in the 1970's, between academic researchers and human resource development practitioners
- An application of Cultural Historical Activity Theory (eg.Vygotsky 1978; Leont'ev, 1978)
- One of the foundations: Yrjö Engeström (1987): Learning by expanding: an activity-theoretical approach to developmental research.
- A developmental method based on DWR: **Change Laboratory**

How DWR approach relates to safety research

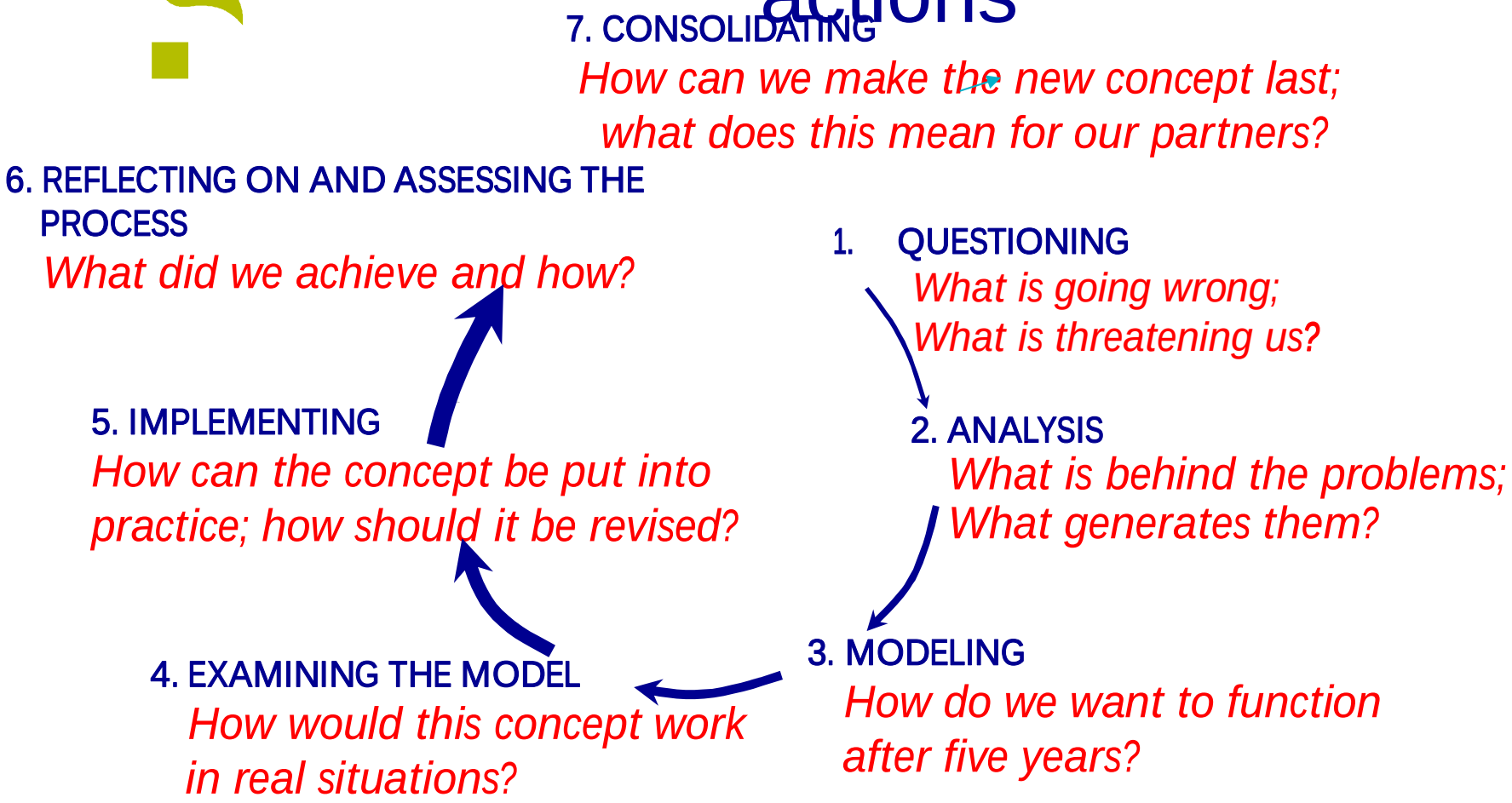
- To understand why something can go wrong, we need to understand how something is functioning normally (Hounsgaard 2016, NIVA presentation)
- Current best practice discussions suggest that the proper approach to safety is not to impose more rules but to change the system's behaviour into being safer (Bertelsen, 2004, ref. In Leino & Helfenstein, this course)
- Much of the existing safety problems may indeed arise from a lack of recognition of the dynamic and dependent nature of [ ] work (Schafer et al., 2008, ref. In Leino & Helfenstein, this course)

The cycle of expansive learning actions



Engeström 1987, ref.
In Virkkunen, 2015)

Change Laboratory: Questions describing the expansive learning actions



(Virkkunen, 2015)

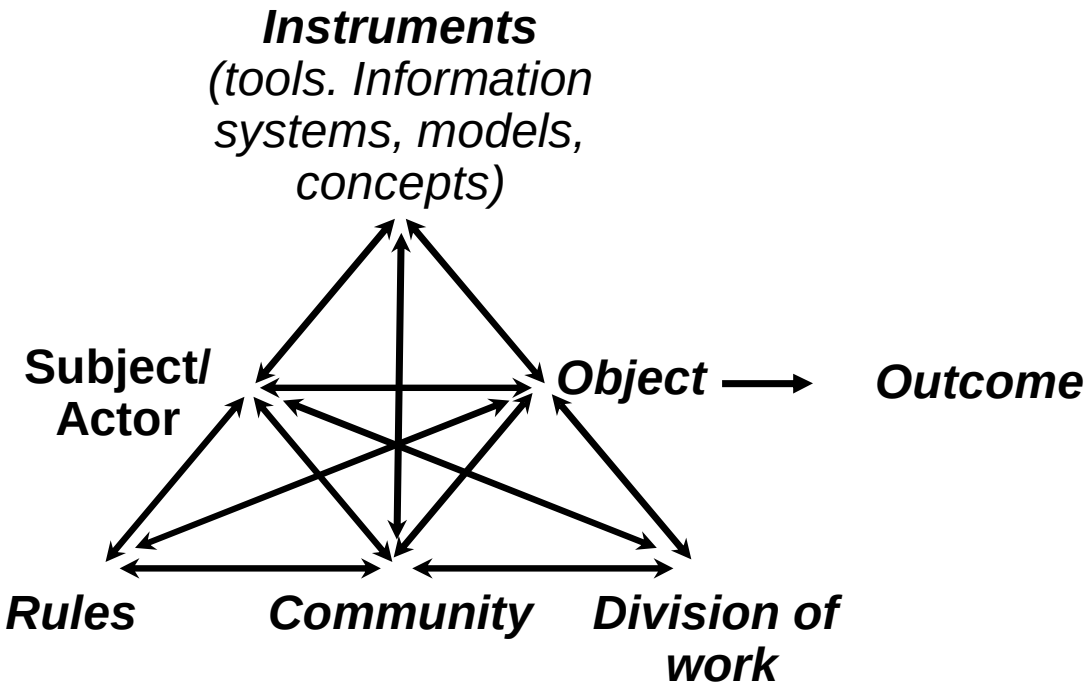
DWR principles

1. Historicity
2. **Unit of analysis**: work as a collective activity system
3. **Double stimulation**
4. Contradictions as central sources of change and development
5. Expansive learning (Engeström, 1987)

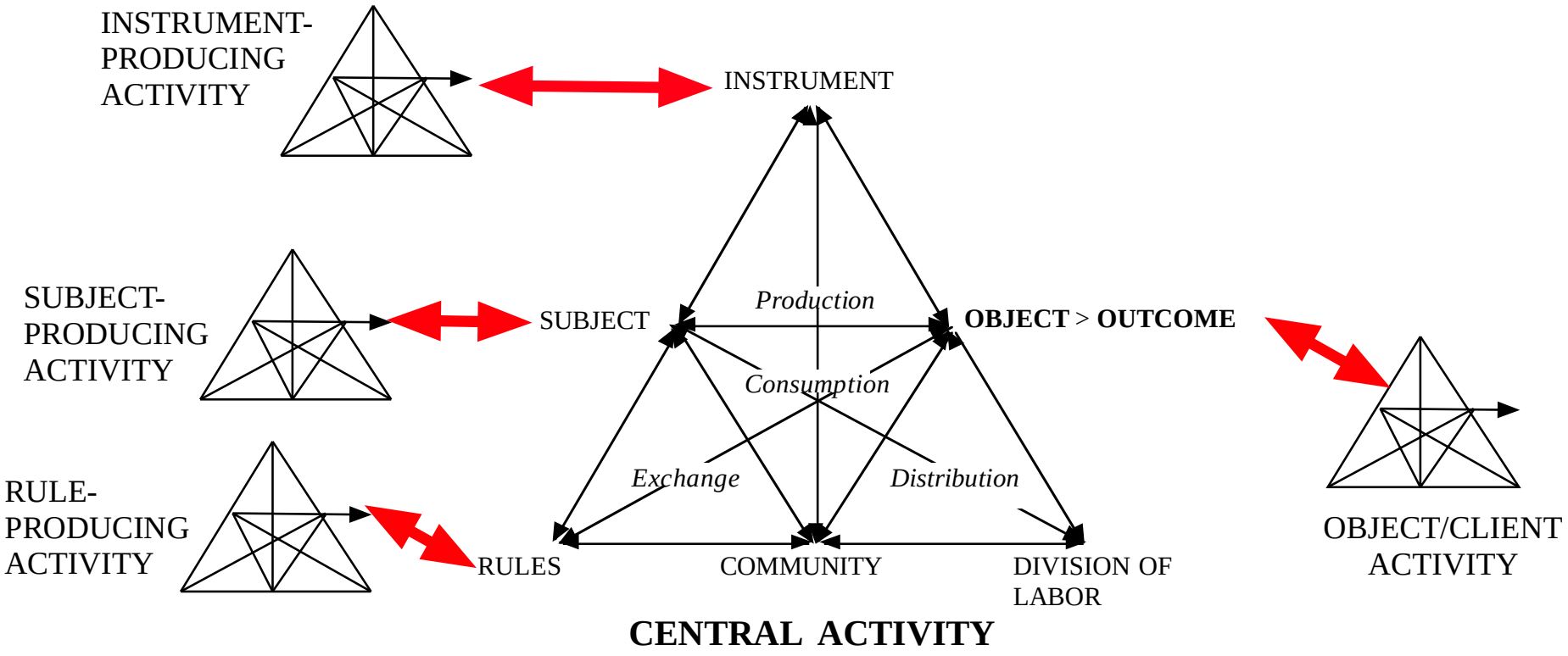
   Expansion refers to the phenomenon of exceeding the initially given context of specific problems and refocusing on the wider context that generates these problems

Unit of analysis: Work as activity system

(Engeström 1987)

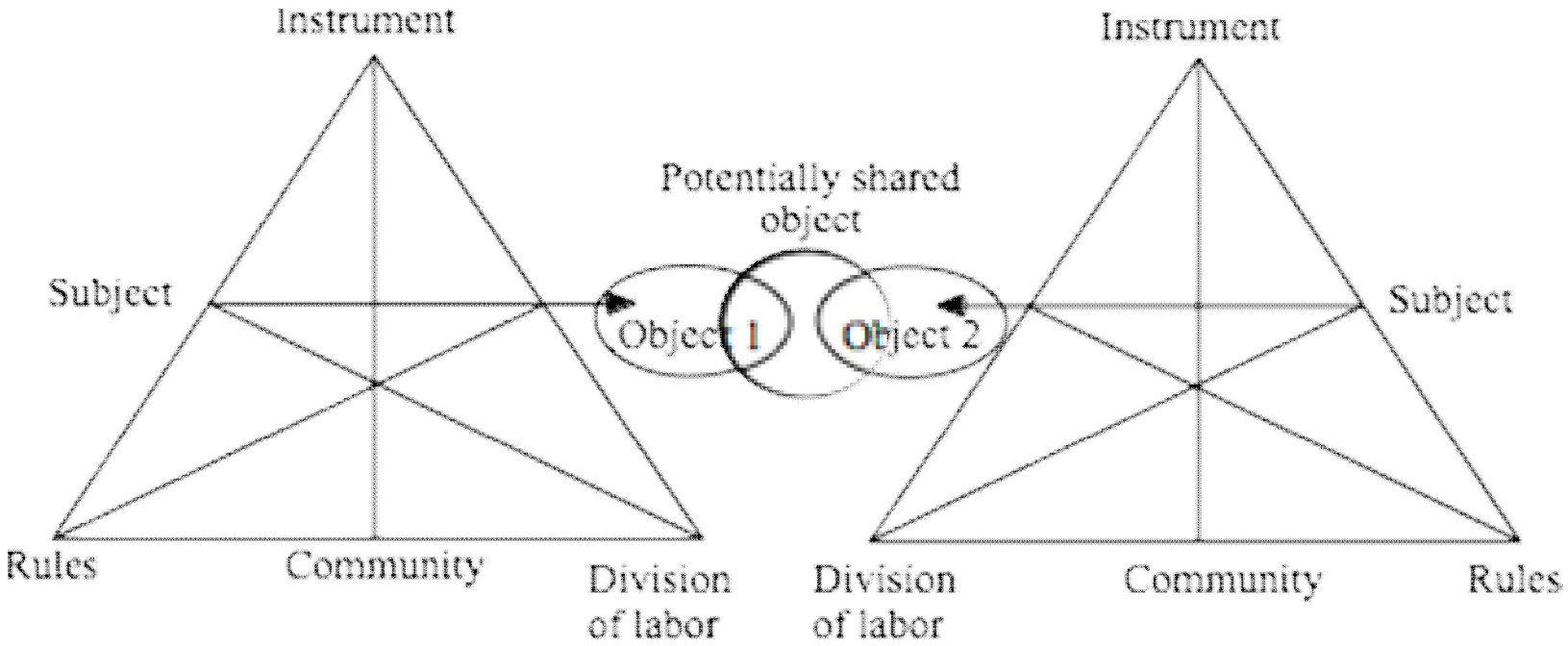


Functional relationship between central activity and another activity as the object of the intervention



(Virkkunen, 2015)

Two activity systems with a potentially shared object as the object of the intervention



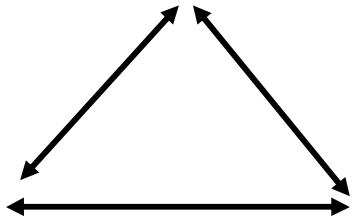
(Virkkunen, 2015)

Double stimulation (Vygotsky, 1978)

= Creating an external auxiliary means for mastering the object of the common work (Engeström, 2007)

Instrument: a second stimulus (given by researcher- facilitators)

Outcome: learning, potentially creating new



Subjects

Object: to analyse the work task in the first stimulus

Double stimulation in the Change Laboratory

First stimuli: ethnographic “mirror data” from the activity in which the CL is conducted (critical incidents, troubles and problems in the work) that brings the problems of the activity to the CL

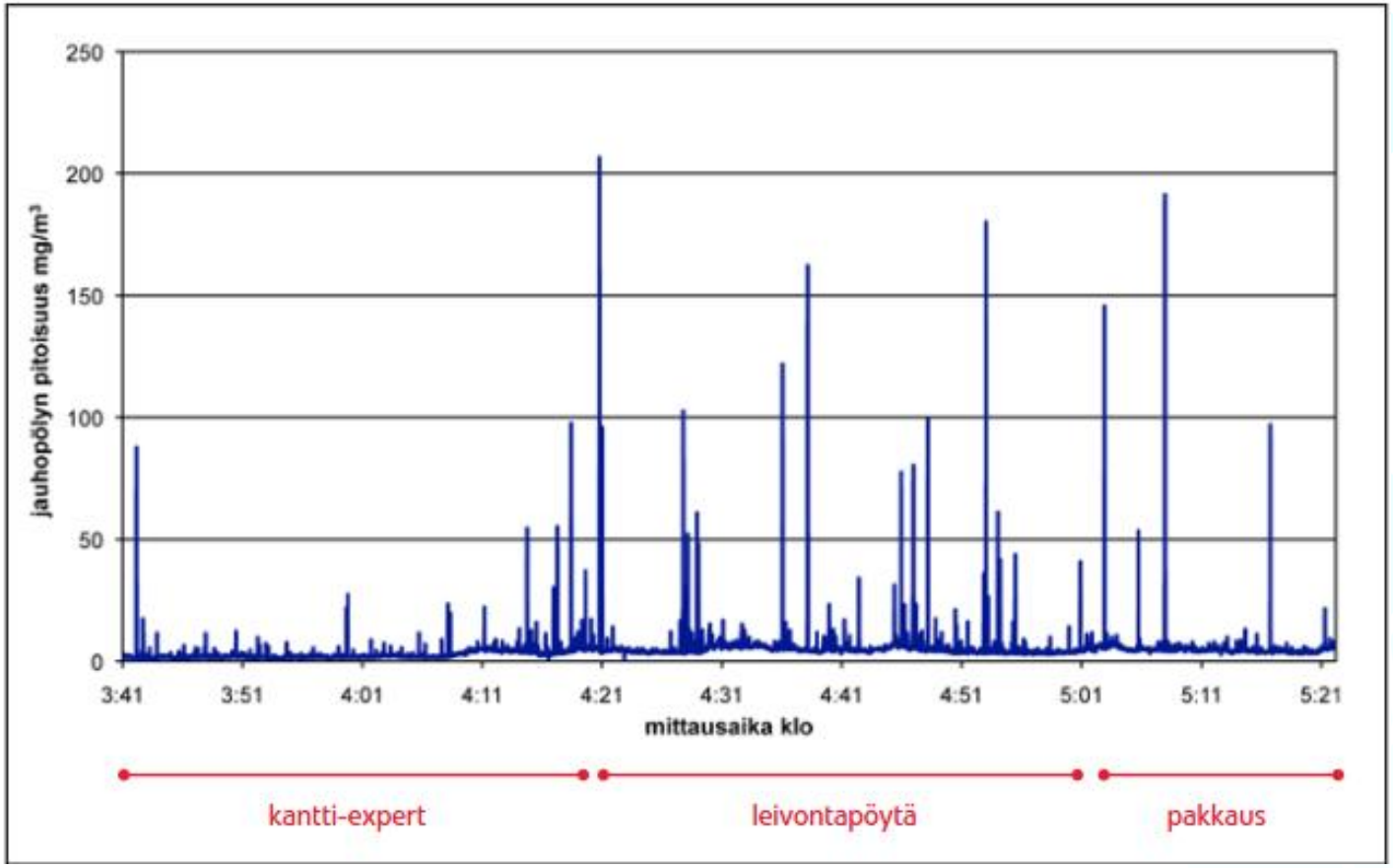
Second stimuli: conceptual tools such as the triangular model of activity system and models and conceptualizations specific to the activity in question including conceptualizations or models formulated by the participants

The CL is a chain of double-stimulation processes that leads to a new model of the activity as a second stimulus that helps the practitioners to renew it (Virkkunen, 2015)

Example 1 of a first stimulus

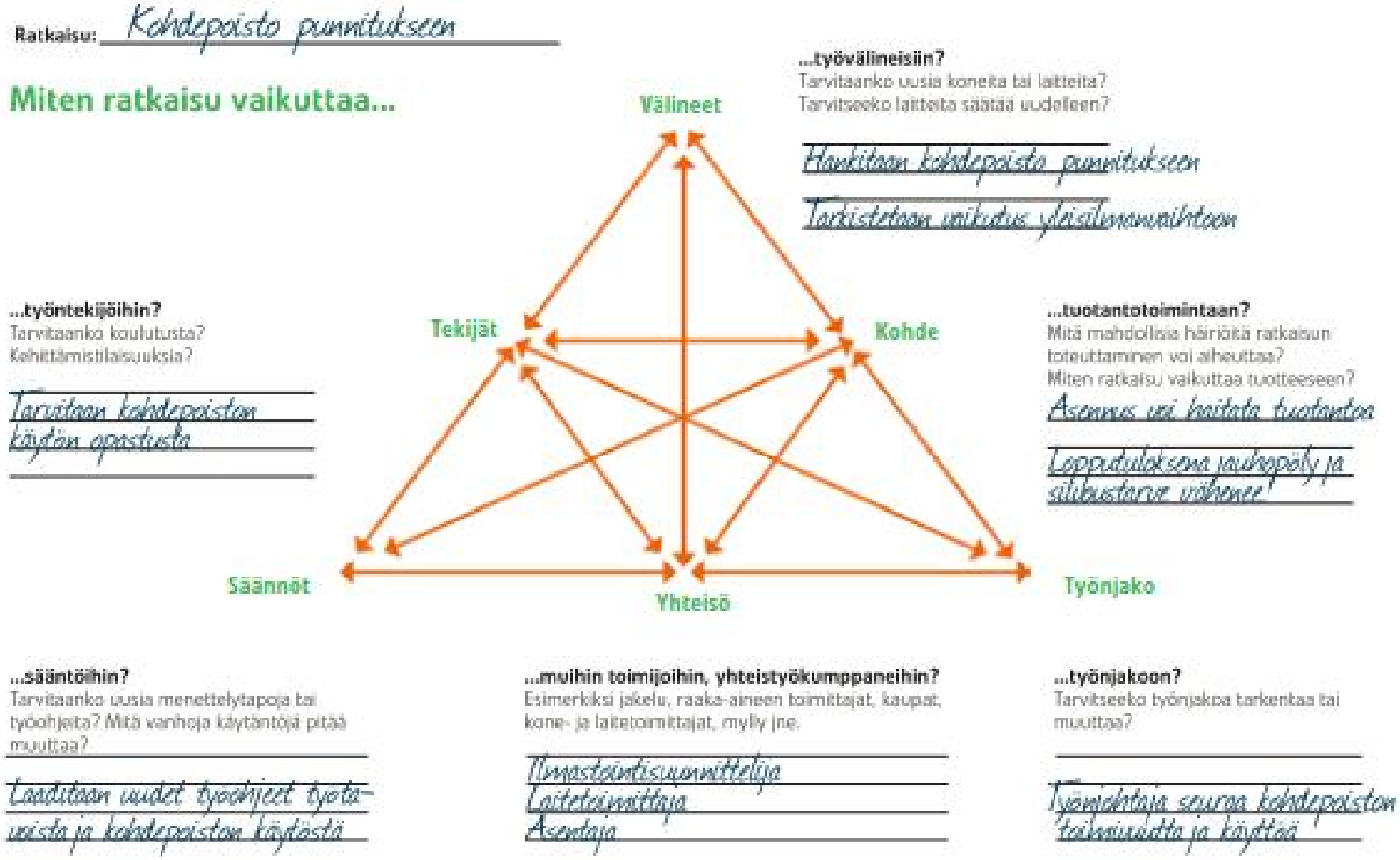
Garbage collection in Brazil, negotiation -
What are the risks?
What are The developmental possibilities?
(Coluci et al., 2016)

Example 2 of a first stimulus: flour dust measurement in bakeries



Säämänen et al, 2012

Example of a second stimulus: modelling and/or evaluating an experiment with the activity system (Säämänen et al., 2012)



Brazilian labour safety inspection activity: Example of a second stimulus

- Question in the intervention: What is the object of activity?
- Discussion: differentiating between fiscalisation of accidents, and vigilance of the workers' health
- A second stimulus brought in by the participants was a definition of vigilance: "Continuous and systematic acting to detect, research and analyse determining and conditioning factors of the work-related health problems... with the aim of planning and evaluation them, in the form of controlling and eliminating them" (Mendes et al., 2016)

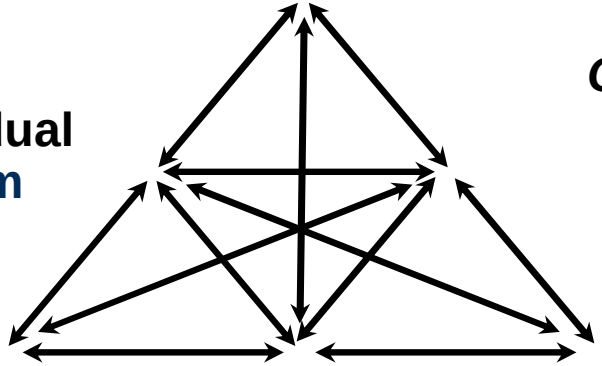
Brazilian labour safety inspection activity: Example 2 of double stimulation

- First stimulus = mirror data: historical data of the company accident cases
- Second stimulus: distinction between fiscalization and vigilance
- New understanding: When vigilance was more negotiated, the accident rates diminished little, but grave and fatal accidents diminished significantly. When only fiscalization, neither rate nor graveness of accidents reduced (Mendes et al., 2016)

The new concept of local labour inspection to be experimented with (Mendes et al, 2016)

New Instruments:
Team meetings
Negotiations

Old Subject: individual
New subject: team

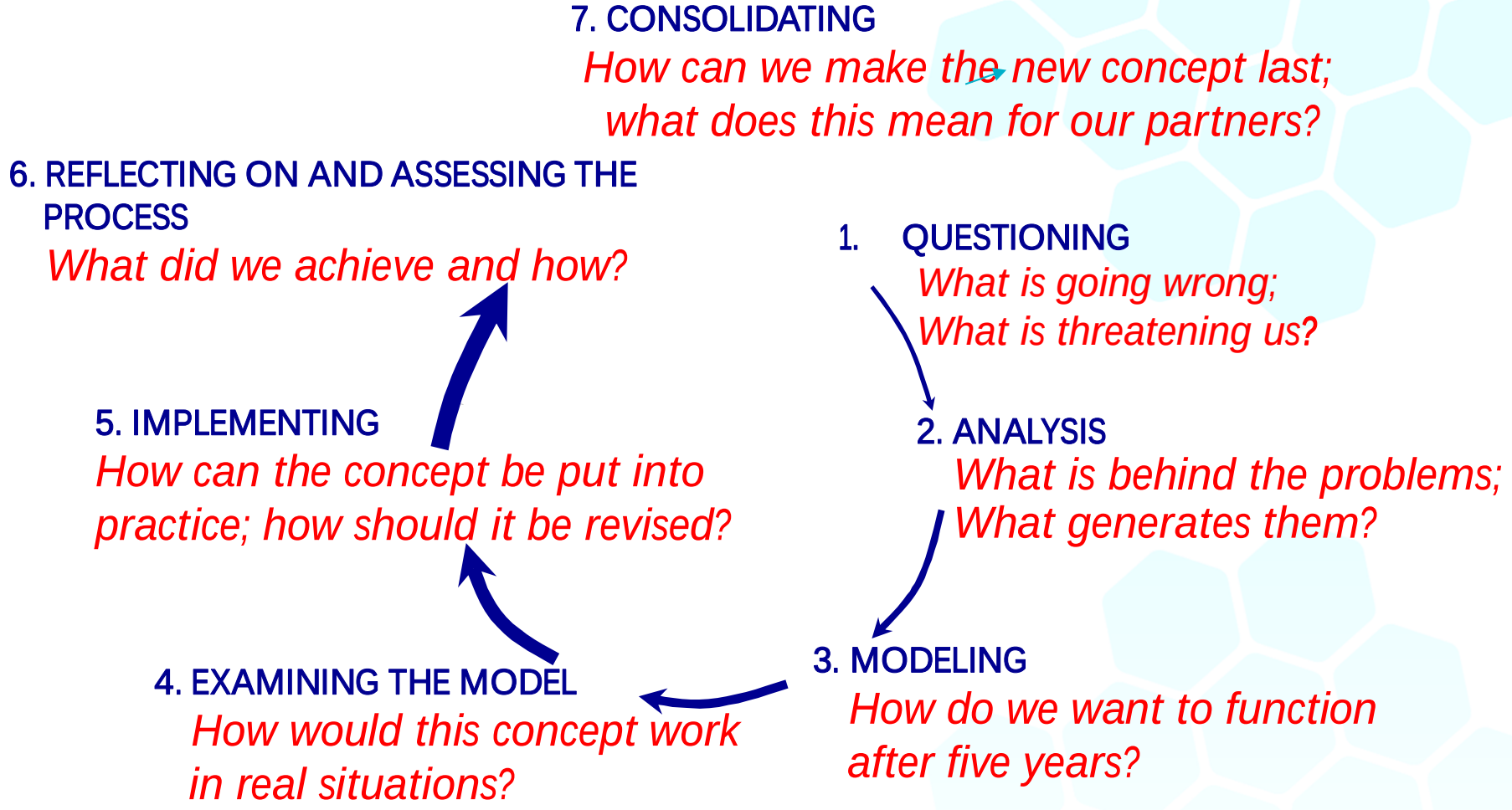


Community

Old Object: More fiscalisation
New object: More vigilance,
***search for* intervention in**
organisational determinants

Rules:
from denunciation
demands to planning,
consensus and
autonomy

New division of
Work:
Emergency actions,
Planned actions and
Information room



Engeström 1987, ref. in Virkkunen, 2015)

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SE1 Tämä on vakio lopetussivu

Smeds Ella; 1.7.2015