



Transdisciplinarity: New Mode of Research

Lecture

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ISOE – Institute for Social-Ecological Research, Frankfurt/Main

Summer School

Brilliant Minds for Social-Ecological Transformations

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Brilliant Minds
for Social-Ecological
Transformations



Outline

Transdisciplinarity: New Mode of Research

- What are we talking about?
- What makes the difference?
- How to conceptualize td research processes?



Mono-, multi-, inter-, trans- ...

Continuum between Disciplinarity and Transdisciplinarity

■ Monodisciplinary

- researchers from a single discipline work together to address a common problem



■ Multidisciplinary

- researchers from different disciplines work independently or sequentially, each from his or her own discipline-specific perspective, to address a common problem



■ Interdisciplinary

- researchers from different disciplines work jointly to address a common problem and although some integration of their diverse perspectives occurs, participants remain anchored in their own fields



■ Transdisciplinary

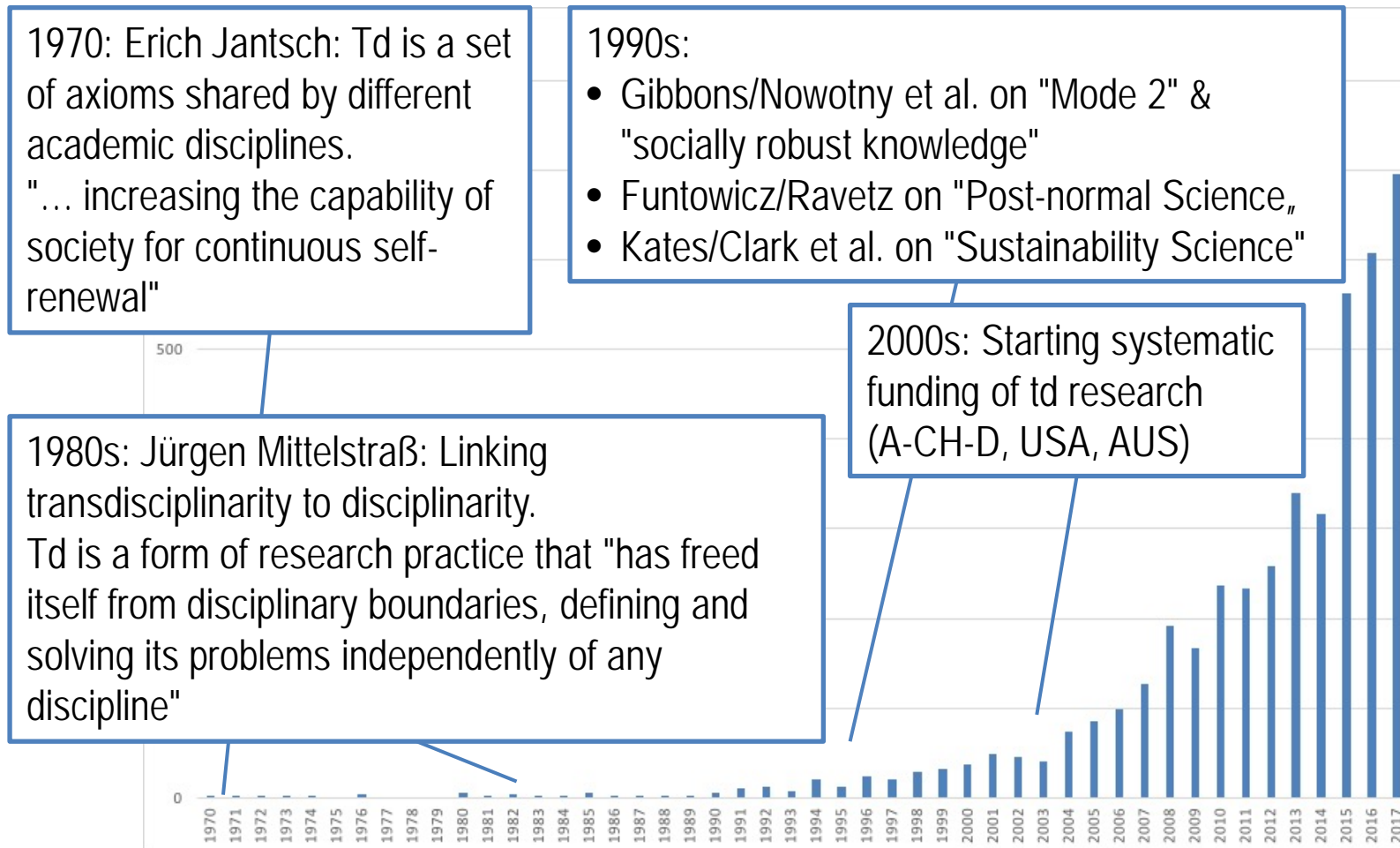
- researchers from different disciplines work jointly to create a shared conceptual framework that integrates and moves beyond discipline-specific theories, concepts, and approaches, to address a common problem





Transdisciplinarity (TD) – a growing topic

No. of publications per year that include “transdisciplinary*” in the topic



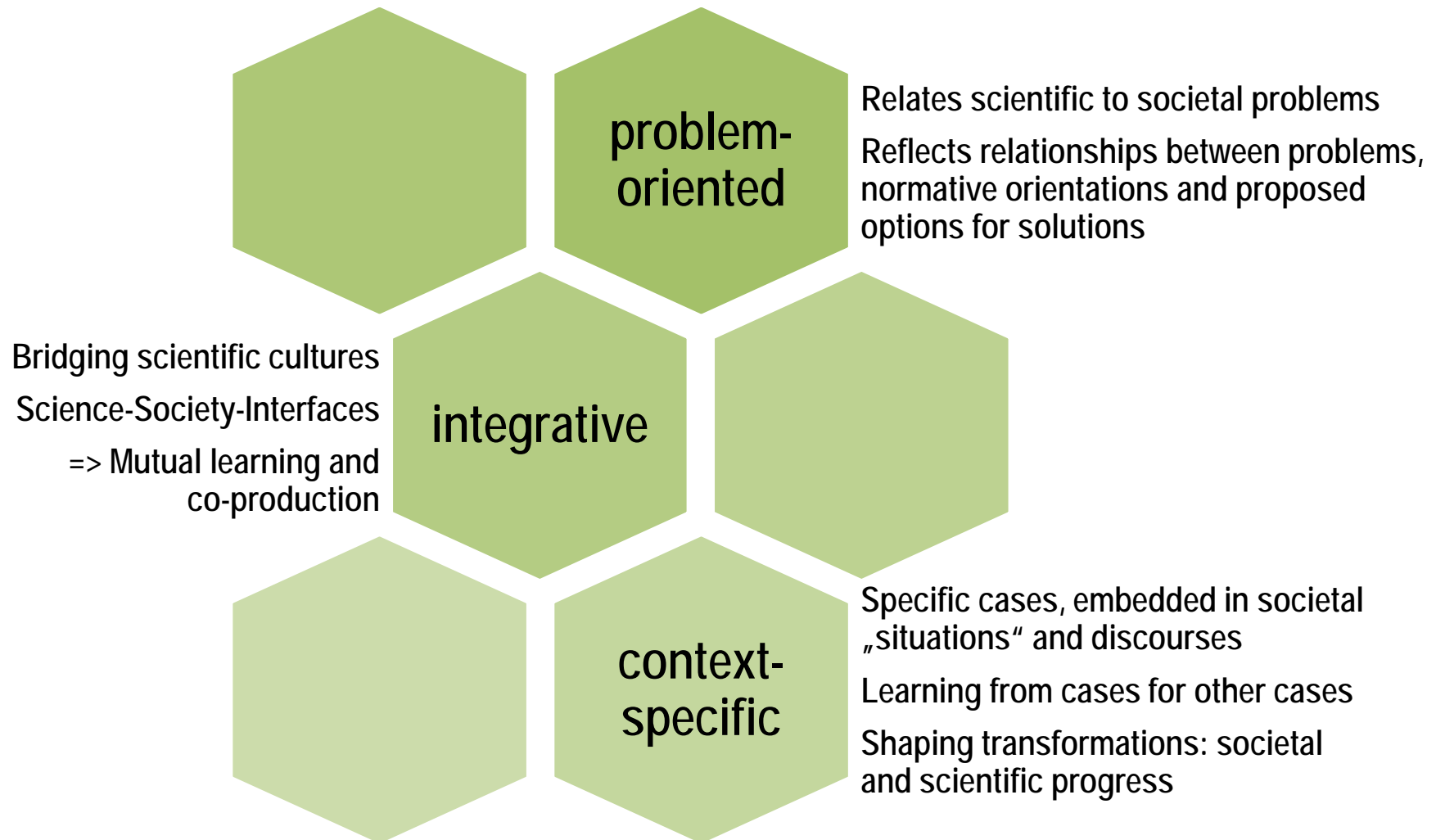


A Pattern of Transdisciplinarity

- “The co-ordination of all disciplines and interdisciplines in the education/innovation system on the basis of a generalized axiomatics ... and an emerging epistemological ... pattern.”
Jantsch (1972:16)
=> science serves a human purpose; multi-level & -goal system
- “‘[T]ransdisciplinarity’ is used for research that addresses the knowledge demands for societal problem solving regarding complex societal concerns.” *Hirsch Hadorn et al. (2006:122)*
=> understanding complex problems & change practices
- “Transdisciplinarity is a critical and self-reflexive research approach that relates societal with scientific problems; it produces new knowledge by integrating different scientific and extra-scientific insights.” *Jahn et al. (2012: 8f.)*
=> process oriented approach; methods of integration



Common Grounds for Transdisciplinarity



Any questions?

Transdisciplinarity – what are we talking about?

- **Over the last decades, several understandings of transdisciplinarity evolved.**
- **Common background is a critical view on the scientific system and on the societal challenges ahead.**
- **Integration is the main issue of td research.**

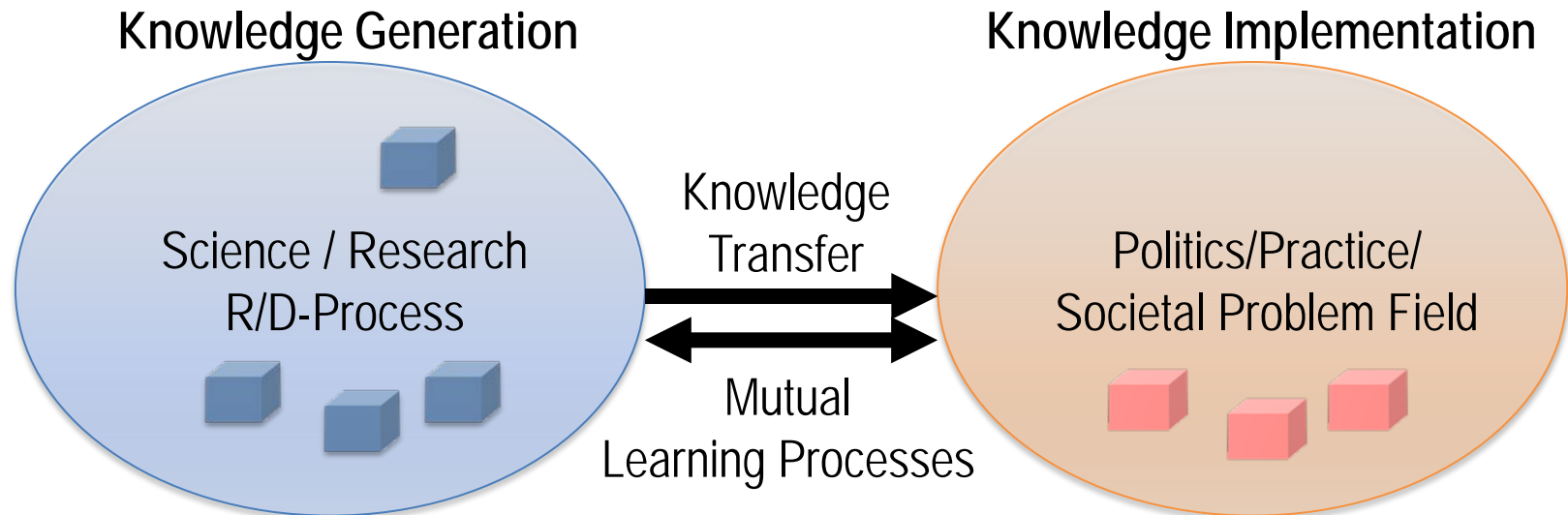


Outline

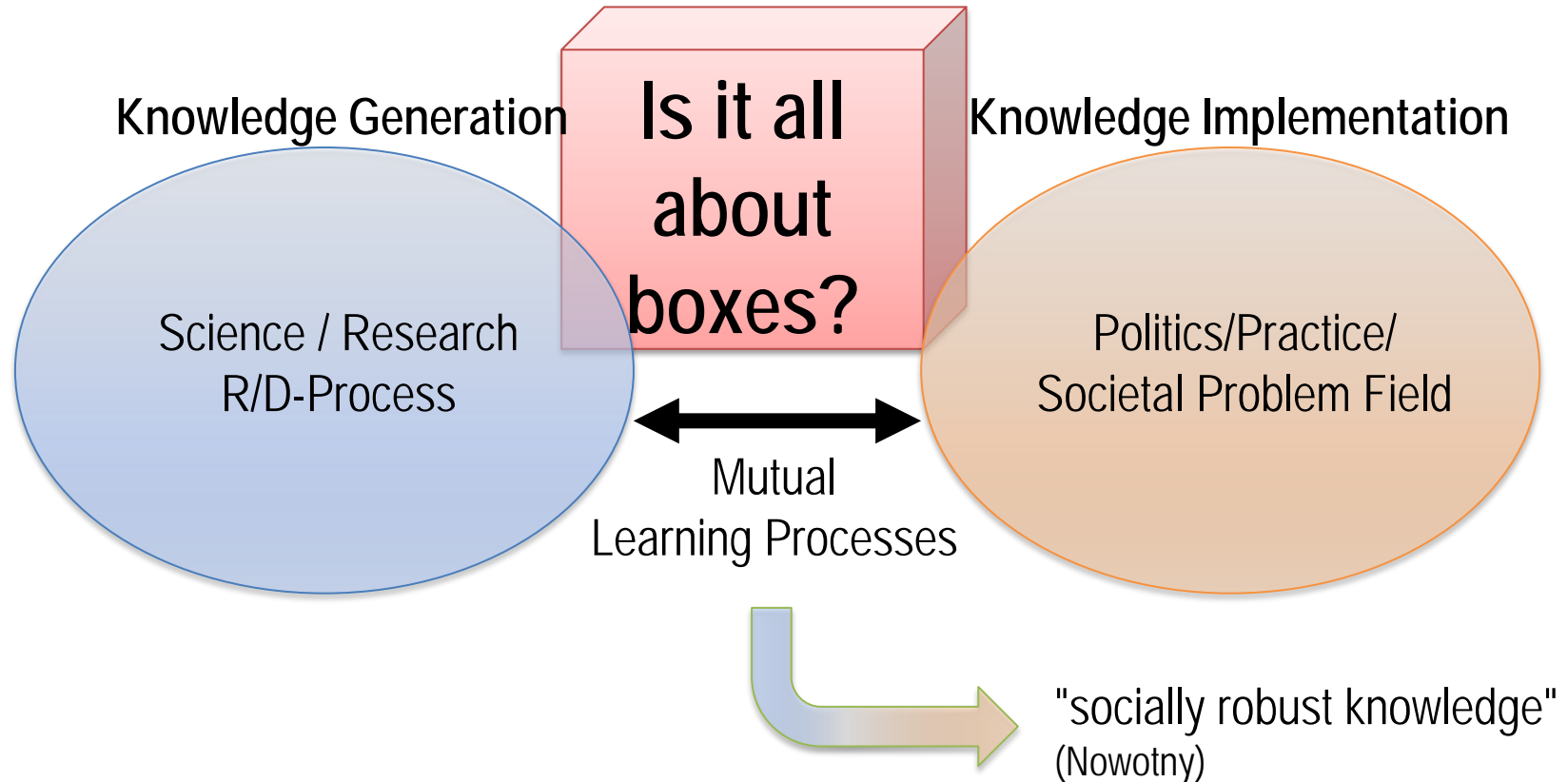
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Why Transdisciplinarity? From Knowledge Transfer to Mutual Learning



... to Joint Knowledge Production

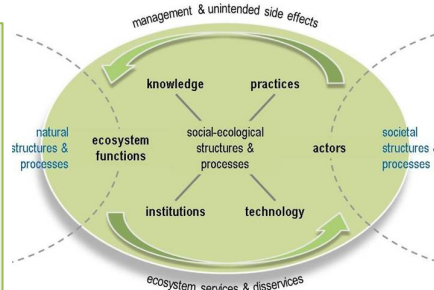
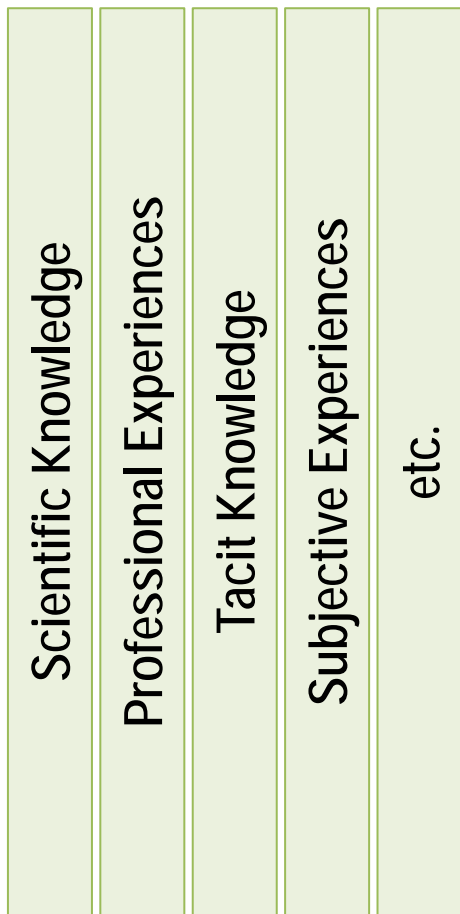


„[We] have to rethink the place of people in the knowledge produced by the sciences“ (Nowotny 1999).



What *knowledge* are we speaking about?

Excursus: Sources and Types of Knowledge

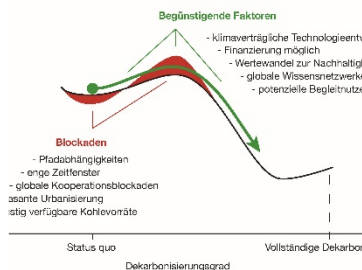


Systems Knowledge

- genesis and possible further development of a problem
- interpretations of the problem in science and in society

Orientation Knowledge

- determining and explaining the need for change
- desired goals and better practices



Transformation Knowledge

- technical, social, legal, cultural and other possible means of acting that aim to transform existing practices and introduce desired ones



Any questions?

Transdisciplinarity – What makes the difference?

- **Transdisciplinarity starts, where complex problems occur:
Neither a single discipline nor a single actor is able to cope with.**
- **The recognition of different knowledge systems is essential
– and acknowledging that there is no clear hierarchy, but that
there are different types.**
- **Joint efforts in knowledge production facilitate robust knowledge.**



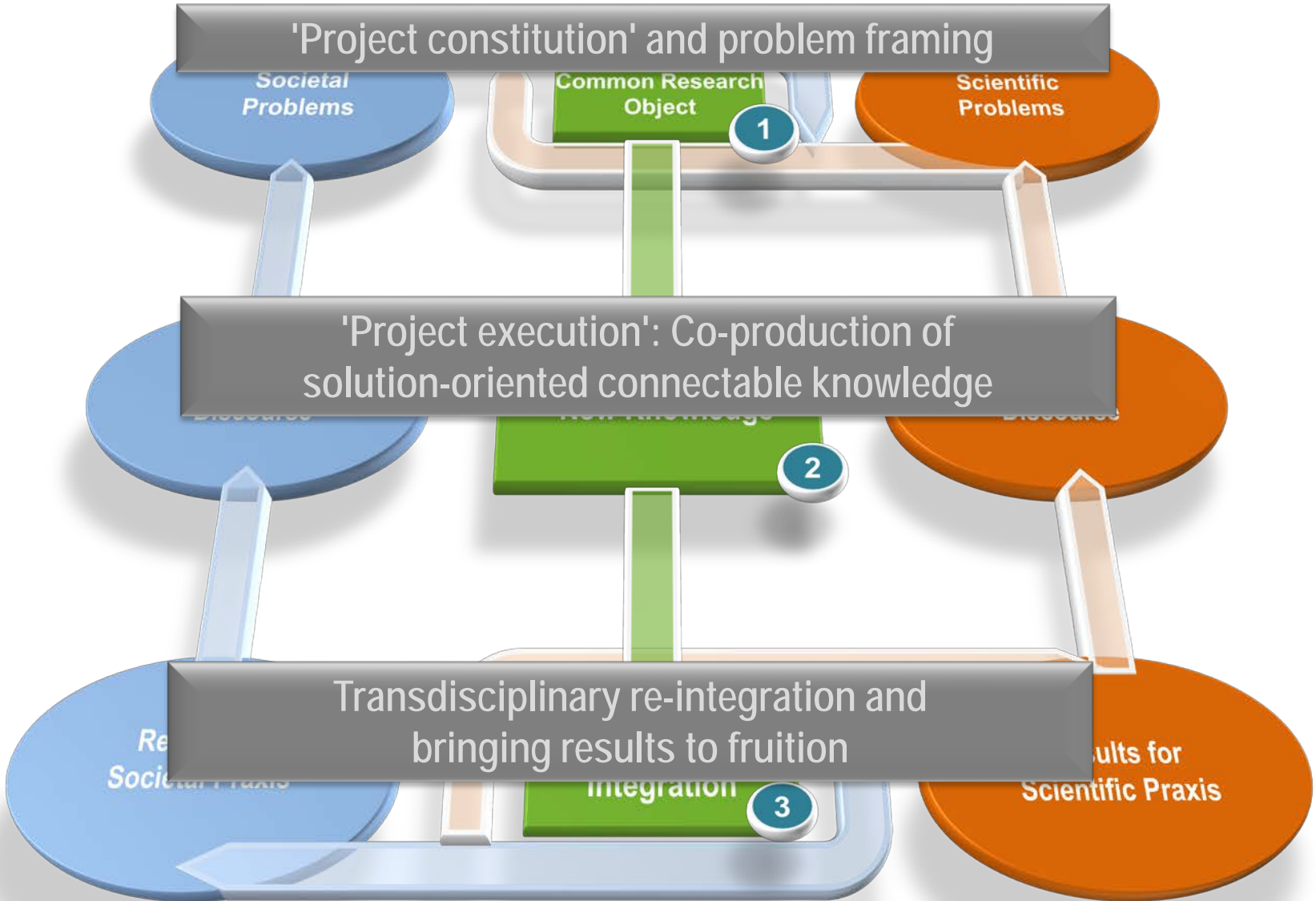
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The reflexive research process



(Jahn/Bergmann/Keil 2012:5; modified)



Phase 1: Common research object

Real-world problems
Contested values, lack of orientation & transformation knowledge, institutional specialisation, limits to knowledge transfer...

Societal Problems

Common Research Object

1

Scientific Problems

Scientific issues
Contested knowledge, lack of (system) knowledge and methods, disciplinary specialisation, aim of generalization and transferability

Constitution and problem framing

Building a research team: identifying expertise needed and **distinguishing between specific contributions**

Common description of the **societal problem**

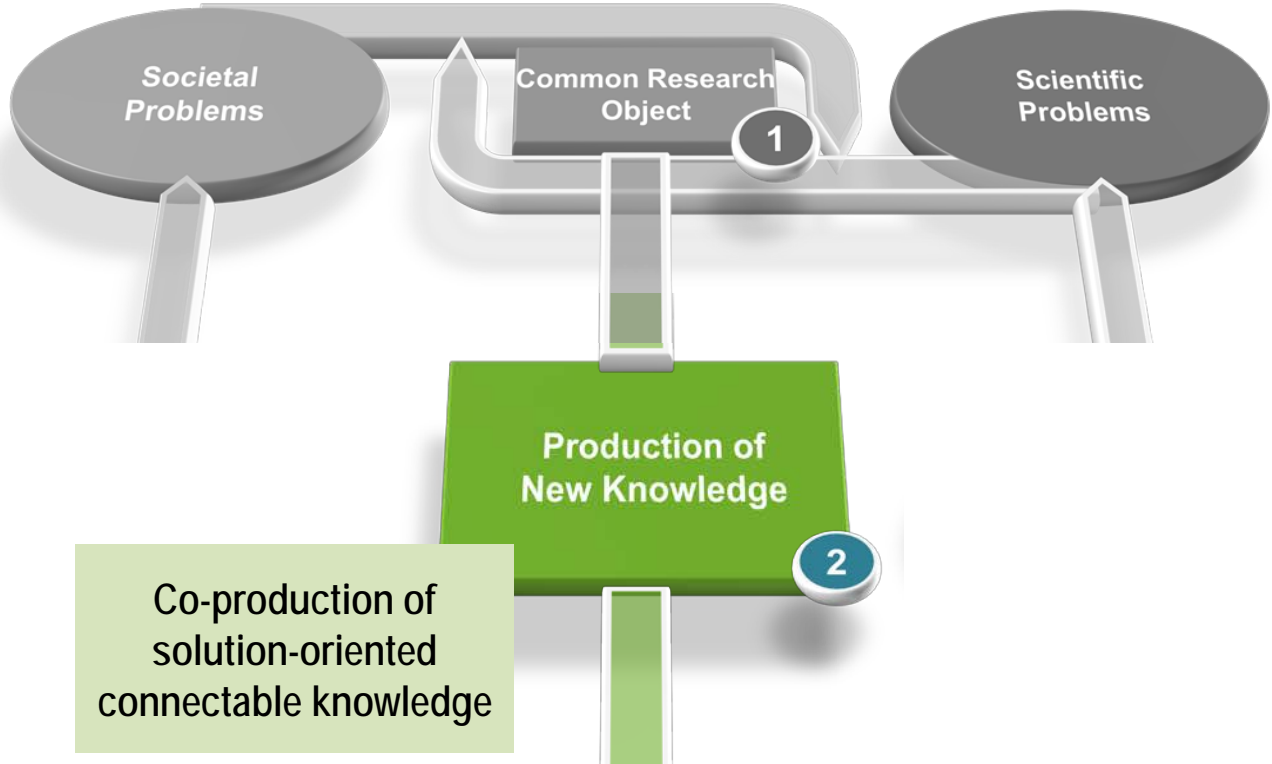
Formulation of a common **transdisciplinary research object (epistemic object)**

Common formulation of **research questions (aiming at connectibility)**

Project design and integration strategy



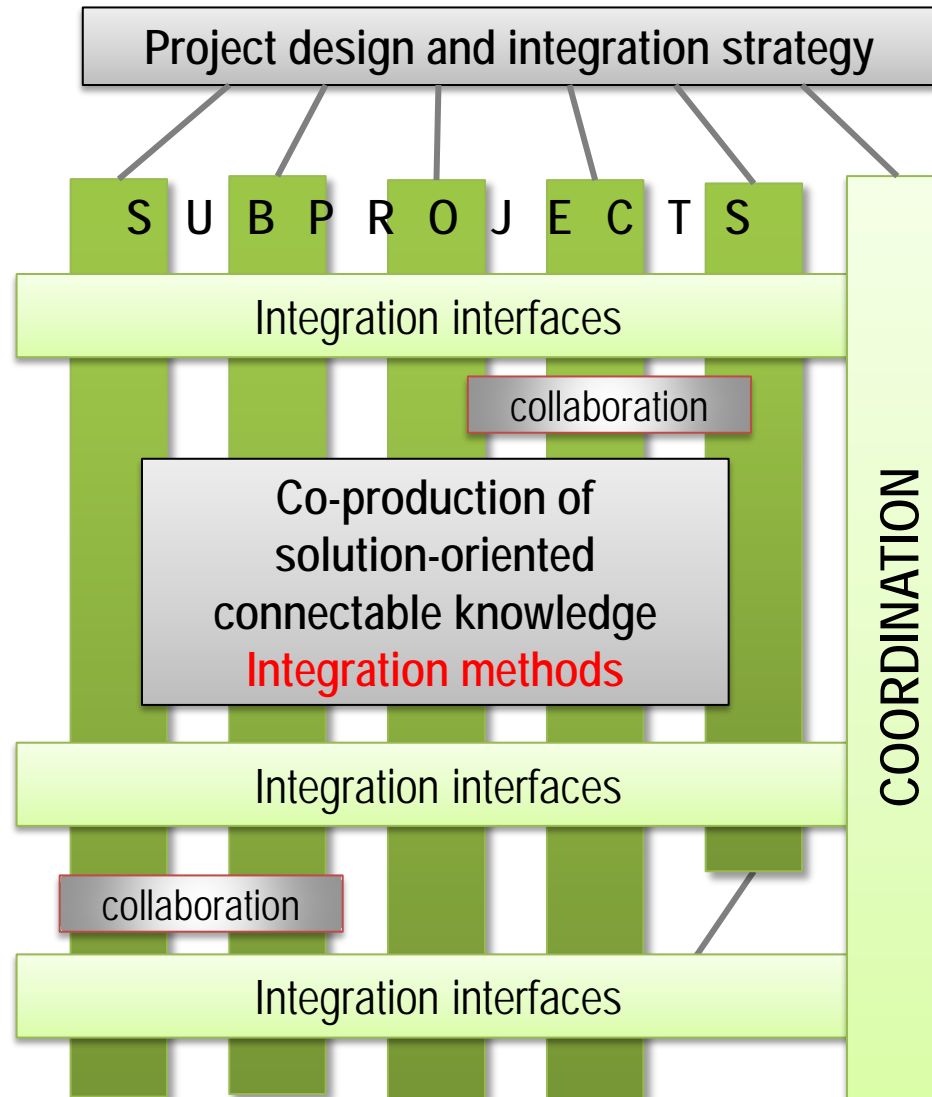
Phase 2: Production of new knowledge (1)



(Jahn/Bergmann/Keil 2012:5; modified)



Phase 2: Production of new knowledge (2)





Excursus: Tasks of Integration in Td Research

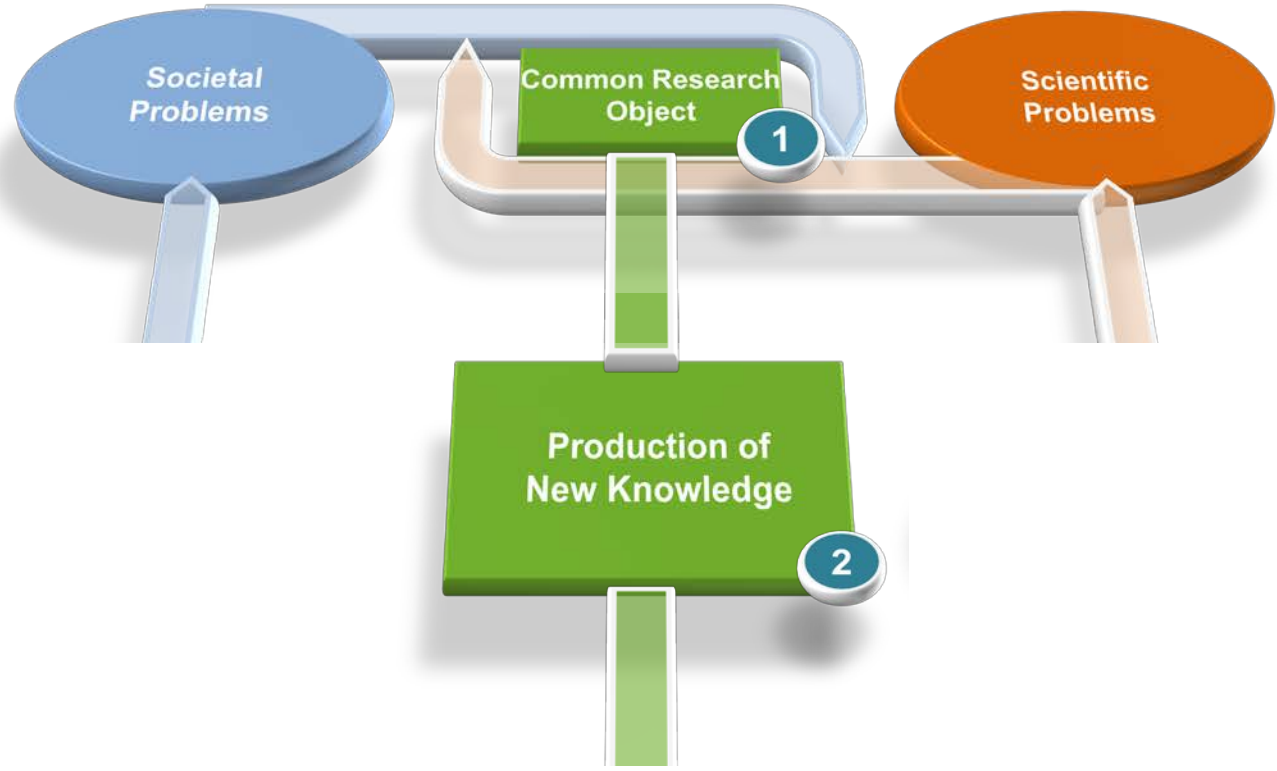
- Cognitive-epistemic dimension
 - Linkage of different knowledge bases

- Social and organizational dimension
 - Creating common grounds for collaboration of researchers and experts with their (differing) interests and activities

- Communicative dimension
 - Develop a shared understanding and common discursive practice



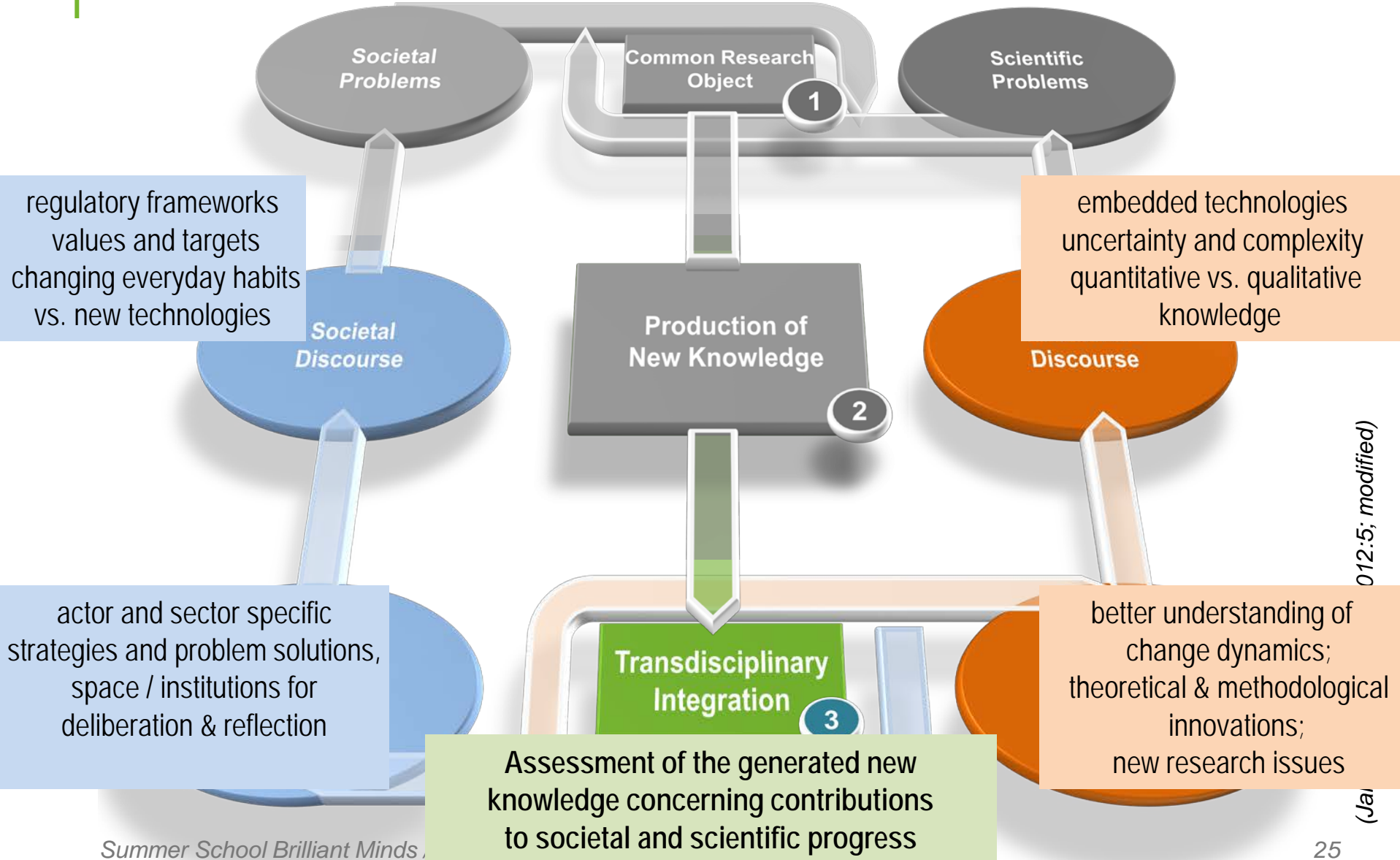
Phase 2: Production of new knowledge



(Jahn/Bergmann/Keil 2012:5; modified)



Phase 3: Transdisciplinary Integration



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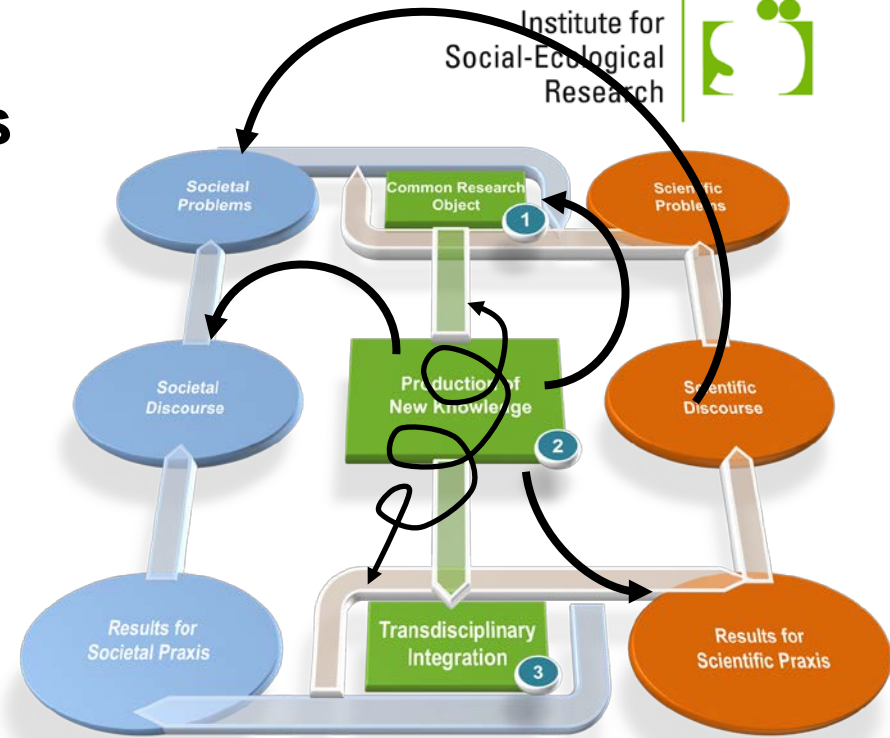
(Ja)



Is this model applicable?

– Some personal experiences

- The model facilitates a process-based understanding of TD and helps to establish projects.
- Projects' reality is not so linear as the model implies!

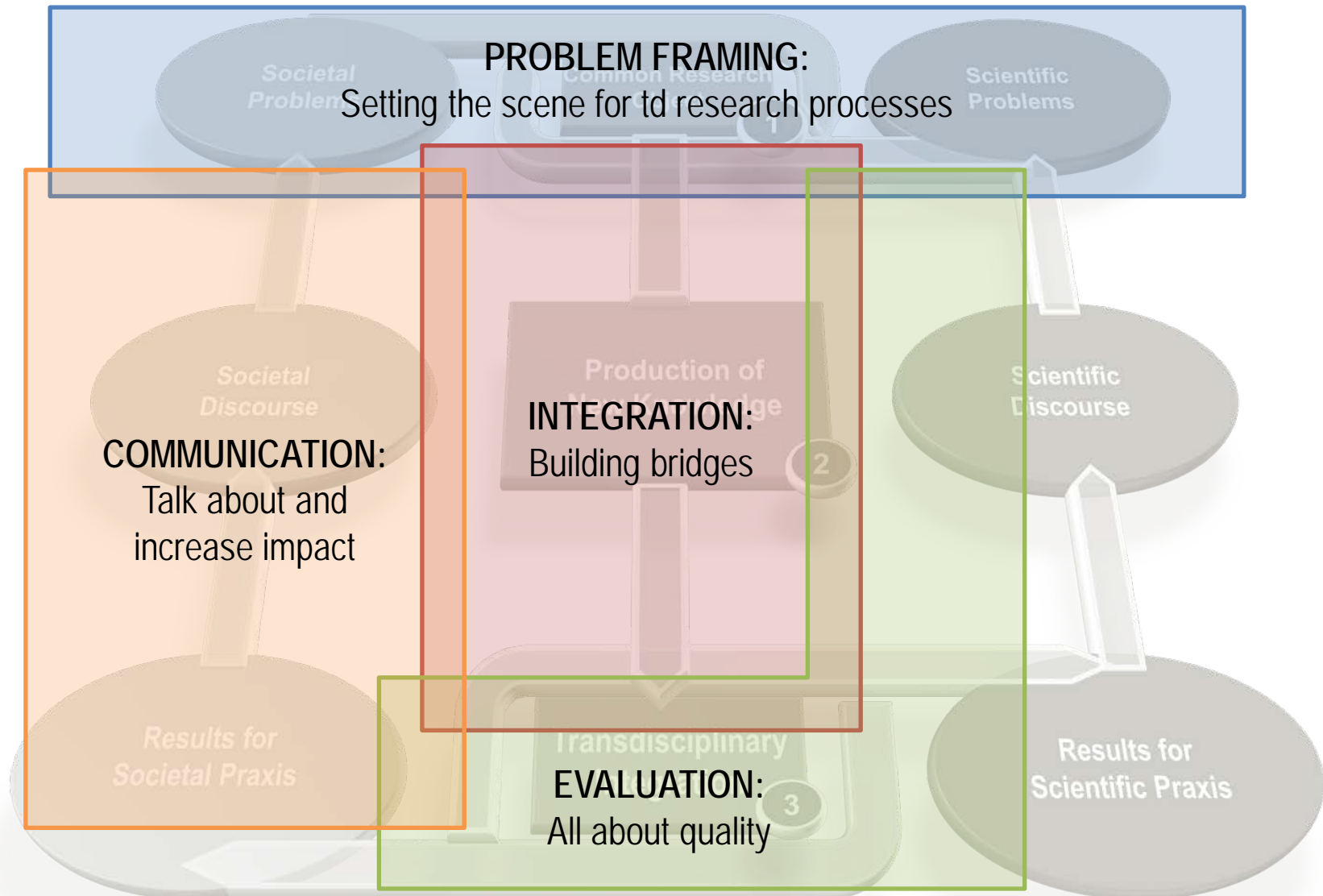


Main challenges are reflexivity and iteration:

- Awareness for changes in the problem field, dynamics in the team and in stakeholders' perceptions
- Adaptivity of planned processes and methods as well as of expected results and products
- Communication against the background of different languages, mind-sets, concepts and aims.



Topics of the Summer School





Any questions?

How to conceptualize transdisciplinary research processes?

- **Project design should facilitate integration and participation and it should allow a journey from problems to options for solutions.**
- **Analytical disaggregation of the process helps to consider reflexive loops and iteration – in short: being adaptive.**
- **Try it! *Brilliant minds* should be a training room.**

Thank you for being here!

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