HC Andersen Castle, 11.30-12.45

Interdisciplinary Research

David Skorton (chair)
Maral Mahdad
Rolf Hvidtfeldt

Interdisciplinary Research

David Skorton

Secretary (CEO), Smithsonian Institution, Washington D.C.

Interdisciplinary Research

Maral Mahdad

Postdoctoral Fellow of
Innovation Management at the
University of Copenhagen, Denmark

AESIS

NETWORK FOR
ADVANCING & EVALUATING THE SOCIETAL IMPACT OF SCIENCE

UNIVERSITY OF
COPENHAGEN

How to increase societal impact through collaboration of SSH with non-SSH disciplines?

Maral Mahdad

Department of Food and Resource Economics, Faculty of Science,
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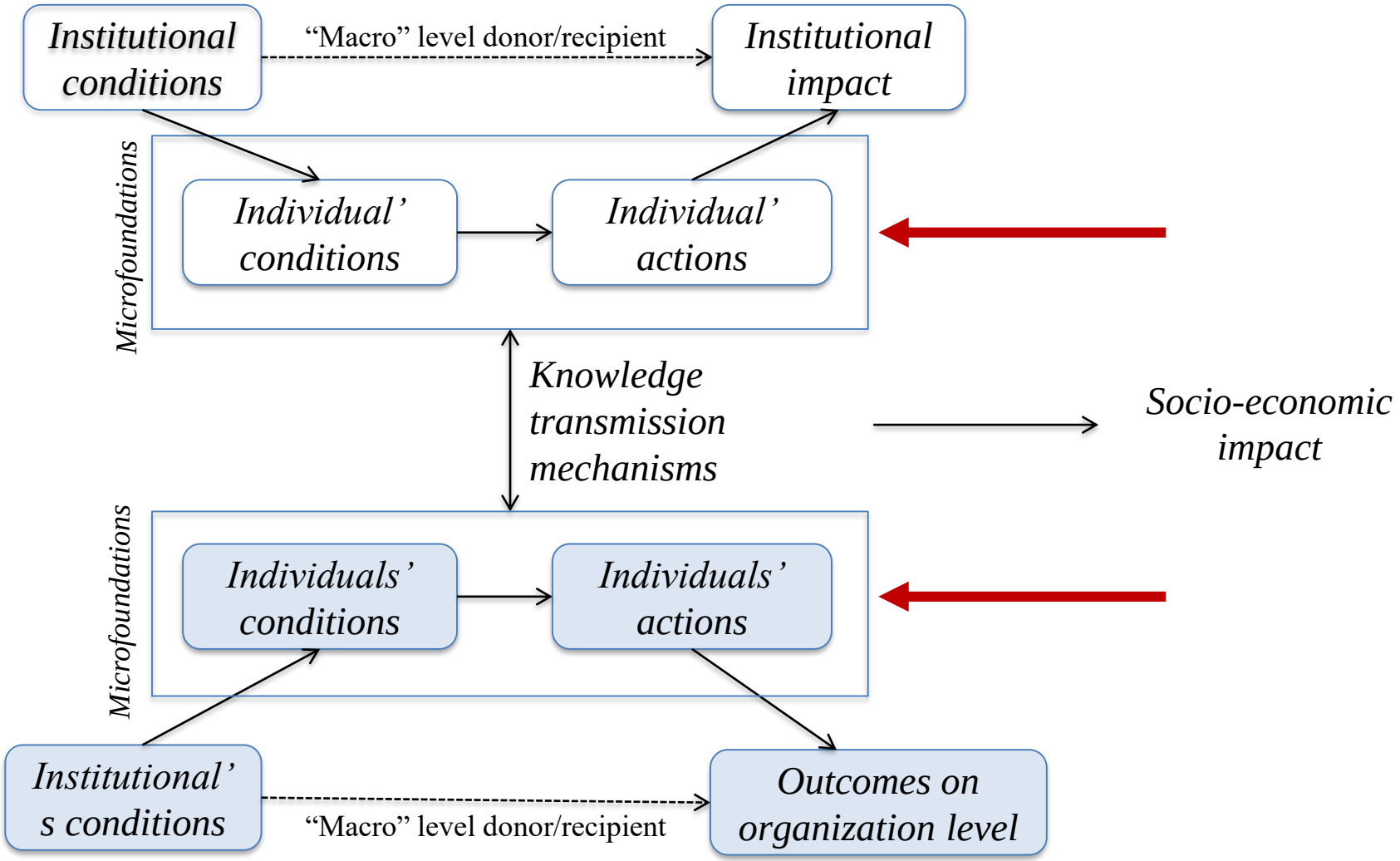
- Interdisciplinary research projects consistently experience lower success rates on applications for funding than monodisciplinary research projects (Bromham et al. 2016).
- Even though, researchers engaged in higher degrees of interdisciplinary work tend to be more cited but they are less productive (Leahey et al. 2016).
- And publications resulting from interdisciplinary research take longer than other type of scientific publications (Wang et al. 2016).

And why it must become meaningful and What are the keys to meaningful interdisciplinary research? (Think Tank DEA report, 2017)

- *"Match the challenge with the team, and the team with the challenge*
- *Focus on establishing temporary teams*
- *Find the "right" level of interdisciplinary for a given collaboration*.
- *Build engagement with users and other stakeholders into the collaboration from the beginning"*

Research perspective



Source: Adapted from Coleman (1990); Felin, Foss & Polyhart (2015)

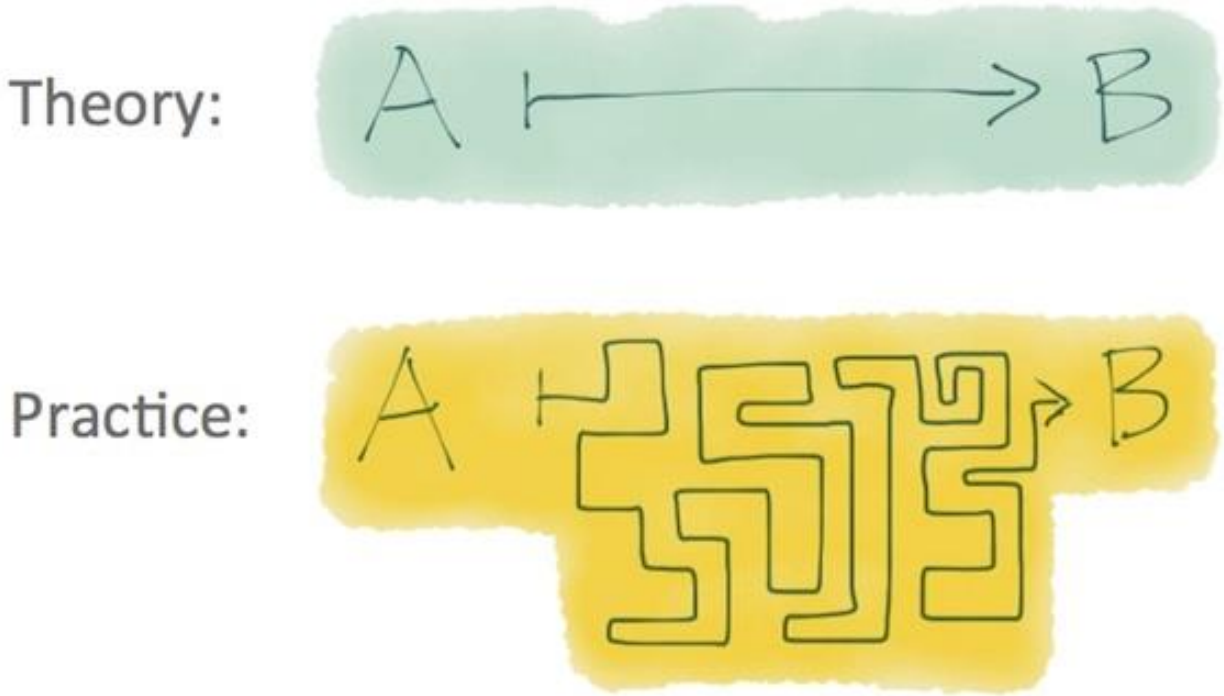
When TIM started to practice collaborative research

- 8 collaborative laboratories
- 20-25 staff (Engineering, medical and health science, and social science)

Semantic-big data	Health technology	Smart solutions	Robotic apps	IoT	Augmented reality, visual research	Mobile services social scene	Wireless apps

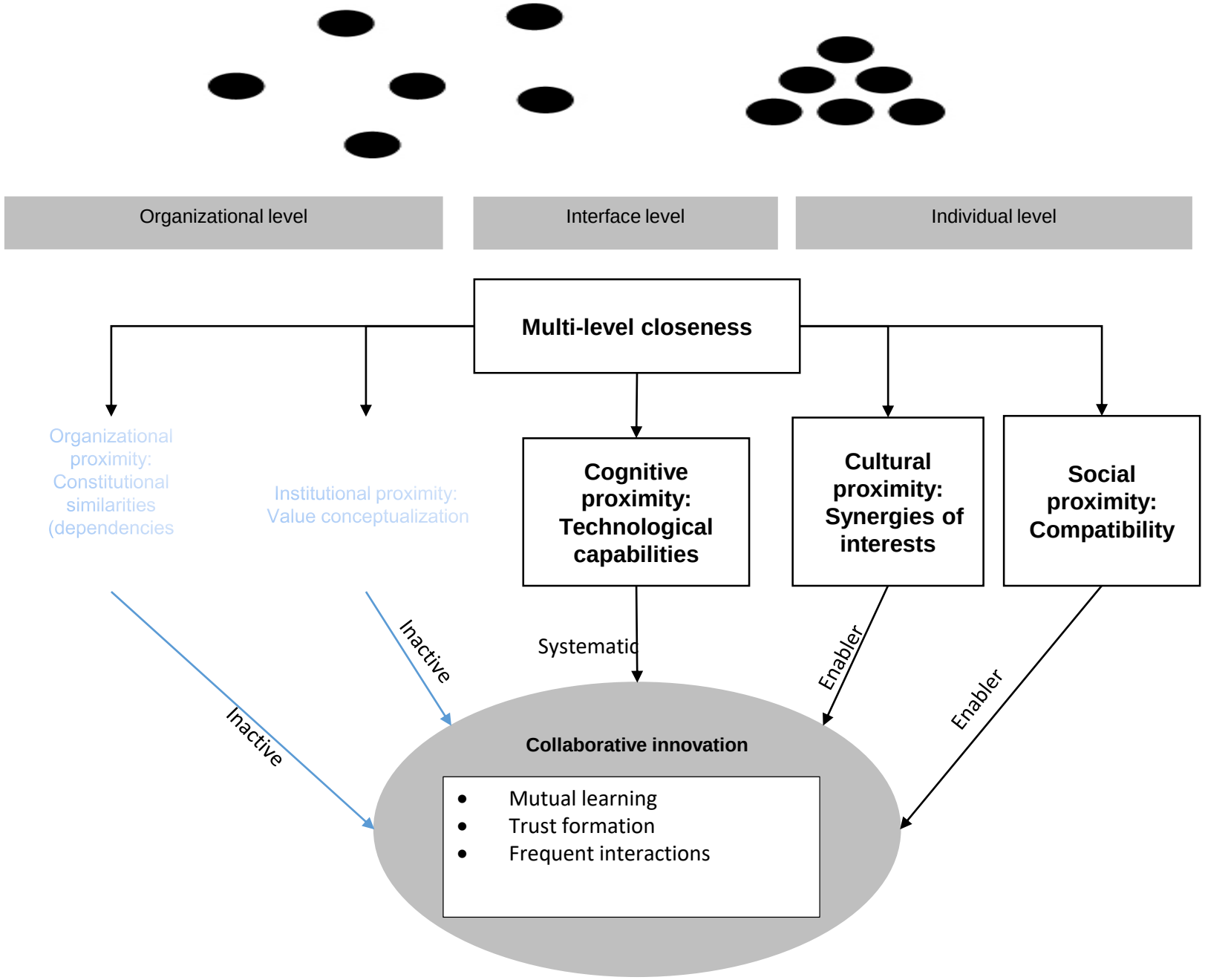
Interviews
3-4 days observation based data collection

TIM



If distance plays a role? Proximity

If leadership of these teams are different form leadership of mono-disciplinary teams? Leadership


Organizational level
Interface level
Individual level
Multi-level closeness
Organizational proximity: Constitutional similarities (dependencies
Institutional proximity: Value conceptualization
Cognitive proximity: Technological capabilities
Cultural proximity: Synergies of interests
Social proximity: Compatibility
Inactive
Inactive
Systematic
Enabler
Enabler
Collaborative innovation
Mutual learning
Trust formation
Frequent interactions

Individual level

Collective level

Sensemaking

- Identity building
- To help interpret different languages
- Ability of decision-making
- Dynamic hindsight
-Reflection on diversity

Charismatic leadership

- Effective communication
- Vision and mission
- Trust building process
- Constant impact

Distributed leadership

- Collective decision-making
- Responsibility delegation
- Dynamic learning culture

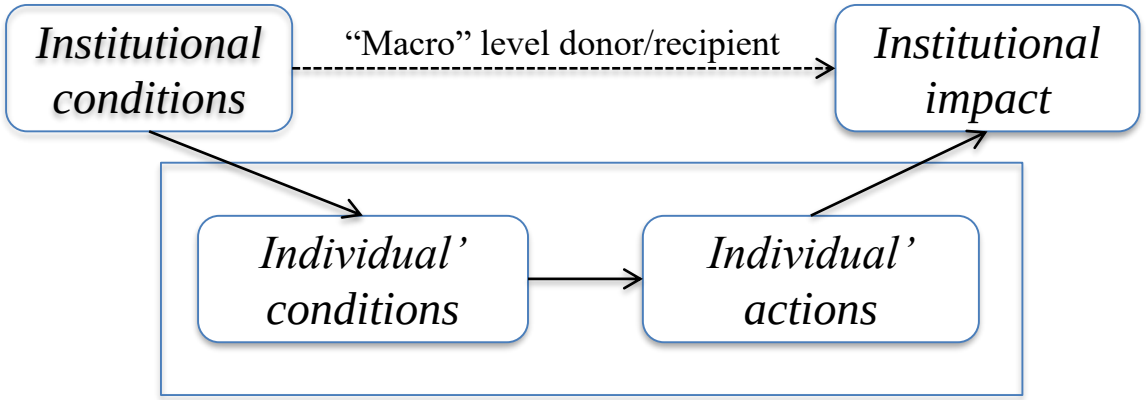
Sensegiving

- Setting up formal/informal meetings
- Planning and consistent action
- Teambuilding and feedback sessions

Contributions of the study to non-SSH teams (interdisciplinary teams as a context)

Organizational readiness matters! (organizational capabilities and NIH)

Micro-dynamics



The importance of behavioral aspects of individuals and emphasize on human recourse!

Current research streams

INTERACT:

INvesTigating thE micRofoundAtions of socioeconomic impaCt of universiTy-industry relations

What are the he microfoundations that underlie the transmission of knowledge from university to industry and that will ultimately lead to socioeconomic impact?

Maral Mahdad, **Marcel Bogers**, Karin Beukel, Elena Tavella, Maria Theresa Norn,Toke Reinholt Fosgaard, Gergana Romanova, Sunny Mosangzi Xu

UNIVERSITY OF COPENHAGEN

novo nordisk fonden

MOIS:

Micro-foundations of interdisciplinary research collaboration

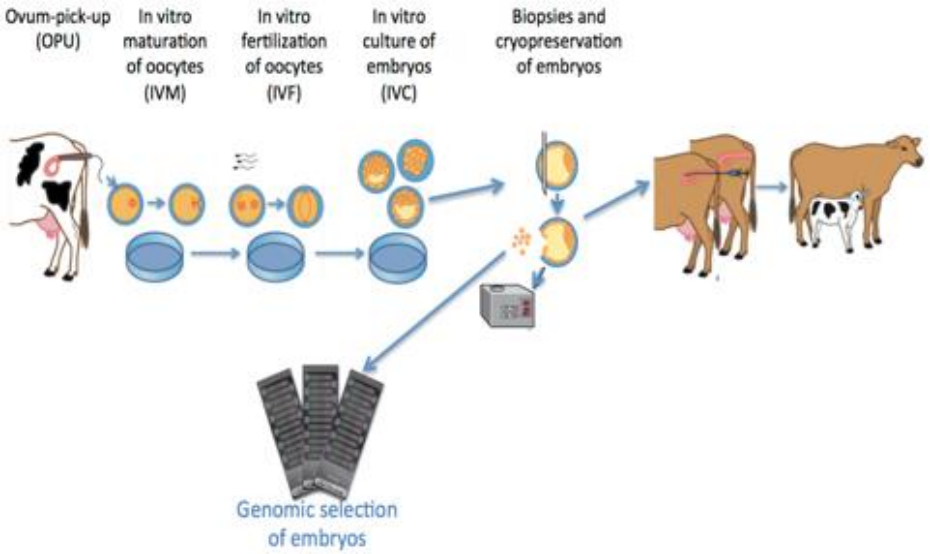
How do individual-level factors influence process and outcome of open and interdisciplinary scientific collaborations?

Susanne Beck, **Marion Poetz**, Agnes Effert, Maral Mahdad, Alexander Ruser, Maria Theresa Norn

Ludwig Boltzmann Gesellschaft GmbH

LBG OPEN INNOVATION IN SCIENCE CENTER

Example 1: EliteOva research team



Now it is possible to select the best calves long before they are born. It serves to put turbo on the Danish breeding of dairy cows, improving the competitiveness of Danish dairy producers. At the same time, the project will contribute positively to preventing climate change, as it will also be possible to select for cows with a smaller methane release.

30 members
Animal scientists, Vets, mathematician, and Social scientists

- Longitudinal data collection
- Mapping knowledge network (location of nodes, content of knowledge exchange, density of interactions, and evolution of knowledge map)
- Ethnography and meeting observations

Example 2: The Open Door project

The D.O.T research group will investigate the impact of social networks on the well-being of children age 9-12. The group will focus on the *social connectedness* and its influence of coping ability in times of personal crisis over a four-year period (2018-2021).

10 members
Psychologists, psychiatrists, social scientists and computer scientists

- Longitudinal data collection
- Mapping knowledge network (location of nodes, content of knowledge exchange, density of interactions, and evolution of knowledge map)
- Experimental interventions

Possible non-scientific contributions

- Trainings and workshop for each team/group
- Understanding possible hidden challenges of collaboration within interdisciplinary teams and possibly help teams to overcome them
- Seminars and workshops for projects leader,
- Understanding the impact of the projects and encouraging funding agencies for more investment on these types of projects

How to increase societal impact through collaboration of SSH with non-SSH disciplines?

1) Understanding the inter-personal and team dynamics (actions and interactions) within collaborative and interdisciplinary teams!
2) Implementing diverse sets of methodologies to assess micro-dynamics at different levels (individual, team, organization, community, and society)
3) More focus on the micro-level understanding of how these interactions will lead to different socio-economic impact (short, medium and long term)

Thank you!

Feedback and questions are welcome ☺

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Interdisciplinary Research

Rolf Hvidtfeldt

Postdoc, Humanomics
Research Centre, Aalborg
University, Denmark

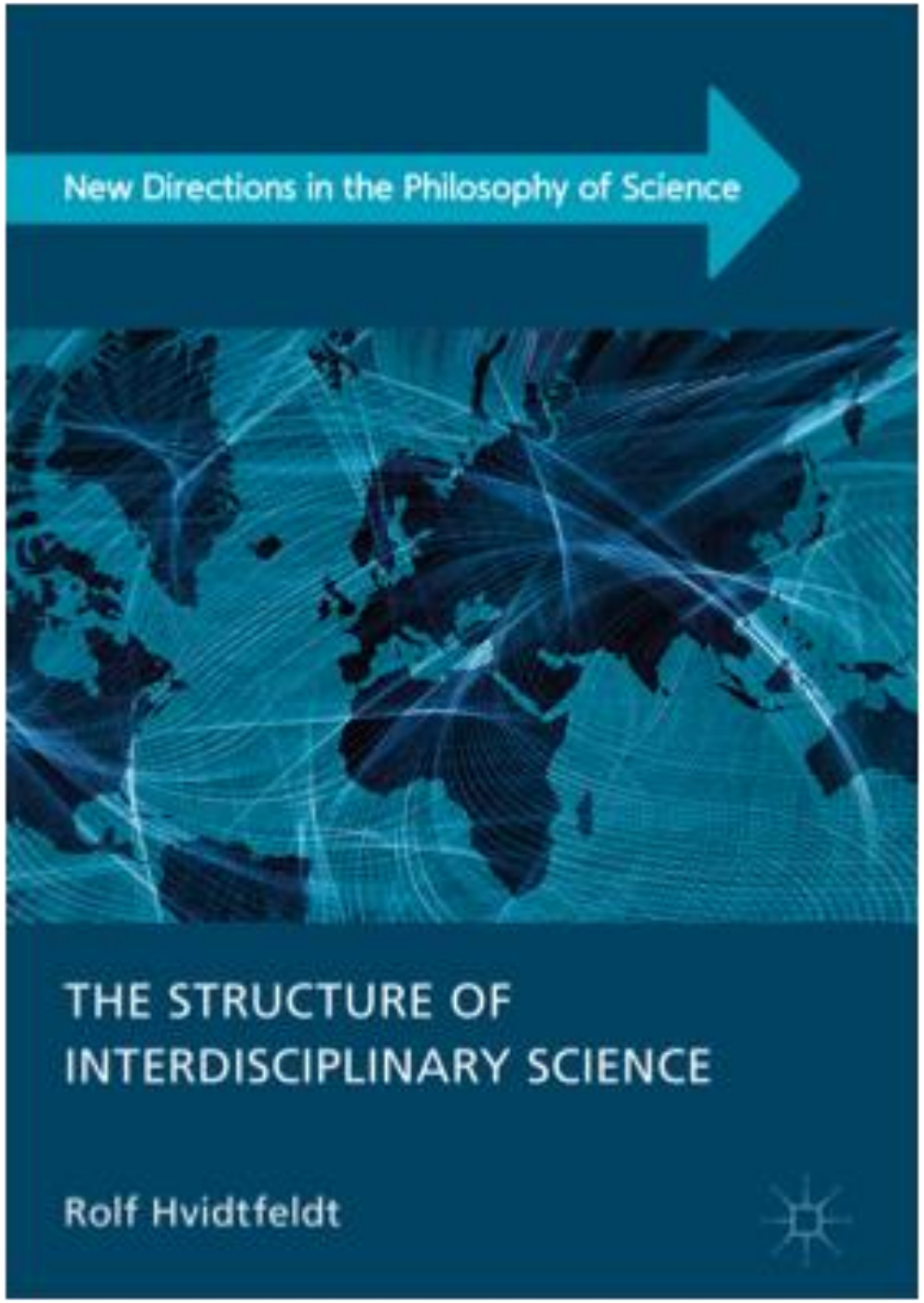
INTERDISCIPLINARY IMPACT

Rolf Hvidtfeldt PhD

The Impact Agenda for Social Sciences & Humanities 2018

KØBENHAVN
AALBORG UNIVERSITET

RE sponsible imp ACT



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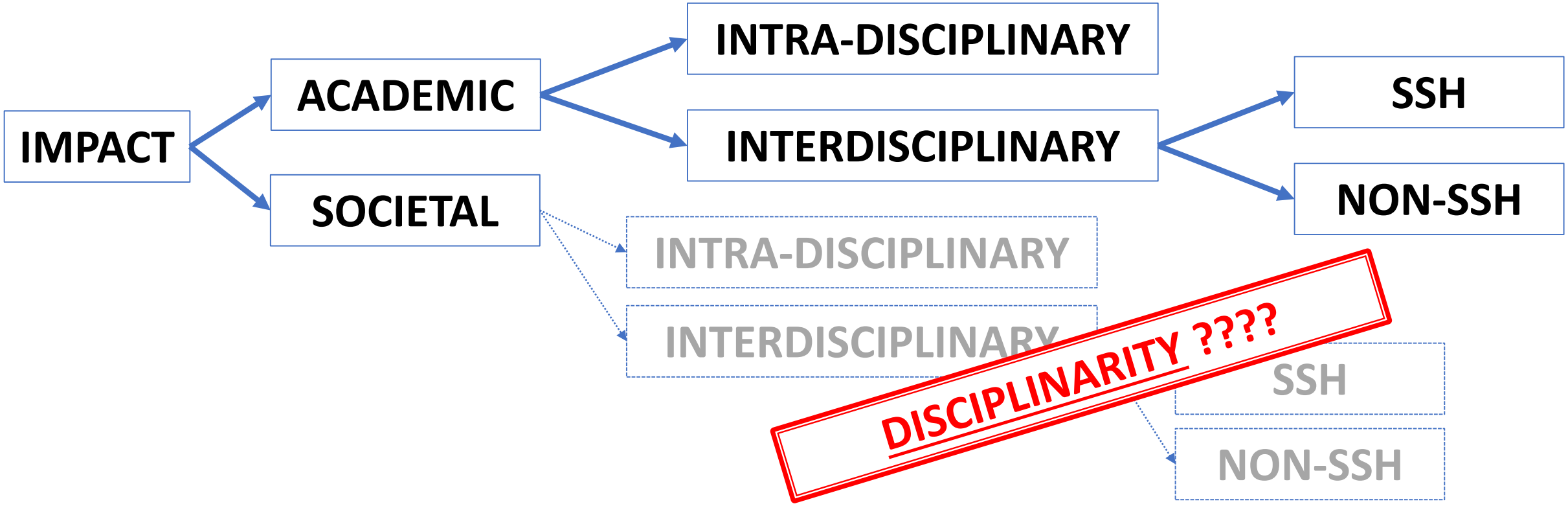
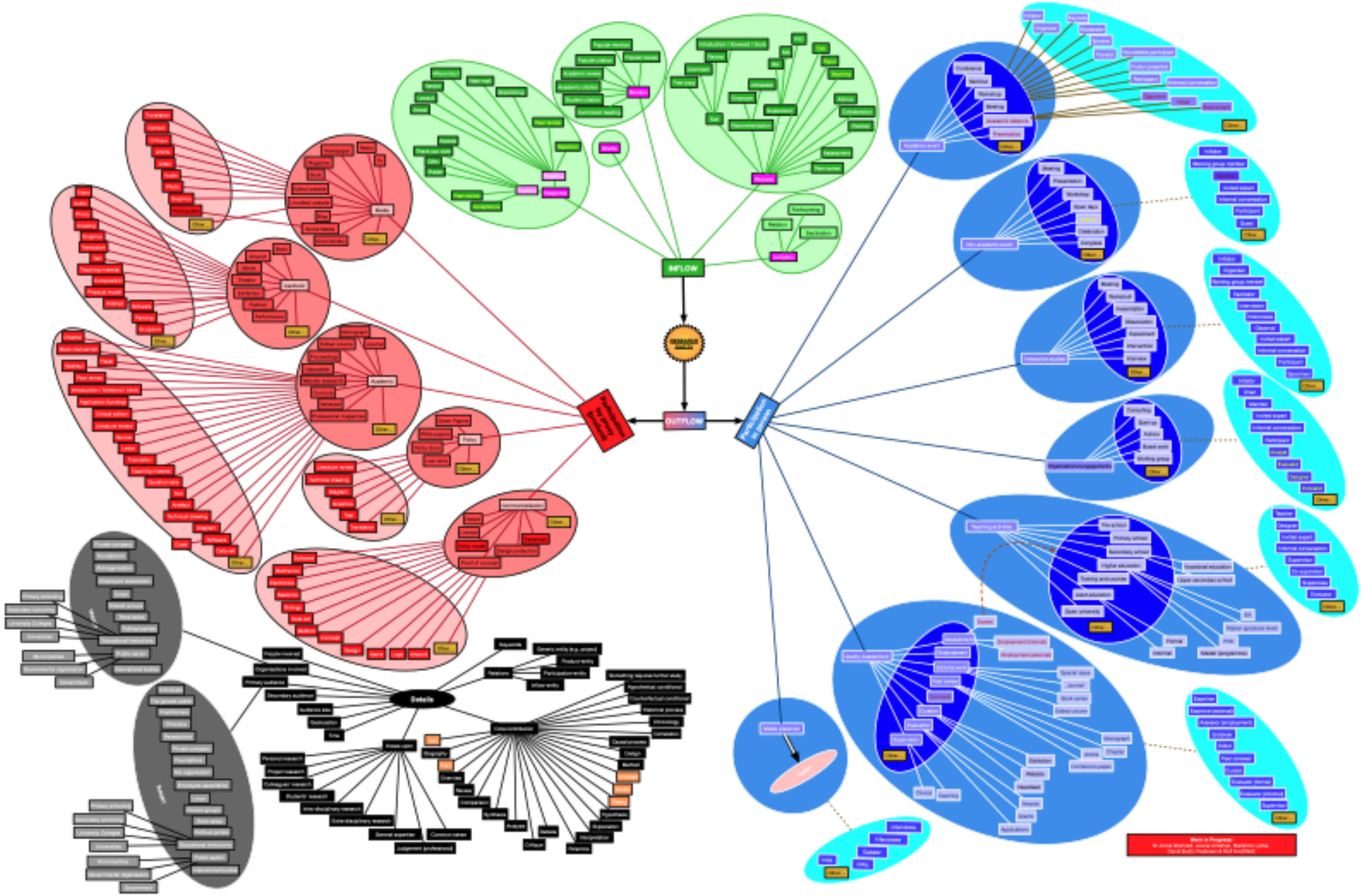
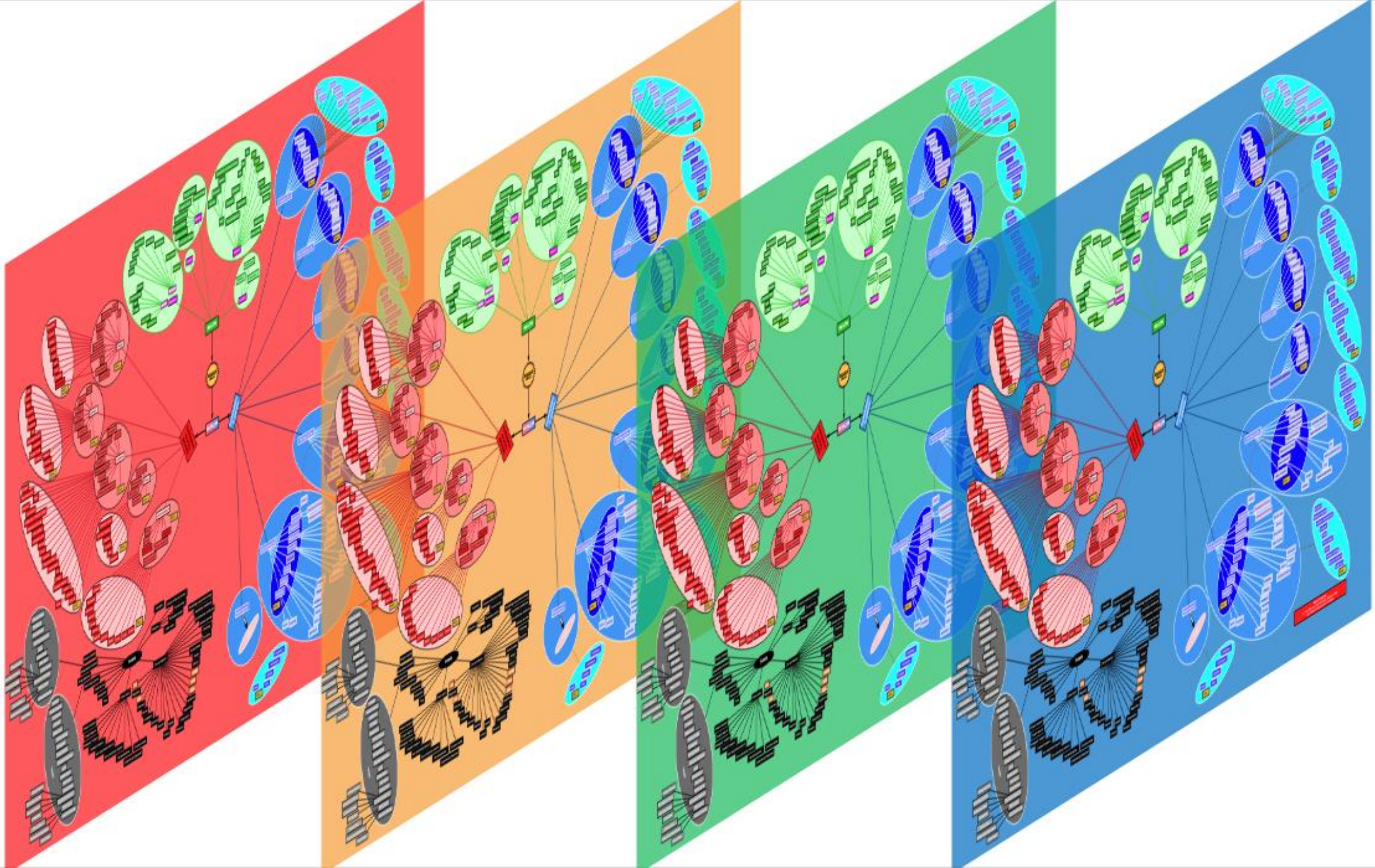

IMPACT
ACADEMIC
SOCIETAL
INTRA-DISCIPLINARY
INTERDISCIPLINARY
SSH
NON-SSH
INTRA-DISCIPLINARY
INTERDISCIPLINARY
SSH
NON-SSH
DISCIPLINARITY ????

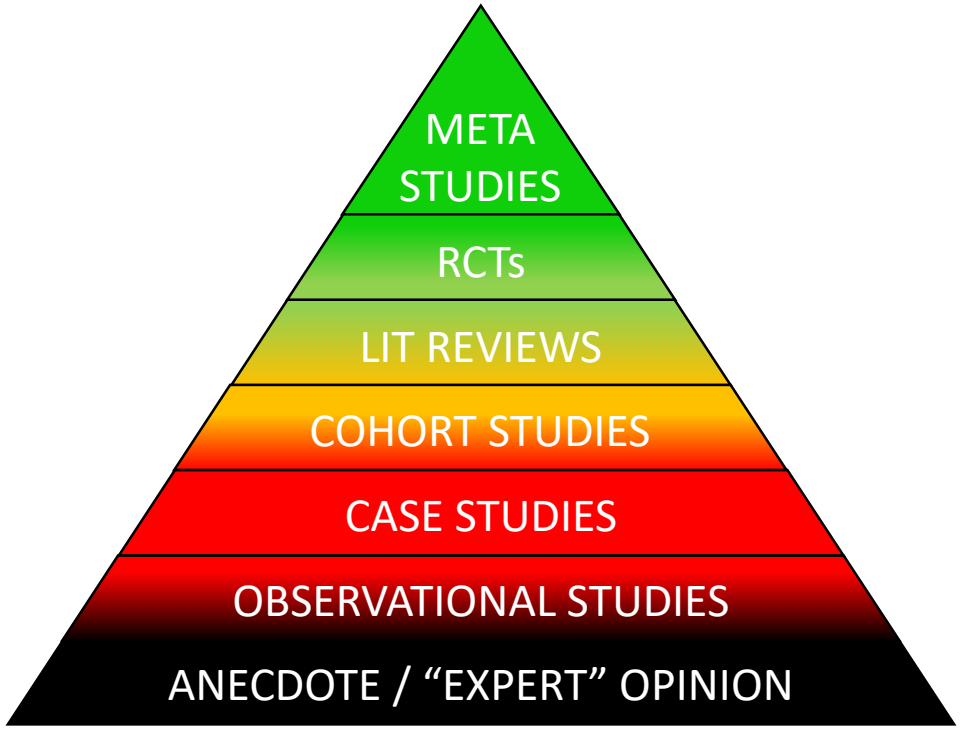
MICRO-IMPACTs & MACRO-IMPACTs

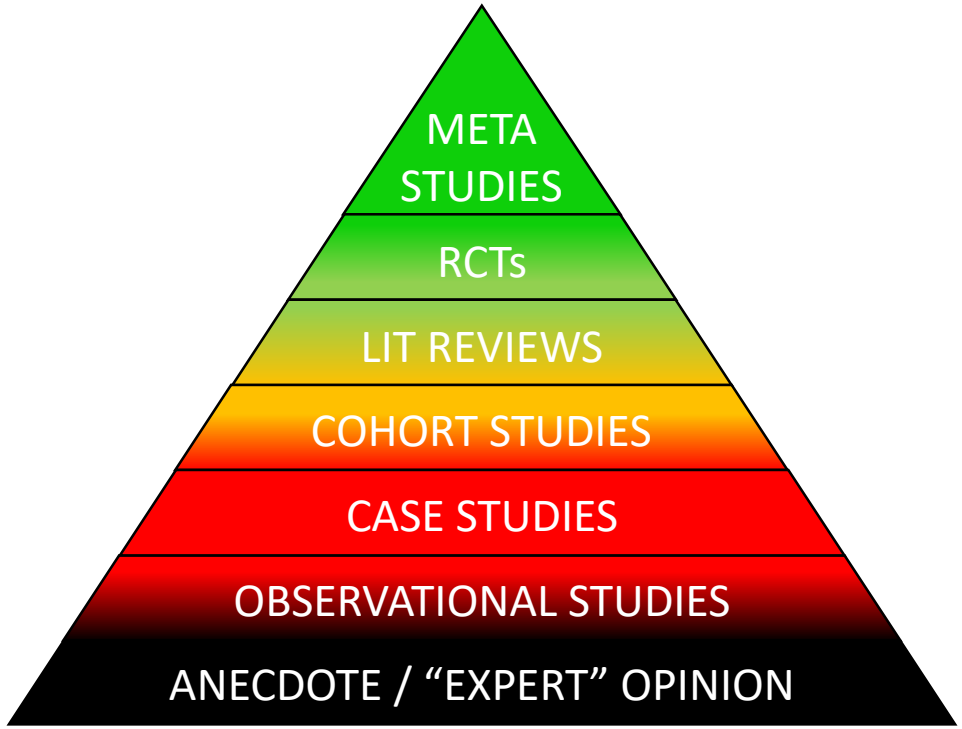
(causal links) **POINTS OF CONTACT**	**SOCIETAL CHANGES (end effects)**
Tangible	Intangible (more or less)
At a specific place	Dispersed (more or less)
At a specific time	Transient (more or less)
Contributory	Non-ascribable (more or less)

TAXONOMY OF MICRO-IMPACTS


INFLOW
OUTFLOW
Details
Work in Progress




META STUDIES
RCTs
LIT REVIEWS
COHORT STUDIES
CASE STUDIES
OBSERVATIONAL STUDIES
ANECDOTE / “EXPERT” OPINION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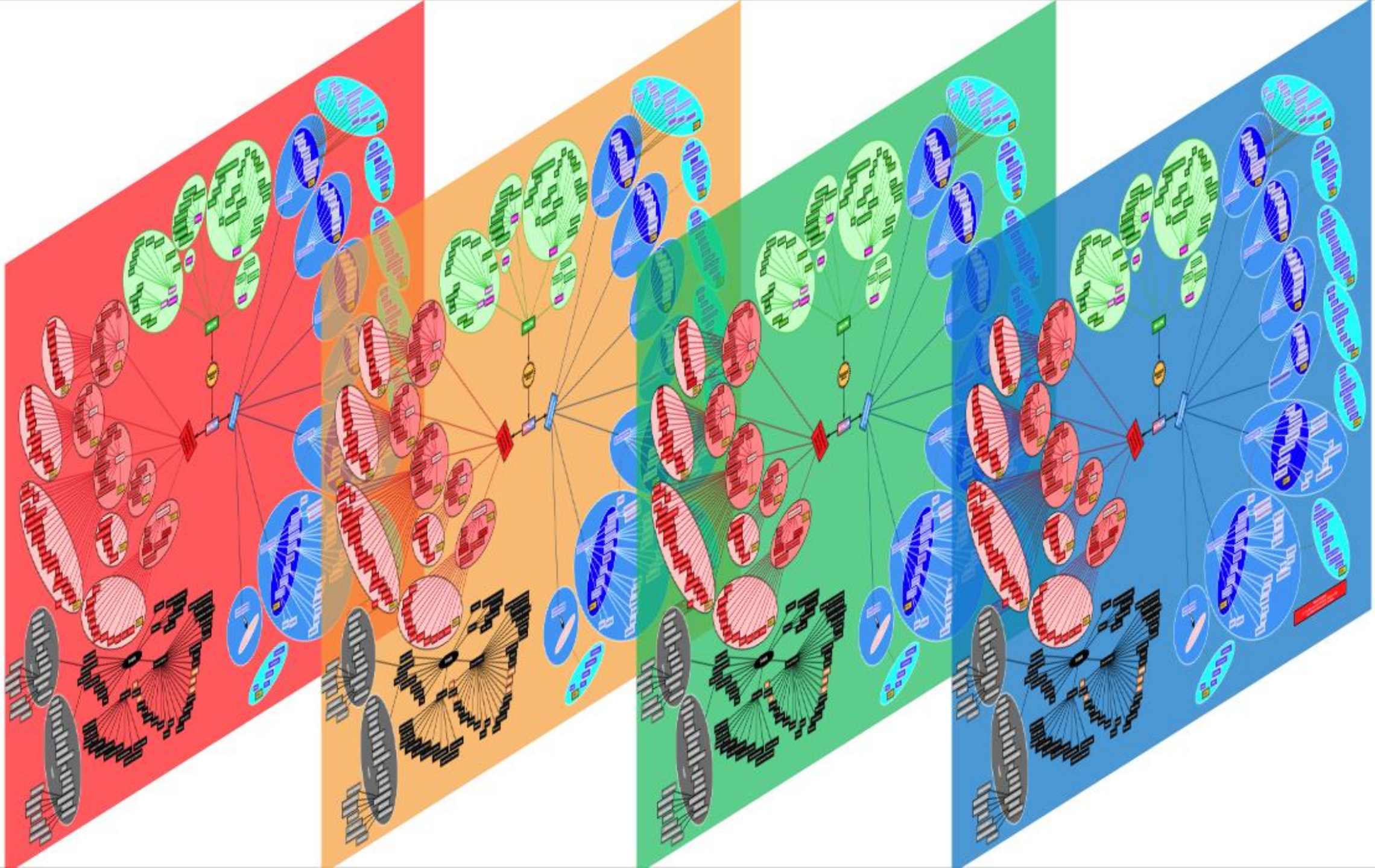


SOCIAL BARRIERS	EPISTEMIC BARRIERS
DISCIPLINARY NORMS	A LACK OF DISCIPLINARY INSIGHT
MAKES PEOPLE EXCLUDE RELEVANT INPUTS	MAKES PEOPLE INCLUDE IRRELEVANT INPUTS (OR USE THEM INAPPROPRIATELY)

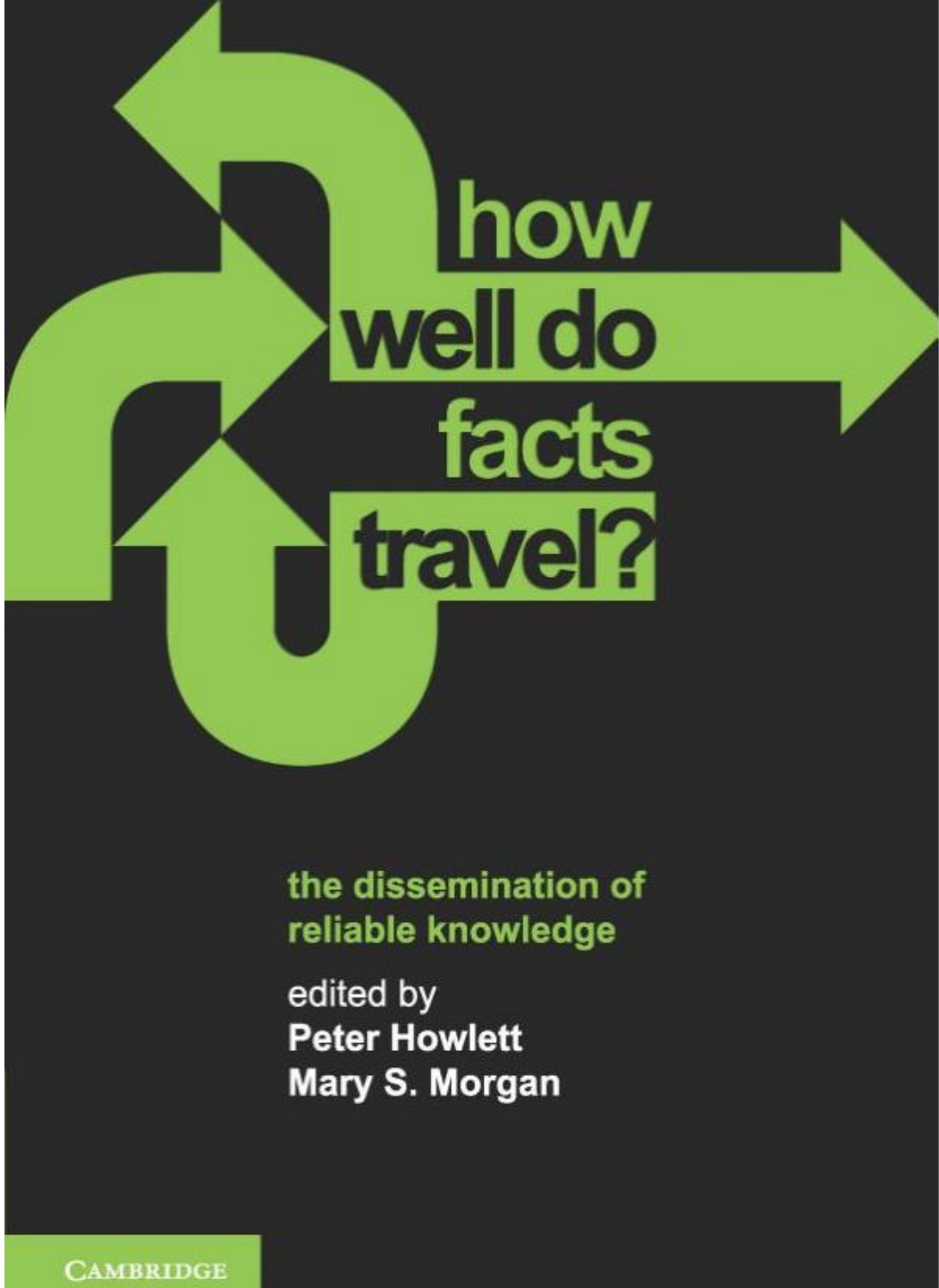
NOT JUST PROBLEMS OF KNOWLEDGE TRANSFER

"KNOWLEDGE TRANSFER" SOUNDS LOT LIKE "DISSEMINATION OF FACTS"

BUT IT IS NOT JUST FACTS THAT TRAVEL:

CONCEPTS AREN'T FACTS…
THEORIES AREN'T FACTS…
HYPOTHESES AREN'T FACTS…
TOOLS AREN'T FACTS…
INTERPRETATIONS AREN'T FACTS…
METHODS AREN'T FACTS…
ASSUMPTIONS AREN'T FACTS…

… AND WHATEVER IT IS THAT TRAVELS, IT MAY NOT TRAVEL WELL…



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Interdisciplinary Research

Panel discussion & Q&A

David Skorton (Chair)
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Rolf Hvidtfeldt

Interdisciplinary Research

Chair: David Skorton

Secretary (CEO), Smithsonian Institution, Washington D.C.

Type your recommendation here

Next up:

12.45-13.45	Lunch	
13.45-15.00	Indicators of SSH Impact	Lumbye Hall
	Institutional assessment	Gemyse 2
	Measurement tools	Gemyse 1
	Public engagement	HC Andersen castle