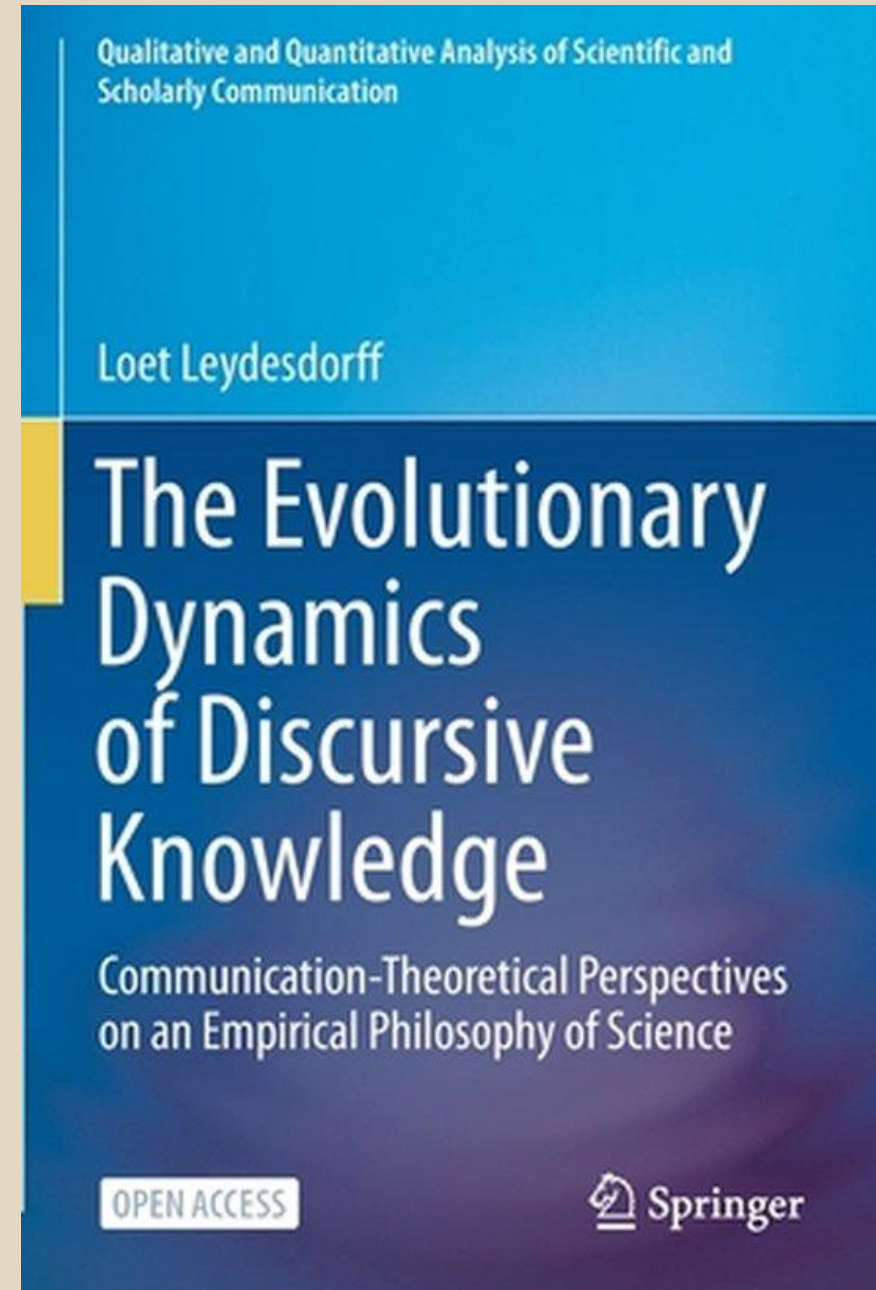


FROM TRIPLE HELIX TO QUADRUPLE HELIX

The first step to a general scheme
for analyses

Harm Hofman
Duurzaam Heiloo



Core difference between Leydesdorff with Luhmann and sociological AGIL scheme of Parsons with Habermas

Core Concept	Loet Leydesdorff	Niklas Luhmann	Jürgen Habermas
Communication	Measuring knowledge flows	Autopoietic systems	Communicative rationality
Rationality	—	—	Communicative rationality
Self-organization	Patterns in citations, publications, patents	Autopoietic systems	—



Triple Helix:

Collaboration between government, industry, and universities.

Goal:

Drive innovation and knowledge sharing

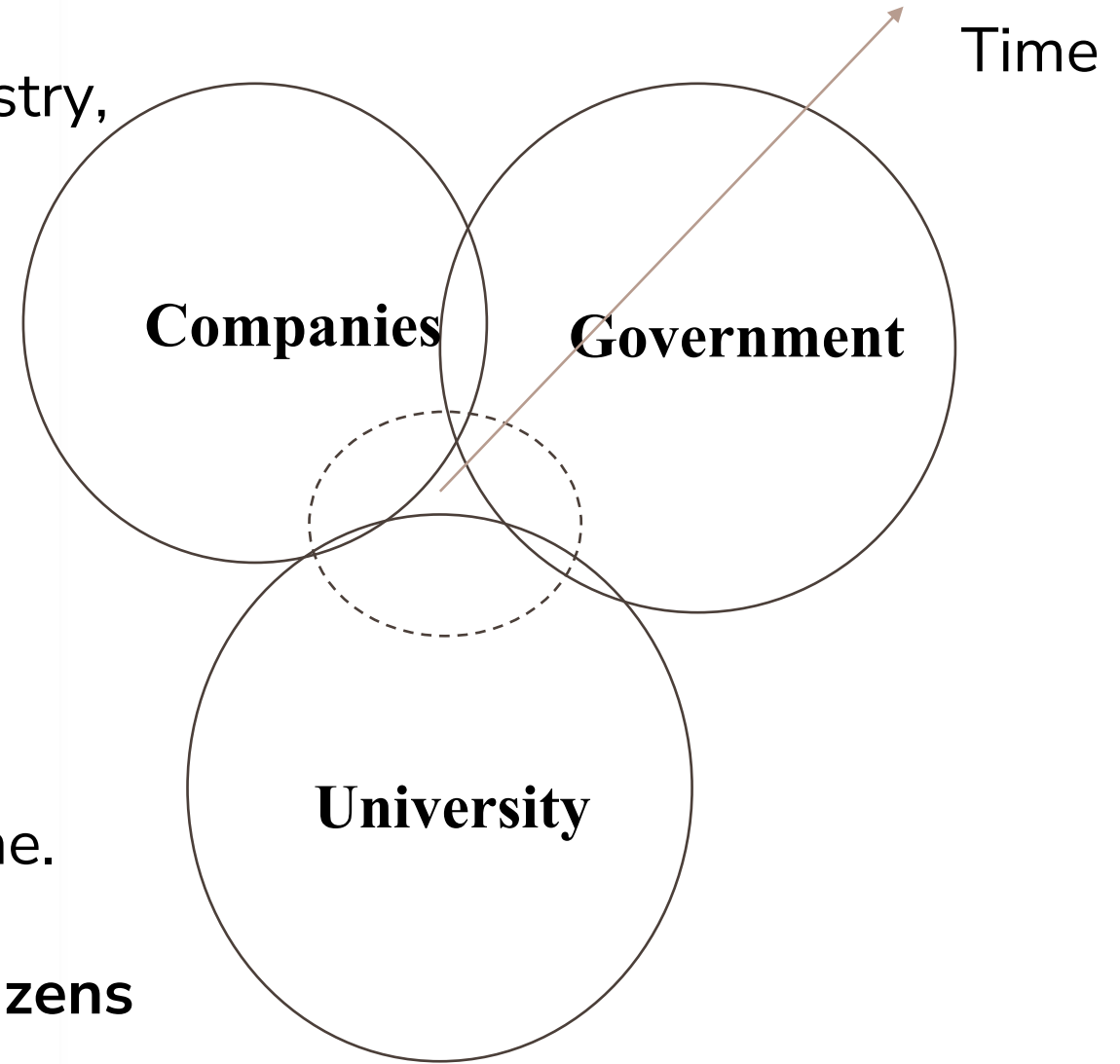
Intersection:

Co-creation and joint projects.

Time:

Relationships evolve and deepen over time.

Foundation for Quadruple Helix: adding citizens

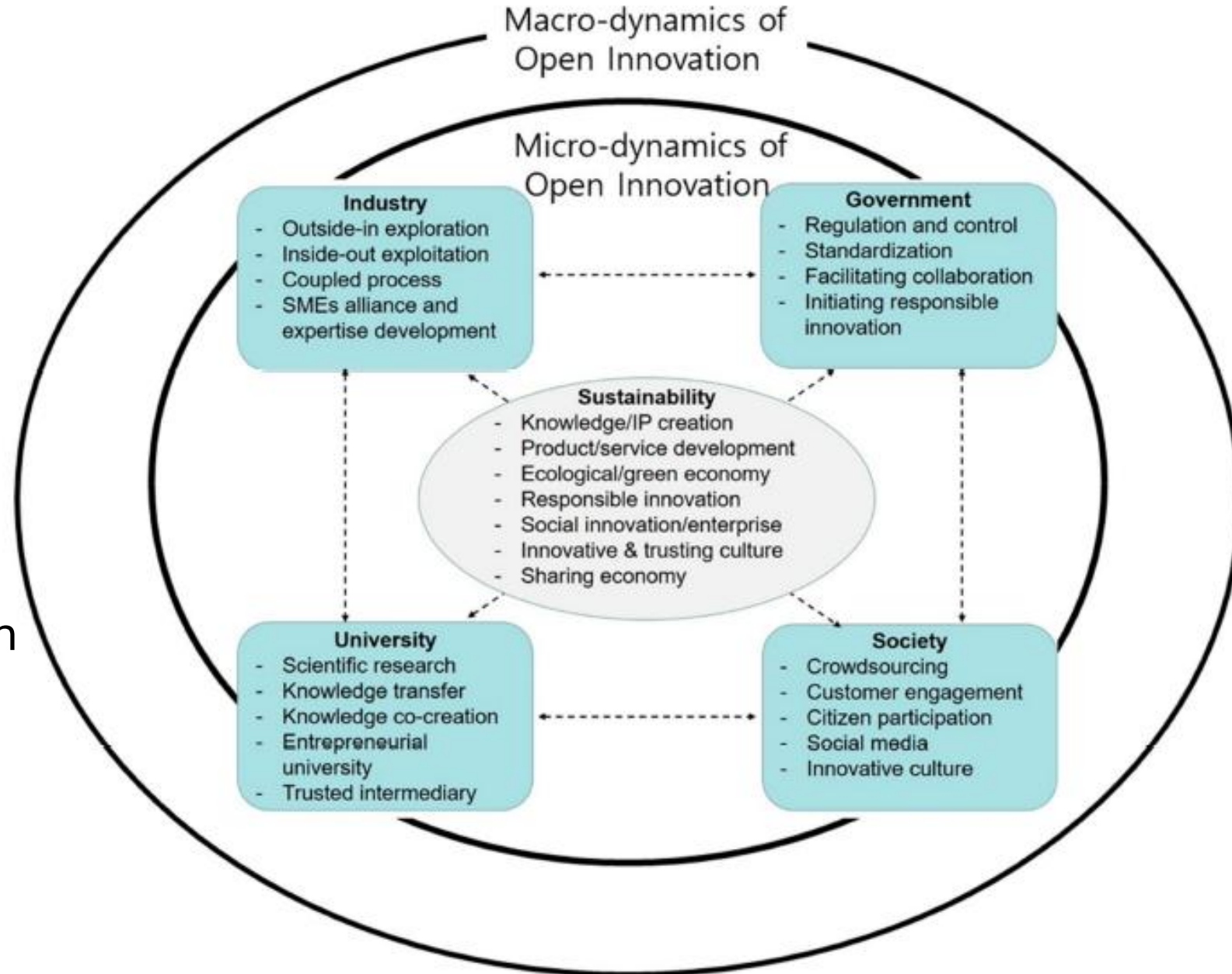


Triple Helix (Leydesdorff)

Micro- and Macro-Dynamics of Open Innovation with a Quadruple-Helix Model

JinHyo Joseph Yun
and Zheng Liu

- SME Aliances in industry
- University
- Knowledge
- Intellectual Property creation



Smaller regions without university,

- less academic
- still requires knowledge
- adapted to the local situation

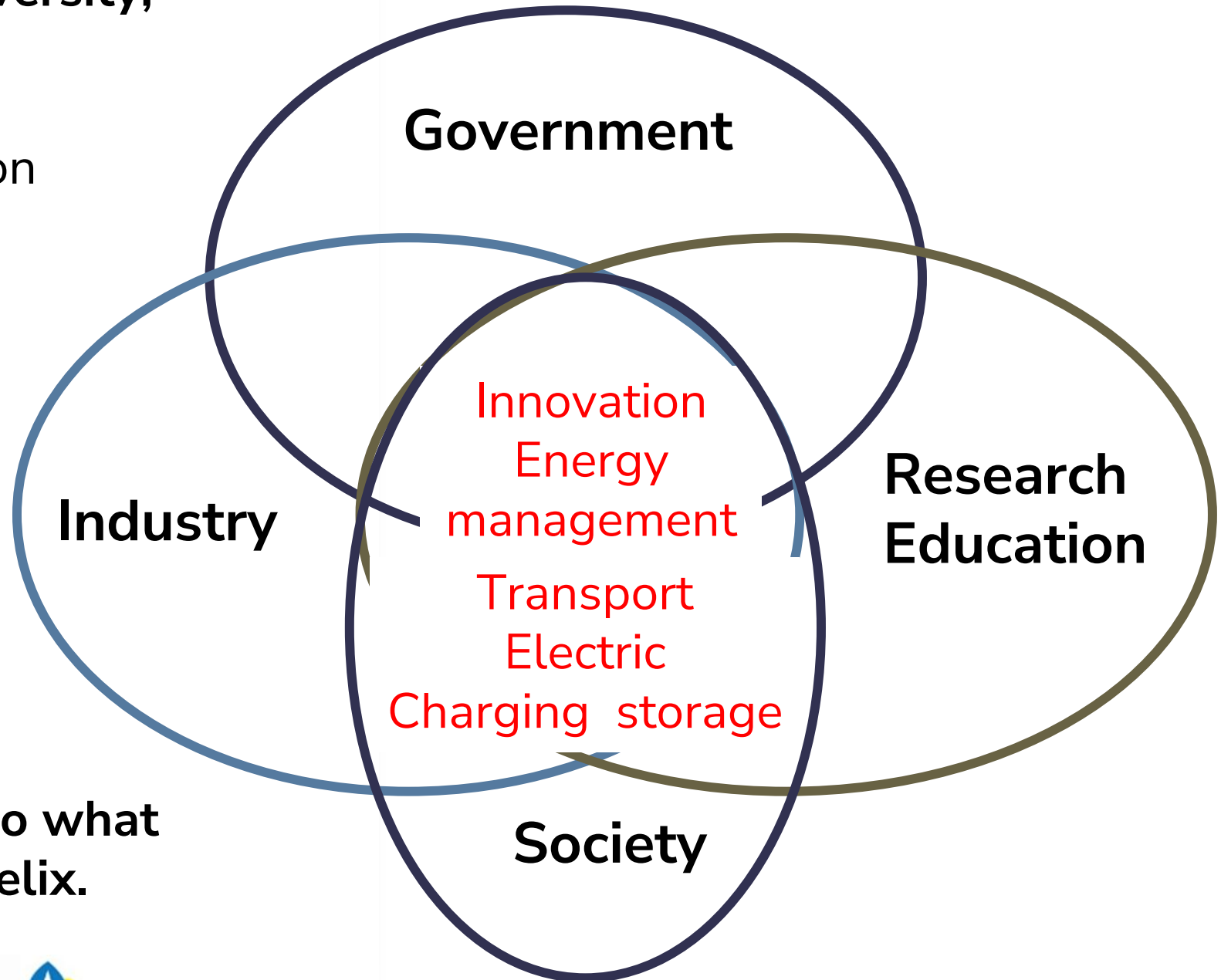
Communication is less about

- publications and
- patents

More about solutions

- for local communities
- with local problems
- local companies .

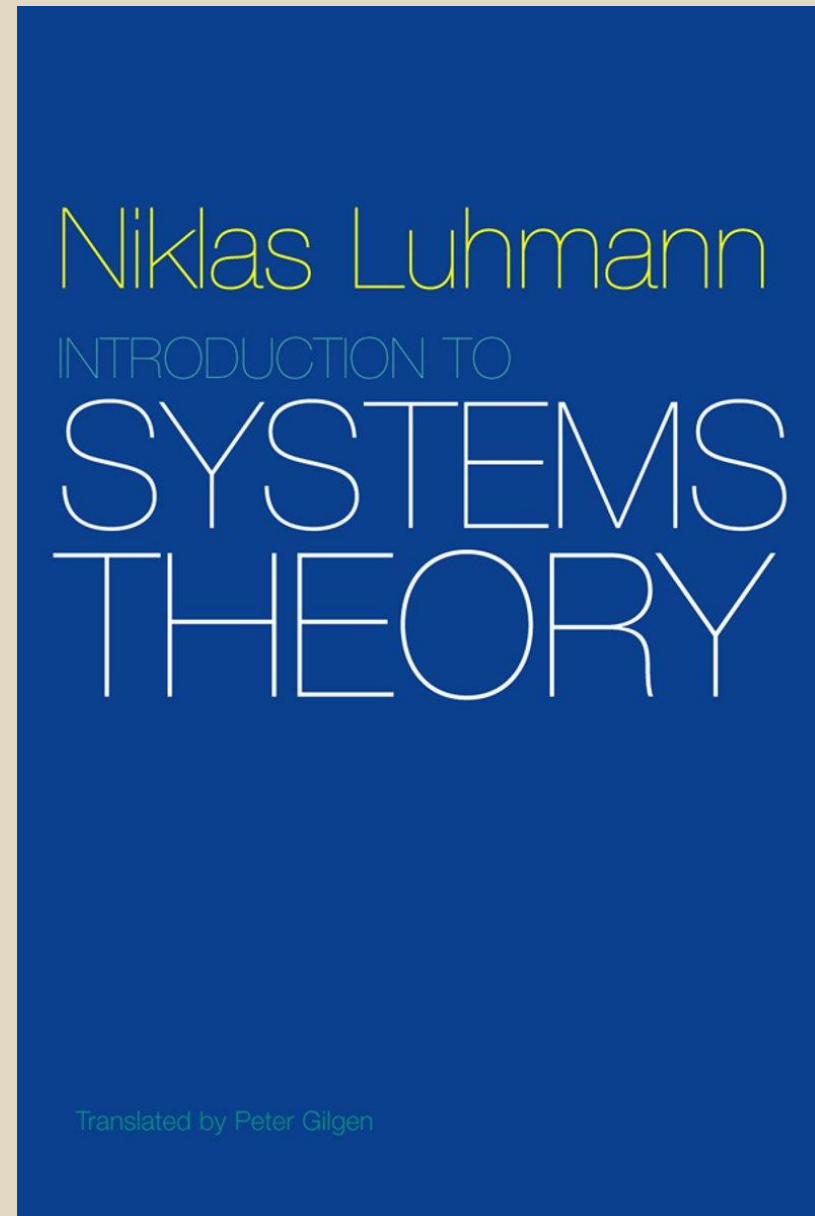
Important what region can do what fits in the middle of the helix.



THIS WAS THE QUADRUPL HELIX FROM TRIPLE HELIX BASED ON LUHMANN

Next step is to social
systems of Habermas

Harm Hofman
Duurzaam Heiloo



<https://duurzaamheiloo.nl/>