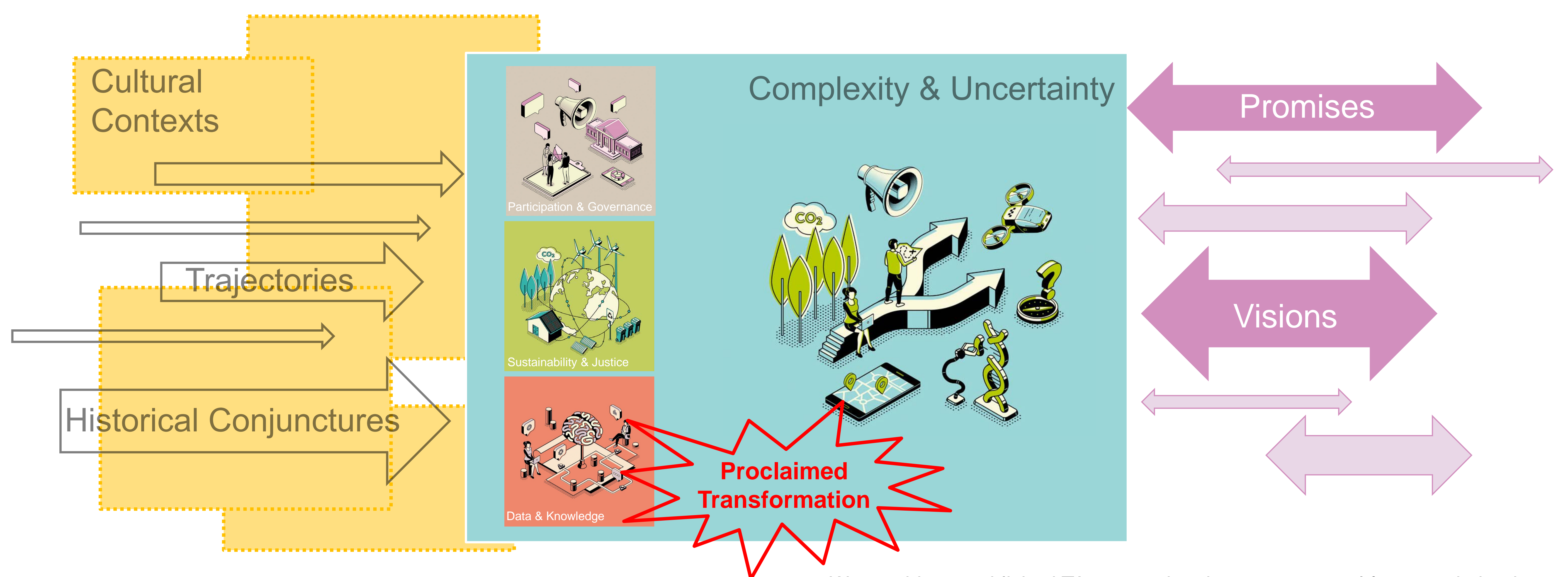


Transformation Assessment - Observing and (Co)Shaping Sociotechnical Transformations

Operationalization of established TA approaches for the analysis of change in and for society

Authors: Andreas Lösch, Janine Gondolf, Christian Büscher & Ulrich Ufer



Any transformation as socio-technical change requires a reorganization of basic socio-technical systems that can affect all social subsystems. Because transformations are often initiated without consideration of the necessary social and structural changes, they can cause significant disruptions in social coexistence. These changes have far-reaching consequences and affect those who may not be directly involved.

We combine established TA approaches into a conceptual framework that is inherently immersive, interdisciplinary, reflexive, and capable of assessing transformation from multiple perspectives. It integrates the analysis of socio-technical change from an immersive anthropological and cultural studies perspective, a systems theory perspective, and a vision assessment perspective.

Point
in
time

Not every process of change is socio-technical. But techno-capitalist and technocratically governed societies drive technological innovations to solve problems and thus proclaim transformations towards urgent socio-ecological changes on different levels: transformation programs are initiated by politics, science or society, like the energy transition; transformation projects associated with these programs are pursued, e.g. renewable energy initiatives; and concrete transformation actions in the context of real-world labs or social movements, jointly drive change. Understanding the connections and interdependencies is critical to the reflection, design and success of transformation.

t_0

Transformation Assessment aims to guide transformation projects by making opportunities and consequences visible, assessable and open to reflection. It is based on the fact that TA is not primarily concerned with scientific questions, but with creating structures that generate solutions to problems. Thus, proclaimed transformations are placed in the larger perspective of their time and context in order to assess their potential for change and their impact on social subsystems, as well as their visionary promise, the historical circumstances in which they arise, and the interrelationship between these three perspectives.

	Socio-Cultural Analysis <small>(e.g., Ufer & Hausstein 2021)</small>	Systems-Theoretical Observations <small>(e.g., Büscher 2018)</small>	Vision Assessment <small>(e.g., Lösch et al. 2023, Schneider et al. 2023)</small>
Research Interests	change over time and cultural situatedness of relevant contexts for (past) proclaimed transformations	system-specific , inter-systemic possibilities for and impacts of transformation	promises, functions, and power of visions of transformation practices
Object of Research	historical conjunctures and trajectories as well as cultural contexts (past and present)	structural and processual interoperability of required changes in and between the involved sub-systems	impacts of the orientation towards certain visionary promises on decisions and actions
Research perspectives	retrospective, developmental, contextualizing	simultaneous, structuring	prospective, in real-time, exploratory
Research Questions	Do historical conjunctures and trajectories in cultural contexts support or obstruct practices and implementation of proclaimed transformation?	What are functionality, effectiveness and impacts of the initiated new coordinative challenges for the subsystems and the whole society?	What are the impacts of visions on scope, directions and pathways of change of structures and processes?
Research Methodology	comparative method, historical analogical reasoning	functional sociological analysis	discourse analysis, dialogues, scenario-building
Research Outcomes	making accessible contextual knowledge and comparative cases across space and time	making accessible systemic sociotechnical constrains of transformation	making accessible the socio-epistemic constellations , that shape the transformation practices in the present

Büscher, C. (2018) Framing energy as a sociotechnical problem of control, change, and action. In: Büscher et al. (Eds.): *Energy as a Sociotechnical Problem. An Interdisciplinary Perspective on Control, Change, and Action in Energy Transitions*. London, New York: Routledge: 14-38.
 Lösch, A.; Schneider, C.; Dobroć, P.; Frey, P.; Gondolf, J.; Hausstein, A.; Heil, R. (2023): *Vision assessment: An orientation framework for the practice of technology assessment 2023*. Karlsruhe Institut für Technologie (KIT).
 Schneider, C.; Rofmann, M.; Lösch, A.; Grunwald, A. (2023): Transformative Vision Assessment and 3-D Printing Futures: A New Approach of Technology Assessment to Address Grand Societal Challenges. *IEEE transactions on engineering management*, 70 (3), 1089–1098.
 Ufer, U. & Hausstein, A. (2021): Anthropology of and for Innovation. In Benoit Godin, Gérald Gaglio, Dominique Vinck (Ed.): *Handbook on Alternative Theories of Innovation*, 334–53. Cheltenham: Edward Elgar Publishing