



The Geography of Sustainability Transitions: Review, Synthesis and Reflections on an Emergent Research Field

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'From vulnerable places to resilient territories:
the path to sustainable development'

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Policy discourse (Geels, 2013)

OECD (2010), Eco-innovation in Industry: importance of “system innovation”, which is defined as “innovation characterized by shifts in how society functions and how its needs are met” (p. 16).

OECD (2011) Towards Green Growth: need for a “transition to green growth”, which “involves systemic changes across the entire economy” (p. 16), including “new ways of producing and consuming things”

UNEP (2011) Towards a Green Economy: “green economy transitions” and “economic transformation” (p. 1), which require “a fundamental rethinking of our approach to the economy” (p. 38)

Europe 2020: importance of “changing tracks” and “exploring new development paths” to generate smart, sustainable and inclusive growth.



Sustainability Transitions

Examples transitions:

- Historical: from horse-and-carriage to car mobility, from sailing ships to steam ships
- Contemporary: e-mobility, smart grids, bio-based economy

Definition:

Shifts or 'system innovations' towards more sustainable socio-technical configurations encompassing not only new green technologies but also corresponding changes in markets, user practices, policy & cultural discourses and governing institutions (Geels, Hekkert & Jacobsson, 2008)

Approach:

- Process: Social construction of technology & evolutionary economics
- Structures: Innovation & socio-technical systems
- Policies: Transition Management & Innovation policy

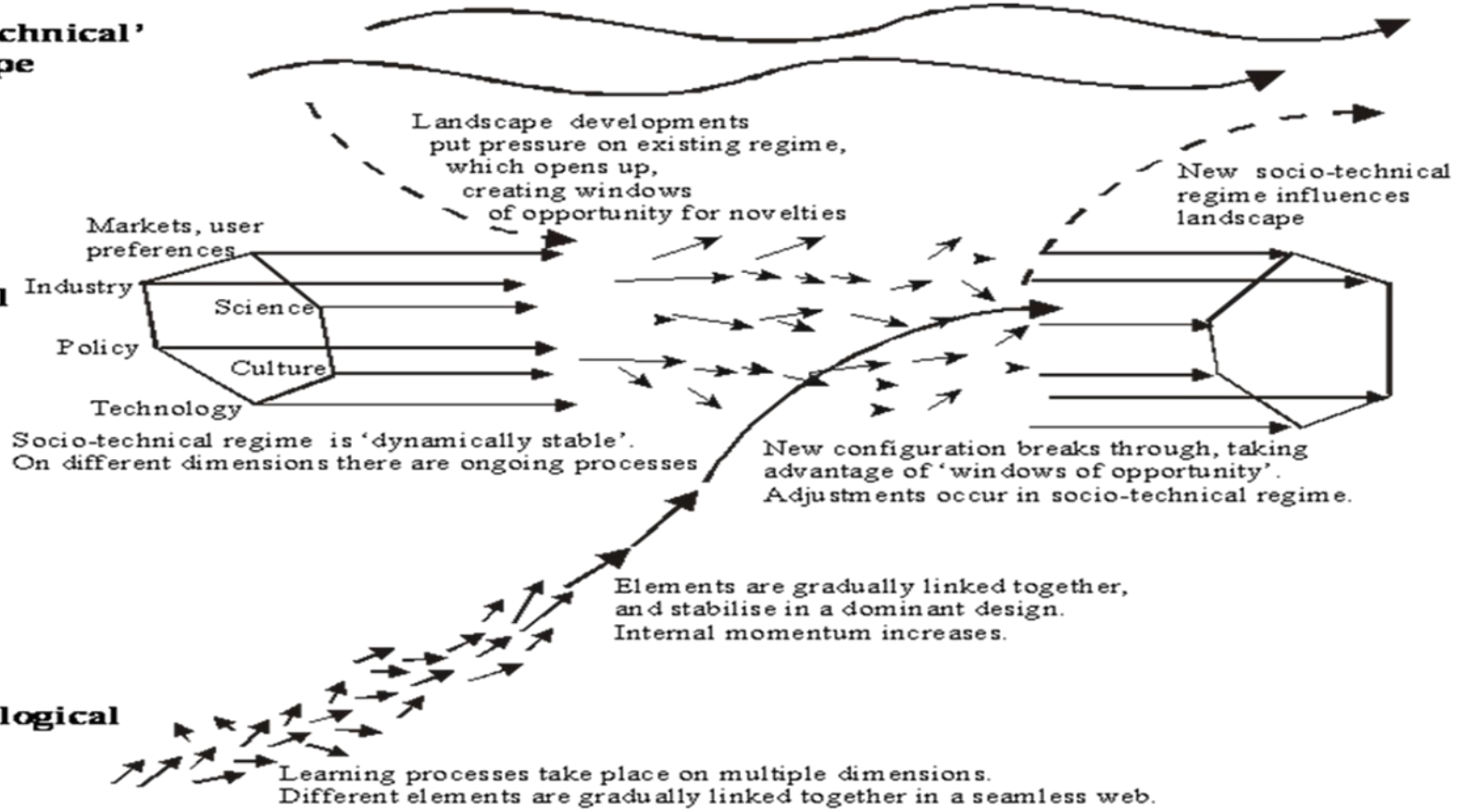


A Multilevel Perspective on Transitions

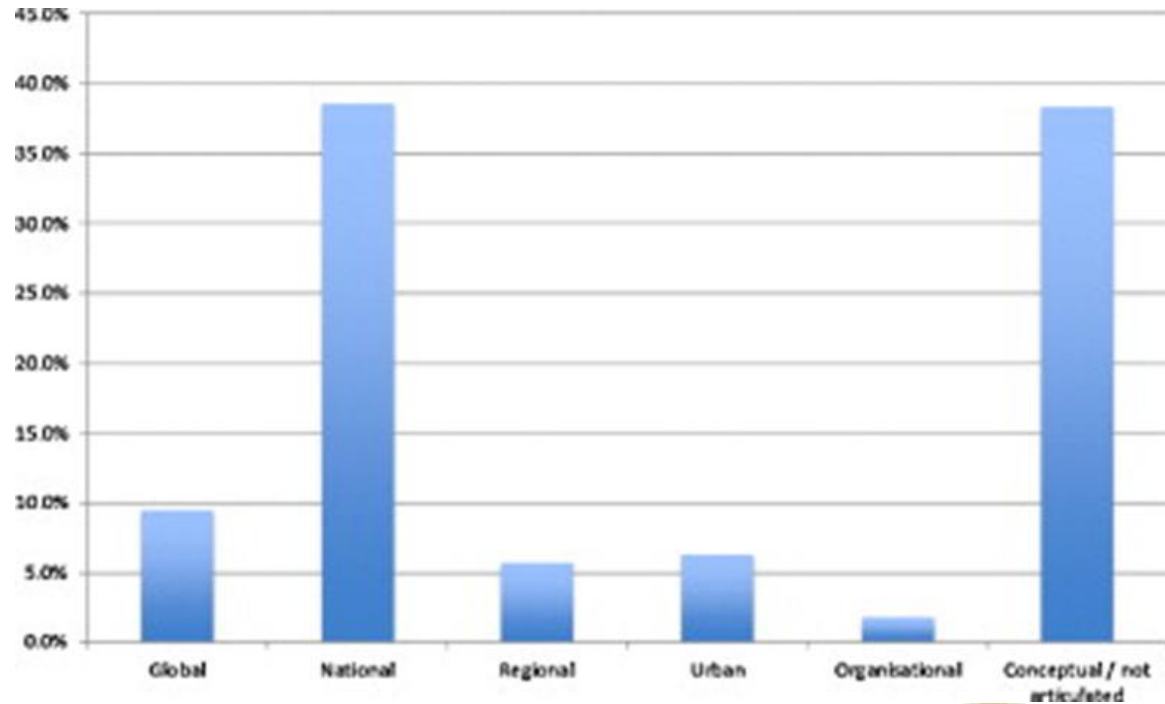
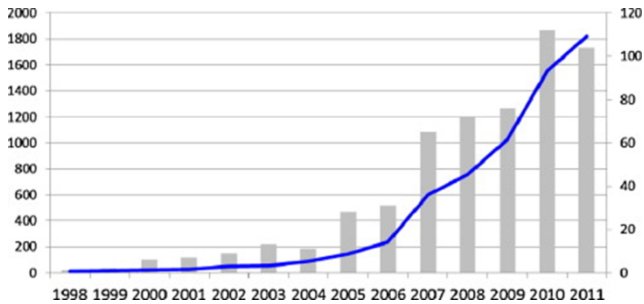
Socio-technical landscape

Socio-technical regime

Technological niches



Sustainability transitions: en emerging literature



Spatial gap in transitions research

Coenen et al. (2012); Truffer and Coenen (2012), Bulkeley et al. (2010)



Despite its metaphors previous research and theory development in Sustainable Transitions has been largely a-spatial

Core of 'Geography of Transitions' Agenda

1. Understand whether and why transitions unfold unevenly across space
2. Analyze whether and how context matters for transition processes
3. Analyze how the spatial dimensions of networks (local-global) influence transitions processes
4. Analyze the governance of transitions at and across different scales



Objectives of the paper

1. to make explicit how in recent geographical studies of sustainability transitions space, place and scale have been treated,
2. to synthesize and take stock with the theoretical and empirical insights which have been achieved so far and their internal coherence
3. to reflect upon and identify promising avenues for future research on the geography of sustainability transitions.

Geographical studies of sustainability transitions



Two main themes:

- (1) the importance of (geographical) context
- (2) the role of spatial linkages

Geographical context: observations and reflections



Urban and regional visions and priorities

- Ecological modernization: wedding competitiveness & sustainability
- Experimentation and contestation

Informal territorial institutions

- Collaborative culture & disruptive innovation: cognitive distance <> geographical & institutional proximity
- Diffusion of innovation and social practice: local spaces of experimentation

Local natural resource endowments

- Comparative advantage
- Materiality of transitions

Local specialization & knowledge spillovers

- Clean-tech clusters: (environmental) regulatory push to cluster development
- Related variety

Consumers and local market formation

- User-producer learning
- Eco-innovation and market creation



Geographical context: synthesis and agenda

- 1) Neglected topics. In particular urban and regional visions, local market formation, cluster formation
- 2) Primarily concerned with niche dimensions of transitions (creation of novelty)
- 3) Topical concern: holistic / systemic perspective is lacking
- 4) Beyond contingency: When and how are contextual dimensions important for sustainability transitions?



Spatial linkages: observations

Debunking the national scale envelop: two main approaches

(1) Studies with a traditional economic geography focus, stressing the positive influence of geographical proximity in stimulating network formation in niches > overlap with context

(2) Studies highlighting that space is socially defined > multi-scalarity of niche dynamics

- Multi-level governance
- Global value chains

Geography of sustainability transitions: so what?



What has sustainability transitions research gained from linking up with geography?

- Move beyond the nation state & scale
- Greater appreciation of conditions for niche formation (& evolution): No one size fits all
- Understand how global linkages materialize
- Very little attention for geographical dimensions of regime, regime destabilization or niche-regime relations