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MTEC

Sustainability Transitions: Introduction to newcomers

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1 Research topics & origins

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What matters ...

- Climate change
- Renewable energies
- Clean water
- Clean technologies, circular economy
- Sustainable finance
- Resources & infrastructures
- Equality
- Sustainable cities
- Knowledge creation & sharing








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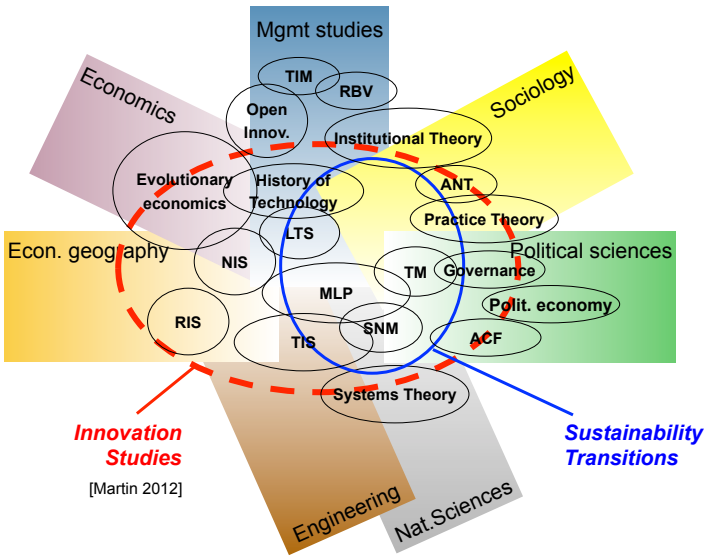
Theory Landscape



[Martin 2012]

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Major research areas [→ STRN Research Agenda]

- Historic transitions. Transition pathways.
  [Geels 2002, 2005; Geels & Schot 2007; Geels et al. 2016; Smith et al. 2005]
- Success and failure of novel technologies & niches.
  [Bergek & Jacobsson 2003; Bergek et al. 2015; Markard et al. 2015; Negro et al. 2007; Smith & Raven 2012]
- Role of policies. Governance, transition management.
  [Kemp & Rotmans 2005; Loorbach & Rotmans 2010; Rogge & Reichardt 2016; Voß 2006]
- Role of (incumbent) actors & strategies. Politics of transitions.
  [Avelino et al. 2016; Farla et al. 2012; Kern & Smith 2008; Meadowcroft 2011; Smink et al 2015; Smith & Stirling 2007]
- Social movements, grassroot initiatives, local communities.
  [Geels & Penna 2015; Hargreaves et al. 2013; Smith 2006]
- Geography of transitions. Transitions at the urban scale.
  [Bento & Fontes 2015; Binz et al. 2014; Bulkeley et al. 2011; Coenen et al. 2012; Wirth et al. 2013]
- Transitions in everyday life, practice theory.
  [Jalas et al. in press; Shove & Walker 2007, 2010; Spaargaren 2011]

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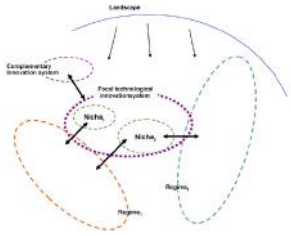
Challenges ...

- ST has traditionally drawn from various disciplines

➢ Attention: mind the origins & underlying assumptions

- Pragmatic & heterodox



➢ Attention: careful what approaches you combine
  [Garud Gehman 2012; Geels 2010; Markard Truffer 2008]

- Literacy in different disciplines takes time & effort

➢ Attention: taking shortcuts → re-invent the wheel?

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2 Sustainability Transition

What is it?

Why is it special?

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A few examples ...

- Diffusion of photovoltaics in South-Africa [poster]
- Biorefinery, bio-economy, biogas [several contributions]
- Emergence of electric vehicles [2 papers]
- Germany: Phase-out of nuclear, rise of coal [poster]
- Urban community gardening, local food suppy [2 papers]
- Rainwater harvesting practices [poster]
- Sharing economy, library of things [several contributions]
- Low energy buildings [several contributions]

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Transition? Sustainability?

- Sustainability Transition
  Long-term, multi-dimensional & fundamental transformation of large socio-technical systems towards more sustainable modes of production & consumption [Markard et al., 2012]

  → time, scale, scope, direction, systemic, technology

so …

- Not everything we study is a „sustainability transition“
  → very often, we look into specific aspects: careful choice of framework!
- Attention:
  What is in the focus of your study?
  What is the ‘right‘ framework for it?

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Particularities of sustainability transitions

[Kern & Markard, 2016]

- Value-laden & contested
  → e.g. trade-offs such as low-carbon vs. nuclear risks; conflicting views
- Key role for public policies
  → purposive transitions, associated with sustainability targets
- Power & politics central
  → vested interests; winners & losers; coalitions & alliances
- Complex, uncertain, long-term
- Context dependent: different pathways
- Multi-dimensional, systemic interaction
  → e.g. interaction of multiple technologies

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3 Transition Studies
- a growing community

STRN

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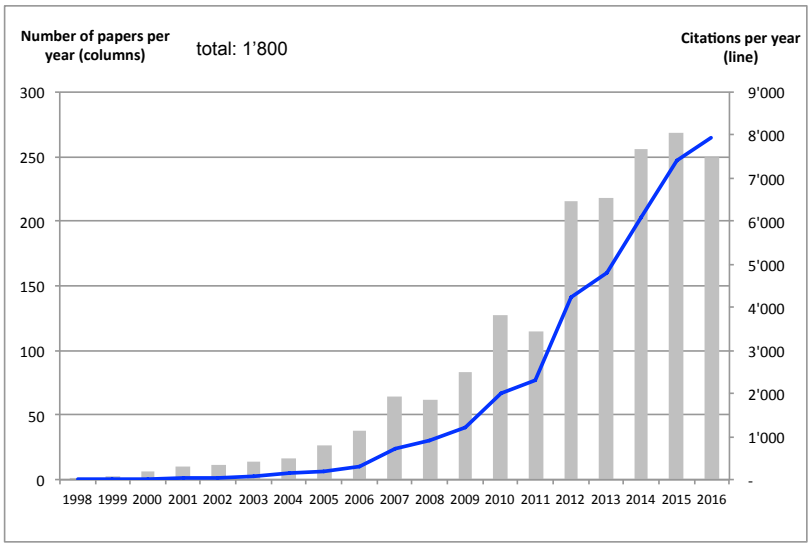
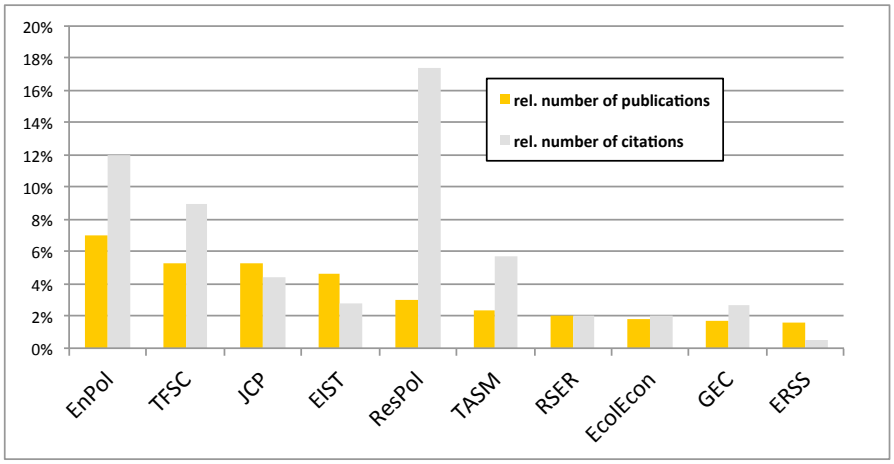
STRN

Academic output: Impressive increase ...

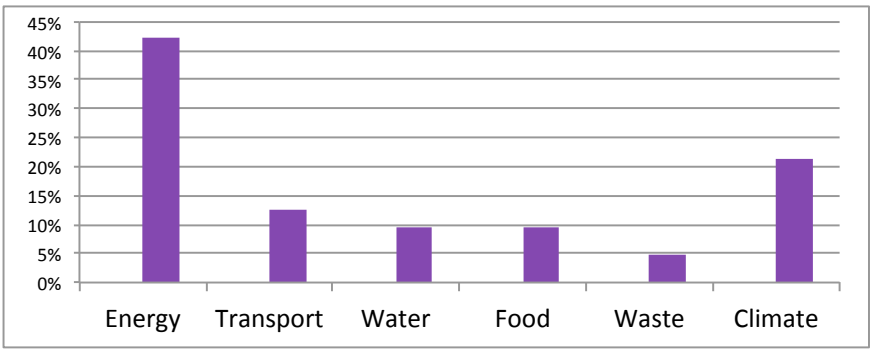


Date: Dec 2016; Method: Markard et al. 2012

Key journals in the field



Key topics



Our network & field

- 1‘300 members
- Website, mailing-list, newsletter
- Yearly IST conference
- Various workshops, incl. PhD schools
- Dedicated journal: EIST
- Mission & research agenda

4 Concluding reflections

Why should I enter, or stay in the field?

Which framework should I use?

What traps await?

Why should I care?

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