1. Dictionary

Transition studies

By Javier Caletrío (Sociologue)

Transition studies are concerned with long-term processes of radical and structural change to sustainable patterns of production and consumption. It involves different conceptual approaches and adherents from a wide range of disciplines.

The concept of Sustainable Development as outlined by the Brundtland report in 1987 has enjoyed wide currency but has also proved largely intractable. Proposals for reconciling economic activities with the Biosphere through free market tools or communitarian values and a return to local production have proved ineffective or unappealing to a majority. As the depth of ecological crises becomes ever more evident, the idiom of sustainability is increasingly being rearticulated as a discourse of transition towards sustainability. Evoking the notion of a set of successive phases along a feasible path forward, transition discourses are emerging from a multiplicity of sites, especially within academia and social movements such as Transition Towns, and are beginning to influence policy discourse at the local, national, and international levels (e.g. EU, UNEP, OECD).

The socio-technical lens

Transition studies involve a wide range of intellectual traditions and conceptual frameworks. Some of these are often referred to as the socio-technical (innovation) lens in transition studies. This literature, first developed in the 1990s by English and Dutch researchers on innovation studies and social studies of science and technology, is currently the most visible and influential.

The socio-technical lens to sustainability transitions stands on two key premises. The first premise is that effectively addressing enduring environmental problems such as resource scarcity and climate change involves a fundamental transformation of food, energy, transport, manufacturing, housing, leisure and other systems. Change in these fundamental parts of everyday life is difficult because these systems have been ‘locked-in’ in specific trajectories, making it extremely difficult to re-orientate their evolution. The second premise is that, however difficult and rare in history, system transitions do happen and it may be possible to purposely ‘un-lock’ those trajectories and try to steer their evolution by better understanding their dynamics and developing adequate management tools. This literature is therefore concerned with how to understand transitions and how to steer them in a desired direction.

A distinctive feature of this approach to sustainability is its concern with co-evolution. Unlike existing approaches to sustainable development that advocate either greener technologies, free-market tools, or behavioural changes, the socio-technical lens to transitions offers analytical frameworks that are sensitive to the interaction of multiple dimensions. Geels et al. have defined sustainability transitions as ‘‘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 and cultural discourses and governing institutions.'' In most research this focus on co-evolution remains, however, insufficiently developed, especially regarding the relation between different systems and the causal mechanisms at play.

A number of conceptual frameworks deserve particular attention: Technological Innovation Systems, Multi-Level Perspective, Strategic Niche Management, Transition Management, and Techno-Economic Paradigm.

Technological Innovation Systems (TIS)

This strand of research analyses specific technological fields in terms of its dynamics and potential for development. Technological fields, conceived of as assemblages of actors, institutions, networks and technologies, can vary widely in their performance. A key concern of TIS is to tease out the functioning of a technological field so as to identify what facilitates or obstructs its well-functioning. Functions considered in the evaluation of the performance of a technological field include: entrepreneurial activities, knowledge development, knowledge exchange, guidance of the search, formation of markets, mobilization of resources, counteracting resistance to change.

Multi-Level Perspective (MLP)

The MLP is a heuristic device that sees transitions happening when changes in the wider cultural, political and economic context (landscape level) create windows of opportunity for innovations (niche level) to develop and diffuse resulting in the substitution of the dominant system (regime level) by a new system. The analytical focus is therefore placed on processes and intertwined sequences of events. Change occurs on every level but each level shows different degrees of 'structuration'. The landscape level is the domain of long-term trends, a domain of almost petrified processes and realities. By contrast the niche is a domain of creative effervescence with a high rate of innovation. In between these two, the regime level is characterised by a state of dynamic stability –innovation takes place but is incremental and path dependent. Some key papers in this approach examine the transition from sailing to steam boats, the transition from horse-drawn carriages to automobiles, the rise of the turbo-jet in aviation, and the Dutch Highway System.

Strategic Niche Management (SNM)

This strand of research is concerned with identifying, understanding and shaping the conditions for specific environmental innovations to become a viable challenge to the dominant regime. This involves the articulation of societal and economic expectations around an innovation and the creation of social networks and learning processes that could facilitate its development and diffusion. Earlier research in SNM focused predominantly on dynamics within experimental spaces for the nurturing of environmental innovations, but more recent research has broadened the focus to the relation between those experimental protected spaces and the wider environment in which those innovations emerge (i.e. regime dynamics and landscape trends). Research informed by this approached has looked at, for example, car sharing and collective car ownership initiatives in Switzerland and bicycle pool schemes in Portsmouth.

Transition Management (TM)

Transition management is a new governance approach involving participatory processes of visioning and experimenting with transition paths. Central to this approach is a reiterative process of trial and error through which tools and strategies are improved. The monitoring and evaluation of experiments is conducted by a forum of relevant actors. TM blends insights from complexity theory and governance studies and has benefited from extensive practical experience, especially from the Netherlands where it has been adopted by the government as a policy tool. Transition management has been applied, for example, in the Parkstad Limburg region and by the Dutch Ministry of Transport and Water.

Techno-Economic Paradigm

This approach is rooted in evolutionary economics and studies of long-waves of economic development. It is concerned with the way in which new technologies and related organizational principles affect routine innovation and investment practices by expanding the frontiers of design, product and profit. These inter-related technological and organizational principles gradually become regarded as the ‘common sense’ way of doing things in an efficient manner. This new common sense for efficiency is the new techno-economic paradigm. This approach is not as widely used as the four mentioned above but it is increasingly being advocated by scholars who think transition studies should be more attentive to very long-term temporal scales.

Each of these approaches has its own identity but also offers variable scope for crossovers with other approaches. The manner and extent of possible interplays is however a matter of discussion.

Criticisms

The socio-technical lens in transition studies has been subject to a number of criticisms. Some of the most incisive concern (i) too strong a focus on technology while neglecting the social in the ‘socio-technical’ tandem, (ii) too technocratic and mechanical a view of transitions and (iii) a neglect of inequality and questions of power (e.g. who decides the kind of transition to pursue, who wins and who loses with different transition paths).

In the midst of this debate about the limits of the socio-technical lens, the approach known as Theories of Social Practice has been recognized by the academic community as a distinctive framework to conceptualize sustainability transitions. Some frame the rise of theories of practice within a division of labour in which the socio-technical lens (and more specifically the multi-level perspective) accounts for the supply side of transitions and theories of practice are better suited to account for the demand side. This view may acknowledge that there is scope for combining both approaches. However, some practice theory scholars see theories of social practice as being able to account on their own for large scale systemic change.

Research agenda

Partly responding to criticisms and partly building on past achievements, the socio-technical lens is guided by an expanding research agenda. Some key issues in this agenda are: (i) interactions between multiple green innovations across different regimes and how these may hinder or reinforce each other (existing research has predominantly focused on the emergence of single green innovations within single sectors); (ii) diffusion of green innovations; (iii) how transitions can be accelerated and which policy mixes may

influence this process; (iv) how to encourage the decline of existing non-sustainable systems; (v) the politics of transitions (especially how to integrate theories of power in existing theoretical frameworks); (vi) agency of actors involved in transition processes (especially governments, firms, civil society); (vii) the geographical dimensions of transitions (i.e. how transitions unfold unevenly in different geographical, political and cultural contexts); (viii) how to think of transitions from global and long-term perspectives.

Transition studies and mobilities

Research coming from the 'transitions community' under the label of mobility has generally focused on innovations in modes and technologies of transporting oneself from one place to another with little analysis of how those systems, technologies and practices are embedded in wider processes of social and cultural change. The framing of this strand of research is more in line with conventional transport studies. However, there is an embryonic but rapidly evolving dialogue between mobilities and transition studies in different sites of conceptual and empirical concern. Promising developments are happening, for example, around the development of the multi-level perspective as illustrated by the recent book edited by Frank Geels and his colleagues entitled Automobility in Transition. Theories of Social Practice are also producing interesting insights on, for example, mobility and energy demand.
Studies explicitly engaging with both mobilities research and transition studies are increasingly featuring in journals and conferences. This dialogue is likely to enrich the diversity of conceptual approaches in transition studies and become central to academic and policy discussions about future mobilities.

Further reading

Theories of Social Practice

Shove, E., Pantzar, M. & Watson, M. (2012) The Dynamics of Social Practice: Everyday Life and How it Changes. London: Sage.

Watson, M. (2012). How theories of practice can inform transition to a decarbonised transport system. Journal of Transport Geography, 24: 488-496.

Socio-technical lens to sustainability transitions

Grin, J., Rotmans, J., Schot, J., Geels, F.W., and Loorbach, D. (2010) Transitions to Sustainable Development. New York: Routledge.

Technological Innovation Systems

Hekkert, M.P., Suurs, R.A.A., Negro, S. O., Kuhlmann, S., Smits, R. E. H. M. (2007) Functions of innovation systems: A new approach for analysing technological change, Technological Forecasting and Social Change, 74(4): 413-432.

Jacobsson, S., Bergek, A. (2011) Innovation system analyses and sustainability transitions: Contributions and suggestions for research, Environmental Innovation and Societal Transitions, 1(1): 41-57.

Automobility and the Multi-Level Perspective

F.W. Geels, R. Kemp, G. Dudley, and G. Lyons, G. (2012) Automobility in Transition? A Socio-Technical Analysis of Sustainable Transport. New York: Routledge.

Book review: https://en.forumviesmobiles.org/publication/2014/10/20/book-review-2615

Strategic Niche Management

Kemp, R., Schot, J., Hoogma, R. (1998) Regime shifts to sustainability through processes of niche formation: The approach of strategic niche management, Technology Analysis and Strategic Management 10(2): 175-196.

Hoogma R., Kemp R., Schot J., Truffer B. (2002) Experimenting for Sustainable Transport: The Approach of Strategic Niche Management. London: Routledge.

Smith, A. (2007) Translating sustainabilities between green niches and socio-technical regimes, Technology Analysis and Strategic Management 19(4): 427-450.

Smith, A., Raven, R. (2012) What is protective space? Reconsidering niches in transitions to sustainability, Research Policy 41(6): 1025-1036.

Transition Management

Loorbach, D. (2010) Transition Management for Sustainable Development: A prescriptive, complexity-based governance framework, Governance, 23 (1): 161-183.

Rotmans, J., Kemp, R., van Asselt, M. (2001) More evolution than revolution: Transition management in public policy, Foresight 3(1): 15-31.

Shove, E., Walker, G. (2007) CAUTION! Transitions ahead: Politics, practice and sustainable transition management, Environment and Planning A 39(4): 763-770.

Shove, E., Walker, G. (2008) Transition Management and the politics of shape shifting, Environment and Planning A 40(4): 1012-1014.

Techno-Economic Paradigm

Freeman C., Perez C. (1988) Structural crisis of adjustment, business cycles and investment behaviour, in G. Dosi, C. Freeman, R. Nelson, G. Silverberg, L. Soete (eds) Technical Change and Economic Theory. London: Pinter.

Other recommended literature

Urry, J. (2013) Societies Beyond Oil: Oil Dregds and Social Futures. London: Zed Books.

One of the few books looking at the dynamic relationship between different systems (energy, housing, mobility).

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En savoir plus x

Mobilization

Mobilization is the action by which individuals are called upon to gather in the public space for a concerted effort, be it to express or defend a common cause or to participate in an event. In this respect, it is a social phenomenon appertaining to mobility. This article has been written by Sylvie Landrième, Dominic Villeneuve, Vincent Kaufmann and Christophe Gay.

En savoir plus x

Car sharing

Car sharing is the pooling of one or several vehicles for different trips at different times. Three types of car sharing exist: commercial car sharing, peer-to-peer car sharing and “informal” sharing between individuals.

En savoir plus x

Mobility

For the Mobile Lives Forum, mobility is understood as the process of how individuals travel across distances in order to deploy through time and space the activities that make up their lifestyles. These travel practices are embedded in socio-technical systems, produced by transport and communication industries and techniques, and by normative discourses on these practices, with considerable social, environmental and spatial impacts.

En savoir plus x

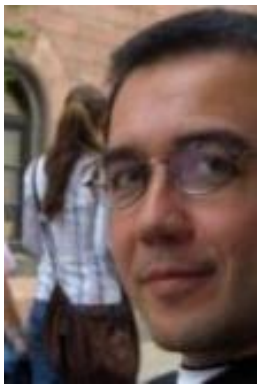
Associated Thematics :

Policies

- Ecological transition

Theories

- Concepts



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Javier Caletrío is the scientific advisor of the Mobile Lives Forum for the English-speaking world (BA Economics, Valencia; MA, PhD Sociology, Lancaster) . He is a researcher with a background in the humanities and social sciences. In adittion, he also has a strong interest in the natural sciences, especially ecology and ornithology. His research lies broadly in the areas of environmental change and sustainability transitions, especially in relation to mobility and inequality. Javier was based at the Centre for Mobilities Research at Lancaster University from 1998 to 2017.

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Transport for Suburbia: Beyond the Automobile Age, by Paul Mess

Publication by Javier Caletrío

Harnessing social tipping dynamics for the ecological transition: the case of the electric car

Javier Caletrío

Ecotourism: Is my flying saving the planet?

Javier Caletrío

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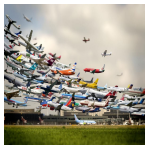
Other publications



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