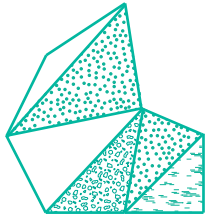
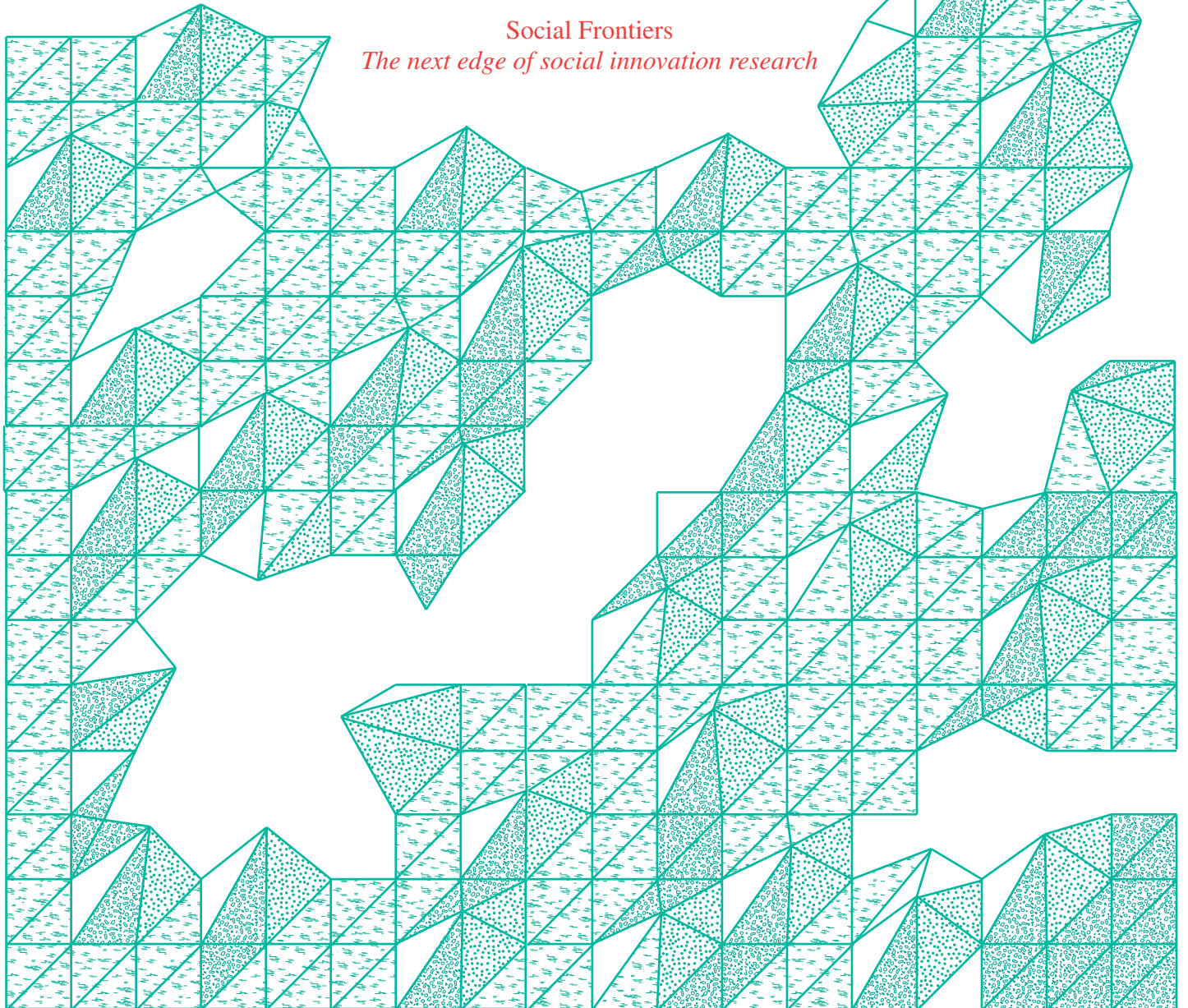


**Transformative social innovations:
A sustainability transition
perspective on social innovation**

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Transformative Social Innovation: A Sustainability Transitions Perspective on Social Innovation

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Abstract

Solutions to the grand societal challenges faced by the knowledge society of the early 21st century will necessarily involve systemic change. This in turn implies a need to understand the ways in which social innovation can be ultimately transformative (creating the conditions for systemic change). This paper addresses the question “how can social innovation be analysed in relation to systemic change and grand societal challenges?” Social innovation is re-conceptualised in relation to systemic change, drawing upon a transitions perspective and emphasizing the important roles of: empowerment, transformative discourses and game-changing developments. This provides a broad conceptual framework, suitable for critically evaluating the hypothesis that social innovation is able to bring about new forms of social interaction that empower people to undertake strategies and actions which, under certain conditions, lead to transformative, systemic change. We propose a methodology for the development of a theory of transformative social innovation linked to a comprehensive programme of empirical research; a comparative case-analysis approach is required to test and refine theory-based propositions about transformative social innovations. In presenting such a novel conceptual foundation for a systemic approach to social innovation research, this paper is highly relevant to a discussion of future social innovation research agendas.

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1 Introduction

Social innovation is an important and understudied phenomenon whose low profile and relatively low standing often result in it being viewed as something marginal. Yet social innovation is already delivering significant value to the groups and communities involved and there is considerable potential for broadening its reach. In this paper we argue for the need to develop a theory of transformative social innovation, by studying how networks of social entrepreneurs and families of social innovation projects contribute to systemic societal change.

This paper addresses the research question “How can social innovation be analysed in relation to systemic change and major societal challenges?” Social innovation is re-conceptualised in relation to systemic change, drawing upon a transitions perspective and emphasizing the important roles of: empowerment, transformative discourses and game-changing developments. This provides a broad analytical framework that is suitable for conducting an integrated analysis of social innovations (and their transformative institutional settings) such as alternative energy cooperatives, science shops, time banks, design labs, eco-villages, transition towns and local resilience initiatives. We also propose a methodology for the development of a theory of transformative social innovation (a TSI theory), integrated with a comprehensive programme of empirical research. The approach features a comparative case-study-analysis approach to test and refine theory-based propositions about transformative social innovations.

We proceed with a brief assessment of the state-of-the-art in social innovation and the need for a systemic approach (section 2), an overview of our perspective and approach in re-conceptualising social innovation in relation to systemic change (section 3), and then a description of a suitable methodology for developing a systemic theory of social innovation (section 4). Finally, section 5 concludes by highlighting how this approach is being taken up in a substantial new international research initiative on transformative social innovation.

2 Social innovation: state-of-the-art and need for a new theory

Social innovation is now extremely prominent on the European policy agenda. The recent report from the Bureau of European Policy Advisors on social innovation (‘Empowering People, Driving Change’, BEPA 2010) sets out a European agenda for social innovation, acknowledging the diversity of forms that social innovation takes:

“Social innovations are innovations that are social in both their ends and their means... new ideas (products services, and models) that simultaneously meet social needs more effectively than alternatives and create new social relationships or collaborations. They are innovations that are not only good for society but also enhance society’s capacity to act”
.... “Social innovation relates to new responses to pressing social demands by means which affect the process of social interactions... In its recent usage, the social innovation approach is understood to mean not only a new governance mode working across traditional fields of responsibilities with an active involvement of citizens, which is effective in addressing the challenges of climate mitigation, social justice, ageing, etc., but also the culture of trust and risk-taking, which is needed to promote scientific and technological innovations” (BEPA 2010).

This definition of social innovation is indicative of the current policy agenda in Europe. It emphasises the distinctive attributes of social innovation in terms of motivation, ends, means, focal agents and processes. The two crucial common elements in social innovation are new social relationships (process related) and new social value creation (outcome related). The changes in social relationships that emerge as “process elements” are an important part of the innovation process, and may even be the most important part in some cases.

Social innovations may be schematically classified into three broad categories:

- grassroots social innovations that respond to pressing social demands not addressed by the market and which are directed towards vulnerable groups in society (e.g. consumer cooperatives);
- broader-level initiatives that address societal challenges in which the boundary between ‘social’ and ‘economic’ is blurred and which are directed towards society as a whole (e.g. crowd-funding or microfinance); and,
- systemic type initiatives that relate to fundamental changes in attitudes and values, strategies and policies, organizational structures and processes, delivery systems and services (e.g. citizen-owned municipal energy networks); i.e. social innovations that play a part in reshaping society as a more participative arena where people are empowered to look for ways to meet their own needs and those of others differently and hence to become less dependent on welfare systems and standardised product offerings from market economy and public sector organisations.

Recent policy interest in social innovation is linked to demographic, environmental, economic, technological, and social changes occurring at all scales from global to local. These widely-experienced societal challenges – even if local cultures and economies vary – are exacerbated by global financial and economic crises, yet they also threaten to place extra burdens on pressed public finances and, indeed, on resources of all kinds at a time of increasing resource scarcity. As Nicholls and Murdock (2012) state: “intractable problems are seen as highlighting the failure of conventional solutions and established paradigms entrenched in intractable institutional settings across all three conventional sectors of society.”

The claim has thus been made that: “at a time of major budgetary constraints, social innovation is an effective way of responding to social challenges, by mobilising people’s creativity to develop solutions and make better use of scarce resources” (BEPA 2010: 7). Interest in social innovation is also reinforced by recognition that addressing major societal challenges requires broad changes in societal discourses, issue framings, values, behaviours, habits and participation rates alongside structural, infrastructural, institutional and organisational changes. The hypothesis implicit in the BEPA report is that social innovation builds social capital and capacities relevant for the general innovativeness of society and, by implication, gives scope for new ways to address (systemic) challenges and meet reformulated policy goals. We suggest that such claims must be critically evaluated through theoretically-informed research and analysis of contemporary social innovations. On the basis of earlier studies, a clearer understanding of social innovation processes has begun to emerge along the lines summarised above (Moulaert et al. 2005; Mulgan 2006; Murray et al. 2010; Young Foundation 2012a-c). Studies such as the “Open Book on Social Innovation” (Murray et al. 2010) represent the state of the art and do an excellent job of describing the methods and tools for social innovation being used across different sectors and regions of the world, drawing on inputs from hundreds of organisations, and developing insights and recommendations. However, still lacking is a structured, systematic, general theory of how social innovation interacts with systemic social change (based on a consistent empirical database) that could be used to inform action by policy makers, social entrepreneurs, potential investors, academics, and other stakeholders.

3 Re-conceptualising social innovation in relation to systemic change

3.1 Problem framing: grand societal challenges, systemic change and social innovation

Societal challenges are persistent and systemic in nature

In framing the current systemic context and challenge for social innovation, we take the position that struggles around health, food, energy, transport, climate change and security are interlinking and systemic in terms of their reach and impacts. They are characterised by the features of wicked or persistent problems (see e.g. Rotmans & Loorbach 2010) in that they exhibit characteristics of self-perpetuation and lock-in: ‘solutions’ which are developed to address symptoms rather than addressing the challenge at a systemic level tend to result in further emergent ‘problems’. Such systemically embedded problems manifest themselves in the daily practice of actors that try to take on enduring problems (Schuitmaker 2012). The nature of persistence means that new practices by actors can have the unintended side effect of reinforcing persistent societal challenges, or even creating new societal challenges. A foundational idea for this paper then is that contemporary societal challenges require fundamental, systemic change, and that, therefore, understanding how social innovations can contribute to dealing with societal challenges, first requires that we understand how social innovations can move beyond the vicious cycle of persistent problems so as to contribute to systemic solutions.

Can social innovation empower people and change societies for the better?

Traditional ways in which markets, governments and civil society have responded to shifting societal demands are showing signs of strain. There are many contributing factors such as: the mounting costs of providing public services in a period of austerity; changing cultural and social norms; an aging demography; the effects of global commercial and industrial competition; and the increasingly complex and interconnected nature of societal challenges. Social innovation is increasingly viewed as a way of addressing societal challenges, but given the systemic nature of many of the challenges faced, an urgent task for research is to better understand the extent to which social innovation is able to contribute to viable alternatives and pathways that trigger transformative change at both individual and collective levels.

The need for a new theory of transformative social innovation

Building on the assessment of the state of the art in section 2 we frame the research question: “*How can social innovation be analysed in relation to systemic change and major societal challenges?*” We begin by observing that these societal challenges call for entirely new and qualitatively-different innovation capacities that are much more broadly-based, diverse, creative, context-sensitive and (in the financial and economic context) more efficient and cost-effective, than have been relied on so far. Drastic societal challenges call for transformative social innovations: social innovations that lead to purposeful systemic changes that address urgent societal challenges. We argue therefore that *there is a need for a new theory of transformative social innovation* (a TSI theory). A TSI theory should be capable of analysis of the process dimension of social innovation in societal change, the inter-relationship between policy and political institutions and social innovation, and the wider role of social innovation in the overall innovativeness of society, especially in challenging times. The theory should also conceptualise the role and scope of social innovation in both contributing to innovation directly, such as by organising new systems for delivering value, and as a “vector” for enhancing social innovation capacities (specifically) and societal innovativeness (generally); i.e. the scope of social innovation to contribute to enhanced capacities for empowerment and transformative systemic change.

3.2 Understand the dynamics between social innovation, transformative discourses, game-changing developments, and systemic change

To be of practical use it is necessary to analyse the relation between social innovation and systemic change in the context of a rapidly changing world that faces multiple ‘game changing’ developments and events. Examples of such ‘game-changers’ are the financial crisis, climate change, and revolutions in ICT. These game-changers may have profound impacts on existing societal systems (such as the health-welfare sector, the food-agriculture sector, the energy sector, the transport sector, or the finance sector). Climate change, for instance, shapes a transformative discourse/paradigm around the need to reduce carbon footprints and transform industrial systems and lifestyles, leading to new opportunities for social innovation. Opportunities for social innovation are also

afforded by the ICT-revolution which is allowing radically new possibilities to share experiences, viewpoints, to mobilize masses and obtain knowledge, via social media and the internet (with new transformative discourses/paradigms around new forms of knowledge production such as ‘open source’). The financial crisis leads to governmental budget cuts that put pressure on social welfare systems, including rising unemployment and an increasing amount of unoccupied people. In reaction to such developments, dissatisfaction with capitalism grows leading to a lack of trust in financial institutions, and a growing pressure on companies and democratic, political institutions.

Further ‘game changers’ with relevance to social innovation processes, might include: the rising costs of health care because of chronic diseases, bad diets and unhealthy lifestyles and dissatisfaction with supply-based modes of health care; rising unemployment for middle and lower skilled jobs in Western countries as a result of globalisation; growing attention to social value creation and quality of life in the urban context (for economic and social reasons); or, individuals’ desires to live in a more responsible and meaningful way as a citizen and worker.

A TSI theory then should unpack the dynamics between game-changers, transformative discourses, social innovations and systemic changes at the level of societal systems in selected policy domains (e.g. health, welfare, food-agriculture, energy, transport, finance). This feature is required in order to develop a forward-looking assessment capability able to identify and assess linkages between game-changing developments, prospective policy interventions, and societal challenges.

3.3 Use a transitions perspective to conceptualise social innovation in a systemic context

TSI theory should address the multi-level dynamics between social innovation, systemic change, ‘game changers’ and transformative discourses. We turn next to the field of transition research, a field that is precisely concerned with *system innovations*, i.e. how innovations – over longer periods of time – are grown, accelerated and up-scaled to the level of systemic change (Grin et al. 2010; Markard et al. 2012), and how actors navigate and perform strategic interventions that support such transition processes (Jørgensen 2012).

To this end, various theoretical frameworks have been developed and empirically tested, such as the Multilevel Perspective (MLP), which is used to analyse innovation processes as a multi-dimensional and complex interplay between micro-, meso- and macro- levels (Rip & Kemp 1998; Geels 2002, 2005). At the *meso-level*, the focus is on *regimes*, consisting of socio-technical structures and formal, normative and cognitive rules that guide the activities of actors. The *macro-level* is framed as the *landscape*, where exogenous trends and events unfold. The *micro-level* is conceptualised as the level of practices, with novel practices occurring in relatively protected spaces called niches (Smith 2006, 2007; Raven 2006). Systemic change at the level of societal systems is the result of particular multi-level interactions between landscape, regimes and niches. Various ‘pathways’ and ‘patterns’ in multi-level interaction have been characterised (see Geels & Schot 2007; De Haan & Rotmans 2011; Smith & Stirling 2010).

The MLP provides a useful heuristic device to analyse the relation between social innovation, transformative systemic changes, game changers and transformative discourses. By conceptualizing social innovation as developing in niches, we are able to develop a first set of questions and hypotheses about the mechanisms that might allow social innovation to be a driver of systemic change. The game-changing developments are then conceptualised as landscape-developments at the macro-level, i.e. exogenous trends and events that place pressure on existing regimes. Systemic changes are conceptualised as fundamental changes at the level of societal systems (e.g. in a particular sector such as health care, finance or energy); these societal systems are understood as being dominated by the practices, interests and paradigm of socio-technical regimes that reinforce existing structures and rules, thereby also reinforcing the persistent problems that come forth from these structures and rules.

While the MLP provides a pragmatic starting point, we also identify the need ultimately to include fully relational approaches (see e.g. Garud and Gehman 2012) that deal directly with the actual relationships that social innovations have to each other and the systemic context. In transition research, the MLP has also been translated and elaborated into heuristic policy frameworks and participatory tools, such as Transition Management (Loorbach 2010) and Strategic

Niche Management (Kemp et al. 1998; Smith & Raven 2012). These contribute to models for managing processes of co-evolution, based on recursive cycles of learning and adaptation, exploiting possibilities for systemic change in a strategic, forward-looking manner. These approaches contain numerous insights on reflexive governance (Grin 2010), social learning (Van den Bosch 2010) and monitoring (Taanman et al. 2012) that can be utilised in further developing a theory of social innovation in relation to systemic change.

We conceptualise TSI theory as an open framework where different theoretical resources are brought to bear in researching different aspects of social innovation, including: theories on power and empowerment (Avelino 2009, 2011; Avelino & Rotmans, 2009, 2011); social movement theories (Smith, 2012); social practice theory (Hargreaves et al. 2013); studies on institutional entrepreneurship and social entrepreneurship; social psychology approaches; and, social capital theory, including social valuation approaches.

3.4 A conceptual framing of the dynamics of social innovation in relation to systemic change

TSI theory should explore the constituent links and conditioning factors in the causal chain between social innovation, transformative systemic change, empowerment, transformative discourses and game-changing developments. TSI theory should critically confront the empirically observed hypothesis/claim (see, for example, the recent BEPA report) that: social innovation induces new forms of social interaction that empower people to undertake strategies and actions which – under certain conditions – lead to transformative, systemic change that helps to address societal challenges. We hypothesise a multi-levelled and non-linear dynamic between social innovations, systemic change and (dis)empowerment processes. It may well be that social innovations can lead to systemic change without necessarily empowering people – or even that the up-scaling of social innovations is accompanied by disempowerment. Thus empowerment is not necessarily a process condition for systemic change; it may also be a separate, substantive ambition in itself.

We also hypothesize that reflexivity will turn out to be an important feature of social innovations that are successful in influencing systemic change. As a social innovation spreads to a new site or situation, it must undergo a process re-contextualisation and the actors involved may (or may not) also engage in a process of reframing. It is then interesting to ask: what ‘model’ of systemic change do the actors involved hold (if any) and how is this model updated (and/or reframed) as the social innovation spreads to new contexts and as new events and information impact it (including ‘game changing’ developments)? And, if such a re-framing occurs at one local instance of a social innovation, can it also be communicated back across the network of social innovations? Transformative paradigms and discourses influencing a particular social innovation are likely to be associated with a ‘model’ of systemic change; learning about systemic change may turn out to be an important feature of what ‘successful’ transformative social innovations do. Of course some social innovations may interact with systemic change without any intention to do so, and this becomes an interesting question to ask/explore in empirical research. We present the following three sets of conceptual framings around how social innovations function in systemic contexts, from which ‘empirically testable hypotheses’ can be further developed:

Conceptual framing 1 focuses on mechanisms and processes.

Social innovations develop in particular ‘spaces’ within society that can be conceptualised as ‘niches’; they interact with, and are often hampered by, ‘regimes’. Moreover, social innovation is scaled up to the systems level, in part, through interactions between different types/varieties of social innovation, and also through the interaction between social innovation and other types of innovation (e.g. technical, financial). The diffusion or scaling-up of social innovations requires the empowerment of niche actors as well as regime destabilisation (i.e. a disrupting of the structural power of dominant institutions). Transnational networks and intermediary organisations, embedded in transnational social movements, play a crucial role in such (dis)empowerment processes. By better understanding these processes, research can contribute to the empowerment of social innovation initiatives, providing suggestions as to how such initiatives may interact and cooperate more effectively in transnational networks.

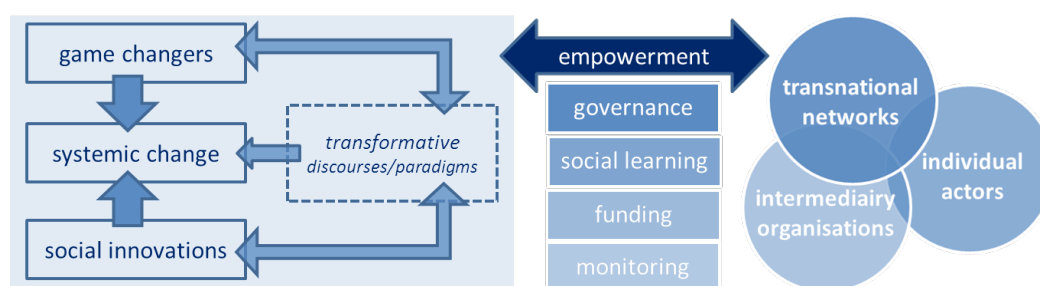
Conceptual framing 2 focuses on context and dynamics.

Social innovation actors are informed and guided in their actions by specific *transformative discourses and paradigms* that can be seen as responses to particular societal challenges (such as ‘low-carbon living’, ‘open source’ production models or a ‘new social economy’ discourse). These transformative discourses in turn are influenced by, and co-evolve with, game-changing developments (such as the financial crisis, climate change, or the ICT-revolution). Game-changers place pressure on existing ‘regime structures’ (the dominant ways of doing things), leading to possibilities for political institutions to take up particular novel transformative discourses (that are perceived as having the potential to alleviate pressures). Such processes provide ‘windows of opportunity’ for social innovations and social movements that may often be ‘ahead of the game’ with concrete examples and manifestations of these novel transformative discourses (such as viable demonstrations of low-carbon living or alternative models of economic exchange). Social innovation initiatives can exercise transformative power by playing into these contextual dynamics. But this is by no means certain, and requires that the social innovation actors employ an adequate model/understanding of systemic change and are able to engage in reflexive (social) learning. By understanding these processes, research can contribute to the empowerment of social innovation initiatives – providing suggestions on how these initiatives may creatively make best use of such contextual dynamics.

Conceptual framing 3 focuses on valuation and metrics.

Monitoring the processes, impacts and outcomes of social innovation can play a major role in social learning and the empowering of social innovation actors. However, the link from monitoring, evaluation and valuation to empowerment and learning is not guaranteed and the type of impacts valuation that policy makers (and ‘regime players’) require may be not be the same as that required *within* a social innovation process. However valuing the impacts of social innovation can play a major role in empowering social innovation actors. In order for people to be empowered and intrinsically motivated to contribute to systemic change through social innovation, they need to be able to value the impact of their endeavours. Existing methods of measuring and monitoring social valuation fail to capture the perception of the added value of social innovation and thus disempower the actors involved. In order to value the transformative potential of social innovations, there is a need for new valuation concepts and methods that combine retrospective and prospective evaluation and envisioning. By developing (and disseminating) such methods, research can empower actors involved in social innovation processes, thereby enhancing contributions to ‘positive’ systemic change.

Figure 1: A conceptual framework for developing a transformative social innovation theory



A task for TSI theory is to inform a sophisticated analytical framework that can be used to analyse how different actors at different levels (individual, intermediary organisations, transnational networks) are (dis)empowered. We conceptualise (hypothesise) four dimensions that determine the extent to which actors are (dis)empowered in social innovation processes:

1. **Governance.** The concept of governance is inherently about empowering other actors besides government in resolving societal challenges. Such participation requires dedicated governance tools. What governance tools are necessary to empower actors to contribute to transformative social innovation processes?
2. **Social learning.** Social innovation and systemic change inherently require new ways of thinking and doing, which in turn require dedicated learning processes. How do (social) learning methods empower transformative social innovation?
3. **Funding.** A major barrier for many social innovation initiatives concerns the lack of available funding within existing financial structures. What new and innovative financing methods are available for funding transformative social innovation?
4. **Monitoring.** Knowing how and to what extent social innovation initiatives are succeeding in their goals, and providing suggestions on how to increase this success, is a crucial element of empowerment. What methods/techniques are required for monitoring processes of transformative social innovation?

In developing a TSI theory, these four cross-cutting themes can be used to structure sets of theoretical hypotheses/propositions which are then evaluated through empirical research, leading to progress towards a robust TSI theory and insights for practice (Figure 1). These four cross-cutting themes also provide a 'bridge' (a bridging device) between TSI theory development and the application of the theory in contemporary social innovation processes.

4 A methodology for developing a systemic theory of social innovation

4.1 Use of a 'middle-range' approach to develop a theory of transformative social innovation

The research concept that we propose to use in developing a TSI theory is to create an iterative interplay between: strategically targeted empirical research on social innovation; the development of new empirically-grounded theory on social innovation; and, a realisation of the concept at an operational level through capacity building and the co-development of applications with policy-makers and social entrepreneurs. It is important to study both the processes and outcomes of social innovation as part of an embedded research approach, in which individual empirical cases will be studied within a broader theoretical analysis which looks at intermediary structures and external developments.

A middle-range theory development approach (see Merton 1949, Hedstrom 2005) provides a tried and tested *method* for building such a new empirically-grounded social theory. Middle-range theory aims to integrate theory and empirical research. It is currently a widely used approach to sociological theory construction. Middle-range theory starts with an empirical phenomenon (as opposed to a broad abstract entity like the social system) and abstracts from it to create general statements that can be verified by data.

Hedstrom's development of the middle-range approach focuses on social mechanisms, by which he means: "a constellation of entities and activities that are linked to one another in such a way that regularly brings about a particular type of outcome." (Hedstrom 2005: 11). The aim is to: "explain an observed phenomenon by referring to the social mechanism by which such a phenomenon is regularly brought about" (ibid.). In Hedstrom's approach, mechanisms can be identified at different levels; mechanisms at a "lower level" may help to describe a mechanism at a higher level. For our purposes, we intend to explore both the explanatory power of theory based on the construct of 'levels' and theoretical framings based on alternative 'flat' or 'relational' ontologies which may turn out to better describe the social mechanisms responsible for social innovation.

Hedstrom (2005: 35) provides three desirable criteria for a middle-range theory: 1) it should be psychologically and sociologically plausible; 2) it should be as simple as possible, and 3) it should explain action in meaningful and intentional terms. For our purposes we need to broaden “sociologically plausible” to some notion of “systemically plausible” as we are interested in all significant processes of systemic change that social innovation engages with, including culture, technology and physical infrastructures, and (importantly) environmental and ecological systems, as well as “purely” social change processes.

The phenomenon of interest then is: *social innovation as it occurs in interaction with systemic change*. We develop TSI theory by first identifying sets of social mechanisms involved in social innovation processes (based on previous empirical research and synthesis) and then developing detailed research questions and hypotheses about how social innovation is mediated via these mechanisms, drawing upon existing theoretical resources (from transitions research, social innovation research and other social science theory). Empirically-grounded and theoretical-informed descriptions of the mechanisms are iteratively developed (through original empirical research), used to address revised research questions and hypotheses, and combined with a forward-looking assessment capacity.

A suitable approach to TSI theory development can then be specified as a step-wise process in which the synthesis of empirical research with theory leads to the iterative development of a *middle-range theory* of transformative social innovation:

1. Review the existing case study literature on social innovation, and build on and integrate existing theories and concepts deductively to formulate theoretical propositions on transformative social innovation (described in terms of social mechanisms).
2. Ground the theory by inductively formulating revised theoretical insights on the basis of empirical observations gathered from a set of in-depth local case-studies of social innovation.
3. Further ground the theory, by testing and evaluating the theoretical hypotheses through a meta-analysis of a larger sampling of cases.
4. Adapt the theory based on the empirical testing, in terms of revising, reformulating and sharpening the theoretical propositions and hypotheses.
5. Apply the theory, by translating theoretical insights into a practical tool-box for empowering actors, consisting of policy recommendations and capacity building tools, and including both retrospective and prospective methods for assessing and improving the transformative potential of social innovations.

These steps occur partly in parallel, partly consecutively to one another.

4.2 Empirical research and case studies

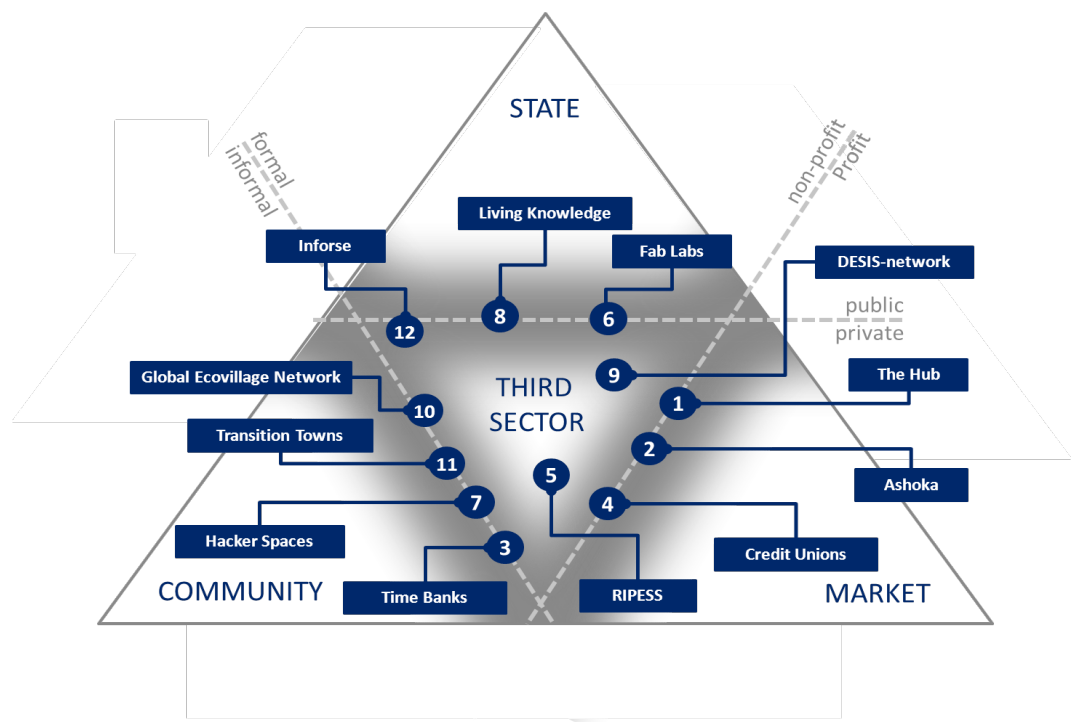
In order to test and ground a new TSI theory, it will be necessary to gather a “streamlined” and “robust” empirical database, derived from a broad empirical sampling of contemporary social innovation networks, including information regarding system dynamics.

Our initial empirical survey, testing and grounding of the elements/dimensions of a TSI theory (as set out in this paper) has involved identifying and selecting a set of twelve *transnational social innovation networks* that facilitate social innovation across Europe and Latin America. The term ‘transnational network’ refers to a set of interlinked social innovation initiatives that operate across national borders. Such networks differ in their level of formalisation, ranging from entirely informal networks to networks that have an official structure with various organisational levels. We focused first on Brazil and Argentina based on the extraordinary liveliness of social innovations in these countries in recent years. Here we find advanced examples of social innovation in practice, providing rich empirical insights into how varied political and cultural contexts colour the potentials for social innovation and (dis)empowerment.

Figure 2 and Tables A1 and A2 in the appendix provide a characterisation of each the selected transnational networks and a summary of how they are relevant to a study of transformative social innovation.

A focus on transnational networks allows empirical exploration of the diffusion and up-scaling of social innovation beyond local initiatives. Formalised networks often have *intermediary organisations* that connect, coordinate and represent local and regional initiatives at the transnational level. The aim is to identify the mechanisms of emergence, shaping, influencing, transfer and adaptation of social innovation across different societal domains and countries. The multi-layered and transnational nature of these networks allows for analysing not only the role of transnational networks themselves, but also the role of the intermediary organisations and individual actors that are part of these networks, sampling various sectors and many different localities.

Figure 2: A characterisation of twelve transnational social innovation networks.

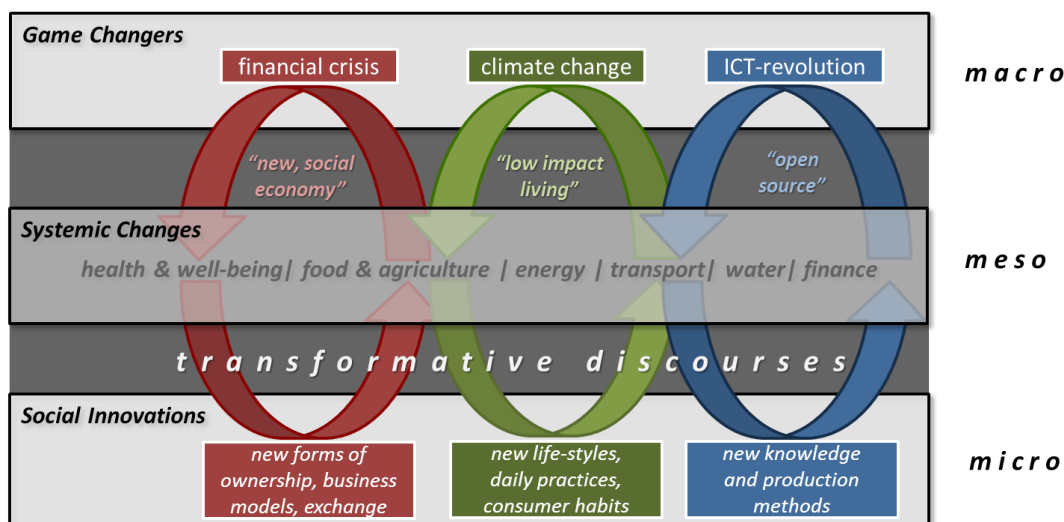


We have identified three game-changing developments that are potentially significant for the dynamics of our selected transnational networks: 1) the financial crisis, 2) climate change, and 3) the continuing ICT-revolution. We furthermore relate these to three contemporary **transformative paradigms and discourses** on: 1) ‘new social economy’, 2) ‘low-impact living’ and 3) ‘open source’. The identification of these transformative discourses is based on a clustering of the ‘generative paradigms’ identified in the *Open Book of Social Innovations* (Murray et al. 2010). The empirical research approach is then to interrogate how different types of social innovation relate to systemic changes processes, game changing developments and transformative discourses (see figure 3 and tables A1 and A2 in the appendix).

As a next step in this analysis we intend to develop a standardised empirical database, using an embedded case study approach (Yin 2003) that combines both qualitative, in-depth case-study analysis, as well as a quantitatively oriented, survey-based comparative meta-analysis. The challenge for the next stage of our empirical research then is to build a robust and systematic database of cases and to analyse how and to what extent the interaction between game-changing developments, transformative paradigms and social innovations, leads to systemic changes at the level of various key sectors/policy areas.

Our proposed analysis then will not only involve a retrospective, historical analysis, but also a prospective, forward-looking analysis to explore potential future ‘needs’ for social innovation as shaped by such game-changing dynamics. Our empirical work will proceed by first developing a more rigorous analysis of each of the networks as a whole, and then subsequently zooming in on specifically identified sub-units of analysis in the form of ‘local/regional/national’ manifestations of these networks (in social innovation projects by specific groups of people at specific sites).

Figure 3: Three Sets of Game-Changers–Transformative Discourses–Social Innovations.



5 Conclusion

This paper has set out a conceptual foundation for a novel approach to researching the dynamical relationships between social innovation and systemic change, as well as identifying relevant contextual factors and contextual dynamics, thereby paving the way for the development of a theory of *transformative* social innovation (a TSI theory).

In related empirical work we have characterised a set of twelve transnational social innovation networks with the potential for systemic impacts. We have also characterised three ‘game changing’ developments that we believe may severely influence the future development of our selected transnational networks in the coming years. We have proposed an integrated theory development and empirical research approach that we judge to be most suitable in developing a TSI theory; this includes the construction of a new standardised empirical database on transnational social innovation networks, including gathering information regarding system dynamics.

This novel systemic approach to understanding and researching social innovation has been taken up in a new EC-funded (FP7) research initiative (TRANSIT), which is conducting an extensive programme of empirical research on the phenomena of transformative social innovations, looking at how they are operating through transnational networks across Europe and Latin America. Related objectives of the TRANSIT initiative include:

- developing a better understanding of the relationships between social innovation and the capacity of a society to address urgent challenges;
- an improved systemic understanding concerning the cross-cutting themes (governance, social learning, funding and monitoring) that policy makers and others should address in order to improve the general framing context for social innovation;

- realistic means for removing impediments and enabling social innovation (extension, up-scaling, acceleration, etc.); including the development of a ‘tool-box’ to support policy makers and social innovation actors; and,
- lasting networks and resources for supporting social innovation processes.

In presenting a conceptual foundation for a systemic approach to social innovation, this paper is highly relevant to a discussion of future social innovation research agendas.

Appendix: Initial characterisation of twelve Transnational Social Innovation Networks

Table A1: Twelve transitional networks, relating transformative discourses to game changing developments and associated types of social innovations (see table A2 for further details).

	Transnational Networks	Transformative Discourses			Short Description of Networks
1	The Hub	A	B	C	network of social entrepreneurs providing co-creation places (or “Hubs”) in > 30 cities around the world
2	Ashoka	A			network for supporting social entrepreneurs, incl. association of 3,000 ‘SE fellows’ in 70+ countries
3	Time Banks	A			globally networked entities that facilitate reciprocal service exchange using time as currency
4	Credit Unions	A			global network grouping and representing credit cooperatives, incl. 44 members in 54 countries
5	RIPESS	A			Intercontinental Network for the Promotion of the Social Solidarity Economy (RIPESS)
6	FABLABS	A		C	189+ digital fabrication workshops for communities, incl. open source design and manufacturing resources
7	Hackerspace	A		C	1330+ physical sites where experiments are made in open source, commons-based, peer-production
8	Living Knowledge Network	A	B	C	Network of ‘Science Shops’: scientific research in cooperation with citizens and civil society organisations
9	DESIS-network		B	C	Global network of design labs supporting ‘social innovation towards sustainability’, incl. 30 labs globally
10	Global Ecovillage Network	A	B		global network of 500 eco-villages and intentional co- communities, incl. European and Latin America
11	Transition Towns	A	B		global network incl. 450 grassroots community initiatives working on “local resilience”
12	INFORSE	A	B		International Network for Sustainable Energy, 140 NGOs in 60+ countries, promoting sustainable energy

	Transformative Discourses	Game Changers	Social Innovations
A	New, Social Economy	Financial Crisis	Innovations in ownership, business models, and methods of exchange. Policy areas: health, welfare, employment, and finance.
B	Low Impact Living	Climate Change	Innovations in life-styles, daily practices, and consumer habits. Policy areas: energy, mobility, food, agriculture, and water.
C	Open Source	ICT-revolution	Innovations in research, production, and the sharing of information. Policy areas: R&D, education, participation, and employment.

Table A2: A characterisation of each of the twelve Transnational Social Innovation Networks

	Transnational Networks	Description
1	The Hub	The Hub is a global network of social entrepreneurs which provides innovative co-creation places (“Hubs”) in 30+ cities around the world, focused on social entrepreneurs that are ‘working on ideas for a radically better world’. The Hub has been studied as an exemplifying social network that facilitates social innovation and entrepreneurial activity (Carrera & Granelli 2009, Casson & Della Giusta 2007). The Hub is also used as empirical material in research on how strategic niche management (SNM) can be applied to inform social innovation and social entrepreneurship (Witkamp et al. 2011). The Hub networks provides TRANSIT with a set of transnational examples of how social entrepreneurs operate at the intersection between The Third Sector and the Market to create social innovations that contribute to transformative paradigms on “a new, social economy”, “low-impact living”, as well as “open source”.
2	Ashoka	Ashoka is a global network for supporting social entrepreneurs (SE), incl. association of 3,000 SE ‘fellows’ in > 70 countries around the world. Ashoka invests in social entrepreneurs by providing personal financial support for 1 to 3 years to ‘leading changemakers’ across the world. Ashoka is thriving for maximum social impact, therefore group entrepreneurship is promoted and relevant infrastructure (access to financial resources, business and academic partnerships) is built. Popular case studies of Ashoka fellows from all around the world are developed by Bornstein (2004) through qualitative interviewing. Sen (2007) focuses upon Ashoka fellows as drivers of social change, while Meyskens et al. (2010) analyses the social value creation characteristics of Ashoka fellows through a resource-based view of entrepreneurship. The Ashoka network provides transnational insights on the relations between social innovation, social entrepreneurship and transformative discourses on the “new, social economy”.

3	Time Banks	<p>Time Banks are regionally networked entities that facilitate reciprocal service exchange using time as currency all over the world. There are networks of time banks in many countries around the world in Europe, the Americas, and beyond. The Network of Spanish Time Banks alone already groups together over 300 time banks. Time banks have been studied as examples of community-led complementary currencies, conceptualised as “a grassroots tool to promote social inclusion through community self-help and active citizenship” (Seyfang 2003, 2004). For the TRANSIT-project, the network of Time Banks provides a unique comparative case-study to analyse how discourses on the “new, social economy” are manifested in local, community-led social innovations.</p>
4	Credit Unions	<p>The World Council of Credit Unions is a transnational network grouping and representing credit cooperatives all over the world. It has 44 members in 54 countries. It supports the development of credit cooperatives all over the world, monitors policy developments and does advocacy work. Credit cooperatives have been studied as non-firm economic institutions by Banerjee, Besley and Guinnane (1994); Guinnane (2001) and Besley (1995). Besley has studied them as institutional responses to risky and poor environments. Guinnane has studied the claim that credit cooperatives are successful due to their ability to capitalize on superior information and to impose inexpensive but effective sanctions on defaulters. The network of Credit Unions provides us with transnational examples of institutionalized social innovation at the intersection between the market and the Third Sector.</p>
5	RIPESS	<p>RIPESS is the Intercontinental Network for the Promotion of the Social Solidarity Economy, which connects social and solidarity economy networks throughout the world. As a network of networks, it brings together continental networks, that in turn bring together national and sectoral networks. RIPESS organizes global forums every four years. The RIPESS network provides a transnational overview of social and solidarity economy networks across the world, thus enabling a systemic comparative study of how the discourse on “a new, social economy” relates to systemic change and social innovations in different parts of the world.</p>
6	FABLABS	<p>There are 189 FabLabs globally networked: from Colombia to Canada, Namibia to the Netherlands. Deriving from a model pioneered by the Centre for Bits and Atoms at MIT, FabLabs are digital fabrication workshops open to local communities, and with access to open source design and manufacturing resources. They enable people to make whatever they want, turning consumers into producers, and advocates see them as democratizing production and consumption (Gershenfeld 2005, Troxler 2010). The network of Fablabs provide interesting case-studies for cross-national comparison regarding social innovations that engage with the paradigm of “open source” and “a new social economy”.</p>

7	Hacker-space	<p>Hackerspaces are similar to FabLabs, but are self-organised by users, and more strongly committed to principles of open source, commons-based, peer-production. There are over 1330 Hackerspaces networked globally, and through events like Makers Faires. There are hundreds in Europe and dozens in Latin America. Hackerspaces are physical sites where experiments are made in the relocating, reconfiguring and recalibrating of innovative capabilities in society. (Stangler and Maxwell, 2012, Dougherty, 2012, Mota, 2011). The network of Hackerspaces provides an exceptionally large set of cases for cross-national comparison regarding social innovations in “open source” and “a new social economy”. Moreover, the comparison between Fablabs and Hackerspaces enables comparison between more government-led (Fablabs) and more community-led (Hackerspaces) social innovation initiatives.</p>
8	Living Knowledge network	<p>The Living Knowledge Network is the formal international network of ‘Science Shops’ - small entities that carry out scientific research on behalf of citizens and local civil society. The concept of Science Shops was developed in the 1970s to strengthen the influence of civil society organisations on societal issues through access to scientific knowledge. Since then Science Shops have been developed in several European and non-European countries, mostly as university-based Science Shops, but also some as community-based Science Shops. The international network, Living Knowledge, was launched in 2001. EU financed projects about impact of Science Shops have been conducted the recent 10 years (Mulder et al, 2006; Brodersen, 2010). Countries with the oldest Science Shops, like the Netherlands and Denmark, have recently experienced reduced university support to Science Shops and integration with match-making facilities between university and society. On the other hand, during the same period the first Science Shops have been set up in countries without strong civil society organisations (e.g. Belgium, Portugal, France, Greece). Living Knowledge provides TRANSIT access to a large transnational set of open source initiatives at the intersection between the Third Sector and government, not only related to open source but also to low impact living and new social economy.</p>
9	DE-SIS-network	<p>DESIS - Design for Social Innovation towards Sustainability – is a global network of design labs supporting ‘social innovation towards sustainability’, based in design schools and design-oriented universities, actively involved in promoting and supporting sustainable change. Now, It gathers more than 30 labs all over the world. (Manzini et al. 2010). The DESIS network provides TRANSIT with a transnational set of cases where universities apply an open source approach to capacity for design of informal solutions to low-impact living in different types of communities. The focus is especially on the intersection between Third Sector and community.</p>

<p>Global Ecovillage Network</p>	<p>The Global Ecovillage Network (GEN) is a network of > 500 eco-villages and other intentional communities across the globe. It also has regional network subdivision for Europe and ‘the Americas’: http://gen-europe.org/ and http://ena.ecovillage.org/. Studies on GEN and/or local eco-villages often focus on social movement theory and/or intentional communities (Lockyer 2010, Kunze 2009, Meijering 2006). Kunze (2012) analysed eco-villages as laboratories for sustainable living and social innovation. Avelino & Kunze (2009) analysed the up-scaling and mainstreaming of eco-villages and their contribution to sustainability transitions. The Ecovillage Networks provides a large set of transnational examples of communities that work on social innovation and explicitly engage with transformative paradigms and discourses on “low-impact living” and “social economy”.</p>
<p>Transition Towns</p>	<p>Network of 450 grassroots communities working on ‘local resilience’ in response to peak oil, climate change and financial crisis. The concept of Transition Towns originates in the UK – where it is also still most strongly represented, but in the past years has spread to many other countries in Europe and Latin America (mostly Brazil and Argentina). Empirical studies about Transition Towns initiatives have been mostly conducted in the context of urban studies and the ‘relocalisation’ movement (e.g. Mason, K. and Whitehead, M. 2012, Bailey et al. 2010, Hopkins 2012). Seyfang & Haxeltine (2012) have studied Transition Towns initiatives in the UK as grassroots innovations from the perspective of the transitions Multi-level Perspective. TRANSIT will contribute to the state of the art through a systematic comparison of Transition Towns initiatives in Europe and Latin America. This will provide rich insights into the dynamics between local social innovations and transnational discourses on “low-impact living” and “a new, social economy”.</p>
<p>INFORSE</p>	<p>INFORSE – International Network for Sustainable Energy – is a worldwide network consisting of 140 independent NGOs working in about 60 countries to promote sustainable energy and social development. The international network was established in 1992 to secure follow-up to the decisions at the Rio summit in 1992. The INFORSE network revolves around the members supported by National Focal Points in some countries and Regional Coordinators working in their respective regions. Renewable energy and increased energy efficiency are a focus in all countries. Western countries are in some cases financing projects in other countries. There is need for scientific analyses of the role of international networking on the transfer and adaptation of experiences among countries. The INFORSE network provides TRANSIT with a large transnational set of experiences with the interaction between low impact living and new social economy with possibilities for analyses of both the international transfer of ideas for social innovation and the need for adaptation of these ideas to specific local and national contexts. The focus is especially on the intersection between Third Sector and state.</p>

6 References

- Avelino, F. (2009) Empowerment and the Challenge of Applying Transition Management to ongoing Projects. *Policy Sciences*, 42(4), 369-390.
- Avelino, F. & Rotmans, J. (2009) "Power in Transition: An Interdisciplinary Framework to Study Power in Relation to Structural Change", *European Journal of Social Theory*, 12(40): 543-569.
- Avelino, F. & Kunze, I. (2009) "Exploring the Transition Potential of the Ecovillage Movement", paper presented at *European Conference on Sustainability Transitions: Dynamics & Governance of Transitions to Sustainability*, June 4-5, 2009, Amsterdam.
- Avelino, F. (2011) *Power in Transition. Empowering Discourses on Sustainability Transitions*, PhD-thesis, Erasmus University, Rotterdam.
- Avelino, F. & Rotmans, J. (2011) 'A Dynamic Conceptualization of Power for Sustainability Research', *Journal of Cleaner Production*, 19(8):796-804.
- Boudon, Raymond (1991) 'What middle-range theories are', *Contemporary Sociology* (American Sociological Association) 20 (4): pp. 519-522.
- De Haan, J. & Rotmans, R. (2011) 'Patterns in transitions: Understanding complex chains of change', *Technological Forecasting & Social Change*, 78(1):90-102
- Garudd, R. and Gehman, J. (2012) 'Metatheoretical perspectives on sustainability journeys: Evolutionary, relational and durational', *Research Policy* 41 (2012) 980- 995.
- Geels, F. W. (2004) 'From sectoral systems of innovation to socio-technical systems: Insights about dynamics and change from sociology and institutional theory', *Research Policy*, 33(6-7): 897-920.
- Geels, F.W. (2005) *Technological Transitions and System Innovations: A Co-evolutionary and Socio-Technical Analysis*, Cheltenham: Edward Elgar.
- Geels, F.W. & Schot, J.W. (2007) 'Typology of sociotechnical transition pathways', *Research Policy*, 36(3): 399-417.
- Gieryn, T. (1983) 'Boundaries of Science', in Jasanoff, S. et al. (eds), *Handbook of science and technology studies*, Thousand Oaks, CA: Sage, pp. 393-443.
- Grin, J. (2010) 'Understanding transitions from a governance perspective', part III in: Grin, J., Rotmans, J. & Schot, J. (eds) *Transitions to Sustainable Development; New Directions in the Study of Long Term Transformative Change*. New York: Routledge
- Grin, J., Rotmans, J. & Schot, J. (2010) *Transitions to Sustainable Development; New Directions in the Study of Long Term Transformative Change*. New York: Routledge
- Hedström, P. (2005) *Dissecting the Social: On the Principles of Analytical Sociology*, Cambridge University Press.
- Hargreaves, T., Longhurst, N. & Seyfang, G. (2013) 'Up, down, round and round: connecting regimes and practices in innovation for sustainability', *Environment and Planning A*, 45 402-420.
- Hoppe, R. (2005) Rethinking the Science-Policy Nexus: from Knowledge Utilization and Science Technology Studies to Types of Boundary Arrangements, in: *Poiesis and Praxis. International Journal on Technological Assessment and Ethics of Science*, 3, 3: 119- 215
- Jørgensen, U. (2012) 'Mapping and navigating transitions - the multi-level perspective compared with arenas of development', *Research Policy*, 41(6), 996-1010.
- 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), 175-198.
- Loorbach, D. (2010) 'Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework', *Governance*, 23(1)161-183.
- Markard, J. Raven, R. & Truffer, B. (2012). Sustainability transitions: An emerging field of research and its prospects, *Research Policy*, 41(6): 955-967.
- Merton, Robert. (1949) *Social Theory and Social Structure*, New York: Free Press. 423p.
- Moulaert, F. & Ailenei, O. (2005) 'Social Economy, Third Sector and Solidarity Relations: A Conceptual Synthesis from History to Present', *Urban Studies*, 42(11):2037-2053
- Mulgan, G. (2006) 'The Process of Social Innovation', *Innovations*, MIT Press Journals, Spring 2006, Vol. 1, No. 2, Pages 145-162
- Murray, R., Caulier-Grice, J. & Mulgan, G. (2010) *The Open Book of Social Innovation*, The Young Foundation, London: NESTA.
- Nicholls, A. & Murdock, A. (2012) *Social Innovation: Blurring Boundaries to Reconfigure Markets*, Palgrave Macmillan, Hampshire, England.
- Raven, R. P. J. M. (2006) 'Towards alternative trajectories? reconfigurations in the dutch electricity regime', *Research Policy*, 35(4), 581-595.
- Rip, A. & Kemp, R. (1998) 'Technological change', in S. Rayner and E.L. Malone (eds) *Human Choice and Climate Change*, 2: 327-399, Columbus, Ohio: Battelle Press.
- Rotmans, J. & Loorbach, D., (2010a) 'Towards a better understanding of transitions and their governance, A systemic and reflexive approach', as Part II, in Grin, J., Rotmans, J., and Schot, J. (eds) *Transitions to sustainable development: new directions in the study of long term transformative change*, Routledge, pp.105-120.
- Schuitmaker, T. J. (2012) 'Identifying and unravelling persistent problems', *Technological Forecasting and Social Change*, Volume 79, Issue 6, July 2012, Pages 1021-1031.
- Smith, A. (2006) 'Green Niches in Sustainable Development: the case of organic food in United Kingdom', *Environment and Planning C: Government and Policy*, 24: 439-458.

Smith, A. (2007) 'Translating Sustainabilities between Green Niches and Socio-technical Regimes', *Technology Analysis & Strategic Management*, 19(4): 427-450.

Smith, A. & Stirling, A. (2010) 'The politics of social-ecological resilience and sustainable socio-technical transitions', *Ecology and Society* 15(1): 11.

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

Smith, Adrian (2012) 'Civil society in sustainable energy transitions', in Verbong, G.P.J. & Loorbach, D. (Eds.) *Governing the Energy Transition: Reality, Illusion or Necessity?* Routledge Studies in Sustainability Transitions. Routledge, New York, pp. 180-202.

Taanman, M., J. Wittmayer & H. Diepenmaat (2012) 'Monitoring on-going vision development in system change programmes', *Journal on Chains and Network Science*, 12(2) pp. 125-136.

The Young Foundation (2012a) 'Social Innovation Overview - Part I: Defining social innovation'. A deliverable of the project: "The theoretical, empirical and policy foundations for building social innovation in Europe" (TEPSIE), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.

The Young Foundation (2012b) 'Social Innovation Overview - Part II: Context and Responses'. A deliverable of the project: "The theoretical, empirical and policy foundations for building social innovation in Europe" (TEPSIE), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.

The Young Foundation (2012c) 'Social Innovation Overview - Part III: Practices and Trends'. A deliverable of the project: "The theoretical, empirical and policy foundations for building social innovation in Europe" (TEPSIE), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.

Van den Bosch, S. (2010) *Transition Experiments: Exploring societal changes towards sustainability*, Doctoral dissertation, Erasmus University, Rotterdam.

Yin, R. K. (2003) *Case study research, design and methods*, 3rd edition, Newbury Park, Sage Publications.