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BUILDING A MIDDLE-RANGE THEORY OF TRANSFORMATIVE SOCIAL INNOVATION

Theoretical pitfalls and methodological responses

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ABSTRACT

This paper argues that there is currently a need for new theory on transformative social innovation that is able to provide empowering insights to practice, especially in terms of how social innovation interacts with transformative change processes. It identifies three 'pitfalls' that such theory-building needs to confront, and presents middle-range theory development, together with a focus on social relations and the processes of social innovation, as three elements of a theory-building strategy that responds to these pitfalls. In describing the implementation of this strategy in successive iterations between empirical case study research and theoretical integration, critical reflections are drawn. Taken together, these reflections underline the importance of maintaining a reflexive approach in developing a new theory of transformative social innovation.

1. Introduction: In search of (transformative) Social Innovation theory

Despite the burgeoning interest in explaining social innovation (SI) in both academic and public discourses (Pol and Ville, 2009; Cajaiba-Santana, 2014; Bonifacio, 2014; Avelino et al. 2017), SI is not yet a fully developed research field, rather it is an emerging body of theory and practice that has its roots in a number of different social science disciplines (McGowan & Westley 2015): to some extent, the boundaries of scholarship are still porous and "*characterized by conceptual ambiguity and a diversity of definitions and research settings*" (van der Have & Rubalcaba, 2016, p. 1923). SI research currently shows widespread ambitions towards the

stabilization and institutionalization of SI as a mature field of research and practice. This is evidenced by the plethora of recent research projects on SI (see EC, 2017), the development of new approaches and frameworks (e.g. Moulaert et al., 2013; Moulaert & Van Dyck, 2013; Cajaiba-Santana, 2014; Howaldt & Schwarz, 2016; Klein et al., 2016 to mention only a few), new platforms (e.g. the Social Innovation Community https://www.siceurope.eu/) and even new journals (such as this one).

Considering the ambitions towards institutionalization, the diversity of initiatives and the high expectations involved, it is now widely agreed that there is a need for new SI theory to inform research, policy and practice (McGowan and Westley 2015, Cajaiba-Santana, 2014, van der Have & Rubalcaba, 2016). Starting from the general understanding that SI theory should catch up with practice (Mulgan, 2012), the following more specific needs for it have been formulated:

- A need to 'move the field forward' (Cajaiba-Santana, 2014) and progressively achieve theoretical and conceptual coherence, or at least dialogue;
- A need to move beyond anecdotal evidence (McGowan & Westley, 2013; Pel et al., 2017a) and single cases towards more generally applicable insights and explanations;
- A need to defend SI discourse and practice against neoliberal 'capture' (Moulaert et al., 2013; Jessop et al., 2013);
- A need for a theory that 'empowers' SI actors (BEPA, 2011), whilst also theorizing processes of disempowerment (Avelino et al., 2017);
- A need for approaches addressing how SI interacts with systemic and transformative change processes, and can contribute to meeting societal challenges (Murray et al., 2010; McGowan & Westley, 2015; Avelino et al., 2017; Klein et al., 2016);
- A need to emancipate *social* innovation as at least equal to technological innovation (Franz et al., 2012).

In summary, there is wide agreement about the need for more 'solid' theory on SI that should also somehow 'empower' practice. These theoretical and normative commitments actually go hand in hand: similar to several critical analyses (Swyngedouw, 2005; McGowan & Westley, 2015; Jessop et al., 2013; Schubert, 2014), we hold that 'empowering' SI theory development only makes sense if undertaken in a reflexive way, and if accounting for the broader transformation processes with which local, situated and confined SI processes co-evolve (cf. North, 2014; Lévesque, 2016; van der Have & Rubalcaba, 2016). However, this is easier said than done, as it requires in particular a thorough methodological elaboration of theoretical considerations and normative commitments, we address the following research question: *What are the methodological 'pitfalls' encountered in the development of a new theory on social innovation, and what methodological responses can navigate these pitfalls?*

This paper reports on our experience of developing a new theory of *transformative* social innovation in an international four-year project[1] (2014-2017). We chose to conceptualise SI in terms of the creation of new social relations, both between the members of an initiative and between members and any aspect of society with which they interact. Changes in social relations are then understood as being intrinsically bound up with the innovation and spread of new knowledge and practices. Accordingly we defined transformative social innovation (TSI) as a process of changing social relations that involves the emergence and spread of new knowledge and practices that challenge, alter or replace the established institutions in a specific context.

Aiming for insights and explanations about how, and under what conditions, SI interacts with transformative change, we studied 20 international SI networks and 80 related local initiatives. In line with our interest in transformative change processes (Haxeltine et al., 2016a; 2017), we investigated their transformative aims, their organizational set-up, their interaction with other actors and institutions, their use of resources, their (dis)empowerment processes, and their learning processes. The theory development was carried out through several iterations between conceptual development and in-depth empirical studies. The resulting 'TSI theory' consists of a theoretical framework for TSI (Haxeltine et al., 2016a) that provides a common ontology and conceptual language for TSI theory-building, combined with a set of propositions on the agency and dynamics of TSI. These propositions explain different aspects or stages of a 'TSI journey', from how and why people join a SI initiative, to which strategies for institutional change are pursued, to how TSI is historically shaped by the social-material context and its path dependencies. The contents of the TSI theory are presented in various (forthcoming) publications (Haxeltine et al., 2016b; Avelino et al., 2017; Loorbach et al., 2016; Cipolla et al., 2017; Pel et al., 2016). This paper is focused on the theory-building process itself – hopefully informing other efforts towards SI theory development.

The remainder of this paper is structured as follows. Section 2 sets out the methodological challenge addressed, characterising three theoretical 'pitfalls' in SI theory development. Section 3 presents the three elements of our methodological response to these pitfalls, explaining their underlying rationales, specifying their implementation, and concluding with critical reflections. Finally, section 4 reviews our findings to answer the research question, and draws broader conclusions for SI research.

Section 2. Social innovation theory development: three 'pitfalls'

We specified the need for new SI theory through a reflexive critique of both scientific and public SI discourse (Haxeltine et al., 2014; 2015; 2016a; 2016c). The aim was to develop a *transformative* SI theory that should both advance the science and have a practical, 'empowering' utility. We identified a number of 'pitfalls' that a successful theory-building effort would need to navigate around. We built on key review articles that identify deficits but also on positive exemplars

[1] The project website http://www.transitsocialinnovation.eu/ contains extensive background documentation of the various method considerations that we describe here.

in the SI literature (Haxeltine et al., 2014; 2015; 2016a; 2016c), and critically reflected on the challenges and advances identified. The resulting pitfalls (presented below) thus synthesize earlier discussions on SI theory development, and distil what we see as currently the most important issues of concern:

1. **Developing explanations of social innovation based on single cases, or small sets of cases**, resulting in a tendency to focus on the empirical detail of single cases, and ignore, or even resist, attempts towards the systematic generalisation of insights and explanations.
2. **Making unsubstantiated normative assumptions about social innovation.** Normative formulations of SI that frame the purpose and outcomes of SI in unsubstantiated ways that neglect the complexity and diversity of real-world SI processes.
3. **Reifying the agency of social innovation actors.** Making overly simplistic assumptions about their ability to cause change in the world, rather than acknowledging the complexity of how their actions interact with, and can be shaped by, wider change processes.

The following sub-sections characterise each of these pitfalls in turn. We will also show how each pitfall has a contrapositive, whereby the imbalance involved is taken to its opposite extreme.

Section 2.1. 1. Developing explanations of social innovation based on single cases, or small sets of cases

To date SI research has suffered from an overreliance on studies of either single empirical cases of SI initiatives or on small groups of localised cases. Several recent contributions indicate in this regard that systematic comparison is crucial for SI research to move forward, even if difficult (Bouchard & Trudelle, 2013; McGowan & Westley, 2015; Pelka & Terstriep, 2016; Callorda Fossati et al., 2017). This pitfall of particularism refers to the excessive focus on the empirical details of particular SI initiatives and processes, at the expense of attempts towards the further abstraction, generalisation and explanation that theory-building requires. To some extent this reflects the still nascent stage of SI as a research field, in which much of the pioneering work in recent years has come from think tanks and 'grey literature' (e.g. the Schwab reports, the work of the Young Foundation and NESTA, the BEPA report). It also reflects that the SI field is so far characterised by a diversity of research settings (Van der Have & Rubalcaba, 2016), conceptual ambiguity, and more generally a confusion of notions about adequate theory-building methods. Finally, our specific focus on *transformative* SIs implies investigating systematically how SI initiatives interact with the broader social-material context.

SI theory-building thus arguably has to capture the empirical diversity involved and draw from a rich evidence base—but crucially faces the pitfall of getting lost in the 'myriad ways' in which SI processes unfold (Lévesque, 2016). This problem is sometimes referred to as 'reificophobia' (Geels, 2007), which refers to the backing away from the search for generic statements and unifying metaphors about a phenomenon. Instead, we argue that SI theory-building requires expanding the empirical exploration beyond single cases. It should involve systematic

comparison of a richer evidence base on how relations between diverse societal actors and institutions condition change.

The above pitfall has the well-known contraposition of neglecting empirical detail, in favour of overly deductive 'grand theorising'. This typically manifests in structuralist accounts of how macro developments determine local SI processes and potentialities. The systems-theoretical framework of multi-level sustainability transitions as promoted by Geels (2002; 2007) and others, has, for example, been criticised for its tendency to be applied in this way (Garud & Gehmann, 2012). Notably, Jessop et al. (2013) have raised pertinent critical questions on the broader trend towards systems-based innovation approaches in SI research. All in all, the described opposite pitfall needs to be avoided not only for scientific considerations of specificity, but also to avoid abstract theory that is too remote from practice.

Section 2.2. The pitfall of misplaced normative assumptions about social innovation

This pitfall concerns normative formulations of SI that interpret and frame empirical realities in asymmetrical, ideological, unbalanced, adversarial ways, thereby neglecting the ethical dilemmas arising from the complexity and diversity of social life. Normativity inevitably permeates any research or theory-building activity, and we consider it entirely legitimate to have explicit normative ambitions in SI theory development (for example, Moulaert et al., 2013). Such normative commitments become a 'pitfall' however when introduced unreflexively, and when the teleological fallacy is made of confusing the research object with the 'desired end'. We agree with Cajaiba-Santana's (2014) assessment that SI has been "frequently presented as a normative instrument used to resolve social problems through the creation of new services or new products…" (ibid: p. 44). Understanding SI as a process of changing social relations leading to new knowledge and practices, we need to account for the diversity of SI actors involved and for the contingent outcomes of SI processes.

Linked to the first pitfall then, the unwarranted inference should be avoided of taking a particular SI process outcome to indicate that such SI processes will always have that result (Cajaiba-Santana, 2014). Importantly, the 'social' in *social innovation* just indicates that the object of innovation is fundamentally a social phenomenon (social relations and practices, not technologies or products). We do not interpret it to imply a somehow desirable quality or goal of innovation. Deliberately taking distance from the teleological pitfall, this understanding thus takes into account how SI (both in means and in ends) is not inherently 'good' for society, but tends to have unequally distributed benefits and sometimes even leads to distinctly undesirable consequences.

Whether misplaced normativities take the form of neo-Marxist formulations of SI (Moulaert, 2016) or neo-liberal formulations of SI (see Jessop et al. 2013 for a critical account) both are 'traps' in terms of producing new scientific knowledge. Crucially, they do not adequately reflect the often paradoxical ambiguities, dilemmas, and contestations observed in real-world SI processes. Through such projections of what constitutes 'true' SI, the diversity of socially innovative ends and the

ethical ambiguities of such purposive interventions in society may be downplayed. Stirling (2016) rightly pointed out how this tragically reproduces the very instrumental rationality that SI initiatives often seek to challenge.

The contraposition of this pitfall is the pretence of having transcended the normative dimension. This objectifying move, typically manifesting in positivist efforts towards scientific rigour but also in instrumentalist-managerial systems intervention recipes for SI practice (Jessop et al., 2013), does not however solve the problem of misplaced normative assumptions. Instead, the normative assumptions are made inaccessible to critical questioning. Just like its mirror image of the teleological mistake, this pitfall calls for a reflexive research approach, that fosters transparency and a questioning of the normativities that shape SI research.

Section 2.3 The pitfall of reifying the agency of social innovation actors

This pitfall concerns reification of SI initiatives and their ability to directly cause change in the world, rather than acknowledging the often messy, dispersed, and complex patterns by which strategic actions shape, and are shaped by, broader change processes. Such 'agentic bias', often accompanying the researcher's engagement with situated struggles of SI initiatives, sits uncomfortably with social-theoretical insights on social transformation (Lévesque, 2013; 2016). It downplays the messy and distributed nature of political life, and the complexity that arises from the interaction between SI initiatives' actions and the wider change processes that they are involved in. Such overstated assumptions about the agency of SI actors are prominent in business management and entrepreneurial approaches to SI (Rubalcaba & van der Have, 2016). Likewise, our review of academic and public SI discourses brought out the persistence of the misleading imagery of the 'isolated innovation hero' (cf. Pel et al., 2017a), taking the SI initiative not only as key SI protagonist, but also as a methodological unit of analysis that is stripped from its multiply embedded operation within social networks, path dependencies and power relations. Such reductionist and *individualizing* views of SI are particularly prominent in contemporary public SI discourse in Europe, reflecting 'neoliberal' ideologies (cf. Jessop et al., 2013) or the 'individualized' society more generally.

It is important to acknowledge the fundamental ways in which SI actors are embedded in broader patterns of social relations, resulting in the so called 'duality of structure' (Giddens 1979, Sewell 1992), in agency effectively being *distributed* across networks of actors (Pel et al., 2016; Cipolla et al., 2017), and in SI processes manifesting as complex systems characterized by path dependency (Moore & Westley 2011). Looking beyond the selection of specific theoretical framings however, it is more broadly a matter of paying attention to the situated agency of how actions play out in specific circumstances, and acknowledging the complexity of factors that lead path dependent, but not fully determined, outcomes.

Also this pitfall has its flipside, namely a disinterest towards the motivations, intentions, and autonomous actions of SI actors, and a neglect of the scope for individuals and SI initiatives to be change agents. This fallacy is notoriously prominent in structuralist accounts of social

movements and (neo-) Marxist theories of transformation, but also manifests in the radically fluid, networked and ultimately actor-less accounts of agency brought forward in Science and Technology Studies. If SI initiatives are entirely reduced to manifestations of long-term social trends and system transitions, it becomes difficult to account for the particular kinds of political agency that they are developing. Moreover, it becomes impossible to develop a SI theory with the potential to empower individuals as change-agents.

3. Key elements of the theory-building approach

In building a new theory of TSI, we made the following theoretical-methodological choices (see Jørgensen et al., 2015; Haxeltine et al., 2016a; 2016c) to enable us to avoid the identified pitfalls:

a 'middle-range' theory approach,
a focus on (changing) social relations,
a process theory approach.

If combined and implemented in an appropriate way, we expected these choices to constitute an adequate response to the three 'pitfalls' identified above. Table 1 outlines the correspondence between pitfall(s) and methodological choices. Next, we address each of these methodological responses, explaining the underlying rationale, specifying their implementation in research activities and providing some critical reflections.

Table 1 Methodological responses to the three 'pitfalls' of social innovation theory development.

Methodological response	*'Pitfalls' addressed*
Use of a middle-range theory approach *Implies a commitment to iterating the theory-development with targeted empirical research on social innovation.*	Addresses the pitfalls of *overreliance on studies of single cases of social innovation initiatives* (2.1) and *misplaced normative assumptions about social innovation* (2.2).
Focus on changing social relations *Implies the use of a relational ontology rather than a substantivist ontology in developing a new theory of social innovation.*	Addresses the pitfalls of *reifying the agency of social innovation actors* (2.3) and *misplaced normative assumptions about social innovation* (2.2).
Commitment to developing a process theory *Implies a focus on how entities change and develop over time, rather than on explaining variance and simplistic causal relations.*	Addresses the pitfalls of *reifying the agency of social innovation actors* (2.3) and of *overreliance on studies of single cases of social innovation initiatives* (2.1).

3.1 Elements of theory-building (I): Middle range theory

Rationale and implementation

Middle-range theory (MRT) is a widely used approach to sociological theorizing that advocates the development of new theory based on the iterative study of a specific empirical phenomenon, such as SI. Leading MRT proponent Peter Hedstrom suggests a focus specifically on *social mechanisms*, understood as "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: p. 11). The aim of MRT is then to: "explain an observed phenomenon by referring to the social

mechanism by which such a phenomenon is regularly brought about" (ibid.). Hedstrom (2005: p. 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.

To implement an MRT approach for *transformative* SI, we combined different types of data collection on a large sample of SI networks and initiatives, in order to inform different aspects of the theory development in a series of iterations. We also chose to articulate the theory in the form of propositions about the agency and dynamics of TSI— not only structuring our knowledge about TSI but also generating relevant further questions (Haxeltine et al., 2016b). The related work by Fligstein & McAdam (2011) served as a benchmark here—their paper presents a new social theory (on 'strategic action fields') through a set of propositions. In the process of iterative TSI theory development we identified four interrelated clusters of propositions that addressed different aspects of TSI, covering: i) the social relations within individual SI initiatives; ii) the processes of network formation of SI initiatives; iii) the relations of SI initiatives and networks to institutional change processes; and, iv) the relations of SI initiatives and networks to the social-material context.

We began our quest for TSI middle-range theory by searching for relevant metaphors and 'sensitizing concepts' (Haxeltine et al., 2015), gathering apparently emblematic SI case studies and surveying related fields of social theory. Metaphors that we explored at this stage (and the eventual account of TSI theory contains elaborations of them) included 'bricolage', the 'innovation journey', 'game-changing' developments, 'the travelling of ideas', and the emergence of 'proto-institutions'. In turn, the selected key metaphors and 'sensitizing concepts' informed a first stage of empirical work consisting of a set of in-depth case studies of 12 transnational SI networks and 24 of their local manifestations (Jørgensen et al., 2014; 2015); detailed case study research guidelines were established that operationalised the concepts and metaphors into empirical observables and specified the appropriate data gathering techniques to be used (Jørgensen et al., 2014; 2015).

Crucial for middle-range theory development are the iterations between empirical research and theory development. Within our research consortium we organised this through a series of 'theoretical integration workshops' (TIWs) as points at which we brought together the empirics and theory development. These intensive sessions of collective discussion involved both case study researchers and the theory development team. The collective comparison and evaluation of

emergent generic insights was used to identify empirical commonalities and differences across the set of cases, in turn informing the elaboration, refinement, or in some cases rejection of initial hypotheses. These iterations materialised in three consecutive versions of TSI theory, consisting of a theoretical and conceptual framework and a (clustered) set of 'TSI propositions' (Haxeltine et al., 2016b; 2017). Over the course of this iterative refinement of TSI theory, the theoretical propositions became more specific and mutually complementary (through the earlier-mentioned structuration into the 4 proposition clusters), and the empirical investigations were tailored to inform this convergence.

The second round of in-depth case studies, comprising 8 additional transnational SI networks and 16 of their local manifestations, was guided by a significantly updated set of 'sensitizing concepts' (Jørgensen et al., 2016). Moreover, the third stage of empirical work involved a larger-N meta-analysis of some 80 SI initiatives' development processes, focusing specifically on the 'critical turning points' (CTP) experienced by them. Through structured interviews, qualitative accounts were constructed that described the interactions, contestations and societal contexts of these turning points in TSI processes. Stored in an online database of some 450 CTP accounts and covering SI initiatives across 27 different countries (Pel et al., 2017b), the CTP data were geared to deepen the developed explanations of TSI as co-produced and dynamic processes.

Critical reflections

The MRT approach enabled us to address the pitfall *of overreliance on studies of single cases* (2.1), and move towards the necessary abstraction and generalisation from multiple cases. Our engagements with a multiplicity of cases in turn raised various theoretically instructive questions about the breadth and diversity of what is actually to be understood and classified as SI: notwithstanding the quite large number of cases investigated, our developed TSI insights remain provisional. Similarly, use of an MRT approach to TSI theory development was consistent with us exploring how to combine in-depth single case analysis and systematic case comparisons. Our specific focus on transformative SI, caused us to reflect on the challenge to tailor the case selections and demarcations to research objectives – given the need to observe wider relations beyond the situated 'local' struggles of individual SI initiatives. Confronting these emerging issues of methodological fine-tuning in the course of iterative theory development, the MRT approach helped us to strike a balance between moving beyond individual cases and learning from them.

The use of a MRT approach also played a role in steering clear from *misplaced normative assumptions* (2.2). The key here was the focus on iteratively comparing theoretical constructs with empirical observations to create increasingly more generalised statements. This crucially entailed continuous questioning not only of emerging insights but also of various normative assumptions and idiosyncrasies slipping in. Still such an iterative research process is a necessary but not a sufficient condition, as it may also amount to stepwise and thereby unnoticed confirmation of normative bias held from the outset—empirical testing needs to be combined with critical reflection

about normative commitments. In our case, this concerned especially the normative commitments to certain forms of institutional change that are implied by the search for *transformative* SI. We brought reflexivity into the MRT building in three main ways. Firstly, through the cultivation of collective iteration sessions and encouragement of a questioning 'research culture'. Secondly, through engagement with practitioners (especially through our extensive case study activities). Thirdly, by placing broader social-theoretical debates at the centre of our theory-building, typically sensitizing us to issues of social diversity, the evolving nature of problems and solutions, and the 'shadow-side' that typically accompanies any project of social transformation (cf. Stirling, 2011; 2016).

To conclude, the MRT approach did help us to move beyond single-case particularism and did provide the iterative-questioning modus operandi through which to avoid unbalanced or overly abstract theorizing. Still, we did not fully avoid the identified 'pitfalls'. Firstly, there is still a need to create a better fit between the theoretical constructs adopted and the scope of empirical observations: the broad focus on *transformative* SI and the adoption of a relational ontology created demands for in-depth yet very comprehensive sets of empirical data that proved difficult to meet, even within the context of a multi-institute and multi-year EU Integrated Project. This raises questions about how to elaborate reasonable theoretical assumptions about distributed agency into manageable research designs. Secondly, we did seize the potentials of metaphors, as vehicles for analytical synthesis and also as communicating devices, notions such as 'bricolage' and 'innovation journeys' proving useful throughout our theory development. Feeling compelled to discard many others and still considering more adequate metaphors for certain TSI aspects, however, we also have experienced the difficulty to develop these metaphors in a more systematic way.

Section 3.2: Elements of theory-building (II): Focus on changing social relations

Rationale and implementation

In focusing on changing social relations, we have taken a relational ontology (Emirbayer, 1997), which emphasises the distributed and networked nature of agency, as foundational. The basic contention of a relational ontology is simply that the relations between entities are ontologically more fundamental than the entities themselves (Wildman, 2006). This contrasts with a substantivist ontology in which entities are ontologically primary and relations ontologically derivative. The term 'relation' refers to the interactions between actors and the dynamic processes of change and development, and not just to relations between actors (Boggs & Rantisi, 2003). This focus on social relations has pervaded our theory development throughout, in particular through the following three choices in empirical research and conceptualization.

Firstly, it led us to foreground the *distributed* nature of TSI agency. Our theorization of networked TSI agency informed case studies guided by a methodology of 'embedded, fluid and provisional' units of analysis (Pel et al., 2017a). We took SI initiatives as focal actors, but explored

in particular their embedding in SI networks and their intertwinements with other actors, organizations and institutions.

Secondly, we deliberately selected a diversity of cases, and paid systematic attention to the 'dark sides' and unintended consequences of SI as perceived by the diverse actors involved with them. This sensitivity to diversity reflects how a relational approach to theory-building works with innovation relations that are still emergent and open: by actively exploring the ends of innovation we aimed to keep teleological presuppositions at bay.

Thirdly, this approach has informed a cautious theorizing of the 'multi-level' and 'multi-scale' interactions implied with the unfolding of local SI processes within broader (transforming) social-material contexts. Whilst recognizing that TSI processes can only manifest transformative developments as part of broad 'co-evolutionary' dynamics within the social-material context, we maintained the reflexive awareness that SI, as a fundamentally dispersed phenomenon, is not easily attributed to distinct entities and mechanisms (such as selection, variation, retention). This tension between system-evolutionary explanations and relational description (cf. Geels 2007; Garud & Gehmann, 2012) emerged as an important backdrop to our theory development. Theorizing and empirically exploring all key concepts in relational terms, we arrived at quite open and relational categories and research questions in our case research guidelines, such as e.g. the 'game-changing developments' (rather than landscape), or the 'dominant institutions' (rather than regime).

Fourthly, the relational approach served as device for theoretical integration. It informed our distinction of four 'proposition clusters' (see section 3.1 above) which constitute different sets of TSI relations (rather than identifying different 'levels'). In theorizing these sets of relations we adapted concepts from various areas of social science theory, but only where they could be made consistent with our relational ontology.

Critical reflections

Adopting a relational approach provided a generally adequate response to the pitfall of *reifying the agency of social innovation actors* (section 2.3). It typically helped us resist the 'reification pitfall' by conceiving of actors, networks, innovations and changes as mutually defining. Likewise, defining SI in terms of changing social relations also helped to avoid the pitfall of *misplaced normative assumptions* (2.2). It sensitized the theory-building to the fact that SI involves 'realities that become', rather than stable projects with clear prime movers and established goals. It helped us to avoid making premature assumptions about 'entities', 'levels' and 'mechanisms'. Furthermore, the avoidance of such premature assumptions has also withheld us from subsequent translations into supposedly empowering but actually overly-simplistic practical advice (e.g. managerial repertoires towards 'scaling-up', in which teleologies typically go unquestioned). Instead, the relational approach has provided empirical attentiveness to diversity, to co-produced transformation, and to the multiple sources and circulations of socially innovative impulses. Finally, the use of a relational ontology also facilitated interdisciplinary theory-building, by providing a

theoretical-methodological platform for interplay between different social science disciplines and traditions.

Still, our experiences confirm some of the criticisms raised earlier about relational approaches. The approach has indeed induced some of the particularism and 'reificophobia' that Geels (2007) considered to undermine attempts at theory-building. The focus on keeping things fluid and undetermined, makes it difficult to construct theoretical building blocks and generic insights on co-evolution patterns and TSI pathways. Similarly, even though the relational approach can in principle account for stability (through notions of obduracy, structuration and institutionalization), change and fluidity tend to be emphasized as primary. The choice for a relational approach has thus left us with certain questions begging for further investigation, notably concerning the search for relational-accounts of the structural contexts, power asymmetries, and path dependencies that shape TSI processes.

Section 3.3 Elements of theory-building (III): Commitment to developing a process theory *Rationale and implementation*

A third key element has been the commitment to developing process-theoretical explanations of TSI, which implies discovering patterns in sequences of events that lead to certain outcomes. This is in contrast to variance theories, which "provide explanations for phenomena in terms of relationships among dependent and independent variables (e.g., more of X and Y produce more of Z)" (Langley, 1999: p. 692). Together with the relational approach, process theory challenges substantivist understandings of SI realities and attempts at explanation through simple linear causal relations.

We implemented a process-theory approach through the following key choices:

Firstly, we organised the MRT building around four 'clusters' of process-relations (as discussed earlier) pertaining to the relations *within* a SI initiative, processes of network formation, interactions with dominant institutions, and the shaping role of the social-material context, through which the previous three processes are historically patterned. This fourfold distinction allowed us to oversee and interrelate the broad range of TSI process-relations at various scales and levels of aggregation, and also ensured the coherent development of propositions covering the various aspects of TSI dynamics and agency.

Secondly, this approach led us to collect process-oriented empirical data. The in-depth case studies of 20 transnational SI networks and some 40 local manifestations included detailed analyses of their processes of emergence and development, and overall timelines detailing their interactions with other actors, events and trends (Jørgensen et al., 2015; 2016). Moreover, the earlier-mentioned 'critical turning points' database is structured around the timelines of about 80 SI initiatives.

Thirdly, our subsequent meta-analysis of these critical turning points tested and elaborated TSI propositions with the particular aim to specify phases and dynamics, and more generally to increase time-sensitivity in our TSI theory. This resulted in TSI propositions addressing the

historical emergence and fading of SI initiatives, the convergences and divergences between different SI initiatives, the mechanisms of interaction between SI initiatives and dominant institutions, and the different mechanisms through which local initiatives and transnational SI networks co-emerge.

Critical reflections

This commitment to developing a process theory provided a generally adequate response to the risk of *reifying the agency of social innovation actors* (2.3). It emphasised how entities change and develop over time. Directing analytical attention to process patterns, it also helped us to move beyond the rich descriptions and particularism inherent to relational approaches, thus fortifying the quest for middle-range theoretical explanations and avoiding the pitfall of *overreliance on studies of single cases* (2.1). Importantly, such process explanations not only help to understand and explain societal co-evolution processes from a distance, but also can empower situated SI actors in navigating their dynamic environments (Geels & Schot, 2010; Jørgensen et al., 2015). The process theory approach has disciplined the theory development towards dynamic understandings of the agency of SI actors. A crucial set of insights has been developed on the paradoxically fragile yet resilient existence of SI initiatives, which tend to embark on their innovation journeys as weakly institutionalized collective actors. It has also clarified the kinds of interactions through which transnational SI networks empower local initiatives, and informed practically empowering understandings of the widely differing transformation contexts that SI protagonists operate in.

However, it also became evident that process theory is a very demanding approach. The general attentiveness to changes over time is easy to implement in case studies, yet it has proven difficult to systematically gather process data that covers a broad range of SI dimensions over extended periods of time. Moreover, it has become clear that historical data are of particular theoretical relevance yet also tend to be in short supply: our research on reconstructing the historical critical turning points experienced by SI initiatives, relied crucially on the limited institutional memories of SI initiatives. In the face of such gaps and limitations in process data, we had to reduce our ambitions towards explanatory process theory as the project unfolded. In hindsight though, this choice for a less than full-fledged process theory approach has its upside as well, though: It has allowed us to work from a broad and interdisciplinary set of theoretical insights, and to remain open to more substantivist lines of theorizing.

Section 4. Conclusion: navigating the pitfalls in social innovation theory development

As part of our quest for empowering, empirically informed and social-theoretically sound TSI theory (Haxeltine et al., 2016a), we formulated a methodological-procedural question on the theory-building process itself **(section 1)**. We identified three methodological 'pitfalls' **(section 2)**, and three methodological responses to navigate them **(section 3)**. Considering both the rationales underlying these responses as well as their implementation, we have shown how a middle-range approach to theory-building, a relational understanding of SI realities, and a commitment to

developing a process-theory are—when implemented in combination—a promising methodological responses to the pitfalls of particularism, teleological projection, and essentialism.

Rather than being an entirely novel approach, these elements of SI theory-building thus represent a recombination of several existing methods for the specific purpose of developing a theory of TSI. Importantly, we have seen how they constitute mutually supporting elements of theory-building, together providing the methodological balance that helped us to avoid both the identified pitfalls as well as their opposite extremes. Reflecting critically upon our method responses, several issues came to the fore that revealed certain trade-offs and relative shortcomings. Pertinent examples were the difficulties encountered in developing an overarching metaphor, the challenges involved in generating the process data required by process-theoretical approaches, and the challenge of extracting solid insights on cross-scale interactions out of our relationally-framed heuristics. These issues highlight that the identified pitfalls cannot be simply transcended or avoided through one-shot methodological responses. Instead, they require well-considered approaches that are developed throughout the theory building process, from the stages of data gathering right through to the fine-tuning of explanatory propositions.

Regarding the broader implications of our methodological reflections for other SI theory development endeavours, it needs to be considered that different aims, positions and assumptions arguably should lead to different methodological choices. Rather than wholesale application of method responses, it is worthwhile thinking through how the proposed elements of theory building can be best selected, combined with others, and tailored to particular research purposes. The broader implications of this research are thus also informed by the *reflexive* research approach that guided our theory building. Through an attitude of self-confrontation (Beck, 2009; Schubert, 2014) we have become aware of the range of ways in which the pitfalls could manifest in concrete methodological choices, of the need for balancing, and especially of the coherence in our research. In line with the plea of Ulrich (2003) for a 'culture' of critical argumentation that moves beyond isolated assessments of methodological choices, the perceived pitfalls and corresponding method responses have been made part of the bigger scheme of reality construction. Just as the reflexive approach assisted towards coherent method choices, it also provided meta-theoretical guidance. Seeking to select from the abundance of concepts and theories available on TSI phenomena, it crucially helped us to avoid eclecticism: any theoretical resource used had to exhibit a compatibility with MRT development, a relational ontology, and process-oriented theorizing.

Finally, it is worthwhile considering how the reflexive approach to methodology also feeds back into the research aims and societal commitments that methodology is to serve. Alongside our process of theory-building, the reflections on our methodological choices have also clarified our ambitions towards the development of 'empowering' theory. As the implications of the three interlinked elements of the theory-building approach became more apparent, we also gained an appreciation of the 'enlightenment' function of theory. Uncovering social mechanisms and providing coherent explanations of processes, SI theory can inform SI initiatives in their efforts to navigate different stages in their development, to confront the contingencies of dynamic

environments, and to develop and update their visions and strategies. Importantly, this understanding of 'empowering' SI theory appreciates what we learnt from our interactions with SI actors, namely that they tend to have quite well-developed theories-of-change themselves. The SmartCSOs initiative (Narberhaus & Sheppard, 2015), for example, draws directly upon scientific theories of societal transitions, while the Transition movement has consciously rejected Sustainable Development goals in favour of resilience and localisation rationales. Our reflexive approach to theory-building helped us towards an understanding of how the TSI theory should be able to link back to the SI networks and initiatives studied, by contributing to their explorations of adequate 'theories of change' for TSI.

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