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Unpacking the social innovation ecosystem: an empirically grounded typology of empowering network constellations

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Social innovation is on the rise as a mode of governance through which to address societal challenges. Seeking to empower SI initiatives, researchers and policy makers are concerned with the development of supportive "ecosystems". This concept usefully calls attention to the distributed nature of SI agency, but many questions remain on the kinds of network constellations involved. This contribution unpacks the "SI ecosystems" concept, specifying how the empowerment afforded through SI networks rests on (1) local embedding, (2) transnational connectivity and (3) discursive resonance. Charting the variety of network constellations as studied in an international comparison of 20 transnational SI networks, a typology of SI ecosystems is constructed. Distinguishing five SI ecosystem ideal-types ranging from loosely integrated and locally focused co-creation hubs to globally connected and widely resonating political movements, the typology informs a differentiated approach to their understanding and development.

Keywords: social innovation; innovation ecosystems; networks; co-production; typology

1.   Introduction: social innovation and the search for SI "ecosystems"

Social innovation (SI), understood as the introduction of new social relations, has become a prominent topic in innovation research (Grimm et al. 2013; Ayob, Teasdale, and Fagan 2016; Klein et al. 2016; Ziegler 2017). Involving new ways of doing, organizing, framing and knowing (Avelino et al. 2019), it refers to a wide range of developments such as Ecovillages, Time Banks, sharing schemes, science shops and makerspaces (Haxeltine et al. 2017a). Such SI initiatives are increasingly acknowledged as drivers of change in an innovation paradigm no longer premised on the Schumpeterian entrepreneur (Pohoryles 1988; Howaldt, Kaletka, and Schröder 2017a). As pointed out by Smith and Stirling (2017) in relation to the makerspaces, these initiatives have a societal significance beyond their immediate societal impacts. Asserting the innovative agency of actors hitherto rather neglected in innovation, they democratize and innovate the innovating. Schubert (2018) similarly points out that SI is currently becoming a general ordering principle for the governance of societal challenges.

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In line with these strategic considerations of its societal change potentials, questions arise on how SI spreads, how it can be stimulated, and how favourable SI "ecosystems" can be created (Cameron 2011; Biggeri, Testi, and Bellucci 2017; Moulaert et al. 2017; Howaldt, Kaletka, and Schröder 2017a; Domanski and Kaletka 2018). Similar to the innovation systems developed to stimulate technological innovation, regional development and sustainability transitions (Hekkert et al. 2007), this second-order mode of SI activity seeks to create the conditions and support structures (Oh et al. 2016, 3) for it to flourish. The "ecosystem" concept thus accounts for the networked, co-produced agency that characterizes contemporary innovation more generally (Etzkowitz and Leydesdorff 2000; Akrich et al. 2002; Papaioannou, Wield, and Chataway 2009; Hutter et al. 2015: Rinkinen and Harmaakorpi 2018). As such, it enriches accounts in which SI is reduced to the agency of particular "innovation heroes". Such reductionism is not only manifest in "neoliberal" preoccupations with the social entrepreneur (Jessop et al. 2013), but also transpires through celebrations of grassroots innovation "challengers" versus "incumbents" (Seyfang and Smith 2007), through "movement-centrism" in social movement studies (Verhoeven and Duyvendak 2017), and through accounts that confine SI to the Third sector "silo" (Howaldt, Kaletka, and Schröder 2017a).

As for now, the SI "ecosystem" only indicates a general metaphorical understanding, connecting a range of metaphorical concepts such as the "rhizomic" SI networks (Scott-Cato and Hillier 2010), and the alternative "milieus" (Longhurst 2015), "fertile soil" (Sekulova et al. 2017) and "regional habitats" (van den Heiligenberg et al. 2018) as SI environments. Whilst providing promising advances, these more specific "ecosystem" concepts tend to be modelled along particular empirical cases. One of the key methodological challenges for SI research is to reach beyond the emblematic examples, and confront the development of comparative insights (Callorda Fossati, Degavre, and Nyssens 2017; Kaletka and Schröder 2017; Wittmayer et al. 2017). Building on a broad empirical base, this contribution unpacks the "SI ecosystems" concept through a typology that clarifies the different kinds of empowering network constellations at issue. This involves two research questions: *What actors, networks and processes does the "SI ecosystems" concept empirically refer to? Which kinds of SI ecosystems can be distinguished and how do they empower the SI initiatives embedded in them?*

As a coherent set of evocative ideal types, the developed SI "ecosystems" typology conveys how their empowering capacity rests on combinations of (1) local embedding, (2) transnational connectivity and (3) discursive resonance. This understanding has been developed through the comparative analysis of 20 transnational SI networks, and about 100 of their local manifestations in 27 different countries. Informed by various relational and network-oriented theoretical perspectives in sociology, innovation theory, and governance scholarship, amongst others (Pel et al. 2017; Haxeltine et al. 2017a), "SI ecosystems" are differentiated along the empowerment processes that constitute them. Such nuanced understanding is particularly valuable as SI research remains caught in silent assumptions about the individual and collective agency at issue (Moulaert et al. 2017).

Our typology development proceeds as follows. First we present a relational perspective on SI "ecosystems", as well as the three constitutive dimensions of empowering network constellations as identified in our research (section 2). The methodological section specifies the underlying iterations between theory integration and case study data, and the typology development procedure (section 3). The empirical contents and constitutive properties of these ideal-types are substantiated through comparative analyses of the three key dimensions of network empowerment: local embedding (section 4), transnational connectivity (section 5) and discursive resonance (section 6). After unfolding the

typology (section 7), the conclusion answers our research questions and provides brief reflections on the broader implications for SI research and practice (section 8).

2. Unpacking SI ecosystems: three dimensions of empowering networks

The "SI ecosystems" concept is a promising way of making sense of SI agency, yet the metaphor remains surrounded with reductionist assumptions about the "innovation heroes" and networks involved (2.1). Against this background we have developed a relational understanding of SI ecosystems (2.2), unpacking the concept through three dimensions of "empowering" network constellations (2.3).

2.1. *SI agency: between "innovation heroes" and "ecosystems"*

The assertion of SI as a distinct kind of innovation revolves around the claim that it denotes "neglected sites of innovation" (Seyfang and Smith 2007) and overlooked innovation agents. Beyond the firms, R&D departments and governments as the traditional drivers of technological innovation, social innovation highlights the innovative agency of civil society and social movements (Franz, Hochgerner, and Howaldt 2012). Likewise, scholarship on the Social Economy (Defourny and Nyssens 2008), on grassroots innovation (Seyfang and Smith 2007; Longhurst 2015) and on social entrepreneurship (Dey and Teasdale 2016) has asserted the specific innovative agency of political movements and disadvantaged groups, civil society, and idealistic entrepreneurs. Also relevant are the accounts of public innovation (Bekkers, Edelenbos, and Steijn 2011), institutional innovation (Lévesque 2013) and "governmental activism" (Verhoeven and Duyvendak 2017), which highlight the (socially) innovative agency of politicians, public officials and other policy entrepreneurs.

The sustained operation of the new innovation heroes is often precarious. Often operating in relative institutional voids (Mair and Marti 2009), they lack resources, legitimacy and network capital, and often rely on the motivation of volunteering individuals. This precariousness and limited action radius forms an important background to the rise of the "SI ecosystems" concept (Cameron 2011). Much policy efforts and innovation scholarship have been dedicated to "innovation ecosystems" as support structures for entrepreneurs or firms (Autio and Thomas 2014; Oh et al. 2016), or specifically to "business ecosystems" (Rinkinen & Harmaakorpi 2018). Arguably, the development of "SI ecosystems" is of no lesser societal significance (Franz, Hochgerner, and Howaldt 2012; Moulaert et al. 2017). The "SI ecosystems" concept marks a move towards SI meta-governance (Schubert 2018), characterized by strategic efforts of governments and sponsors to create the conditions for SI to flourish.

Whilst usefully directing attention to the structures supporting the new "innovation heroes", the "SI ecosystems" concept remains as yet a rather broad metaphorical concept for social-institutional embedding. This calls for critical elaboration of what the metaphorical term conveys about the supportive structures at issue. The "eco" prefix carries assumptions about self-organizing ecologies, for example, leading away from the quest for planned and purposive innovation systems (Oh et al. 2016). Indeed, Scott-Cato and Hillier (2010) deliberately characterize the development of the Transition Town movement in terms of organically growing "rhizomes", setting them apart from "arborescent", rationally cultivated innovation systems. Moreover, others warn against understanding "SI ecosystems" as an extension of the regional and national "systems of innovation" concepts, leaving the concept vulnerable to capture by the goals and evaluation schemes prevailing in

neo-liberal innovation policy agendas (Jessop et al. 2013; Moulaert 2016). If narrowly understood as support structures for *social entrepreneurs*, the SI ecosystems policies would misapprehend the particular SI pursuits of social movements and marginalized communities (Laville 2016).

Instead of reducing the SI ecosystems to supportive structures for certain innovation heroes, Howaldt, Kaletka, and Schröder (2017a) and Kaletka, Markmann, and Pelka (2017) argue that ecosystems are populated with a multitude of actors and organizations that *co-shape* social innovations. In order to develop such non-reductionist understanding, they argue the need to move beyond emblematic empirical examples of what "SI ecosystems" mean and comprise – observing instead, in comparative fashion, how SI ecosystems come in a broad miscellany of forms.

2.2.   *A relational perspective on SI ecosystems: empowering network constellations*

A balanced understanding of SI "ecosystems" is needed that avoids reductionist assumptions about particular actors' leading agency (Haxeltine et al. 2017a). In our theory building on transformative social innovation, we have therefore developed a relational understanding of SI that acknowledges its distributed, co-produced diffusion (Emirbayer 1997). As detailed in Haxeltine et al. (2017b), we define SI as a process of changing social relations, involving new ways of doing, organizing, framing and knowing. This relational definition contains no assumptions about purposes, "driving" actors or beneficiaries. Avoiding the outdated but persistent imaginary of the isolated hero-innovator, our empirical research has been guided by assumptions of distributed agency and accordingly "embedded, fluid and provisional" units of analysis (Pel et al. 2017). This networked understanding has been informed by the critiques of movement-centrism in social movement studies (Verhoeven and Duyvendak 2017), and by accounts of triple helix innovation (Etzkowitz and Leydesdorff 2000) and networked innovation (Akrich et al. 2002). Zooming out from the agency of SI initiatives, we have been attentive to the "action fields" (Fligstein and McAdam 2011), "arenas of development" (Jørgensen 2012) and "translocal assemblages" (McFarlane 2009) in which they are embedded. These accounts of distributed innovation "journeys" (Van de Ven et al. 1999) helped to articulate the striking ways in which we saw social innovations diffuse relatively independently from the Ecovillages, Timebanks or Slow Food initiatives that we initially took as their key drivers.

Whilst acknowledging that SI initiatives seldom travel their SI "journeys" alone, we have resisted the relational-theoretical inclination towards neglecting the particular agency of SI initiatives within these networked innovation processes (Miettinen 1999). Empirically we did observe various (members of) SI initiatives operating as clear lead protagonists or focal actors to be supported through ecosystems. Along this more pronounced actor-oriented angle, SI ecosystems are thus acknowledged as the crucial innovation networks that carry the diffusion of new social relations throughout society, whilst also appreciating them as supportive, dedicated networks – characterized by their capacity to *empower SI initiatives*. This follows the basic governance insight that networks form through actors seeking access to empowering resources, through which they enhance their position under conditions of uncertainty and interdependency (Koppenjan and Klijn 2004). Understood through the empowerment processes in which SI initiatives gain the "capacity to mobilize resources and institutions to achieve a goal" (Avelino 2017), SI ecosystems can thus be unpacked along the concrete network constellations at issue, and along the particular empowerment processes that they afford.

2.3. *Empowering network constellations: three dimensions*

The relational perspective provides a general conceptualization of SI ecosystems as potentially widely extending actor networks that empower SI initiatives in their diffusion of new social relations. Having elaborated this understanding through different relational schools of thought and comparative case analyses of 20 SI networks (Cf. section 3), SI ecosystems can be seen to rely on three essential kinds of empowering network constellations. As distinct, mutually complementary constituents of SI ecosystems, these three dimensions specify the concrete actors and empowerment processes involved:

(1) *Local Embedding*. SI initiatives tend to find fertile ground in their immediate surroundings. Often existing in the form of "labs", "Hubs", "Towns" and community-based initiatives, it has been striking in our comparative analysis how many socially innovative collectives operate through intensive collaborations with local stakeholders, including local authorities, NGOs, community organizations, businesses, and educational institutions (Jørgensen et al. 2016). The importance of these local roots manifests through the empowerment processes of (a) legitimacy (addressing local needs); (b) critical mass (for which vicinity is also important); (c) the provision of accommodation and material resources, and (d) institutional anchorage. These elements of empowerment through local embedding are highlighted in scholarship on grassroots innovation (Seyfang and Smith 2007; Longhurst 2015), community-based initiatives (Aiken 2019) and government-civil society co-creation (Voorberg, Bekkers, and Tummers 2015).

(2) *Translocal connectivity*. In extension to their local embedding, local SI initiatives are often supported in their attempts at social change through translocal, international collaborations with like-minded local initiatives. Alongside their identities as "hubs", Ecovillages or Timebanks, local SI initiatives are also often forming part of various international SI federations, networks, platforms, or movements (Jørgensen et al. 2016). The importance of this transnational connectivity manifests through empowerment processes such as (a) the development of translocal "critical mass"; (b) the construction of translocal political voice; (c) the development of translocal collective identity (as materialized in brands and logos), and (d) knowledge exchange. The international connections are also often important assets towards the acquisition of funds. This translocal dimension of SI ecosystems is highlighted in scholarship on relational geography (Cf. the account of "translocal assemblages" by McFarlane 2009), "translocality" (Greiner and Sakdapolrak 2013), social movements (Castells 2010; 2015), and the work on "globalities" in science and technology studies (Law and Hetherington 2000).

(3) *Discursive resonance*. SI ecosystems involve more than the local embedding and the transnational connectivity as rather immediate supporting structures of SI initiatives. SI initiatives, and especially the new social relations that they promote, can also be empowered through wider processes of discursive resonance (Luhmann 1989). Beyond the many individuals, local initiatives and transnational networks who seek to develop persuasive discourses and narratives of change (Wittmayer et al. 2019), this discursive resonance is a collective process that involves the whole communicative sphere through which socially innovative concepts gain political and scientific authority (Voß 2014). This includes the communication infrastructures through which SI concepts are mediated and spread

(Cf. Haxeltine et al. 2017a; Pel and Backhaus 2018). The ICT revolution has dras-
tically altered this transmission, as well as the opportunity structures and mobiliz-
ation dynamics of SI initiatives (Kelly Garrett 2006). The importance of discursive
resonance typically manifests through the circulation of (a) organizational models;
(b) formats of practices; (c) framings and narratives and (d) codified knowledge on
socially innovative concepts and practices. This discursive, communicative
dimension reflects scholarship in Science & Technology Studies (Czarniawska
and Joerges 1996; Ezrahi 2004), interpretive approaches to social movement
studies (Benford and Snow 2000; Davis 2002), and relational-sociological
accounts of policy mobilities (Temenos and McCann 2013). These perspectives
highlight the increasingly wide and fast circulation of novel ideas.

   The theoretical framework is visualized through Figure 1. It shows local SI initiatives
as focal actors of SI ecosystems, empowered through their embedding in three kinds of SI
network constellations. Each of those involves particular empowerment processes and par-
ticular groups of actors. Before comparing our 20 cases along these dimensions in sections
4–6, the next section clarifies our typology development.

3. Methodology: towards a typology of "SI ecosystems"

In unpacking the promising concept of "SI ecosystem", this study also takes up the chal-
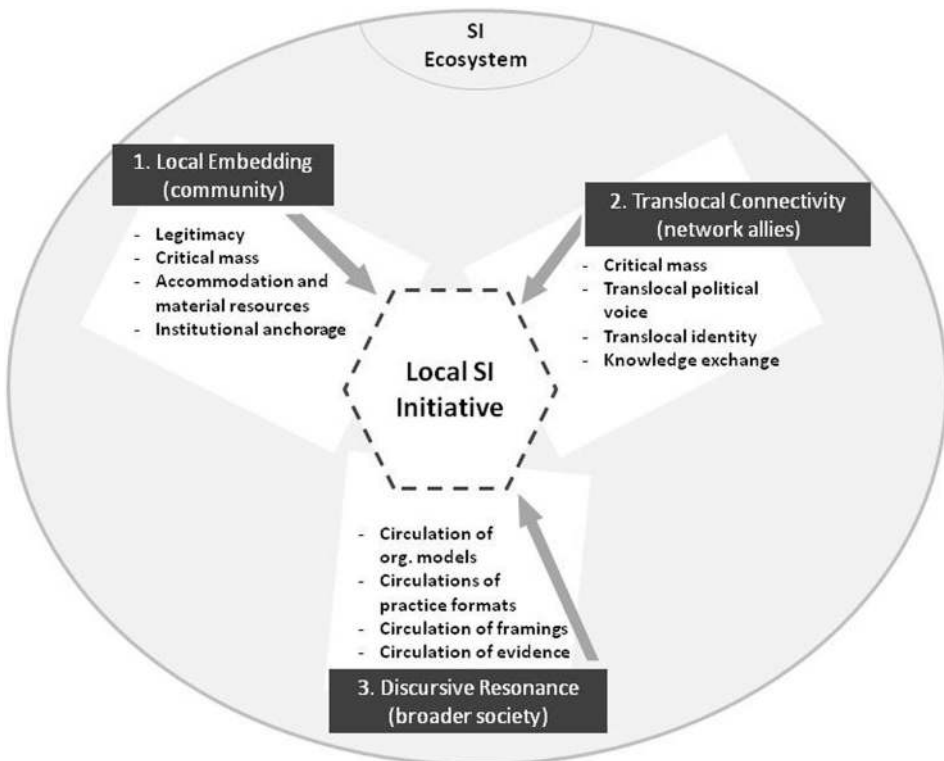lenge that presents itself for SI research more broadly, the development of systematic

Figure 1.   SI initiatives and their empowering network constellations.

comparative insight on SI (Wittmayer et al. 2017). Within the context of a four-year research project on transformative social innovation (Haxeltine et al. 2017b; TRANSIT 2018), we have analysed and compared 20 transnational networks of social innovation initiatives. In line with our relational understanding, we took SI initiatives as focal actors, investigating both their "local roots" and their "global connectedness" (Pel et al. 2017). This involved investigation of the emergence and internal organization of local SI initiatives, their empowering linkages with transnational SI networks, the evolution of the SI concepts promoted, and the interactions with their broader societal contexts. Studied through their transnational network structures and their local manifestations in a diversity of (mostly European and Latin American) countries, the sample covered SI in a broad range of societal domains (Cf. Table 1).

Seeking to test and substantiate our initial theoretical understandings about SI, our first comparative case analyses in the research project were oriented towards the identification of paradigmatic exemplars: The individualist-entrepreneurial Ashoka change makers, collaborative "makerspace" platforms and Timebank "shadow systems" were striking and enlightening cases. Yet as persuasive exemplars they were also hampering our theorization, silently introducing various assumptions about SI actors and networks (Cf. section 2.1).

Table 1. Overview of social innovation networks.

Network	Description
1. Impact Hub (IH)	Global network of social entrepreneurs
2. Participatory Democracy Observatory (OIDP)	Network of communities and municipalities reinventing how public money is spent and prioritized
3. Global Ecovillage Network (GEN)	Network of eco-villages and other intentional communities
4. Ashoka	Network for financial support to social entrepreneurs
5. Basic Income Earth Network	Connects people committed to basic income and fosters informed discussion
6. RIPESS (solidarity-based economy)	Network for the promotion of social solidarity economy
7. Febea/credit cooperatives	Different types of credit cooperatives
8. Time banks	Networks facilitating reciprocal service exchange
9. Living Labs (ENOLL)	co-creative, human-centric and user-driven research, development and innovation
10. FABLABS	Digital fabrication workshops open to local communities
11. Hackerspaces	User driven digital fabrication workshops
12. INFORSE	International network of sustainable energy NGOs
13. La Via Campesina	Aiming for family farming to promote social justice and dignity
14. Living Knowledge Network	Network of science shops and community-based research entities
15. Seed Exchange Network	Protects biodiversity by defending seed freedom for integrity, self-organization and diversity
16. Transition Towns	Grassroots communities working on "local resilience"
17. Slow Food	Linking food to a commitment to sustainable local and global development
18. Shareable/sharing Cities	Connecting and empowering urban sharing initiatives aiming for a sharing transformation
19. DESIS (Design for SI and Sustainability)	Network for design for social innovation and sustainability
20. International Cooperative Alliance (ICA)	Associations that co-work in the production of sustainable inclusive habitat

Methodologically, this growing set of "SI ecosystem" exemplars can be appreciated as a "partial typology" (Elman 2009, 124–125). Such underspecified and largely implicit typologies call for clarification of the logic that defines and links the types. The theoretical significance of one or a few types is typically increased by "expanding the property space", i.e. by situating them in a larger spectrum of attribute combinations. In our analysis, this spectrum is circumscribed through the three dimensions of network empowerment. Seizing the particular power of typologies to provide new insights into underlying dimensions of phenomena (Collier, LaPorte, and Seawright 2012, 217), this makes for a systematic unpacking of SI ecosystems that orders the present miscellany of apparent exemplars.

Whilst our typology is primarily aimed towards conceptual clarification and systematic comparative insight into on the elusive, dispersed (Pel et al. 2017) empowerment processes involved, we do reach for explanatory insight (Collier, LaPorte, and Seawright 2012, 223). Instead of merely classifying our 20 cases into descriptive conceptual categories, we pursue an explanatory typology (Doty and Glick 1994, 232–234). Beyond the conceptual understanding of "SI ecosystems" as empowering network constellations, our theoretical and empirical analyses have found that this empowerment rests on three pillars, i.e. on combinations of (1) local embedding, (2) transnational connectivity and (3) discursive resonance. Dissecting the 20 cases for their greater or lesser display of these dimensions and considering the empirical relevance of the theorized attribute combinations, we have systematically constructed ideal-types. The resulting typology provides generic insight through an evocative, theoretically consistent and comprehensive set of such "SI ecosystem" ideal-types (Fiss 2011, 394). This provides a heuristic with a certain explanatory power: The empowerment afforded by other "ecosystems" can be understood through their (dis)similarity to the listed ideal-types and the particular empowerment processes that characterize them.

Having clarified the general logic underlying our typology development, Figure 2 provides a more detailed reconstruction of the methodological procedure. Iterative confrontations between case evidence and theoretical reflection have led to the SI ecosystems framework and its three dimensions (step 1). In turn, cases have been considered for their display of low (L) or high (H) scores on the theorized sources of empowerment (step 2). As an intermediate step, we have generated an overview of the 20 cases, considering the relative salience of the $2^3 = 8$ theorized combinations of L/H scores (step 3). More fine-grained distinctions could not be accommodated in this formalization. Initially working with "medium" scores as well, the corresponding "property space" matrix (Collier, LaPorte, and Seawright 2012, 223) of $3^3 = 27$ theoretical types was subsequently reduced through the binomial L/H values. Apart from this logical compression (Elman 2009), we have applied careful empirical compression by considering the empirical salience of the theorized ideal-types (step 4). Finally, several iterations have been applied regarding the emerging typology and the underlying empirical and theoretical considerations (step 5). This involved considerations of theorized ideal-types not encountered in the empirics, the empirical salience of hybrid forms between theoretical categories, and the extent to which the overall set of ideal-types appeared to cover the theorized and observed spectrum of SI ecosystems (Cf. section 7.1). The consolidated set of five ideal-types (Cf. section 7.2) is thus indicating the quali-quantitative middle ground that is typically needed when seeking to develop theory through comparative case analysis (Eisenhardt and Graebner 2007). Building on a data-set of 20 SI networks and 100 associated local initiatives, this study can be positioned in between the quantitative-based typologies of SI phenomena as undertaken by Howaldt et al. (2017b), and the rather qualitatively detailed study of SI configurations as undertaken by Westley et al. (2014) and McGowan and Westley (2017).
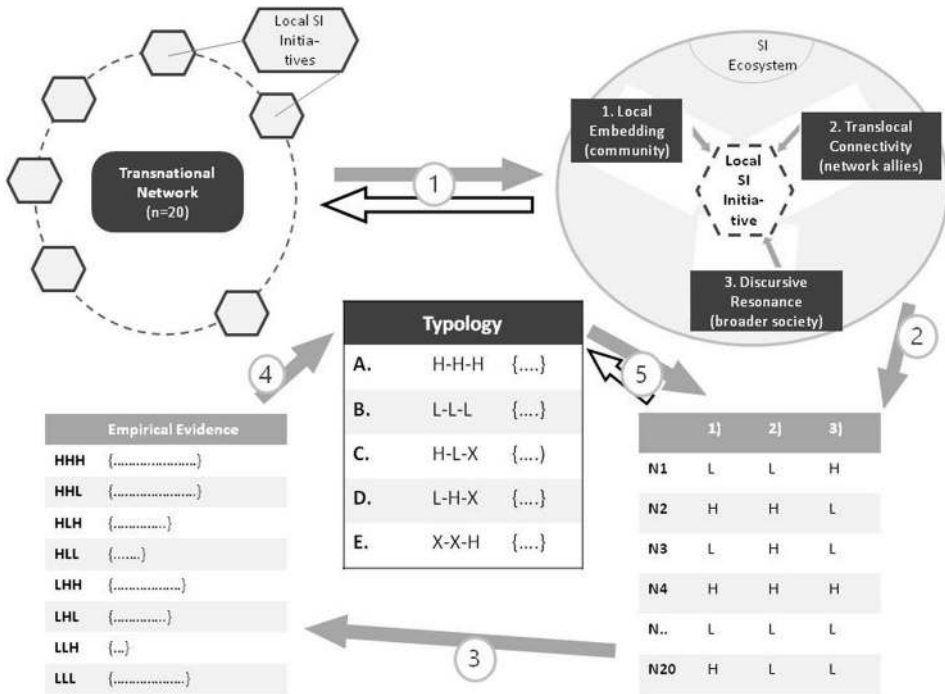
Figure 2.   Typology construction procedure.

4.   Empowering network constellations (I): local embeddedness

SI initiatives are often taking the form of collaborative "spaces", "hubs", "villages", or "labs". This expresses their inclinations towards various forms of collaboration with, and empowerment of, local communities. Our analysis highlights how this local embedding also provides SI initiatives with a supportive local "SI ecosystem". This revolves around the four empowerment processes of legitimacy (alignment with local needs), critical mass (for which vicinity is important), provision of accommodation and material resources, and institutional anchorage. Striving towards a typology, the empirical analysis teases out the main empirical contrasts by distinguishing SI initiatives along their relatively high (section 4.1) or low (section 4.2) empowerment through local embedding.

4.1.   *Local embeddedness (HIGH)*

Within our sample, several SI initiatives display the strong local rootedness that is considered essential for their flourishing in accounts of "grassroots innovation" (Cf. section 2). The following initiatives are particularly telling examples for this, each of them displaying different ways of being empowered through local embeddedness.

Slow Food initiatives exemplify the legitimization afforded through local roots. The Slow Food "convivia" celebrate local-regional culinary traditions and cultural heritage, develop local perspectives on food production and consumption, and strengthen the economic development and branding of farmers and food manufacturers. Working together with local civil society, schools, restaurants, cultural organizations and food industry, Slow Food initiatives gain political support from local and regional governments. In turn, the demonstrable catering to local needs creates legitimacy for the broader alternative

visions that Slow Food promotes, regarding food sovereignty, decelerated lifestyles, and sustainable development. Similar legitimization through local relevance can be observed with regard to the efforts towards sustainable energy by *INFORSE*. Developing local energy saving strategies with local governments (such as in Denmark and in Belgium), INFORSE affiliates display local commitment in the local elaboration of national energy transition strategies – in turn legitimizing them as constructive, skilled and locally relevant partners. Other examples are the legitimacy gained by the local *Living Labs* and *Shareable* network affiliates, similarly involved in the development of local strategies regarding real-world experimentation and sharing economy applications.

Apart from the legitimization, several initiatives are also crucially empowered through the critical mass that local ties allow them to acquire. An exemplary initiative in this regard are the *Timebanks*. These networks of voluntary, non-monetary service exchange are pre-mised on the availability and physical participation of a few hundred participants with a diversity of services to exchange. Local embeddedness is essential for the recruitment of participants, but also for the pre-existence of trusting relationships, vicinity and meeting places. In similar vein but less depending on this empowerment, *FabLabs* and *seed exchange initiative*s thrive when their local embedding enhances the meeting, exchanging and co-creating between a critical mass of participants. The Credit Unions exemplify how the importance of local ties may recede over time: Expanding their operations nation-wide and formalizing into established banking organizations, the critical mass is developed well beyond the regions of origin.

A third exemplar of highly empowering local embeddedness consists in the local provision of accommodation and material resources. This strongly applies to the *DESIS labs* and the *Science shops*, where universities provide physical space, equipment, project opportunities and embedding in educational curricula. The presence of these educational institutions makes for essential material preconditions for students to conduct research and design projects together with local societal stakeholders. The *Fablabs* and *Hacker-spaces* display similar empowerment processes, but to a lesser degree.

Finally, the case of *Participatory Budgeting* exemplifies how the local roots can be highly empowering through institutional anchorage. Their aims of more inclusive, direct-democratic governance are more easily achieved locally, where the linkages between governments and their constituency are relatively close. The locally existing political will, civic culture, programmes of governance reform and regulatory frameworks help develop the desired civic participation in governmental budget decisions. In fact, the very concept of participatory budgeting presupposes its introduction and institutional anchorage through a political agreement between a limited group of advocates (the SI initiative) and a broader constituency. This empowerment through institutional anchorage can also be witnessed in other initiatives such as the *co-housing initiatives* (often benefiting from local/national regulatory frameworks for loans), the *Impact Hubs* and the *Ecovillages* (e.g. planning permissions for urban re-development or construction of an Ecovillage; institutional support for the establishment of an independent school).

4.2.   *Local embeddedness (LOW)*

In contrast with the various forms of strong local networking, some SI initiatives are instead rather self-contained. Even if our sample contains few examples of low empowerment across the four distinguished aspects, several cases display telling manifestations of "low" empowerment on particular aspects. The relatively self-contained existence is

clearly not only a matter of unfavourable circumstances. Several elements in SI initiatives' ambitions, strategic outlook and modus operandi can make it a deliberate choice.

The *BIEN* network of basic income advocates exemplifies how weak local embedding may flow quite naturally from the kind of SI pursued. Striving for a *universal* basic income, BIEN members seek institutional anchorage on a national or even supra-national level, to begin with. Even if not starting from local-regional societal issues, basic income activism does show a recent upsurge of local activism, discussion meetings, and small-scale "real-world experiments". Accordingly, the linkages with local governments, universities and civil society intensify. Whilst appreciating how such local embedding enhances the legitimacy of the basic income concept, many BIEN members still consider however that critical mass needs to be developed well beyond the local level, and that local experimentation could even distract from that. Meanwhile, BIEN members can do quite well without empowerment through accommodation and material resources: Revolving around the construction and circulation of arguments and evidence that could convince governments into large-scale institutional reforms, their SI activities are rather immaterial and placeless.

Next to this rather principled, locality-transcending SI, several other SI initiatives display in a rather practical sense how they can manage without much of the local sources of empowerment. Whilst co-creating with others and not insisting on a go-alone approach, they do so within relatively small circles and dedicated ecosystems significantly less dense than in the emphatically community-based initiatives. *Ashoka fellows* are not relying much on local institutional anchorage, accommodation and material resources, for example, as they rely more on the professional, entrepreneurial work of networks of individuals. The empowerment through critical mass is important for them, but this is not based upon broad civil society participation, but rather upon their professional networks. The *Hackerspaces* are similarly rather self-contained spaces. Just as the *FABLABs*, they do develop empowering local roots in terms of accommodation and material resources. Yet they also strive for a certain independence, keeping their needs for institutional anchorage minimal and deriving their legitimacy only to a limited degree from their catering to local needs. Finally, this self-contained operation is even discernible in SI initiatives with apparent strong "local roots". The *Living Labs* are institutionally hybrid, collaborative ventures aligning partners from different corners of local communities, yet ultimately they remain confined labs. Even if local *Transition Network* initiatives tend to be strongly locally rooted, some local initiatives are developed as rather separate and self-reliant entities. And whereas *Shareable* initiatives are sometimes building on the local legitimacy, critical mass and institutional anchorage through which sharing economy activities are mushrooming in some cities and regions, others display little local embedding as they involve desk activities and exchanges between a limited group of individual persons.

Finally, there is the evidence of SI initiatives for whom the local roots are actually disempowering and constraining. This is historically contingent, depending on particular unfavourable circumstances. Still this disempowering side of local SI networks is relevant, adding depth to the spectrum unfolded here. Exemplary in this regard are *Via Campesina*'s activities for family-farm-based sustainable agriculture and food sovereignty, and some of the housing cooperatives of the *ICA network*, developing as self-reliant structures against unsupportive or even oppressive institutional environments. Even if local civil society provided them with critical mass, accommodation and material resources, the local embeddedness only became truly empowering once favourable institutional frameworks came in place. And even if generally relying on strong local empowerment, *RIPESS* solidarity-based economy activities experienced difficulties to gain foothold in Romania, where

they raised suspicions of reviving the earlier cooperative structures under the communist regime. Finally, the ethical banks of the *Credit unions/FEBEA* have initially benefited from the legitimacy and critical mass afforded through their strong local/regional roots, yet eventually they faced various challenges associated with operating on a greater scale.

5.   Empowering network constellations (II): translocal connectivity

SI initiatives are often not only locally embedded but translocally connected as well. The following empirical accounts substantiate how the empowerment afforded through this translocal embeddedness revolves around processes of developing critical mass, translocal political voice, translocal identity, and knowledge exchange. Teasing out the main contrasts, the analysis identifies evidence on (relatively) high (section 5.1) and low (section 5.2) empowerment through translocal connectivity.

5.1.   *Translocal connectivity (HIGH)*

Within our sample of SI initiatives, the majority ranks as "high" on translocal connectivity. Still, few initiatives rank consistently high across all four empowerment processes involved, just as the networks come in a broad variety of forms. Some initiatives are intensively engaged in lobbying activities nationally and internationally, accordingly showing embedding in political movements affording empowerment through critical mass, collective voice and identity, and knowledge sharing. Other networks revolve around one particular empowerment process however, often reflecting the particular SI ambitions of the initiatives involved.

The clearest examples of strong empowerment involve networks resembling organizations. The *International Cooperative Alliance (ICA)* is a typical example. They are legally registered, they have offices, a secretariat, a president, a governing board, statues, committees, and they are divided hierarchically into regional, national, and local levels. Members are charged a fee. Such a structure helps to develop critical mass internationally, while also presupposing a broad membership in different countries to sustain it. Concentrating a large amount of resources in the network, ICA develops the translocal voice through lobbying activities, a strong translocal identity, also providing services to members regarding monitoring, financial planning, accounting, and management of innovation, inclusiveness and knowledge sharing. Even within a tight network like ICA, some local initiatives hardly interact with the network though, for lack of locally felt need to do so. Translocal interactions are often not part of the local initiatives' daily activities. The cases of *Slow Food, Via Campesina, FEBEA (credit unions)* and *Transition Towns* show similarly strongly developed networks that empower through the construction of translocal political voice. Interestingly, these highly structured networks are not necessarily proficient at facilitating knowledge generation and transfer. An example of strong developed knowledge sharing is the *Basic Income Earth Network (BIEN)*. Organizing discussion through an academic journal, an extensive website and international congresses, the network has helped to keep the societal basic income debate going over the last 30 years. Also providing voice and identity, the loosely organized network provides complementary empowerment to activists generally lacking strong local ties (Cf. section 4.1).

Amongst the organization-like formalized networks, the construction of translocal political voice is not always the leading rationale. Instead, networks such as *Living Labs, Impact Hub,* and *Ashoka* involve social entrepreneurship-based SI initiatives In line with prevailing societal discourses of innovation (Cf. section 6), they look for market

demand rather than political support. Working along a somewhat more pragmatic attitude, the networks serve purposes of lobbying, brand development, knowledge sharing (like the art of hosting/facilitation in the Impact Hubs), and of scaling.

Finally, it appears that high empowerment through translocal connectivity does not necessarily rely on well-organized, centralized networks. The *Living Knowledge* network does support the affiliated Science Shops with a narrative of more democratic and accessible research. This political voice is not the focus of the network, however. Moreover, the loosely organized network has not acquired a significant critical mass, particularly pronounced collective identity, or brand. Still, the network has had a successful political impact in its niche. It has facilitated an alignment of otherwise highly dispersed members towards converging research activities, materializing in various publications and other forms of codified knowledge. This particular empowering capacity premised on knowledge exchange allows the Living Knowledge network to hit above its weight compared to the more tightly knit and better-resourced networks. *INFORSE* is similar in several aspects. It is a comparable small politically active network without a very pronounced brand or translocal identity. It does provide significant empowerment though, through its ability to generate, exchange and mobilize legitimizing knowledge on matters of sustainable energy.

5.2. *Transnational connectivity (LOW)*

This category comprises networks that empower only in very specific areas, and those providing only weak empowerment. The *Hackerspaces* actively eschew any manifest positioning as a unified political actor like RIPESS and BIEN. The Hackerspaces deliberately form a very loose social movement, seeing little need to construct a translocal political voice or identity through a common homepage or other organizing structures. Some of their local initiatives downplay the radical "hackers" image, also adopting other labels such as FabLabs. Their SI ecosystems are thus composed along rather "light" participation in several different SI networks, with dispersed and intermittent interactions.

Similarly focused on pragmatic tinkering and experimentation with digital fabrication and electronics, the *FABLABs* are less opposed to networking and organizing than the Hackerspaces. Still, they equally do without a recognized organization acting as a spokesperson for the network, or a coherent identity to convey shared transformative ambitions. The rapid diffusion of the translocal FabLabs identity is rather a cumulative effect of the societal interest aroused by multiple local initiatives. This can be invoked to gain legitimacy and visibility locally. The translocal identity does not reflect strong translocal organization. The local initiatives involved are pragmatic in orientation, focusing on exchanges of practical knowledge and skills (e.g. use of equipment). This also applies to the *Living Knowledge* network, which has a pragmatic perspective on knowledge and research as a way to solve societal problems.

Surprisingly considering their label as a movement, the *Seed exchange movement* (just as other modern movements enabled by ICT and social media) share the characteristics of only loose organization and pragmatic focus – in this case related to the sharing of knowledge and skills around seed cultivation. This key activity takes place through periodic, intermittent seed swapping events, similar to the Maker Fairs in FabLabs. Like FabLabs it is a pragmatic network with many members that gather primarily for their interest in the activity undertaken. Even if specific individuals and groups do pursue political action (e.g. food sovereignty, sustainable agriculture), no particular translocal SI

network has asserted itself as the key empowering and organizing intermediary for those activities. *GEN* (The Global Ecovillage Network) is similarly focusing on the sharing of knowledge and skills, related to a wide range of practices of ecologically and socially sustainable living. The network has some activities within all four empowerment processes, but the associated local initiatives are generally particularly keen on their local roots (Cf. Section 4). The GEN network does significant work in constructing a shared identity and narrative of change, yet also sees how various ecovillages exist outside the network. Events are organized, and knowledge about ecovillages is spread through publications and mapping efforts, but these activities appear to be of relatively secondary importance to the strong *local* empowerment of members. The GEN network bears strong similarity to the widely known Transition Towns movement, but it is still more of a loose social movement compared to the more formalized network structures of the latter. Compared to RIPESS, Living Knowledge and ICA, GEN can be seen to act less as a unified political representative or shared identity. This may have to do with the modes of internal democracy pursued by their constituent local initiatives.

Even networks providing a strong collective political voice and collective identity can still be seen to provide relatively low levels of empowerment on the other aspects. *Shareable & RIPESS*, both promoting alternative economic practices, have organized a certain critical mass, but are weakened since they are covering large and varied areas. They are both networks of networks, featuring members that are generally locally focused and oriented towards particular sectors. Constructing a common identity or brand is thus more complex, and knowledge is not immediately transferable between members. The members do not share any specific causes like *Slow Food*, *Via Campesina* or *BIEN*. Despite mapping efforts and attempts to connect members, it also seems that little knowledge is being shared or generated through the network structures. Importantly, most members are also members of one or several other networks. Some RIPESS members are also members of *FEBEA*, for example, which serves the needs of ethical banks. Moreover, some potentially strong SI networks are divided along different and sometimes even competing translocal networks, as is the case with the *Timebanks* and the *Seed Exchange movement*.

Meanwhile, *Shareable* exemplifies how relatively newly established networks may simply need more time to build up an infrastructure through which to empower members. This also applies to the *DESIS* network on sustainable design. Drawing in design departments and labs at universities around the world as members, they do expand rapidly, but it takes time to develop a coherent, shared and pronounced translocal identity.

6.   Empowering network constellations (III): discursive resonance

SI ecosystems involve more than the local embedding and the transnational connectivity as immediate supporting structures. SI initiatives, and especially the new social relations that they promote, can also be empowered through wider processes of discursive resonance. Beyond the many individuals, local initiatives and transnational networks who seek to develop persuasive discourses and narratives of change (Wittmayer et al. 2019), this discursive resonance comprises the whole communicative sphere around socially innovative concepts. It involves four empowerment processes, namely the circulation of (1) organizational models; (2) practices; (3) framings and (4) data/evidence. Teasing out the main contrasts, the analysis identifies evidence on (relatively) high (section 6.1) and low (section 6.2) empowerment through discursive resonance.

6.1. *High empowerment through discursive resonance*

More than half of the SI initiatives can be considered as highly empowered through discursive resonance. The initiatives, and especially the SIs that they promote, are carried forward through their particular fit with contemporary framings and narratives, and through the apparent societal demand for their organizational models, practices, and data/evidence regarding certain socially innovative concepts. ICT infrastructures are not only serving as additional tools for their direct communications (websites, newsletters, mailing lists) but also channel their ideas along wider communication networks of blogs, discussion platforms or social media such as Twitter, Facebook. Many of the framings and knowings propagated by SI initiatives resonate widely with those recently brought forward in political, scientific, business and civil society discourses. The various framings of alternative economies have found fertile ground in the wake of the financial crisis of 2008, and many of the promoted organizational models are being adopted by third parties.

A paradigmatic example of strongly empowering discursive resonance is the *Basic Income Earth Network (BIEN)*, or rather the concept of the unconditional basic income that it is dedicated to. Since the treatises, pamphlets and newsletters of early basic income advocates, the internet age has yielded a significantly more extensive communication network of bloggers, discussion platforms, activist groups and Twitter circuits. This communication network is not just empowering basic income initiatives in their advocacy activities, it also supports the wide circulation of the easily transferable and intriguing concept of a wage-independent income. This case also exemplifies however that discursive resonance is a relatively volatile source of empowerment: Before the recent "hype", carried by broader searches in society for new welfare models, the concept has also gone through periods of political irrelevance.

Regarding the resonance of socially innovative practices, also *Slow Food* stands out. Promoting "decelerated" consumption, the network has created a powerful SI brand that turned out particularly successful. It resonates with a more pervasive shift towards slow lifestyles and practices, as witnessed by movements towards slow science, slow cities and slow parenting amongst others. Similarly timely coincidence with emerging societal framings is displayed by *Shareable*, as part of broader experimentation with economic practice based on access rather than ownership. INFORSE, the *International Network for Sustainable Energy*, has been carried quite steadily by a more longstanding societal interest for changing energy production, distribution and consumption.

Apart from the society-wide quests for alternative narratives of sustainability and fairness, various SI initiatives also find broad societal interest in the organizational models that they experiment with. The *Impact Hubs* can witness how their social entrepreneurship has become fashionable, and how their model for shared, cross-fertilizing working spaces has been emulated in cities across the globe. Similarly, the models of the *International Observatory for Participatory Democracy* network form part of wide circuits of international policy transfer and social activism. Their participatory budgeting models stand out as benchmarks for governmental reform. Several other initiatives provide the innovative modes of working broadly sought for under policy headings of "scientific valorisation", "urban labs", "co-creation" and "experimental governance". This applies strongly to the *European Network of Living Labs*, and the DESIS initiatives *(Design for social innovation and sustainability)*, both presenting "lab" kind of organizational models at the interface of universities and society. These examples also share the pronounced experimenting spirit that has made the *FABLABs* such particularly timely initiatives. This proponent of the

"maker movement" has thrived within broader societal trends towards democratization of the means of production, revived "do-it-yourself" attitudes, and attempts to exploit the ICT revolution for digital social innovation.

Arguably, *Transition Towns* have been the most successful in purposively circulating their model of grassroots community projects and the associated practices of urban gardening, community currencies or community energy. In turn, this largely self-created SI "hype" has been amplified by many communications of other actors – the movie "Demain" is indicative of particularly wide resonance. This reminds that the Transition Towns are increasingly the subject of academic observers. The resulting availability of evidence helps to normalize their practices, and to codify the developed skills. This is also evident in the *Global Ecovillage Network (GEN)* case. The network actively disseminates much evidence, informational resources and tools via its website, in line with general trends of evidence-based policy and practice. The *Basic Income Earth Network* (BIEN) displays particular science-based efforts in this regard, to ensure that wide resonance is not accompanied with misguided ideas about the SI model promoted.

6.2.   *Low empowerment through discursive resonance*

Amongst the initiatives displaying relatively low empowerment through discursive resonance, no clear set of shared characteristics stands out. This reflects the circumstance that discursive resonance is to a significant extent beyond their control. Generally speaking, it does transpire however that the initiatives concerned tend to promote practices and organizational models that are less easily transferable, recognizable and communicable. This makes them less susceptible to wider uptake in societal discourses. Also the lesser articulation of collective translocal identities (Cf. section 5) seems to make for comparatively less discursive resonance.

A telling example of limited transferability are the *Seed Exchange* initiatives, and their practices of exchanging seeds. These exchanges do not make for a clear organizational "format", and their significance in terms of food sovereignty is not immediately apparent or relevant to the broader public. *Via Campesina*, also working on food sovereignty through localized agricultural practices, shows how also language barriers can limit the worldwide resonance of socially innovative practices and framings. This also applies to *RIPESS*, whose promotion of the "social-solidarity economy" (SSE) remains as yet strongly anchored in francophone-hispanic discourses of alternative economic models. As the particular SSE concept is developed as a unifying umbrella term, it lacks the specificity of some of its constituent models, such as ethical banking or social economy. In addition, it displays a misfit with other emerging "alternative economy" narratives, such as the "sharing economy" and "social enterprise". The latter framing is in fact adopted by *Ashoka.* Taking a less pronounced ideological profile and diversifying along a multitude of projects and fellowships, the latter is not immediately recognizable as a social enterprise standard bearer, however.

Other initiatives remaining relatively "below the radar" are the ethical banks of *FEBEA* and the *Timebanks* initiatives. The Timebanks have in fact developed a highly transferable, formalized software package for their voluntary exchanges of services. Still, the organizational model is often practiced under different headings, linked up with other initiatives (sharing movement, alternative banking, alternative welfare provision) and translated locally in various forms. Moreover, the translocal networking has not resulted in a stabilized framing, as different parties have put a claim on the Timebank model. The ethical banking services promoted by *FEBEA* are similarly displaying an increase in uptake and

clientele, whilst still evoking only moderate societal resonance through the broader discourses on banking reforms. The practice resonates widely, more than the accompanying set of ideas and framings.

Finally, our sample did bring out instances of initiatives with framings in discordance with current societal discourses. Positioning as "hackers", the *Hackerspaces* strike a less favourable chord in society than the otherwise similar *FabLabs* or repair *shops*. While having considerable resonance potentials similar to the latter, the "science shops" promoted by the *Living Knowledge Network* are currently out of tune. This shows the volatility of discursive resonance. It is displayed in particularly striking fashion by the cooperative organizational models promoted by the *International Cooperative Alliance*: In some countries, cooperatives are being rediscovered as alternative organizational models for energy production or healthcare provision. In others, such as in libertarian-capitalist contexts and in the former communist countries of Eastern Europe, cooperatives have negative connotations. Meanwhile, cooperatives are often not recognized as such, as they have become "normal" enterprises and integral parts of the institutional landscape.

7. Synthesis: SI ecosystems typology

Before presenting our fivefold typology of SI ecosystems (7.2), we clarify its generation through a confrontation between the theorized set of attribute combinations and our empirical observations on those (7.1).

7.1. *SI "ecosystems": theorized and observed empowerment processes*

Our empirical analyses have shown concretely how and why SI initiatives seldom travel their innovation journeys alone. They have substantiated how SI initiatives are empowered to different degrees and in different ways through different combinations of local embedding (section 4), transnational connectivity (section 5) and discursive resonance (section 6). Charting empirical contrasts and identifying telling exemplars, the analysis has empirically validated the theorized property space (Collier, LaPorte, and Seawright 2012, 223), i.e. the set of possible combinations of scores on the three distinguished analytical dimensions. Table 2 links the $2^3 = 8$ theoretical ideal types to related empirical evidence, establishing their empirical salience. Importantly, this rough overview abstracts from the considerable differences and variations observed within the networks, just as the high/ low scores constitute only crude approximations of case characteristics. Meanwhile, the more fundamental fact applies that ideal-types reminisce of but do not *correspond* with particular empirical cases.

Organizing the matching between theory and evidence, the table structure has served as a stepping stone towards a more concise set of theoretically coherent and empirically adequate ideal-types. Further iterating between emerging ideal-types and empirical evidence, the eventual five-fold typology (Cf. section 7.2) has been developed along the expansion and reduction strategies of Elman (2009). Key considerations were the following:

First of all, the initial overrepresentation of "high" scores has informed a recalibration of those in the underlying empirical analyses. Considering how this overrepresentation followed from a case selection procedure inclined towards relatively visible and relatively extensively connected initiatives (Cf. section 3), a greater set of empirical evidence was classified as (relatively) "low" empowerment (Cf. sections 4.2, 5.2 and 6.2). Second, the clear empirical salience of the categories of consistent "high" and "low" scores (HHH/ LLL) has led to the consolidation of those as ideal-types marking the extreme ends of

Table 2.   Theorized ideal-types and related empirical evidence.

Theoretical types *Local-Translocal-Discursive*	Empirical evidence
HHH	The relevance of this extreme end of the spectrum speaks from several of the studied initiatives that displayed strong local embedding in combination with high translocal connectivity and discursive resonance. The empowerment processes across the three dimensions were often found to be mutually reinforcing – as particularly evident for Slow Food.
HHL	Different networks display locally rooted initiatives internationally connected through SI federations, networks and movements. Some of them lean towards the HHH category', lacking only some its added "discursive resonance" dimension. The Timebanks are an example.
HLH	This category, together with the HLL, proved particularly relevant for the emphatic local orientation and the secondary significance of the other network linkages and associated sources of empowerment. A whole range of relatively pragmatic SI initiatives were in rough correspondence with these characteristics.
HLL	This category, together with the HLH, proved particularly relevant for the emphatic local orientation and the secondary significance of the other network linkages and associated sources of empowerment. A whole range of relatively pragmatic SI initiatives were in rough correspondence with these characteristics.
LHH	This category, together with the LHL, proved empirically more relevant than the lack of local embeddedness would theoretically suggest. The particular relevance of translocal embeddedness proved to be intimately related to initiatives' searches for political alliances and knowledge exchange with peers outside of their local environments.
LHL	This category, together with the LHH, proved empirically more relevant than the lack of local embeddedness would theoretically suggest. The particular relevance of translocal embeddedness proved to be intimately related to initiatives' searches for political alliances and knowledge exchange with peers outside of their local environments.
LLH	This theoretical category is somewhat unlikely for the lack of what may appear essential sources of empowerment either in proximity or translocally. The empirical analysis did bring out its salience, however, through several networks displaying particular reliance on the societal circulation of the socially innovative concepts and ideas promoted. The basic income, promoted by but discussed well beyond BIEN, is an example.
LLL	Also this end of the spectrum proved empirically very salient. It manifested through various rather self-contained SI activities, eschewing any more than minimal form of networking and developing rather outside –often deliberately so-the broader societal circulations of organizational models, practices and concepts. The Hackerspaces are exemplars.

the spectrum. Third, closer examination of the various high-low combinations on local embedding and translocal connectivity (HLx, LHx OR HLH, HLL, LHL, LHH) has highlighted the division between pragmatic and political movement-oriented SI initiatives that cuts through the associated theoretical categories. Accordingly, the latter have been merged into two ideal-types, characterized by the relative importance of either local embedding or translocal connectivity. Fourth, further analysis has brought out that relatively few clear-cut high/low distinctions could be made on the "empowerment through discursive resonance"

dimension. Considering the striking empirical prominence of several initiatives with rather exclusive "high" scores on this particular dimension, a corresponding ideal-type has been constructed. Premised on relatively "high" scores, the ideal-type does account for the observed volatility of this source of empowerment (Cf. section 6). Fifth, theoretical considerations of coherence have identified the logic underlying the set of ideal-types: Next to the two extreme categories of consistent "high" or "low" scores, the three other ideal-types display specialization i.e. "high" scores on one particular dimension of empowering networks. Even if the empirical analyses suggest various relevant further differentiations and "hybrids" within the distinguished ideal-types, the fivefold typology provides greater heuristic value whilst arguably covering the empirical spectrum.

7.2. *Typology of SI "ecosystems"*

The above considerations have generated a coherent set of five ideal-types of SI "ecosystems". Constituting the most salient combinations of "local embeddedness", "transnational connectivity" and "discursive resonance", their pertinence arguably extends beyond the sample of cases by which they were empirically informed. Beyond their similarity to certain exemplar cases, the empirical adequacy of these constructs speaks from the recognizable sets of attributes (actors, network constellations and empowerment processes Cf. section 2.3) that constitute them. In order to highlight how the ideal-typical SI ecosystems indicate essentially different kinds of empowering network structures, they have been distinguished through evocative metaphorical names.

Type A: The "coral reef". This rich and extended kind of ecosystem provides strong empowerment across all three dimensions of empowering network constellations. Combining strong local roots with a wider translocal identity, political voice and a favorable discursive sphere, these SI ecosystems combine a multitude of the associated twelve (Cf. Figure 1) empowerment processes into a network structure that is particularly supportive to local SI initiatives aiming for broad transformative impacts. The local affordance of advantageous material and institutional preconditions support the development of organizational models and practice formats, know-how and legitimacy. In turn, this typically facilitates the formation of transnational identity, political voice, and knowledge basis as well as the uptake of organizational models, practices and evidence in society-wide circulations of socially innovative concepts and practices. This ecosystem engages a particularly wide range of actors, extending well beyond the immediate circles of SI initiators. A well-known exemplar is the Slow Food case. Facilitating the current wide resonance of Slow Food practices and principles into a globally well-established social innovation "brand", a favourable cultural-political selection environment exists for new Slow Food activities to undertake local activities.

Type B: The "badger castle". This second type represents the opposite end of the spectrum, indicating rather secluded habitats. These SI ecosystems provide relatively little empowerment across the three dimensions. This partly reflects the institutional voids that have some SI initiatives struggling for resources and supportive alliances. On the other hand, this category of ecosystems also comprises the sparse, loose networks actively sought for by initiatives cherishing independence, flexibility, and diversity, which also deliberately seek out or build secluded spaces. Relatively few actors beyond the SI initiative are engaged with, typically on the basis of practical necessity or well-considered choice. Exceptions to this seclusion regarding particular empowerment processes and network relations indicate hybrid forms between this ideal-type and the types C, D or E. Exemplary for the deliberate operation in these secluded ecosystems are the

Hackerspaces. Their experimenting and tinkering are premised on anarchistic attitudes, do-it-yourself modus operandi and suspicions towards broad political movements and societal "hypes".

Type C: The "Fish pond". This type of SI ecosystem empowers primarily through strong local embedding, and significantly less so through translocal connectivity (transgressing the edges of the "pond"). Discursive resonance can be either weak or strong. The key empowerment processes are legitimacy, locally developed critical mass, provision of accommodation and material resources, and institutional anchorage. These ecosystems are typically sought for by local SI initiatives for the affordance of material support and immediate means for sustained operation. The network formation is characterized by physical proximity. Key actors are the local governments, civil society organizations, NGOs, citizens, students and entrepreneurs that form local communities. These ecosystems tend to be sought by rather pragmatic SI initiatives, such as FabLabs, Science Shops and Timebanks. Still there is a significant range between more and less widely extended co-creation relations. The latter bear similarities to the "badger castle" (type B) modes of existence of rather self-contained SI initiatives, such as the Hackerspaces.

Type D: The "Fungi strand". This fourth category of SI ecosystems is characterized by its high empowerment through translocal connectivity (i.e. the subterranean extensions of fungi strands), and relatively low empowerment through local embedding. Empowerment is mainly afforded through translocal critical mass, collective voice and identity, and facilitation of knowledge sharing. Typically involving well-developed network organizations that seek to boost the circulation of organizational models, practices, framings and codified knowledge, these ecosystems tend to involve relatively high levels of discursive resonance. Driven generally by political rationales of organizing collective action and moving beyond dispersed and locally confined action, various policy entrepreneurs, intermediaries, internationally operating professionals, large NGOs and academics can be seen to act as key agents in this translocal linkage. Set up to become a political interlocutor and network-of-networks for the various local initiatives of solidarity-based economy, RIPESS, is a fitting example for the political movement kind of ecosystem. Another relevant example is the International Cooperatives Association. This well-developed network starkly contrasts with the translocal networks through which little empowering exchanges takes place beyond the collective identity communicated to the outside world. The Science Shops in later years developed more along the latter line of ecosystems, boosting knowledge circulation and trying to organize more collective actions.

Type E: "Seeds flight". This fifth type of SI ecosystem empowers primarily through the communicative sphere around socially innovative concepts – which can be thought of as seeds flight, carried by the winds of society. This fifth type of ecosystem differs from the "coral reef" and the "fungi strand" types for the pivotal significance of *"discursive resonance"* and the relatively negligible role of local embedding and translocal networking. This discursive resonance involves the authoritative actors and organizations that lead in discourse formation, but also the communication infrastructures through which organizational models, practice formats, fashionable framings and codifying knowledge are mediated and spread. In terms of actors, this type of ecosystem comprises a particularly wide range. Discourse formation is a society-wide process, largely taking place outside the control of local initiatives and translocal networks. The importance of these discursive networks for some SI initiatives can be exemplified through the rich discursive sphere that has formed around "Basic Income". Since the treatises, pamphlets and newsletters of early Basic Income advocates, the internet age has yielded a significantly more extensive communication network of bloggers, discussion platforms, activist groups and Twitter circuits. This

communication network is not just empowering BI initiatives in their advocacy activities, it also supports the circulation of the BI *concept*. This case also exemplifies the volatility of this source of empowerment. The BI debate has gone through cycles of "hype" and societal irrelevance, depending on the societal winds through which these discursive seeds were carried.

8. Conclusion and discussion: SI ecosystems unpacked

The "SI ecosystem" concept usefully directs attention to the conditions under which SI initiatives can thrive. Still, much remains to be clarified about it (section 1): *What actors, networks and processes does the "SI ecosystems" concept empirically refer to? Which kinds of SI ecosystems can be distinguished and how do they empower the SI initiatives embedded in them?*

As a double-layered construct (Doty and Glick 1994, 234–235), the developed typology answers both research questions. Regarding the former, it conveys our synthesis of different theoretical perspectives on the agency and supportive networks of SI. Working from a relational theoretical understanding, we have unpacked the SI ecosystems along three kinds of empowering network constellations. Local embedding, transnational connectivity, and discursive resonance indicate often complementary yet distinct sets of network relations, each corresponding with particular empowerment processes and key actors (section 2).

Regarding the second question, further empirical unpacking has been achieved by systematically charting the empirical variety across 20 cases of transnational networks (sections 4–6). The typology captures these differentiations through a coherent set of five empirically grounded ideal-types that covers the theorized spectrum of SI ecosystems: (A) The "coral reef"; (B) the "badger castle"; (C) the "fish pond"; (D) the "fungi strand" and (E) "seeds flight" (section 7). These ideal-types show comprehensively how SI ecosystems revolve around particular sets of empowerment processes (e.g. local institutional anchorage, translocal political voice, circulation of organizational models), engage actors at greater or lesser proximity (immediate peers, general public, governmental actors, intermediaries), whilst differing significantly in terms of interaction intensity and spatial extension. Moreover, the typology conveys how the various network constellations meet particular ambitions and needs of the focal actors in the analysis, the local SI initiatives. Importantly, the rich, widely extended and intensive "coral reef" networks (type A) are not the obvious mode of existence for all SI initiatives. Some reasons and circumstances rather drive towards self-contained operation (type B), or towards discourse-driven ecosystems in which SI initiatives may play quite secondary roles (type E).

The relevance of the developed typology resides in its contribution to refined SI theory and differentiated approaches to SI practice. Regarding the former, the presented study has bridged various schools of thought and their particular imaginaries of SI ecosystems. This adds to recent attempts to structure the scholarly origins and constitutive dimensions of the notoriously complex SI concept (Cf. van der Have and Rubalcaba 2016; Amanatidou, Cox, and Gagliardi 2018). Moreover, this study has confronted the methodological challenges of operationalization and sampling that arise from this conceptual ambiguity (Bouchard et al. 2015; Callorda Fossati, Degavre, and Nyssens 2017). Reaching beyond the fragmented evidence of exemplars, contrasting cases and "partial" typologies (Elman 2009), the empirical denotations of the SI ecosystems concept have been charted through a wider empirical variety. This adds to the comprehensive SI insights developed through configurational case comparisons (Westley et al. 2014) and mapping efforts (Howaldt et al. 2017b).

The practical relevance of the developed typology resides in its capacity to inform differentiated approaches (Cf. Jaeger-Erben, Rückert-John, and Schäfer 2015). Describing a range of different modes of existence in various network constellations, the typology provides a heuristic for SI initiatives to position themselves in their immediate and more distant institutional environments. As indicated, the typology should be taken neither as a hierarchy of optimum network configurations nor as an obvious growth trajectory. Relating particular network constellations to particular ambitions and needs for empowerment, the typology invites strategic reflections on the investments needed to develop and sustain supportive networks, on the tailoring of certain hybrid forms between the distinguished ideal-types, and on the change processes through which to "migrate" from one mode of network embedding to another. The developed differentiations similarly inform policy-makers' quests for SI ecosystem development. A key insight is that stimulating local and national policies are particularly pertinent to some ecosystems (types A and C, notably) and less so to others.

Finally, these practical recommendations do warrant explicit mention of some limitations of this study. As a first caveat, there are limitations of precision and depth. Even if balanced by an iterative analysis procedure, the formalization through "high" and "low" scores on the three dimensions of network empowerment does make for only rough approximations. While we are confident about the overall adequacy of the mapped spectrum of SI ecosystems, the placement of individual cases in it remains debatable. Second and more fundamentally, straightforward SI ecosystem *instruments* (Cf. van den Heiligenberg et al. 2018) cannot be derived from the study. The underlying "mechanics" of empowerment have been unpacked systematically but not exhaustively. Deliberately grounding the SI analysis in Social Science and Humanities insights (Moulaert et al. 2017) and seeking to remain attentive to the complexity of distributed SI agency (Pel et al. 2017), the typology rather informs reflexive practice (Haxeltine et al. 2017b). The empowerment processes at issue have proven to be highly complex phenomena. For reasons of coherence across the empirical analyses (sections 4–6) and clear exposition, we have focused on the empowerment afforded *to SI initiatives*. This approach has left unaddressed however how network development tends to be driven by experienced interdependencies (Koppenjan and Klijn 2004), involving processes of *mutual* empowerment and empowerment afforded *by* SI initiatives. This opens a range of issues for further SI ecosystems research. Particularly worthwhile taking up are the often asymmetrical distributions in mutual empowerment and the circumstance that embedding in broader actor constellations tends to be both empowering as well as constraining (Cf. Clegg et al. 2016; Avelino et al. 2019).

References

Aiken, G. T. 2019. "Community as Tool for Low Carbon Transitions: Involvement and Containment, Policy and Action." *Environment and Planning C: Politics and Space* 37: 732–749. doi:10.1177/2399654418791579.
Akrich, M., M. Callon, B. Latour, and A. Monaghan. 2002. "The Key to Success in Innovation Part I: The Art of Interessement." *International Journal of Innovation Management* 6 (02): 187–206.
Amanatidou, E., D. Cox, and D. Gagliardi. 2018. "Social Engagement: Towards a Typology of Social Innovation." In MIOIR/MBS Working Paper Series-Working Paper 82.

Autio, E., and L. Thomas. 2014. "Innovation Ecosystems." In *The Oxford Handbook of Innovation Management*, edited by M. Dodgson, D.M. Gann, and N. Phillps, 204–288. Oxford: OUP.

Avelino, F. 2017. "Power in Sustainability Transitions: Analysing Power and (dis)Empowerment in Transformative Change Towards Sustainability." *Environmental Policy and Governance* 27 (6): 505–520. doi:10.1002/eet.1777.

Avelino, F., J. M. Wittmayer, B. Pel, P. Weaver, A. Dumitru, A. Haxeltine, R. Kemp, et al. 2019. "Transformative Social Innovation and (Dis)Empowerment: Towards a Heuristic." *Technological Forecasting and Social Change* 145: 195–206. doi:10.1016/j.techfore.2017.05.002.

Ayob, N., S. Teasdale, and K. Fagan. 2016. "How Social Innovation 'Came to Be': Tracing the Evolution of a Contested Concept." *Journal of Social Policy* 45 (4): 635–653.

Bekkers, V., J. Edelenbos, and B. Steijn, eds. 2011. *Innovation in the Public Sector*. New York: Palgrave Macmillan.

Benford, R. D., and D. A. Snow. 2000. "Framing Processes and Social Movements: An Overview and Assessment." *Annual Review of Sociology* 26 (2000): 611–639.

Biggeri, M., E. Testi, and M. Bellucci. 2017. "Enabling Ecosystems for Social Enterprises and Social Innovation: A Capability Approach Perspective." *Journal of Human Development and Capabilities* 18 (2): 299–306.

Bouchard, M. J., C. Trudelle, L. Briand, J. L. Klein, B. Lévesque, D. Longtin, and M. Pelletier. 2015. "A Relational Database to Understand Social Innovation and Its Impact on Social Transformation." In *New Frontiers in Social Innovation Research*, edited by Alex Nicholls, Julie Simon, and Madeleine Gabriel, 69–85. London: Palgrave Macmillan.

Callorda Fossati, E., F. Degavre, and M. Nyssens. 2017. "How to Deal with an "Essentially Contested Concept" on the Field? Sampling Social Innovations Through the Delphi Method." *European Public & Social Innovation Review* 1 (2): 45–58.

Cameron, H. 2011. "Social Entrepreneurs in the Social Innovation Ecosystem." In *Social Innovation: Blurring Boundaries to Reconfigure Markets*, edited by A. Nicholls and A. Murdock, 199–220. London: Palgrave MacMillan.

Castells, M. 2010. *The Rise of the Network Society*, Vol. I. Massachusetts: Blackwell Publishing. doi:10.2307/1252090.

Castells, M. 2015. *Networks of Outrage and Hope: Social Movements in the Internet Age*. 2nd ed. Cambridge: Polity Press.

Clegg, S., E. Josserand, A. Mehra, and T. S. Pitsis. 2016. "The Transformative Power of Network Dynamics: a Research Agenda." *Organization Studies* 37 (3): 277–291.

Collier, D., J. LaPorte, and J. Seawright. 2012. "Putting Typologies to Work: Concept Formation, Measurement, and Analytic Rigor." *Political Research Quarterly* 65 (1): 217–232.

Czarniawska, B., and B. Joerges. 1996. *Travels of Ideas. Translating Organizational Change*. Göteborg: Göteborg University-School of Economics and Commercial Law/Gothenburg Research Institute. (p. 13–48).

Davis, J. E. 2002. *Stories of Change. Narrative and Social Movements*. Albany: State University of New York Press.

Defourny, J., and M. Nyssens. 2008. "Social Enterprise in Europe: Recent Trends and Developments." *Social Enterprise Journal* 4 (3): 202–228.

Dey, P., and S. Teasdale. 2016. "The Tactical Mimicry of Social Enterprise Strategies: Acting 'as if' in the Everyday Life of Third Sector Organizations." *Organization* 23 (4): 485–504.

Domanski, D., and C. Kaletka. 2018. "Lokale Ökosysteme sozialer Innovation verstehen und gestalten." In *Soziale Innovationen lokal gestalten*, edited by Hans-Werner Franz and Christoph Kaletka, 291–308. Wiesbaden: Springer VS.

Doty, D. H., and W. H. Glick. 1994. "Typologies as a Unique Form of Theory Building: Toward Improved Understanding and Modelling." *Academy of Management Review* 19 (2): 230–251.

Eisenhardt, K. M., and M. E. Graebner. 2007. "Theory Building From Cases: Opportunities and Challenges." *Academy of Management Journal* 50 (1): 25–32.

Elman, C. 2009. "Explanatory Typologies in Qualitative Analysis." In *The Sage Handbook of Case-Based Methods*, edited by D. Byrne, and C. Ragin, 121–131. London: Sage Publications.

Emirbayer, M. 1997. "Manifesto for a Relational Sociology." *American Journal of Sociology* 103 (2): 281–317.

Etzkowitz, H., and L. Leydesdorff. 2000. "The Dynamics of Innovation: From National Systems and 'Mode 2' to a Triple Helix of University–Industry–Government Relations." *Research Policy* 29 (2): 109–123.

Ezrahi, Y. 2004. "Science and the Political Imagination in Contemporary Democracies." In *States of Knowledge: The Co-Production of Science and the Social Order*, edited by S. Jasanoff, 254–273. London: Routledge.

Fiss, P. C. 2011. "Building Better Causal Theories: A Fuzzy Set Approach to Typologies in Organization Research." *Academy of Management Journal* 54 (2): 393–420.

Fligstein, N., and D. McAdam. 2011. "Toward a General Theory of Strategic Action Fields." *Sociological Theory* 29 (1): 1–26.

Franz, H. W., J. Hochgerner, and J. Howaldt. 2012. "Challenge Social Innovation: An Introduction." In *Challenge Social Innovation*, edited by H.W. Franz, J. Hochgerner, and J. Howaldt, 1–16. Berlin, Heidelberg: Springer.

Greiner, C., and P. Sakdapolrak. 2013. "Translocality: Concepts, Applications and Emerging Research Perspectives." *Geography Compass* 7 (5): 373–384. https://onlinelibrary.wiley.com/doi/full/10.1111/gec3.12048.

Grimm, R., C. Fox, S. Baines, and K. Albertson. 2013. "Social Innovation, an Answer to Contemporary Societal Challenges? Locating the Concept in Theory and Practice." *Innovation: The European Journal of Social Science Research* 26 (4): 436–455.

Haxeltine, A., B. Pel, A. Dumitru, F. Avelino, R. Kemp, F. Bauler, T. Kunze, et al. 2017a. "Towards a TSI Theory: A Relational Framework and 12 Propositions." TRANSIT working paper 16. TRANSIT. http://www.transitsocialinnovation.eu/resource-hub/towards-a-tsi-theory-a-relational-framework-and-12-propositions-transit-working-paper-16-december-2017.

Haxeltine, A., B. Pel, J. Wittmayer, A. Dumitru, R. Kemp, and A. Avelino. 2017b. "Building a Middle-Range Theory of Transformative Social Innovation; Theoretical Pitfalls and Methodological Responses." *European Public and Social Innovation Review* 2 (1): 59–77.

Hekkert, M. P., R. A. Suurs, S. O. Negro, S. Kuhlmann, and R. E. Smits. 2007. "Functions of Innovation Systems: A New Approach for Analysing Technological Change." *Technological Forecasting and Social Change* 74 (4): 413–432.

Howaldt, J., C. Kaletka, and A. Schröder. 2017a. "Social Entrepreneurs: Important Actors Within an Ecosystem of Social Innovation." *European Public & Social Innovation Review* 1 (2). doi:10.31637/epsir.16-2.4.

Howaldt, J., A. Schröder, A. Butzin, and D. Rehfeld. 2017b. *Towards A General Theory and Typology of Social Innovation*. SI-DRIVE Deliverable 1.6.

Hutter, M., H. Knoblauch, W. Rammert, and A. Windeler. 2015. "Innovation Society Today. The Reflexive Creation of Novelty." *Historical Social Research/Historische Sozialforschung* 40 (3): 30–47.

Jaeger-Erben, M., J. Rückert-John, and M. Schäfer. 2015. "Sustainable Consumption Through Social Innovation: a Typology of Innovations for Sustainable Consumption Practices." *Journal of Cleaner Production* 108: 784–798.

Jessop, B., F. Moulaert, L. Hulgård, A. Hamdouch, et al. 2013. "Social Innovation Research: a new Stage in Innovation Research?" In *The International Handbook on Social Innovation; Collective Action, Social Learning and Transdisciplinary Research*, edited by F. Moulaert et al., 110–127. Cheltenham: Edward Elgar.

Jørgensen, U. 2012. "Mapping and Navigating Transitions—The Multi-Level Perspective Compared with Arenas of Development." *Research Policy* 41 (6): 996–1010.

Jørgensen, M. S., F. Avelino, J. Dorland, S. Rach, J. Wittmayer, B. Pel, S. Ruijsink, P. Weaver, and R. Kemp. 2016. "Synthesis across Social Innovation Case-Studies." TRANSIT deliverable D4.4. http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/207%20TRANSIT_D4.4_Synthesis%20Report%20about%20all%20in-depth%20case%20studies.pdf.

Kaletka, C., M. Markmann, and B. Pelka. 2017. "Peeling the Onion. An Exploration of the Layers of Social Innovation Ecosystems. Modelling a Context Sensitive Perspective on Driving and Hindering Factors for Social Innovation." *European Public & Social Innovation Review* 1 (2). doi:10.31637/epsir.16-2.3.

Kaletka, C., and A. Schröder. 2017. "A Global Mapping of Social Innovations: Challenges of a Theory Driven Methodology." *European Public & Social Innovation Review* 2 (1): 78–92.

Kelly Garrett, R. 2006. "Protest in an Information Society: A Review of Literature on Social Movements and New ICTs." *Information, Communication & Society* 9 (02): 202–224.

Klein, J. L., A. Camus, C. Jetté, C. Champagne, and M. Roy. 2016. *La transformation sociale par l'innovation sociale*. Montréal: Presses de l'Université de Québec.

Koppenjan, J., and E. H. Klijn. 2004. *Managing uncertainties in networks: a network approach to problem solving and decision making.* London: Routledge.

Laville, J.-L. 2016. "L'économie sociale, l'entrepreneuriat social et l'innovation sociale, une mise en perspective historique." In *La transformation sociale par l'innovation sociale*, edited by J. L. Klein, A. Camus, C. Jetté, C. Champagne, and M. Roy, 13–20. Montreal: Presses de l' Université de Québec.

Law, J., and K. Hetherington. 2000. "Materialities, Spatialities, Globalities." In *Knowledge, Space, Economy*, edited by J. Bryson, P. Daniels, N. Henry, and J. Pollard, 34–49. London: Routledge.

Lévesque, B. 2013. "Social Innovation in Governance and Public Management Systems: Toward a New Paradigm?." In *The International Handbook on Social Innovation; Collective Action, Social Learning and Transdisciplinary Research*, edited by F. Moulaert et al., 25–39. Cheltenham: Edward Elgar.

Longhurst, N. 2015. "Towards an 'Alternative' Geography of Innovation: Alternative Milieu, Socio-Cognitive Protection and Sustainability Experimentation." *Environmental Innovation and Societal Transitions* 17: 183–198.

Luhmann, N. 1989. *Ecological Communication*. Chicago: University of Chicago Press.

Mair, J., and I. Marti. 2009. "Entrepreneurship in and Around Institutional Voids: A Case Study From Bangladesh." *Journal of Business Venturing* 24 (5): 419–435.

McFarlane, C. 2009. "Translocal Assemblages: Space, Power and Social Movements." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 40 (4): 561–567.

McGowan, K. A., and F. Westley. 2017. "Constructing The Evolution of Social Innovation: Methodological Insights From a Multi-Case Study." *European Public & Social Innovation Review* 2 (1): 93–109.

Miettinen, R. 1999. "The Riddle of Things: Activity Theory and Actor-Network Theory as Approaches to Studying Innovations." *Mind, Culture, and Activity* 6 (3): 170–195.

Moulaert, F. 2016. "Recommandations méthodologiques pour l'analyse de l'innovation sociale: une perspective critique sur l'épistémologie des systèmes d'innovation territoriaux." In *La transformation sociale par l'innovation sociale*, edited by J. L. Klein, A. Camus, C. Jetté, C. Champagne, and M. Roy, 65–78. Montreal: Presses de l' Université de Québec.

Moulaert, F., A. Mehmood, D. MacCallum, and B. Leubolt. 2017. "Social Innovation as a Trigger for Transformations; The Role of Research". European Commission, Directorate-General for Research and Innovation.

Oh, D. S., F. Phillips, S. Park, and E. Lee. 2016. "Innovation Ecosystems: A Critical Examination." *Technovation* 54: 1–6.

Papaioannou, T., D. Wield, and J. Chataway. 2009. "Knowledge Ecologies and Ecosystems? An Empirically Grounded Reflection on Recent Developments in Innovation Systems Theory." *Environment and Planning C: Government and Policy* 27 (2): 319–339.

Pel, B., and J. Backhaus. 2018. "Realizing the Basic Income: Competing Claims to Expertise in Transformative Social Innovation." *Science & Technology Studies*. https://sciencetechnologystudies.journal.fi/forthcoming/view/index.

Pel, B., J. Dorland, J. Wittmayer, and M. S. Jørgensen. 2017. "Detecting Social Innovation Agency; Methodological Reflections on Units of Analysis in Dispersed Transformation Processes." *European Public and Social Innovation Review* 2 (1): 110–126.

Pohoryles, R. 1988. "Innovation - nur ein technisch-ökonomisches Problem? Anstelle eines Editorials." *Innovation: The European Journal of Social Science Research* 1 (1): 3–16. doi:10.1080/13511610.1988.9968098.

Rinkinen, S., and V. Harmaakorpi. 2018. "The Business Ecosystem Concept in Innovation Policy Context: Building a Conceptual Framework." *Innovation: The European Journal of Social Science Research* 31 (3): 333–349.

Schubert, C. 2018. "Social Innovation; A New Instrument for Social Change?" In *Innovation Society Today*, edited by W. Rammert, A. Windeler, H. Knoblauch, and M. Hutter, 371–391. Wiesbaden: Springer VS.

Scott-Cato, M., and J. Hillier. 2010. "How Could we Study Climate-Related Social Innovation? Applying Deleuzean Philosophy to Transition Towns." *Environmental Politics* 19 (6): 869–887.

Sekulova, F., I. Anguelovski, L. Argüelles, and J. Conill. 2017. "A 'Fertile Soil' for Sustainability-Related Community Initiatives: A New Analytical Framework." *Environment and Planning A* 49 (10): 2362–2382.

Seyfang, G., and A. Smith. 2007. "Grassroots Innovations for Sustainable Development: Towards a New Research and Policy Agenda." *Environmental Politics* 16 (4): 584–603.

Smith, A., and A. Stirling. 2017. "Innovation, Sustainability and Democracy: an Analysis of Grassroots Contributions." *Journal of Self-Governance and Management Economics* 6 (1): 64–97.

Temenos, C., and E. McCann. 2013. "Geographies of Policy Mobilities." *Geography Compass* 7 (5): 344–357.

TRANSIT. 2018. http://www.transitsocialinnovation.eu/discover-our-cases-2.

van den Heiligenberg, H., G. Heimeriks, M. Hekkert, R. Raven, and J. Sol. 2018. "Contrasting Regional Habitats for Urban Sustainability Experimentation in Europe." *Sustainability* 10 (5): 1624.

van der Have, R. P., and L. Rubalcaba. 2016. "Social Innovation Research: An Emerging Area of Innovation Studies?" *Research Policy* 45 (9): 1923–1935.

Van de Ven, A. H., D. E. Polley, R. Garud, and S. Venkataraman. 1999. *The Innovation Journey.* Oxford: Oxford University Press.

Verhoeven, I., and J. W. Duyvendak. 2017. "Understanding Governmental Activism." *Social Movement Studies* 16 (5): 564–577.

Voorberg, W. H., V. J. Bekkers, and L. G. Tummers. 2015. "A Systematic Review of Co-Creation and Co-Production: Embarking on the Social Innovation Journey." *Public Management Review* 17 (9): 1333–1357.

Voß, Jan-Peter. 2014. "Performative Policy Studies: Realizing "Transition Management"." *Innovation: The European Journal of Social Science Research* 27 (4): 317–343.

Westley, F., N. Antadze, D. J. Riddell, K. Robinson, and S. Geobey. 2014. "Five Configurations for Scaling Up Social Innovation: Case Examples of Nonprofit Organizations From Canada." *The Journal of Applied Behavioral Science* 50 (3): 234–260.

Wittmayer, J. M., J. Backhaus, F. Avelino, B. Pel, T. Strasser, I. Kunze, and L. Zuijderwijk. 2019. "Narratives of Change: How Social Innovation Initiatives Construct Societal Transformation." *Futures* 112: 102433.

Wittmayer, J., B. Pel, T. Bauler, and F. Avelino. 2017. "Editorial Synthesis: Methodological Challenges in Social Innovation Research." *European Public & Social Innovation Review* 2 (1): 1–16.

Ziegler, R. 2017. "Social Innovation as a Collaborative Concept." *Innovation: The European Journal of Social Science Research* 30 (4): 388–405.