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Transformative Social Innovation Theory

Spaces & Places for Social Change

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DOI (link to publication from Publisher):
[10.5278/vbn.phd.tech.00053](https://doi.org/10.5278/vbn.phd.tech.00053)

Publication date:
2018

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Dorland, J. (2018). *Transformative Social Innovation Theory: Spaces & Places for Social Change*. Aalborg Universitetsforlag. <https://doi.org/10.5278/vbn.phd.tech.00053>

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TRANSFORMATIVE SOCIAL INNOVATION THEORY

SPACES & PLACES FOR SOCIAL CHANGE

**BY
JENS DORLAND**

DISSERTATION SUBMITTED 2018



AALBORG UNIVERSITY
DENMARK

Transformative Social Innovation Theory

Spaces & Places for Social Change

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DENMARK

DISSERTATION SUBMITTED 2018

Dissertation submitted: December 6th, 2018

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PhD Series: Technical Faculty of IT and Design, Aalborg University

Department: Department of Planning

ISSN (online): 2446-1628
ISBN (online): 978-87-7210-362-4

Published by:
Aalborg University Press
Langagervej 2
DK – 9220 Aalborg Ø
Phone: +45 99407140
aauf@forlag.aau.dk
forlag.aau.dk

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Printed in Denmark by Rosendahls, 2018



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Jens's research focuses on social innovation & transformative change, sustainable transition, as well as organizing in SME's and social movements. This includes research into the organizing taking place in loosely organized social movements, the materiality of empowerment and international interactions, as well as the role of spaces for interaction. His research is based on an material-semiotic perspective from Science and Technology Studies inspired by Actor-network theory. Jens has published about contradictions in qualitative research, methodology in social innovation research, and propositions on the significance of international networking for local initiatives. He has been teaching courses on Sustainability and Society, Actor-based Design, and Change Management & Organizational Research.

ENGLISH SUMMARY

In this dissertation, the organizing and empowerment of social innovation networks and their local initiatives are investigated. This dissertation has as part of the Transit project (TRANSformative Social Innovation Theory) been studying twenty networks and some local initiatives, which are working to develop and implement various types of social innovations. These social innovation networks range from Basic Income, FabLabs, Impact Hubs, Living Knowledge, Transition Towns, Desis Labs to name a few, working with such diverse issues as public governance, sustainable transition, social entrepreneurship, food sovereignty, service exchange as alternative to capitalism, access to research for disadvantaged societal groups, renewable energy etc.

The dissertation frames the challenges and the area of social innovation, arguing that there is a need to study the internal organizing efforts in these social innovation networks to understand how to build local agency. The research question asks “how can foundations or spaces for social innovation processes be facilitated that enable the agency of practitioners in solving social problems?”

The literature review on social innovation establishes a working definition, which sees social innovation as a new more transparent and democratic innovation paradigm in contrast to the more conventional innovation-for-profit paradigm. The paradigm perspective embraces any type of innovation that can play a part in solving societal problems. The review is critical of innovation research and argues that many social innovations necessarily involves the destruction or replacement of institutions and systems, which innovation research has not focused on except some very recent developments. There is also a gap in the social innovation literature concerning the materiality of social relations and change, which Science and Technology studies have focused on for decades.

The theoretical framework has three main parts, 1) the material-semiotic and flat relational perspective, 2) the process view on organizations and networks, 3) and the staging perspective inspired by design studies. The four articles in the dissertation draw on different concepts and approaches within these three areas providing different perspectives on the research question.

The dissertation is based on data stemming from two batches of case studies on social innovation networks, twenty case studies in total. Each of the case studies was composed of three embedded cases, one on the international network and two in-depth on local initiatives. Furthermore, a meta-analysis was done of critical turning points in the emergence and development of local initiatives that solidified, substantiated, or falsified the findings from the in-depth case studies.

A typology for the social innovation networks is developed along different dimensions: development over time, organizational forms, general characteristics like types of material manifestations, social innovations, and resources observed in the cases.

The initial analysis finds the embedded case set-up, and assumptions about and definition of social innovation networks and local initiatives problematic. In the processes of transformative social innovation, the agency is also distributed and therefore

fundamentally challenging to detect and ascribe.

The methodological challenge of capturing these undefined and vague networks and the social innovation processes they attempt to enact is discussed as the challenge of choosing appropriate units of analysis (UoA). Three essential aspects are identified: 1) normative commitments, 2) ontological assumptions and 3) ambitions towards comparison.

An ideal-typology of network configurations is developed with seven ideal-types divided into three categories. This typology contributes to a deeper understanding of organizing social innovation networks and their function for the local initiatives that are their members.

This comparative analysis across all the cases is supplemented by a bottom-up analysis of a single local initiative - the international network of science shops, the Living Knowledge network. The analysis identifies four strategies for creating organizational spaces for social innovation and provides insight into the empowerment potential of translocal networking for local social innovation initiatives.

A selection of local initiatives across three specific social innovation networks: FabLabs, Desis Labs, and Living Knowledge are analyzed in relation to materiality and social relations. The analysis provides novel insights into the staging process of such spaces and points out three ideal-types: affording spaces, mediating spaces, and self-contained spaces.

An analysis of all local initiatives identifies the significance of the international networks and translocal interactions for the local initiatives. The analysis discusses strategies for constructing macro-actors and building local agency through four types of resources that travel through three types of interactions: working on the context, making resources available, and directly transferring resources to the local initiatives.

The findings from the four analyses are integrated into a tripartite discussion of 1) the materiality of translocal interaction and empowerment, 2) macro-actors and staging, and 3) network configurations. The micro-macro divide is discussed and shows the object form and materiality of the resources that travel within social innovation networks and enable empowerment of these networks as so-called macro-actors. The various building blocks of social innovation networks form specific configurations that seek to achieve a societal impact through either horizontal or vertical interactions. Horizontal interactions denote an organic expansion and scaling out of the social innovation network through local-to-local interactions with little or no management by a centralized organization. Vertical interactions are the constitution of a social innovation network as a macro-actor and the staging of local initiatives as spokespersons that allow interaction with, and impact on, other macro-actors like national authorities, societal institutions, or supranational organizations like the EU. This type of configuration shows the dispersed agency of a social innovation network. Altogether, the discussion lays the foundation stone for a framework of practical relevance that can be used by practitioners and policymakers and facilitate reflection on how to create and foster social innovation.

The dissertation contributes to several different research areas. It expands upon the

understanding and nature of objects and materiality within Science and Technology Studies to include a more nuanced distinction of the function objects can have in the travel of agency. Furthermore, the dissertation contributes to macro-actor theory that is a type of actor-network theory (ANT) or an ANT-inspired organizational theory. The dissertation shows how macro-actor theory can be used to span the micro-macro divide and form part of an action-oriented framework that enables reflection of how local social innovation initiatives can have an impact on societal institutions.

Concerning social innovation literature, the dissertation is the first publication that takes a material focus on social innovation processes. Moreover, the dissertation shows that a focus on materiality is a relevant approach to constructing a more action-oriented framework.

The dissertation also contributes to organizational theory. Few, if any, have taken an organizational process perspective on geographically dispersed networks without formal organizational structures. The affordances of the materiality of objects that carry resources are essential in stitching together these networks. Furthermore, the dissertation contributes to studies of the new types of network configurations that new communication technologies and media affords.

Lastly, the dissertation contributes to staging theory, which is intersection of design studies, STS, and a political process perspective that offers an actionable framework for political navigation in the area of design and innovation. The dissertation contributes by applying this theory outside a product development setting from which the staging theory originates.

The dissertation has focused on the organizing and empowerment of the social innovation initiatives and networks, but not studying the detailed impacts of the social innovation networks. A further path of research would be to study the types of societal transformation that the different identified network configurations and macro-actors can have.

RESUME IN DANISH

Denne afhandling udforsker organisering og empowerment i social innovations netværk og deres lokale initiativer. Denne afhandling har som en del af Transit-projektet (TRANSformative Social Innovation Theory) studeret tyve netværk og lokale initiativer, der arbejder for at udvikle og implementere forskellige former for sociale innovationer. Disse sociale innovationsnetværk spænder fra Basic Income, FabLabs, Impact Hubs, Living Viden, Transition Towns, DESIS Labs for at nævne et par stykker, som arbejder med så forskellige emner som bæredygtig omstilling, socialt entreprenørskab, fødevareruverenitet, service udveksling som alternativ til kapitalisme, adgang til forskning for dårligt stillede i samfundet, vedvarende energi.

Afhandlingen beskriver udfordringerne og området for social innovation, og argumenterer for, at der er behov for at studere den interne organisatoriske indsats i disse SI-netværk for at forstå, hvordan man bygger lokal handlekraft. Forskningsspørgsmålet spørger "hvordan kan et fundamentet eller space for sociale innovationsprocesser skabes, som øger handlekraften og mulighederne for lokale praktikere it at løse sociale problemer?"

Gennemgangen af litteraturen indenfor social innovation etablerede en operationel definition der ser social innovation som et nyt og mere gennemsigtigt og demokratisk innovations paradigme i modsætning til det mere konventionelle innovation-for-profit paradigme. Paradigmeperspektivet omfatter alle typer innovation, der kan bidrage til at løse samfundsproblemer. Diskussionen er også generelt kritisk for innovationsforskningen og argumenterer for, at meget social innovation nødvendigvis vil indebære ødelæggelse eller udskiftning af institutioner og systemer, hvilket innovations forskningen ikke har fokuseret på, med et par enkelte undtagelser indenfor de seneste par år. Der er også et hul i social innovationslitteraturen vedrørende materialiteten af sociale relationer og forandring, hvilket Science and Technology studies har fokuseret på i årtier.

Det teoretiske framework har tre hovedpunkter, 1) et materiel-semiotisk og fladt relationelt perspektiv, 2) proces-perspektivet på organisationer og netværk, 3) og iscesættelsesperspektivet inspireret af designstudier. De fire forskellige artikler i afsnit 4 trækker på forskellige begreber og tilgange inden for disse tre områder, og artiklerne giver således forskellige perspektiver på forskningsaspektet.

Afhandlingen er baseret på data fra to runder af casestudier på social innovationsnetværk, tyve casestudier i alt. Casestudierne var sammensat af tre indlejrede cases, en på det internationale netværk og to på lokale initiativer, plus en metaanalyse af kritiske vendepunkter i fremkomsten og udviklingen af lokale initiativer, som udbyggede, underbyggede, eller afkræftede resultaterne fra casestudierne.

En typologi for de sociale innovationsnetværk er udviklet langs forskellige dimensioner: udvikling over tid, organisationsform, generelle karakteristika som typer af materiale manifestationer, sociale innovationer og ressourcer observeret i casestudierne.

Den indledende analyse finder den integrerede case setup, og antagelser om og definition af sociale innovationsnetværk og lokale initiativer problematisk. I processerne for transformativ social innovation, er handlekraft også distribueret og derfor fundamentalt

udfordrende at opdage og tilskrive.

Den metodologiske udfordring at fange disse udefinerede og vage netværk og de sociale innovationsprocesser de forsøger at gennemføre diskuteres igennem udfordringen at vælge passende analysenheder. Tre væsentlige aspekter er identificeret: 1) normative forpligtelser, 2) ontologiske forudsætninger og 3) ambitioner for sammenligning.

En ideal-typology for netværkskonfigurationer er udviklet med syv ideal-typer opdelt i tre kategorier. Typologien bidrager til en dybere forståelse af organisering i sociale innovationsnetværk og deres funktion for de lokale initiativer, der er deres medlemmer.

Denne komparative analyse på tværs af alle de casestudierne suppleres af en bottom-up analyse af et enkelt lokalt initiativ - det internationale netværk af videnskab butikker, Living Knowledge. Analysen identificerer fire strategier til at skabe organisatoriske rum for social innovation og giver indsigt i empowerment potentialet af translokale netværk for lokale social innovation initiativer.

Et udvalg af lokale initiativer på tværs af tre specifikke sociale innovationsnetværk: FabLabs, DESIS Labs, og Living Knowledge. Kapitlet pointerer hvordan et analytisk fokus på materialitet og sociale relationer kan kombineres og tilvejebringe nye indsigter i iscenesættelsesprocessen af komplekse rum. Typologien illustrerer de principielle konfigurationselementer, der observeres på tværs af casene, og peger på tre forskellige idealtyper: faciliterende rum, formidlende rum og selvstændige rum.

En analyse af alle lokale initiativer identificerede betydningen af de internationale netværk og translokale interaktioner for de lokale initiativer. Analysen diskuterer strategier til konstruktion af makroaktører og opbygning af lokal handlekraft gennem fire typer af ressourcer, som rejser gennem tre typer af interaktioner: ved at arbejde på rammevilkårene, ved at gøre ressourcer tilgængelige, og direkte overfører af ressourcer til lokale initiativer.

Det resultater fra de fire analyser er integreret ind i en treparts diskussion af 1) materialiteten af translokale interaktioner og empowerment, 2) makroaktører og iscenesættelse og 3) netværkskonfigurationer. Denne struktur sammenvæver mikro-makro opdelingen ved at vise hvordan objektets form og materialitet og de ressourcer de bærer rejser inden for SI-netværk og muliggør bemægtigelse og udvikling af SI-netværk og skabelsen af makroaktører. De forskellige byggesten af SI-netværk danner specifikke konfigurationer, der søger at opnå en samfundsmæssig påvirkning gennem enten vandrette eller vertikale interaktioner. Horisontale interaktioner angiver en organisk udvidelse af det sociale innovationsnetværk gennem lokale til lokale interaktioner med ringe eller ingen ledelse af en centraliseret organisation. Lodrette interaktioner er opbygningen af et SI-netværk som en makro-aktør og iscenesættelsen af lokale initiativer som talsmænd, der tillader interaktion med, og indvirkning på, andre makro-aktører som nationale myndigheder, samfundsinstitutioner eller supranationale organisationer som EU. Denne type konfiguration fokuserer den distribuerede handlekraft af et SI-netværk. Samlet set lægger diskussionen grundstenen til et framework med praktisk relevans, som kan bruges af praktikere og beslutningstagere som en mental model, der kan lette overvejelser om, hvordan man skaber og fremmer social innovation.

Afhandlingen bidrager til flere forskellige akademiske forskningsområder. Det

udvider forståelsen af objekters materialitet inden for Science and Technology studies til at omfatte en mere nuanceret skelnen af den funktion objekter kan have i fordele eller overføre handlekraft. Det andet er makro-aktør teori, der er en type aktør-netværksteori (ANT) eller en ANT-inspireret organisatorisk teori. Mens makro-aktør teori stammer tilbage fra 80'erne er mængden af forskning sparsom, men afhandlingen viser, hvordan den kan bruges til at spænde mikro-makroopdelingen og danne del af en handlingsorienteret ramme, der gør det muligt for lokale initiativer at reflektere om, hvordan de kan påvirke samfundets institutioner og udvikling.

I forhold til social innovationslitteraturen, er dette er den første afhandling, der har taget et materielt fokus på sociale innovationsprocesser og organisering. Desuden viser afhandlingen, at fokus på materialitet er en relevant tilgang, til at konstruere en mere handlingsorienteret ramme.

Afhandlingen bidrager også til organisatorisk teori. Få, hvis overhovedet nogen, har taget et organisatorisk procesperspektiv på geografisk spredte netværk uden formelle organisatoriske strukturer. Her er objekters materielle egenskaber og deres evne til at bære ressourcer afgørende for at samle disse netværk. Afhandlingen er også et bidrag til undersøgelsen af de nye typer netværkskonfigurationer og organisationsformer, som nye kommunikationsteknologier og medier giver.

Endelig bidrager afhandlingen til iscenesættelses teori, som er et interessant snit mellem designstudier, Science and Technology studies og et politisk procesperspektiv. Det tager inspiration fra mange akademiske områder og gør det til en handlingsorienteret ramme for politisk navigation inden for design og innovation. Bidraget her er anvendelsen uden for en produktudviklingskontekst, hvorfra iscenesættelsesteori stammer.

Afhandlingen har fokuseret på organisering og empowerment af de sociale innovationsinitiativer og netværk, men ikke at studere den detaljerede effekt af de sociale innovationsnetværk. En yderligere forskningsvej ville være at studere de typer samfundsmæssige transformationer som de forskellige identificerede netværkskonfigurationer og makroaktører kan have.

ACKNOWLEDGEMENTS

This Ph.D. project has been financed by Alborg University, Department of Development and Planning, and the European Union's Seventh Framework Programme for research, technological development, and demonstration under grant agreement n. 613169, which funded the Transit project (TRANSformative Social Innovation Theory). Thank you for giving the opportunity to carry out the research presented here.

Thank you to my co-authors, Christian Clausen, Bonno Pel, Michael Søgaaard Jørgensen, and Julia Wittmayer, and the rest of the researchers from the Transit consortium that I have collaborated with through various case studies and project deliverables throughout the project. Christian Clausen, your sparring and comments on the various parts of the dissertation have been inspirational and educational. Signe Pedersen and Charlotte Louise Jensen, thank you for discussion of the research process and sparring on issues relating to planning and writing the dissertation.

Thank you to my supervisor, Michael Søgaaard Jørgensen, for your efforts in funding the Ph.D. project and managing the Transit project connecting me with many of my current co-researchers, and always making sure to keep the empirical data in focus in my various analyses in articles and technical reports.

To my co-researchers in the Transformative Social Innovation Theory project, Bonno Pel, Julia Wittmayer, Flor Avelino, Morten Elle, Michael Søgaaard Jørgensen and the rest of the project consortium. Thank you for the dialogue and input that have given me a deep insight into the various case studies, as well as inspiration from many and diverse academic fields. In particular, thank you to Bonno Pel that managed our cluster B research group on the network formation of SI initiatives and greatly enhanced the quality of my research. Also, thank you to the project coordinators Julia Wittmayer and Flor Avelino that oversaw and successfully organized the very complex and tightly scheduled four-year project.

Thank you to the participants in my case study on the Living Knowledge network and various science shops around Europe that over several years willingly gave interviews and attended my sessions at the Living Knowledge conferences in Dublin and Budapest.

Lastly, thank you to my wife Min Kyung that have managed both our kids and everything else while I have stayed day and night at the university to complete my dissertation.

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SECTION 1

- ◇ Chapter 1 - Introduction
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Chapter 1

Introduction

The developed world is facing numerous challenges to the modern welfare state. Social innovation research is often, but not always, focusing on such problems as justice, fairness, poverty, environmental preservation, climate change, improved health, mental illness, arts and culture, social exclusion, an aging demographic, gentrification, better education etc. (Lawrence et al. 2014; Lehtola & Stähle 2014; Mulgan et al. 2007). These have all been exacerbated by the financial crisis that caused wide-ranging austerity policies in Europe and elsewhere, the increasing rate of climate change and environmental degradation, and other developments.

But even though we share the same planet many societal problems addressed by social innovation is very place specific, even the environmental and climate related issues. The empirical data this study is based on spans the EU, Latin America, and South Korea. In Seoul for instance the air quality is so bad that the it sometimes looked like a foggy day when looking out of then windows for the couple of months I stayed there, when it was in fact smog. As I sit writing this introduction the amount of fine particulate matter (PM2.5) is at 170, the EU limit is 25, and I can barely see the mountain in the horizon despite the cloud free sky. Yesterday in the train from Busan to Seoul the public TV in the aisle were running a documentary on how to clean the pollution from your apartment, i.e its a problem that take up a lot of space in the public sphere. The focus in Denmark, where I am usually based, has recently been more on how pesticides and other chemicals pollute our drinking water. In the EU we are generally also more concerned about "meta" issues like Transition Town and Ecovillage that try to move away from use of fossil fuels and perceived unsustainable practices like consumerism. Other areas of concern, for some, is the growing economic inequality, which in South Korea is not in focus due to their very different world perspective and political agenda.

These problems as illustrated here are based on my perception, which illustrates one of the biggest problems for social innovation research, that societal problems are socially constructed and inherently political (lawrence). While there are certainly some "facts", like measurements of air or water pollution, the interpretation of these are socially constructed. For instance, how harmful is it, what should the legal threshold be, what is the correct metric and measurement method, who are responsible, what actions should be done to solve it etc. Other issues are almost completely socially constructed like economic inequality, i.e. is it even a problem, how big a difference is OK, is it the responsibility of the state etc.

The point here is that any social innovation might only be relevant or applicable in a specific context, and I will thus not go into details on or focus on specific societal

problems or social innovations. And any reader would be well aware of at least a number of challenges in their own context. How to solve specific problems is therefore not a topic of this thesis, but rather how social innovation initiatives can have an impact either locally or on society as a whole, how they can contribute to societal development. The focus is then not specifically on what the subjects in our cases aim to transform or achieve, but how they do it, and how this experience can be generalized. Although I do provide some in-depth examples of social innovations as part of analyzing exemplary cases, but without considering the normative aspect of the social innovation.

The outcome of this thesis will then hopefully be applicable in any number of settings in relation to any number of problems, the specific problems then being up to the protagonists in later stories. Stepping a bit back to the setup of this thesis, which sets the scene while also limiting the focus.

This thesis has been a part of the EU project TRANSIT (transformative social innovation theory) that had an aim to study transformation of societies in response to societal challenges. The aim was to both provide insight of practical relevance to policy makers and practitioners that can facilitate a greater impact of the social innovation initiatives we have studied, as well as providing greater theoretical insight into the processes of societal change and innovation. This was done by studying mostly newer social innovation networks, i.e. networks that espoused that they aimed to solve one or several societal challenges. What networks imply here I will expand upon later. This enabled us to study the process of social innovations in the making, ignoring momentarily the evaluative and normative aspects of our cases. However, the setup and methodology in TRANSIT entailed 40 mini-cases on local social innovation initiatives and 20 mini-case on their trans-local networking interactions and organizing. Mini-cases entails a research duration of around 6 month but only a minimum of 5 interviews and some 80 hours of observations. This was followed up by a broad qualitative meta-analysis involving 160-240 interview across 80 local initiatives within the same networks, although not necessarily the same local initiatives that were studied in the mini-cases. How and why these specific units of analysis (UoA) were chosen and their implications are discussed in more detail in the methodology chapter. The implications is that we have a lot qualitative data on the local "level" that is both broad and deep, but limited structured data on how these networks have interacted with other networks or organizations external to themselves. This partly follows from the flat relational ontology that formed the basis of the methodology, which will be discussed at length later, but directs us to study the local as the starting point for any societal transformation. Very few qualitative studies have been carried out that connects the very local interactions of your friendly neighborhood social innovation initiative with societal change, especially with a methodology that do not accept that societal institutions and individuals exist on different ontological scales, but that is the challenge that I see in TRANSIT.

So, the specific challenge addressed in this thesis is how very local social innovation initiatives (LSIs) can have an impact on societal development. Think about a Fablab around the corner, or the Repair Café down the street, and the hundreds of other very local and small initiatives that are very far away from interacting directly with societal challenges and discourses on a national scale. Nonetheless, these LSIs collectively, as

a network or social movement, can have an impact. This build on an assumption that was not completely certain at the time we started the case studies, that the international networks empower their members. How to answer this question require some further explanation.

Studying societal change is a tall order, as many big societal changes in modern times like the industrial revolution, globalization, or the advent of neo-liberalism are only understood when looking back, which is the first problem as we in TRANSIT mostly studied contemporary and ongoing social innovation processes. Secondly, these changes happen at a “macro level”, composed of thousands of interactions by numerous actors over a long time. As pointed out by several authors globalization and other processes at the “macro level” are materially produced and takes form in particular places performed by specific actors (Law & Hetherington 2000), i.e. the “micro level”. The research design tried to compensate by studying both the local initiatives and the network interactions specifically.

However, this research design did by itself not solve the challenge of connecting the micro and macro. The micro-macro dialectic is not a new discussion in sociology but is usually solved by focusing on either the micro or the macro. However, that would not answer the question on how societal changes come about, the connection between the two, and give practical insight into how to facilitate social innovation locally that might have a meaningful impact beyond their local context. Our cases on the international level of these network often give little insight on how they are actually linked to the local members, what kind of interactions they have, how they are materially produced locally, and how this leads to empowerment of the LSIs.

The flat relational ontology enables us to trace and map the very local social innovation initiatives and their networks simultaneously, to understand the relation between them, and focus on the interactions and empowerment taking place. We can thus draw a direct line from the initiative around the corner to interactions taking place between international organization and and the EU, for instance.

This is not that different from the TRANSIT project itself that also adopted a flat relational ontology, but as discussed in more detail later there are some inadequacies in the framework TRANSIT constructed in relation to my focus here. Major among them is the negligence of the material aspect of social relations and interactions. Conceptualizations and explanations of social relations and interactions, and how they link to societal change, can become very abstract if the basic materiality is not analyzed first. This is not unlike what has happened in other fields like organizational studies, where aspects like leadership have also become de-materialized (Ford et. Al 2017).

Answering the who, where, and what very specifically also makes it more practically relevant. This thesis thus adopts a material-semiotic perspective, explained in detail in chapter X. My approach also provides an alternative action perspective, an action perspective focusing specifically on the agency of the local initiatives and how empowerment and enactment process can be staged, as an alternative to other approaches in Transition Studies like the Multi-Level perspective. The research question I try to address is then:

How can social innovation networks and local social innovation initiatives together facilitate social innovation that has an effect on societal development?

There are some implicit assumptions here that need to be discussed. The first, as already mentioned, is that social innovation networks have a positive and empowerment effect on the local social innovation initiatives, which might not be true. A second assumption is that at least some of our cases have had an effect on societal development, but we might fail to identify any changes, or fail to identify a casual relation. Third, we assume that no social innovation happens in a vacuum, i.e. there is always trans-local interactions, there are no independent and isolated LSIs even if they proclaim not to be part of a network. The specific sub-questions in thesis is then:

1) how are local social innovations initiatives and network constituted and how do they emerge and develop over time? A focus on this temporal aspect and the specific components of these networks and their local initiatives is a necessary prelude for the next sub-questions. It will be hard to understand how interactions and empowerment takes place, without understanding the composition and development. This will take outset in a specific case, the Living Knowledge network, as an illustrative example.

2) how can university-community interactions involve and empower communities? This sub-question analyses how three specific cases facilitated empowerment of local communities through social innovation, three cases specifically related to universities to ease comparative analysis. This is to shed more light on how social innovations carry out locally, before moving on to the next question on what role trans-local interaction can play for these social innovation.

3) what is the significance of international networks, of trans-local interactions, for local social innovation initiatives and their activities, and what is travelling from one place to another? Many of the discourses espoused by both networks and other research can often seem very abstract or vague like “international interactions lead to local empowerment”. I find it necessary to study the specific interactions, what activities it entail, how was it carried out practically, and what resources it actually provided that led to an empowerment locally. This sub-question will be analysed across all the cases in TRANSIT. This sub-question will also light on the scaling up and diffusion of the social innovations overtime.

However, all three sub-questions require a theoretical elucidation of how trans-local interaction and processes can and are material in nature. As pointed out by many scholars’ globalization is necessarily a material phenomenon (REF), and ideas and knowledge cannot travel without materialising materially (REF). Globalisation is brought up because that is one of the development many social innovation network react against, and because as it turns out globalisation and the developments it relate to have had an large impact on the context for social movement and innovation. This will be discussed more in depth in the literature review and conceptual framework.

SECTION 1

Chapter 2.

Literature review

Purpose: To review the literature on social innovation to 1) identify or construct a working definition for this dissertation, 2) identify gaps in the literature, and 3) establish if and why social innovation is an interesting field.

Summary: SI research has focused on definitions and conceptual developments with few published empirical articles. I identify the main dimensions of the different perspectives as: 1) process vs. outcome-based, 2) normative vs. objective, 3) material/technical vs. social, 4) and various camps viewing social innovation as either a type, a category, or a new paradigm. I find that a paradigm perspective makes the most sense as a working definition both for methodological and logical reasons as the range of phenomenon studied under the umbrella of social innovation can never conform to a nicely delimited type. Most scholars agree that Social innovation is about solving social problems, which with my paradigm definition can be through any means be those technological innovations, new social relations, alternative practices, or innovative governance systems, etc.. Lastly, I find the prevalent argument that social innovation is immaterial both in means and ends puzzling as research especially within STS (science and technology studies) have long shown that technological innovation is both socially shaped and have social impacts, which is a serious gap in the literature so. As an extension of this argument, technological innovation can be both a solution and facilitate social change.

Findings: Social innovation is best understood as a new innovation paradigm in contrast to traditional for-profit-innovation and is thus a new way to conduct innovation that is more inclusive and democratic. However, the field lack from some narrow-minded and silo thinking, and could be well served by cross-fertilization from Science and Technology studies that show how technology can both be a solution and a facilitator of social change.

I will in this chapter review the literature of relevance, i.e. what are the definitions, methodologies, findings etc. in social innovation research of relevance for the focus in this thesis. As already explained, the interest and focus in social innovation stem from a desire to solve social problems. However, that is hardly a new phenomenon. Social movements for instance have worked to solve societal problems for more than a century. Other innovation areas like grassroots innovation, sustainable innovation, citizen innovation or social entrepreneurship have likewise focused on solving social problems. Indeed, looking at just two of the innovation handbooks I have in my archive they comprise 54 chapters on innovation types or aspects (Fagerberget, Mowery and Nelson, 2006; Dodgson, Gann and Phillips, 2014). One of the questions is then what is so interesting about social innovation compared to other innovation areas focusing on some of the same subjects? And if it is worthwhile how it can be conceptualized and studied. If social innovation is interesting is just as much a challenge as a question though.

denial of a clearly understood audience assumption is the essence of the interesting (Davis, 1971).

And I will try to critically discuss and challenge assumptions in the field to stoke new discussions and make it more relevant for both academics, policy makers, and practitioners. Why this is crucial I will discuss in detail further below. The assumptions are important to understand to contribute with something meaningful or interesting, while not appearing so alien as to be seen as absurd (Alvesson and Sandberg, 2013). The assumptions uncovered in this chapter stem both from the literature review but also from empirical data collected during the project from workshops, meetings, conferences, emails, and skype calls involving researchers in social innovation both within Transit and from outside like Moulaert (Moulaert, 2016), Westley (Moore and Westley, 2011), Howaldt (Howaldt and Schwarz, 2010) etc.

One of the keys in analysing and understanding assumptions is identifying implicit assumptions and biases stemming from path-dependency, academic professions, national cultures etc. that for outsiders seems puzzling, resulting in a breakdown of understanding. I draw inspiration from Alvesson and Kärreman's (2011) mystery method, which is a structured approach for uncovering such breakdowns of understanding. Familiarization is one of the first steps and essentially means to review the area. Generally, it is important to become familiar with the area and to be well read and not reproduce others, it is a feature of creative research:

Thus a researcher's reading should have a certain breadth [...] because seeing links between distant phenomena is a common feature of creative research (Alvesson and Aschroft, 2009).

My education in innovation studies & engineering, combined with research from a career dedicated to design, innovation & sustainable transition gives me some breadth, although it might mean that I as well have inherent assumptions about innovation that I need to identify. Thus, necessitating the second step defamiliarization as discussed later.

Innovation

The word innovation is argued to mean something new (Encyclopædia Britannica 2015a; Merriam-Webster 2015), ideas that successfully gets a foothold in society (Frankelius, 2009), “as the successful application of new ideas” (Dodgson, Gann and Phillips, 2014), “the capacity of people to exploit a new idea or method successfully and thereby realize a desired material and social effect” (Smith, 2017), or simply “new ideas that work” (Dawson, Clausen and Nielsen, 2000). The difference to invention is this process of application (Encyclopædia Britannica 2015b). Dodgson et al. (2014) believes the common definition inadequate, for him it is about organizational benefit, gaining value, contribution to economic performance etc. There have also been a heavy focus on technical & business innovations apparent from (Fagerberget, Mowery and Nelson, 2006) and as pointed out by others scholars (Dawson, Clausen and Nielsen, 2000; Dodgson, Gann and Phillips, 2014; van der Have and Rubalcaba, 2016). The field is diversifying as apparent in (Lawrence, Dover and Gallagher, 2014), which adopt a relational actor-network style understanding of innovation, and are clear about earlier biases toward innovation as something technical and focused on firms.

A conundrum is that innovation is both a process and an outcome. One stream of research focuses on the outcome that manifests in products, methods, services, features, production methods, technologies, organizational models etc. The other stream explores the organizational and social processes that produce innovation (J. Phills, Deiglmeier and Miller, 2008), while some researchers include both as will be discussed later. Innovation is likewise both a noun and a verb (Smith, 2017). Something can be innovative, and innovation is something you do, although how do you know that what you are doing is innovation until after the fact?

Combining these characteristics there are essentially 4 aspects of innovation: 1) the process, 2) the product, 3) the diffusion or implementation, and 4) the value created or given by the innovation. The last two aspects are the difference between an invention and an innovation, it needs to be successful in society and better than alternatives and not just a change. The fourth aspect is the most subjective and evaluative. What would be the product in social innovation and how should value be measured? Social innovation has partly been a reaction to the tendency in innovation research to focus on technologies, products and economic performance, which however seem to be slowly changing seeing from the amount of publications on social innovation in recent years and newer innovation handbooks (Lawrence 2014). However, seeing social innovation as building on the base of innovation research, and thereby extending on these definitions, bring a series of challenges that might be problematic that I will discuss further.

Social innovation

Social innovation is an old term. Joseph Schumpeter was the first in the early 19th century to underline the necessity of social innovation to guarantee economic effectiveness (Moulaert et al., 2005; Lehtola and Stähle, 2014). Indeed, there were no lack

of social innovations (depending on definition) in the 19th century, with the upsurge of social enterprises in the form of micro-credit, kinder gardens, building associations, cooperatives, fair trade labelling, community-centered planning etc.

Despite the age of the term Moulaert et al. (2005) supported by numerous scholars argue that the research on social innovation is underdeveloped and remains where the natural sciences were a century ago, i.e. there are no standard practices, definitions etc. (Pol and Ville, 2009; Howaldt and Schwarz, 2010; Grimm et al., 2013; Cajaiba-Santana, 2014; Lehtola and Stähle, 2014). There is thus no shortage of articles discussing definitions and conceptual frameworks in social innovation, many arguing that agreements between researchers in these fields is holding the field back, preventing maturing etc. And you see titles like “Social innovation: Moving the field forward. A conceptual framework” (Cajaiba-Santana, 2014). There is an assumption here that firm definitions and frameworks if embraced by the whole field would bring or enable insights, an assumption I find puzzling. My experience in Transit especially shows that frameworks might be as big a hindrance as an advantage, as discussed in chapter 5. And how will definition discussions bring us any closer to understanding the phenomenon? Especially as the majority of these articles have no empirical data how can they develop definitions (here my disciplinary background plays in). I support the idea that spending time on definitions is generally not a fruitful endeavour getting us closer to understanding:

“It is, however, generally agreed that not too much attention needs to be paid to questions of definition, for definitions serve only to delimit, not adequately to describe (let alone explain) the object under investigation” (Luhmann, 1993, p. 7).

Especially not before adequate empirical material is available. However, I do understand where this assumption is coming from. In a positivist view to gradually accumulate knowledge it is necessary to adhere strictly to agreed upon research designs, methodologies, ontological frameworks etc. to ensure repeatability and comparability of the research. I am not a positivist though, but I will also argue later drawing on Law (2004) that even for researchers inclined to positivist perspectives there are some problems with this preoccupation with definitions and conceptual frameworks on social innovation. However, I do concede as Pol & Ville (2009, p879) points out that to “enhance interdisciplinary communication terminological consistency between disciplines is essential”, i.e. the term is currently so confusing that discussion about social innovation is challenging.

Normative outcome focused definitions of social innovation - solving social problems

The most widely shared focus and definition in social innovation, in modern times, is on solving social problems (Gillwald, 2000; Pol and Ville, 2009; Dawson and Daniel, 2010; Grimm et al., 2013; Lawrence, Dover and Gallagher, 2014; van der Have and Rubalcaba, 2016; Smith, 2017). This definition define social innovation in relation to it's goal like the prevalent “meeting unmet needs in society” (Moulaert et al., 2005;

Mulgan, 2006; Mulgan et al., 2007; Howaldt and Schwarz, 2010). All reviews also agree on this dominance (J. A. Phills, Deiglmeier and Miller, 2008; Pol and Ville, 2009).

This is a product type definition as it focuses on the outcome, on solving a social problem, on meeting an unmet need. This definition would sometimes not discern between technological or any other type of innovation as they might all accomplish the goal of meeting unmet needs. The difference between social innovation and social change is the intentionality in innovation (Grimm et al. 2013).

Some of the opponents of this definition, some of them former colleagues of mine, argue that its methodologically impossible to work with evaluative definitions. How would you identify social innovations until years after the fact? And then how would you study it if you like the Transit project aim to follow and participate in the innovation process. I contend this is a challenge, yet another point I will return to further down.

Another issue is the subjective and political nature of identifying social problems (J. A. Phills, Deiglmeier and Miller, 2008; Pol and Ville, 2009; Dawson and Daniel, 2010; Lawrence, Dover and Gallagher, 2014; Smith, 2017). A lack of awareness that the identification and description of problems itself can be contentious is common both among our case studies but also in literature (Lawrence 2014). Lawrence (2014) uses the example of “addiction to alcohol, drugs and gambling” being presented objectively as “behavioral problems of affluence” as if addiction and its causes are accepted and understood generally. How much alcohol is too much? The sentiment on that has changed hugely just in my life-time here in Denmark. And from my experience in Korea I know that drinking soju (Korean 20% liqueur) is an accepted daily occurrence for many. As Lawrence (2014, p318) comments “It is as though the social innovator emerges from and operates in a politics-free space, where social problems exist as independent entities”.

Within our own spheres we mostly agree on the importance of justice, health, better education etc. (J. A. Phills, Deiglmeier and Miller, 2008), it becomes contentious when moving beyond abstractions or between different cultures (Lawrence, Dover and Gallagher, 2014). Changing the conditions for one societal group invariably worsens it for another. An arch-typical example is tax differentiation between the rich and the poor, raising tax on one group to lower it for another. “Meeting unmet needs” sounds more simple on the surface, it sounds like providing food or education to the disadvantaged, but it is essentially the same as someone else needs to pay in the end. The social construction of social problems is thus an issue of relevance (Abdelnour and Branzei, 2010).

Process focused definitions of social innovation - changes in social relations and practices

A range of definitions focus not on the outcome like doing social good, what I term normative definitions, but on the type of process in question. Specifically many define it as changes in social relations or practices (Mumford, 2002; Moulaert et al., 2005;

Howaldt and Schwarz, 2010; Hochgerner, 2011; Moulaert, Maccallum and Mehmood, 2013; Ruiz and Parra, 2013; Cajaiba-Santana, 2014). Several scholars are very explicit about this aspect:

Social innovation is very strongly a matter of process innovation – i.e. changes in the dynamics of social relations (Moulaert et al. 2005, p1978)

With social innovations the innovation does not occur in the medium of technical artefacts but at the level of social practice (Howaldt and Schwarz 2010, p. 21).

Other scholars go so far as denying that there could be any material aspect for an innovation to be classified as social innovation:

First, because an answer to a social problem is not necessarily a social innovation, even technical innovations might be aimed at solving social problems. [...] Social innovations are non-material: their material outcomes are solely a supplementary result [...] social innovations are manifested in changes of attitudes, behaviour, or perceptions, resulting in new social practices. Third [...] social innovation is about social change and this should be the main characteristic to be put in evidence (Cajaiba-Santana 2014).

Indeed, some argue that that one of the primary connotations of social innovation is its immateriality (Schubert, 2018), although I as visible have identified many alternative positions. I took the liberty of shortening Cajaiba-Santana's definition, although the main points remains clear. While Cajaiba-Santana (2014) does not reject focus on social problems as valuable it argues that this has nothing to do with social innovation, which is inherently and exclusively related to social change. I find several problems here especially with the very strict non-material and non-technical definition. I understand that it is a more straightforward definition as it is not evaluative/normative, and the delimitation to other types of innovation phenomena is firm, which makes it easier to conduct comparative case studies and makes the terminology very precise. TRANSIT largely adopted this as a working definition, to my chagrin as I was present at the workshop where this happened (more on this in chapter 5). The argument in TRANSIT, among others, was that this definition is not evaluative, i.e. you do not have to wait a decade and look back to identify if a social problem was solved or not. The TRANSIT definition is at least less excluding as it does not deny aspects of materiality:

A change in social relations, involving new ways of doing, organising, framing and/or knowing. Objects of social innovation can be Ideas, objects and/or activities. These are 'socially innovative' – and can thus be referred to as 'social innovations' – to the extent that they imply/demonstrate a change in social relations (necessary condition) (Haxeltine et al., 2015)

First off, how can you ever have an innovation that is only social? OK, Cajaiba-Santana (2014) do admit that there can be supplementary material outcomes, but take

problems with climate change for instance, any technological solutions that alleviated some of that problem would thus not be classified as being a social innovation. That I might be convinced to agree on if the solution was strictly a technological fix like somehow sucking CO₂ out of the atmosphere, but then what about technologies or material products that are used in a process to change practices and social relations? Smart-phones and social networks like Facebook have undeniable changed social relations, we might discuss for decades if it's a positive or negative change, but it certainly is technologies with very social impacts. And if that is possible it by extension is also possible to create other material objects that can solve some of the social problems discussed under the previous definitions.

And yet another aspect, can you ever have technological innovations that do not change something in the “social” either? Scholars from Science and Technology studies (STS) have illustrated the impact of materiality on the social and vice versa for decades (Akrich, 1992; Bijker, 1997; Latour and Woolgar, 2013), ultimately technologies are socially constructed (Bijker and Law, 1992), and “The indivisibility of socio-technical dynamics has been a mainstay in sociological research” (Schubert, 2018, p. 377). Products are innovative because they are different or better than previous products, and thus enables us to do something different or better than previously, like driving without interacting with the car leaving us to do other activities (we are not quite there yet though) changing the social relation between driver and car. The car in itself can be seen as a social innovation a century ago (Pol and Ville, 2009).

What I am getting at is that the definition is inherently contradictory, no social innovations would fit within this delimitation if strictly non-material. Objects of social innovation might as well be technologies or products if that is the way to change behavior and practice towards sustainable consumption for instance.

Lastly, the vast majority of scholars in social innovation are engaged because of their ambition to solve social problems and would thus never accept this alternate definition that could imply many other end-goals, like change management for increased efficiency and profits in organizations. As Pol & Ville (2009) point out most if not all business innovation would classify as social innovations. Even the scholars touting these social relation definitions focus almost exclusively on social problems, a bit curious that they then argue for definitions excluding that aspect. The consortium in Transit itself also focused exclusively on social problems. I argue that you cannot make a non-evaluative or non-normative definition when the majority of the scholars, yourself included, are only engaged because of this normativity (voting quote). Some of these scholars solve this issue by constructing multi-dimensional definitions, i.e. requirements specifications.

Multi-dimensional definitions

The definition by Cajaiba-Santana (2014) above is an example of a multi-dimensional definition that delimits it to non-material innovation further specifying it as manifested as “attitudes, behavior, or perceptions, resulting in new social practices” and focusing on social change, making it a non-normative outcome-based definition. A good example of a normative multi-dimensional definition of social innovation:

A novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals (J. A. Phills, Deiglmeier and Miller, 2008, p. 36)

The dimensions here are novel solutions, which show a lineage back to traditional innovation literature, and a normative aspect in evaluating value for society that should accrue to society over individuals, which is the distinction to conventional innovation. The process dimension is here absent though. The focus on novel solutions is also a distinct camp within the social innovation literature (Lawrence 2014), inspired by the traditional innovation paradigm and is a way so see social innovations as products. However, changes in society or the tools for facilitating these changes cannot always be described as novel solutions or products, which more focus on traditional innovations except that they are evaluated against solving social problems rather than earning a profit. This is close to the idea in social entrepreneurship. While this is of course also a valuable and necessary way to approach social problems, it falls short in a couple of areas I will expand on in the next sub-chapter.

Another dimension that has been used to describe and delimit social innovation is scale. Some argue that social innovation is concerned with global problems that affect us all (Cooperrider and Pasmore, 1991), akin to the assumption of social innovation being transformative discussed below. Social innovations addressing climate change is a good example. I would however argue that such change would always start in the local in any case, even globalization is materially anchored locally after all (Law and Hetherington, 2000), and it would thus be the local we need to study and work with. Many also focus on locally situated problems like disadvantaged neighborhoods (Moulaert and Nussbaumer, 2005). Moulaert has worked with social innovation for more than twenty years, specifically within urban development, and is thus one of the few scholars in the area from before it became “trendy”. Scale also work in another direction with problems ranging from the very abstract like the financial crisis (Biggs, Westley and Carpenter, 2010) to obesity problems for specific minority populations (Halkier, 2011). Our case studies in Transit also span this width with RIPESS working to promote the solidarity economy very broadly speaking, to the Seed Movement working on food diversity and seeds. While other case studies focus on solutions at the local level, like Eco-villages and Transitions Towns that work on living and consumption practices at the community level, while others like FIARE (Credit Unions) work with lobbying the EU. Research in social innovation thus cover all scales, although a few definitions try to restrict it to global problems.

There are many other dimensions used variously in different fields, for instance focus on social systems, democracy, temporal dimensions, public participation etc. However, the most prevalent focus is on social needs vs change in social relations and/or systems plus the paradigm that mostly stay within and expand upon the research done in business innovation. The biggest differences between multi-dimensional definitions is the strict excluding definitions where all cases must adhere to a specification to be accepted, and loose descriptive definitions that have a list of non-mandatory characteristics as guiding principles. Some strands of research

choose to focus on the social aspect of all and any innovation:

The principles of innovation as an activity and a process are fundamentally the same regardless of the type of innovation. The distinctive characteristics of societal innovation are associated with society and its citizens (Lehtola & Ståhle 2014).

This diffuse definition opens for a discussion what social innovation is about at all in relation to the established field of innovation research? Is it a type, category or a new paradigm? As visible above Moulart et al. (2005) is cited under both the process and outcome view on social innovation, because they see it as a multidimensional process of social change involving both satisfaction of unsatisfied human needs and changes in social relations and practices:

1) satisfaction of human needs that are presently unmet; 2) changes in social relations; and 3) an empowerment dimension in the form of increasing socio-political capability and access to resources (Moulaert et al., 2005).

Moulart et al. (2005) focuses explicitly on neighborhoods and local area development, and here sees social innovation as an alternative to sectoral top-down strategies in local development and include new forms of civic involvement, participation, democratization, which in themselves could be seen as types of innovation. Smith (2017) largely agree with this view on social innovation, as a more democratic approach to innovation. I could go on citing papers and relating to ever more dimensions of social innovation or innovation areas. Why this plethora of definitions? As Salter & Alexy (2014) says it seems “there is a whole industry of academics and consultants putting new words in front of the word innovation”. I will here argue against any definition of social innovation as a type and would argue that Moulart et al. (2005) see social innovation as a paradigm rather than type as it encompasses so many innovation types.

Paradigms, types and categories of (social) innovation

Several of the scholars cited so far attempt to define social innovation as a new type in line with technological, organizational, sustainable, or production innovation etc., and the challenge is simply to agree on the type delimitation. Several of the papers, and the most interesting from my perspective, do not attempt to strictly define the concept but merely state their aim of solving social problems. And in-between we have the multi-dimensional specifications that often try to satisfy both normative and objective aspects that from my perspective invariable run into difficulties as they either become too restrictive, are contradictory, or end up not really defining anything anyway. As mentioned the social and material is not divisible. A technological innovation is inherently social, otherwise it would not be successful and then by definition not be an innovation at all, making the “social” in social innovation redundant (Pol & Ville, 2009). Likewise, no social relation and social change can be non-material.

Returning shortly to the origin, Schumpeter (1949) saw social innovation as distinct from but complementary to technological innovation, and a necessity to attain and gain advantage from technological innovation. It is in this view thus an organization-centered approach seen as new ways to organize business practices (Neumeier, 2012), and by later scholars related to organizational innovation, knowledge management innovation etc. (Pot and Vaas, 2008). Social innovation is here a category distinct from technological innovation that is another distinct category. Categories tend to have strict boundaries like Cajaiba-Santana (2014) that reject materiality. This view though agree that social innovation is too complex and large a phenomenon to be just another type. The category view though also run into problems, because where do types like social entrepreneurship or grassroots innovation belong? From my experience at numerous conferences, workshops and seminars social entrepreneurship is invariably grouped as a subtype or even equivalent with social innovation, but a type very focused on products and services thus trying to co-op traditional innovation types into solving social problems.

Social entrepreneurship would then break the boundaries of several of the definitions. No, I would rather argue that social innovation is a new paradigm that can be related to any and all types of innovation:

This approach considers social innovation more as a new innovation paradigm, rather than a separate category of innovation [...] social innovation refers to a large revitalization of the social aspects involved in any kind of innovation, technological innovation included (van der Have and Rubalcaba, 2016)

the question arises whether the technology-oriented innovation paradigm that has been shaped by the industrial society is not becoming increasingly less functional (Howaldt & Schwarz, 2010 p15)

The view by Van der have & rubalcaba (2016) is a bit too limited though as they in the end backtrack and suggest further research on “complementarities between social innovation and technological change”, which again view social innovation and technological innovation as a dichotomy. Howaldt & Schwarz (2010) likewise see social innovation in contrast to the prevailing technical innovation, although they see social innovation more like a category of several innovation types like market, management, political, or institutional innovations. Despite initially describing social innovation as a completely new paradigm coming to challenge the increasingly dis-functional technology-oriented innovation paradigm Howaldt & Schwarz (2010) falls back into a quite conventional understanding of innovation.

Van der have & rubalcaba (2016) like Dawson (2010), who broadly support the paradigm idea, also end up supporting multi-dimensional definitions. However, this misses the point I would argue as social innovation is not a type or a category. Van der have & rubalcaba (2016) thus risk situating social innovation as merely an extension of traditional innovation research. As commented by Smith (2017, p1) “Social innovation requires a transformation in innovation practices”. Viewed through a

paradigm perspective, and with insights from STS, technological change whether its innovative or not is firmly inside the boundaries of social innovation. The subject matter or innovation type is irrelevant, it's the innovation process and the purpose.

Smith (2017) takes outset in a series of case studies on makerspaces that on one hand “tries to insert makerspace creativity into global manufacturing circuits under business as usual” and on the other “anticipate more democratic relations in material culture and political economy”. Makerspaces is then a battleground between two paradigms of innovation, although they often co-exist peacefully from observations in our case studies, and an example of what Smith (2017) term innovation democracy in action.

Social innovation as seen from the old paradigm aims to redirect innovation capacity towards goals of solving social problems. However, as Smith (2017, p2) also point out this agenda does not make sense as:

“experience suggests interventions for social development work best and endure longest when they build upon processes of citizen participation, open deliberation and sensitive community development”

The new social innovation paradigm is then more complicated than adding a new aspect, redirection conventional innovation capabilities, and then continuing with business as usual. No, it refers to a completely new way to manage and facilitate innovation. Social innovation implies reinventing innovation itself. This leads to the last part of my discussion on the transformative aspect of social innovation.

Social innovation is transformative

I will here argue that social innovation as a new paradigm is inherently transformative both in end and means. Social innovation is about solving social problem through social or system change by most definitions (Pol and Ville, 2009; Lawrence, Dover and Gallagher, 2014). It's not about charity, like giving food to the hungry, it's about transforming society to prevent hunger in the first place, very roughly speaking. However, as some argue it is not possible to be transformative while conforming to established systems and institutions:

Transformative innovations do not fit smoothly into these cultural and social contours [the traditional innovation paradigm]- otherwise the activity would conform to those conditions and hence could hardly qualify as transformative (Smith 2017).

I would challenge a bit that social innovation cannot come out of established systems, which social entrepreneurship does to some extent, but I do contend that it is ill suited to the purpose or at least fall short of solving all problems as the market is not suited to finance all types of innovation (Pol & Ville 2009). One of the movements to transform innovation systems have been to push to make them more democratic (Stirling, 2014), by for instance “improving in any way, access by the least powerful people, to the capacities for challenging power”(Smith and Stirling, 2016, p. 11) in

innovation. This is akin to another of our social innovation case studies on Science Shops that exactly try to make research resources available for disadvantaged communities in society (Dorland and Jørgensen, 2016), shaking up the established structure. Other of our cases focus on social movements aiming to challenge systems in food production, housing, banking etc. Likewise, Smith (2017, p5) see makerspaces “as a potentially radical social innovation that is redistributing access and power in innovation in society”, although that is maybe stretching the potential impact of makerspaces a bit far as it looks currently (cf chapter 10).

Assumptions and breakdowns in social innovation research

I have so far discussed some of the main camps in social innovation research and will in this chapter quickly sum up the main assumptions:

- Social innovation is generally positive and apolitical, i.e. no ill side-effects and no “losers”.
- Social innovation is about social change - change in social relations, practices, and systems.
- Social innovation is normative or cannot be normative, depending on which camp you adhere to.
- Social Innovation can be defined, the different aspects studied, and the understanding of social innovation will increase cumulatively.
- Social innovation is distinct from technical/technological innovation
- Social innovation cannot have any material aspects – its inherently immaterial
- Social innovation is a new paradigm challenging the established technology- or business-oriented innovation paradigm perpetrated by industrial society - a new way to do innovation

This is a list summarizing the most prevalent assumptions covered above. Some I can understand, while not agreeing, while others I see as logically inconsistent. Lastly some I agree on and understand but are methodologically impossible. I will in the remainder of this section shortly discuss the problems I find in these assumptions.

Definitions arguing against any normative aspect lose the purpose of the large majority for working with social innovation and thus stand no chance of adoption. Non-material and non-normative definitions also do not differ from business model innovation, management innovation, governance innovation etc. that also focus on social relations and practices.

Several definitions comes from armchair research – As argued by Alvensson and Käremann: “we would pay particular attention here to the interplay between theory and

empirical material, thus focusing on how the inconsistencies and breakdowns derived from empirical observation, rather than from (pure) theoretical speculation, may help us to develop theory (Qualitative Research and Theory Development 2011)". While this is likewise not an empirical paper, I do not provide a definition but argue against a definition, and this paper is written in the context of a large project on social innovation with abundant empirical material that inspired the work and discussion in this article.

Likewise, as pointed out all the definitions rejecting materiality likewise seem strange considering research on sociamateriality referred to above. Other researcher inspired by STS also point out that material objects are necessary to transfer ideas, knowledge etc. (Czarniawska-Joerges and Sevón, 2005). The definitions that accept materiality but demand that it only be supplemental are more logically sound, although I still disagree as there is no purpose for the requirement beyond creating a nice "virtual" requirement specification for an innovation type that neither helps in studying the phenomenon nor make insights more practically applicable.

A definition based on change of social relations, without any normative dimension, is also far too general to say anything about anything. Again, in STS all innovation types technical or not involve changes in social relations as shown by Bijker & Law (1992).

By extension and drawing from my argument for supporting the normative view, it makes no sense to put it in oppositions to technological innovations as it might be instrumental as a means or an end to solve social problems.

Scholars working to establish firm definitions relate to the perception of science as a use of "rigorous techniques for processing the data" that most text on qualitative methods are about with grounded theory as a leading example (Alvesson, Skoldberg and Sköldberg, 2009), in order to enable cumulative increase in knowledge. However, making firm definitions of so complex an entity as social innovation is a fool's errand especially given the early stage, and the whole focus on rigorous methods problematic (Law, 2004). Seeing the picture in figure 1 illustrates the situation, everyone is making definitions based on their academic area or personal interest. Just instead of an elephant imagine a phenomenon so complex that even without blindfolds the scholars would only see one small part.

Lastly, while I support the idea that social innovation is a new paradigm, and we need to transform the way we do innovation to be more democratic, most of the authors supporting this perspective in the end fail to describe this new paradigm and end up in a very traditional innovation perspective.

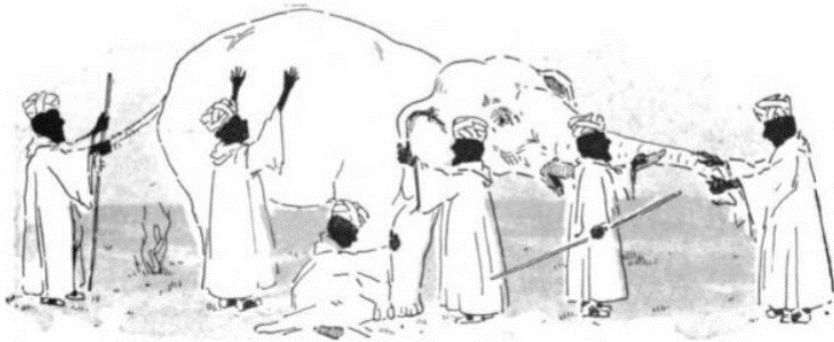


Figure 2.2 - Blind men and elephant; From Charles Maurice Stebbins & Mary H. Coolidge, *Golden Treasury Readers: Primer* (1909)

There are many more assumptions, and I could go on making arguments, but the aim here is to find why and if social innovation is an interesting phenomenon to study and if so find a solution to approach it.

Defamiliarizing Social innovation

I here defamiliarize the social innovation field to bring some new or alternative insights (ref), which I have already weaved into the discussion above. Far back I worked within STS (Science and technology studies), but I have for several years worked more in the area of organizational research, innovation, and staging design processes, until a seminar on materiality in social environmental science where I encountered affordance theory. This was during the Transit project, three years ago, when this paper was starting to take form. In these three years I went back to STS and have introduced perspectives from this area into my research on social innovation and found it a great way to defamiliarize social innovation. Changing the vocabulary by taking in an alternative theory or framework like affordance theory (Gibson, 2014) and the STS area that it led me back to is interesting partly because of the abundance of definitions rejecting materiality in social innovation, and from the many insights on the impact of technological innovation on social change coming from STS (REF).

Also, as pointed out by recent research in social innovation the context is sociomaterial, the social does not exist in a vacuum independently from the material. Indeed, social networks and materiality develop iteratively together (Law). And although we can separate material and social aspects analytically, I support the perspective that the aspects are inherently inseparable (Orlikowski, 2007; Lamprou, 2017). As already mentioned above there is ample research within STS or inspired by the field showing the social shaping of technology (Bijker and Law, 1992; Jørgensen, Jørgensen

and Clausen, 2009; Clausen and Gunn, 2015), the social impact of technology or attempts to structure relations through materiality (Akrich, 1992; Dale and Burrell, 2008), and the role of materiality in facilitating innovation by enabling the travel of ideas & knowledge (Czarniawska-Joerges and Sevón, 2005). A very succinct point for social innovation that due to its nature is very knowledge intensive and rely on the emergence and distribution of new ideas. Affordance theory is an old environmental theory from the 70'ties that distinctly focuses on the material and especially the natural environment (McGrenere and Ho, 2000; Gibson, 2014), but also man-made objects like emails and ICT (Bülow, Lee and Panteli, 2016; Cardon, 2016). Affordances does not discuss intentionality, agency, or the networks behind objects, it's the possibilities or limitations inherent in materiality & objects that structures or sets the boundaries for agency. Materiality is in this way important in structuring the world both as a way to enable agency of disadvantaged groups but can also enforce status quo. Affordance theory forces the abstraction level even further down than most research within STS, to the concrete and specific.

These approaches encourage alternative interpretations (Qualitative Research and Theory Development 2011) and are vital to adequately understand social innovation processes.

Discussion & Conclusion

So, is social innovation relevant and interesting? Having read extensively I would say that most articles discussing social innovation definitions are not interesting. Propositions from specialized academic areas, which most definition articles are, often fail to seem interesting to outsiders (Alvesson 2013; Davis 1971). Articles without empirical data also often also fail to contribute with anything new, as pointed out by Luhmann (1993) definition discussions only serve to delimit and not increase understanding. This is an especially salient point for new areas like social innovation that suffer from a lack of empirical cases. However, there are several interesting insights that show great promise.

Some of the most prevalent assumptions about social innovation is: its immaterial, its dichotomous relationship with technical innovation, that it's about social change, that its apolitical, that it's possible to cumulatively build up understanding of it if the definition is firm and widely adopted, etc. I have rejected some assumptions while embracing others. I essentially argue that social innovation can best be a new paradigm in contrast to the old paradigm of business or for-profit-innovation. It is thus not a type like business model, governance, grassroots, or product innovation. Neither is it a category like material/technical/technological innovation that it is often set in opposition to. It is both methodologically unfeasible to see such a complex field as a type and makes little sense and would be akin to seeing all for-profit-innovation as just one type with one definition, which any innovation handbooks prove that it's not. Therefore, I argue that the positivist dream of rigid definitions and methodologies leading to cumulative knowledge gathering is here unfeasible. It might well be possible for

innovation types within a social innovation paradigm, types that are more specific and clearly delimited, but not for the field as a whole.

As a paradigm it's a completely new mode or system of innovation. Not only does it aim to solve social problems through societal transformation, but it also aims to transform the way we do innovation to be more democratic by the argument that we cannot transform society while conforming to existing systems, institutions, and relations of power in the process. This paradigm of social innovation can then involve all types of innovations from new technologies, services and governance systems to completely alternative societies. Even for-profit-innovation is welcome if it solves social problems in the process (Pol & Ville, 2009). Innovation areas like grassroots innovation is then an innovation type taking on specific social challenges, and Moulaert (2005) has developed his specific innovation type within social innovation to deal with local social problems in neighborhoods. The challenge and focus for researchers should then be to identify and develop innovation types working with specific social challenges in specific areas, to build up knowledge in these areas, instead of trying to make the whole paradigm of social innovation conform. This process has already started with areas like user-driven innovation, grassroots innovation, and other bottom up perspectives. It is not a denial of businesses role in and ability to solve social problems either but points out that the old paradigm is ill-suited to the purpose.

I also challenge the argument that social innovation is immaterial both in its means and ends. As pointed out above research in STS and other areas have long shown that technology is both socially shaped, have social impact, and can be used to facilitate dispersion of new ideas and knowledge. By extension technology can likewise be a means for solving social problems and facilitating social change, and thus be an object of study in social innovation research.

However, little to no research have so far been done from an STS perspective on social innovation. The two main journals in the field, *Science, Technology, & Human Values* and *Science & Technology Studies*, have only a single article discussing social innovation that neither references or is referenced by anyone else in the social innovation field (Jover, 2008), and is very vague about its meanings and implications. I thus encourage scholars embracing sociomaterial perspectives to engage in research in the social innovation paradigm, for instance by looking at how technological innovation can better solve social problem through a more inclusive a democratic innovation process.

Lastly, how can social innovation then be approached considering its normative and political nature? I suggest to not focus on solutions to specific social problems when researching the paradigm more generally, but on how types of social innovation has been facilitated, i.e. how to build foundations for types of social innovations processes. This circumvent the normative aspect, because even though American and German society might disagree on what constitutes a social problem, the study on how to facilitate specific social innovation types leading to social change might have broad similarities that can cross-fertilize each other. The challenge, as mentioned earlier, is then how to define types within this new paradigm that allow broad comparisons but without becoming so general that it is useless in practice like many of the social innovation

definitions reviewed above.

A short note on the process vs outcome view, I see both as essential perspectives for the paradigm but researched as different types. A process perspective is especially relevant for policy makers for instance, to gain insight on how these innovations processes can be facilitated.

The case studies in Transit is then actually about providing spaces and foundations for social innovations, focusing mostly of processes, while also studying distinct types of social innovations. Like science shops that is a space facilitating new ways to develop innovation through university-community partnerships, Desis labs that are spaces for sustainable innovation design with communities, and FabLabs that as mentioned by Smith (2017) are spaces for democratic relations in material culture. Moreover, all three are either predominantly or often located at universities, which then might be an innovation type within this new paradigm.

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Chapter 3

Dissertation structure

This chapter gives an outline of the dissertation through a table overview of the articles and project reports included in the dissertation as different chapters, followed by a collection of abstracts detailing the purpose, contents, and findings of each chapter except the final discussion. The chapters that are either published or submitted articles follow the abstract format of the respective journals. These abstracts are also to be found in the front of each chapter, and here only serve as an overview of the dissertation. The dissertation also contains a certain amount of repetition because the articles build on many of the same theoretical approaches. The theoretical framework in chapter 4 is an expanded and integrated discussion of all the theoretical approaches used in the articles, and so each part of the framework is introduced several times. Skimming chapter 4 or the theoretical frameworks in each chapter in section 4, would eliminate most of the repetition.

Overview of reports and articles

Table 3.1 - overview of articles and project reports included in this dissertation

Title	Authors	Status
Deliverable D4.3: Methodological Guidelines for Batch 2	Julia Wittmayer, Flor Avelino, Jens Dorland, Bonno Pel, Michael Søgaaard Jørgensen	Published as part of the Transit project. Excerpts included as part of chapter 5.
Deliverable D4.4: Synthesis across social innovation case studies, Part 1.	Michael Søgaaard Jørgensen, Flor Avelino, Jens Dorland, Sarah Rach, and Julia Wittmayer	Published as part of the Transit project. Chapter 3 included, in an amended version, as chapter 7.
Detecting Social Innovation agents: Methodological reflections on units of analysis in dispersed transformation processes	Bonno Pel, Jens Dorland, Julia Wittmayer, Michael Søgaaard Jørgensen	Published in European Public & Social Innovation Review. Included as chapter 6
Empowering university-community interactions through specific space configurations	Jens Dorland, Christian Clausen, Michael Søgaaard Jørgensen	Presented at the 4S/EASST conference 2016 in Barcelona. Submitted to Science and Public Policy. Included as chapter 10
A process perspective on the creation of an organizational space serving as a foundation for social innovation at universities	Jens Dorland, Michael Søgaaard Jørgensen	Planned for submission to Higher Education Included as chapter 9

The constitution & configuration of organizations in Social Innovation networks	Jens Dorland	Presented at ISIRC 2018 in Heidelberg. Submitted to International Review of Applied Economics upon invitation. Included as chapter 8
Building local agency for social innovation through the formation of transnational networks	Jens Dorland	Planned for submission to Organisational Studies. Included as chapter 11

Beyond the publications described in table 3.1, there are many publications in Transit that have not been directly included in this dissertation but are used through references — notably the meta-analysis and database of critical turning points in the life of local social innovation initiatives that I based some of my analysis on. The empirical data from the meta-analysis is open access and available through the Transit webpage (<http://www.transitsocialinnovation.eu/sii>).

Section 1 - Introduction

Chapter 2: Literature review

Purpose: To review the literature on social innovation to 1) identify or construct a working definition for this dissertation, 2) identify gaps in the literature, and 3) establish if and why social innovation is an interesting field.

Summary: SI research has focused on definitions and conceptual developments with few published empirical articles. I identify the main dimensions of the different perspectives as: 1) process vs. outcome-based, 2) normative vs. objective, 3) material/technical vs. social, 4) and various camps viewing social innovation as either a type, a category, or a new paradigm. I find that a paradigm perspective makes the most sense as a working definition both for methodological and logical reasons as the range of phenomenon studied under the umbrella of social innovation can never conform to a nicely delimited type. Most scholars agree that Social innovation is about solving social problems, which with my paradigm definition can be through any means be those technological innovations, new social relations, alternative practices, or innovative governance systems, etc,. Lastly, I find the prevalent argument that social innovation is immaterial both in means and ends puzzling as research especially within STS (science and technology studies) have long shown that technological innovation is both socially shaped and have social impacts, which is a serious gap in the literature so. As an extension of this argument, technological innovation can be both a solution and facilitate social change.

Findings: Social innovation is best understood as an new innovation paradigm in contrast to traditional for-profit-innovation and is thus a new way to conduct innovation that is more inclusive and democratic. However, the field lack from some

narrow-minded and silo thinking, and could be well served by cross-fertilization from Science and Technology studies that show how technology can both be a solution and a facilitator of social change.

Section 2

Chapter 4: Perspective – The theoretical framework

Purpose: To explain the different perspectives and theories used throughout this dissertation, how they complement each other, and focus on specific aspects of the social innovation process.

Summary: The chapter has three main sections, 1) the introduction that covers my material-semiotic perspective, flat relational ontology, as well as my view on agency & empowerment that is of prime concern in this dissertation. 2) Cover my process view on organizations and networks based on the concept of sensemaking in combination with the relational and material-semiotic perspective. 3) Lastly, I draw in the staging perspective based on Goffman (Goffman, 1959) and Clausen (Clausen and Yoshinaka, 2007) to work more strategic and intentionally with the social innovation process, as a more action-oriented alternative to transition theory among others. As illustrated the theories & perspectives in this dissertation is a bit an amalgam due to different work was done at different times in relation to the research process in Transit, which has also changed the focus in this dissertation over time.

Findings: I find that exploring “foreign” paradigms and ontological oscillation offer some frame-breaking moments that challenges established assumptions and encourage rethinking. The combination of theories, especially the inclusion of material & spatial perspectives, enable a focus on the material and local that has been lacking in SI research.

Chapter 5: Methodology – The tools and research design

Purpose: To create an overview of and discuss the methodology and research design used both in Transit and this dissertation of gathering, order, and analyze data.

Summary: The chapter covers several distinct research activities. 1) The research design, 2) the methodological guidelines for the two batches of case studies, which largely failed in its intent to harmonize the case reports to facilitate easy comparison and analysis, and the meta-analysis that generated the critical turnings points database. 3) A discussion of the problems inherent in Transit and the empirical data I can draw upon in relation to my focus in this dissertation. 4) My approach to analytical generalization through typologizing that I have applied both in Transit and this dissertation, which I chose and adapted in order to handle some of the limitations imposed by my reliance on empirical data from Transit.

Findings/conclusion: The diffuse nature of social innovation combined with the empirical diversity of the case reports required a reflexive approach. The meta-analysis, however, served to solidify, substantiate, or falsify the findings from the comparative analyzes.

Chapter 6: Detecting Social Innovation agents: Methodological reflections on units of analysis in dispersed transformation processes

Disclaimer: Published in The European Public & Social Innovation Review (EPSIR), ISSN 2529-9824.

Abstract: Considering that it is important for the social innovation research field to confront its methodological challenges, this contribution addresses the challenge of choosing appropriate units of analysis. In processes of transformative social innovation, the agency is distributed and therefore fundamentally difficult to detect and ascribe. This contribution addresses the challenge to develop methodologies that are consistent with this relational ontology, critically evaluating the three main unit of analysis choices that guided an international comparison of 20 transnational SI networks and their local manifestations. Methodological lessons are drawn on the actors that SI can be ascribed to, on the transnational agency through which it spreads and on the relevant transformation contexts involved. This provides SI research with methodological tools to handle the elusiveness of SI agency, a methodological challenge that becomes particularly pressing in attempts towards systematic comparison of cases.

Section 3 – Empirical analysis

Chapter 7: Comparative analysis of our case studies on social innovation

Disclaimer: Published as part of Deliverable D4.4: Synthesis across social innovation case studies, Part 1.

Purpose: To give an overview and insight into the breadth of the empirical data gathered through the case studies in Transit as well as details of the case studies through representative examples.

Summary: The case studies in Transit were analyzed in two comparative reports, D4.2 and D4.4. The two batches of the case studied used different methodological guidelines, to take advantage of the insight gained from analysis of the first batch in the second as part of iterative research design. I in my first analysis in Transit focused on the development over time and organizational forms of the social innovation networks we studied, and in the second analysis deepened the temporal and organizational focus, as well as expanding with general characteristics like types of material manifestations, social innovations, and resources observed in the cases. The analysis presented here is thus very explorative and descriptive, and presented through a range of typologies. Findings: When characterizing the networks along the generated ideal-types, I found the embedded case set-up, assumptions about, and definition of social innovation networks and local initiatives to be problematic. They are neither organizations, social movements, nor distinct networks depending on the case in question. Many other insights will be taken up in subsequent chapters.

Chapter 8: Synthesis of typologies on the constitution of SI networks

Disclaimer: Preprint version. Submitted as a research article to International Review of Applied Economics upon invitation. Presented at ISIRC 2018 in Heidelberg.

Purpose: To synthesize the typologies constructed through the various comparative analyzes in Transit into a theoretical typology on the constitution of SI networks.

Summary: This contribution elaborates how SI networks & organizations are configured to focus the dispersed agency of the members and facilitate different forms of empowerment and societal change. This is done through the development of an ideal-typology focusing on the constitution of SI networks through the dimensions of network stability, network resources, macro-actor strength, and manifestations. The base dimensions are developed from an extended range of typologies iteratively constructed in Transit the last 4-5 years based on case studies within 20 SI networks. Transit through a bottom-up focus looked at the distributed nature of SI agency, and this chapter develops this perspective aiming to give practitioners, researchers and policymakers insight that can help them to empower SI initiatives.

Findings: The analysis led to seven ideal-types ordered in three categories: all-encompassing, secondary, and auxiliary networks. This typology contributes to a deeper understanding of organizing concerning SI. The practical implications reside in the mental models the typology afford on the different types of networks.

Section 4 – Discussion

Chapter 9: A process perspective on the creation of an organizational space serving as a foundation for social innovation at universities

Purpose: To give insight into the bottom-up emergence and development of a specific social innovation initiative and its associated network, in contrast to the other chapters that focus on the networks or more extensive selections of cases.

Summary: This chapter gives insight on how to stage the configuration of an action-net that can serve as a foundation for an organizational space facilitating interactions between universities and communities leading to social innovation. It is based on a study of a Science Shop that operated at the Technical University of Denmark from 1987-2012. This insight is based on an organizational process perspective, novel to the field, drawing on the concepts of sensemaking, staging, and action-net inspired by material-semiotics and symbolic interactionism. The discussion arrives at four fruitful strategies for creating organizational spaces and provides valuable insight into the empowerment potential of trans-local networking for local social innovation initiatives. Lastly, the paper highlights and evaluates the combination and applicability of sense-making, staging, and action-nets to understand organizing in network-organizations.

Findings: This contribution characterizes the type of organization represented by one of our social innovation networks, how that network can be enacted by and empowers local initiatives. The chapter also arrives at four fruitful strategies for creating and protecting spaces for social innovation at universities.

Chapter 10: Empowering university-community interactions through specific space configurations

Disclaimer: Preprint version. Submitted to Science and Public Policy. Presented at the 4S/EASST conference 2016 in Barcelona.

Purpose: Taking a subset of case studies related to universities to make a cross-comparative analysis on the types of empowerment that space for SI at universities can facilitate, taking a step deeper in generalizing across the cases than the previous chapter.

Summary: Some see universities as a possible source of solutions for a sustainable transition and societal challenge. This contribution sheds light on how universities can help empower communities and solve societal challenges locally based on three multi-site case studies on Desis Labs, Fab Labs, and Science Shops. This paper takes a sociotechnical and flat relational perspective inspired by science and technology studies (STS) focusing on the material and spatial aspects of how these spaces are configured, to ensure the practical relevance for policymakers and practitioners. The analytical generalization methodology condenses the qualitative data into a three-category ideal-typology encompassing affording-, mediation-, and impact-oriented spaces that each represent a specific configuration of actors, researchers, students, communities, spaces, infrastructure, equipment, facilitators, etc. The ideal-types each empower in different ways, require different resources to create and operate, and translate differently into specific local contexts.

Findings: The analytical framework points at how materiality and social relations can be combined and provide novel insights into the staging process of complex spaces. The typology illustrates the principle configurational elements observed across the cases and point out three different ideal-types: affording spaces, mediating spaces, and self-contained spaces.

Chapter 11: Building local agency for social innovation through the formation of transnational networks

Purpose: To make a cross-comparative analysis across all the case studies, in contrast to the two previous chapters that analyzed one or three specific cases focusing on the local contexts. The chapter thus focuses on the significance of the international networks for local agency and the construction of macro-actors.

Summary: In this paper I show the significance of transnational networks for social innovation initiatives by analyzing: 1) how networks can increase the agency of local initiatives, and 2) how the formation of networks that focus the dispersed agency of its members – thus enabling interactions with and impact on dominant institutions and international organizations – can be facilitated. I examine a database and 20 case studies on social innovation networks, encompassing 300-500 interviews carried out in the EU project TRANSIT from 2014-2017. This is done through a material-semiotic perspective based on a flat relational ontology inspired by actor-network theory and organizations theory. I find that networks enable agency by on the one hand constructing different types of macro-actors that are powerful enough to interact with

other macro-actors, and on the other, providing four types of resources: legitimacy, visibility, funding, and knowledge & peer-support, which local initiatives can enact to gain agency locally.

Findings: The contribution sheds light on how to construct macro-actors and build local agency through four types of resources, which happens through working on the context, making resources available, and directly transferring resources to the local initiatives. An interesting finding was that many of processes to build local agency are indirect.

SECTION 2

- ◇ Chapter 4 - Perspective – The theoretical framework
- ◇ Chapter 5 - Methodology – The tools and research design
- ◇ Chapter 6 - Detecting Social Innovation agents:
Methodological reflections on units of analysis in dispersed
transformation processes

Chapter 4

Perspective

Purpose: To explain the different perspectives and theories used throughout this dissertation, how they complement each other, and focus on specific aspects of the social innovation process.

Summary: The chapter has three main sections, 1) the introduction that covers my material-semiotic perspective, flat relational ontology, as well as my view on agency & empowerment that is of prime concern in this dissertation. 2) Cover my process view on organizations and networks based on the concept of sensemaking in combination with the relational and material-semiotic perspective. 3) Lastly, I draw in the staging perspective based on Goffman (Goffman, 1959) and Clausen (Clausen and Yoshinaka, 2007) to work more strategic and intentionally with the social innovation process, as a more action-oriented alternative to transition theory among others. As illustrated the theories & perspectives in this dissertation is a bit an amalgam due to different work was done at different times in relation to the research process in Transit, which has also changed the focus in this dissertation over time.

Findings: I find that exploring “foreign” paradigms and ontological oscillation offer some frame-breaking moments that challenges established assumptions and encourage rethinking. The combination of theories, especially the inclusion of material & spatial perspectives, enable a focus on the material and local that has been lacking in SI research.

In this chapter we explain our main perspective(s) inspired by a flat relational ontology and a semiotics of materiality in the tradition of authors in STS like Latour and Law (Latour and Strum, 1987; Law and Hetherington, 2000; Law, 2002; Latour, 2007).

However, this dissertation is an amalgam of different work done at different times, some of it in relation to Transit, other in relation to other research projects, conferences, or seminars. Three of the main chapters are composed of papers presented at different conferences and submitted to different journals. As a result, different approaches and frameworks have been used, although I have kept a focus on material-semiotic sensibilities and a flat relational ontology as guiding principles across the papers included in this dissertation as well as the work I contributed to TRANSIT.

I will try to weave the different approaches together in this chapter to explain how they create different types of insights that fit together, although they are not all easily combined. This can be termed ontological oscillation which some would see as problematic (Burrell and Morgan, 1979), but I see as an advantage like Weick (1995, p. 35) that argues it is a strength to oscillate ontologically as that helps to better understand actions of people in everyday life who couldn't care less about ontological perspectives. As he comments "If people have multiple identities and deal with multiple realities, why should we expect them to be ontological purists?" (Weick, 1995, p. 35). In either case I think what Burrell & Morgan (1979) rails against is when people oscillate ontologically while being unaware of the fact, while Weick in his work and I in this dissertation are very aware of oscillations, although we inevitably might miss some as Morgan himself did (ref). One can question the extent to which it is possible to cross between and master several perspectives (Burrell & Morgan, 1979), but as argued by Alvesson:

"exploring 'foreign' paradigms offer theorists a potentially 'frame-breaking experience' that challenges an established position and encourages rethinking." (Alvesson and Kärreman, 2011, p. 49)

I have thus shifted between perspectives across my different papers. While most dissertations have written papers sequentially, I have written them partly in parallel, enabling some coordination between them. They thus focus on three sub-questions relating to my overall focus, and I have kept a material-semiotic aspect in all of them to give them some common ground and adhere to a flat relational ontology, although even within these boundaries there are several paradigms. Giving a short overview of the three main contributions:

- Chapter 10 - analyzing Science Shops, FabLabs, and Desis Labs from a purely material-semiotic and spatial approach inspired by actor-network theory and work done on materiality and spatiality within science and technology studies.
- Chapter 11 - drawing on analyzing spanning all 20 cases in TRANSIT this chapter likewise draws on material-semiotics inspired by ANT but with the addition of organizational theory in the form of a macro-actor perspective advocated by Czarniawska (ref) among others.

- Chapter 9 - goes further along the organizational theory trajectory and builds a framework composed of a process view on organizations based on Weick and communication theory, while still relating these approaches to a material-semiotic understanding.

The chapters are listed in the order the papers they are based upon have been written, illustrating the trajectory I have moved along during my research. I will in section 5 discuss how this comes together. The theoretical parts of chapters in section 4 may be skipped as they to some degree are repetitions of this chapter albeit more condensed. The first section in this chapter is on material-semiotics and flat relational ontologies that is the common denominator across the work presented in this dissertation, and to some degree the research in *Transit*.

A material-semiotic perspective

A material-semiotic perspective means that I see relations as simultaneously material and semiotic, i.e. relations between things and concepts. This means that an object is not merely defined by its material characteristics but also the cultural concepts we associate with it. Materiality is not simple in itself and “is not some prefabricated stuff waiting out there” (Mathiasen and Koch, 2015), and materiality is furthermore not a neutral notion (Carlile *et al.*, 2013) disciplines and cultures define it differently. In an Euro-American perspective the most obvious is the material aspect, spaces like offices, buildings, parks (Lefebvre, 1991), or absolute spaces that can be drawn in an Euclidean coordinate system (Law, 2002; Harvey, 2004), or spaces as measurable distance (Taylor and Spicer, 2007). Research on organizations also illustrate how leadership is materially constituted (Ford *et al.*, 2017), for instance in our idea that the suit is the only appropriate dress-code for leaders.

The most tangible definition is that things are “made of matter”, of tangible “stuff” (Law and Hetherington, 2000). And different stuff give different possibilities for action that Gibson (Gibson, 2014) described as affordances. Objects and actors then are a mix of inseparable material and semiotic aspects. While an object like a hammer may seem very fixed many different meanings can be prescribed to it, i.e. a tool, a weapon, an archaeological artefact, a religious or ideologic symbol etc. We can never not understand an object through some interpretation though, making the material and semiotic inseparable. I will discuss this aspect in relation to sensemaking in the next chapter. Although I argue materiality and semiotics are inseparable that does not prevent me from discussing and analyzing the aspects separately. I will refer to materiality when I discuss that aspect specifically, and object when discussing the whole.

From a material-semiotic perspective it is the many non-human actors or objects that have been linked up in actor-networks that lends permanence to human relations and enable interactions to extend into something “permanent” spanning across space and time, like organizations. Human society is thus built upon objects that have left the hands of their creators and enter associations with other actors. Latour (1987)

contrasts this to baboons where interactions and relations are ephemeral as they do not use objects to stabilize their society:

Primates have only their bodies and their physical co-presence in the here and now with which to construct social relations and they therefore must re-construct these relations anew at every moment (Belliger and Krieger, 2016, p. 140) *(should use original latour ref)*

Which prevents primates from ever assembling larger and larger networks. It is thus non-human actors that make us human, and the social world is made up of associations between human and non-human actors, of networks.

One of the problems in material-semiotic research is that parts of the tradition may be imagined as a machine for “waging war” on the material aspect of space (Law, 1999b), which is ironic as ANT as one of the main material-semiotic approaches advocates the agency of non-human actors. Latour (1994) for instance has an inclination to root the relationship between humans and non-humans in signs (Putnam, 2013), like in the way a red-light signals stop or a speed bump slows down traffic like a silent policeman. In these examples Putnam (2013) argue that the theory of meaning between humans and non-humans is governed by signs in which the humans give meaning to objects rather than meaning emanating from features or characteristics of the material, which then privileges the social. Part of the work of Law (Law, 1999b, 2002; Law and Hetherington, 2000; Law and Moser, 2012) has been to challenge this neglect of materiality in the relational networks that are the foci of ANT, raising the issue that non-human actors becomes detached from the structuring effect of the material, which we in this paper as mentioned term affordances (Gibson, 1977). Other research likewise criticizes sociomaterial research of neglecting the material or putting too much emphasis on the social (Bansal and Knox-Hayes, 2013).

Affordances is a concept that focuses on the action possibilities given by objects (McGrener and Ho, 2000; Gibson, 2014), especially the natural environment, but also man-made objects like emails and ICT (Bülow, Lee and Panteli, 2016; Cardon, 2016a). Affordances does not discuss intentionality, agency, or the networks behind objects, it’s the possibilities or limitations inherent in their material form or environment that structures or sets the boundaries for agency, as discussed in the sub-chapter on agency. Unlike empowerment it is passive; it is simply actors taking advantage of possibilities. Indeed, affordances only emerge through the actions of individuals; they are the properties of the action capabilities of actors. A bridge can be walked; water cannot, unless you are a Water Strider. So, while the actor and the environment make an inseparable pair (McGrener & Ho 2000), materiality is in this way important in structuring the world. Another aspect of the materiality is distance, like a magnet that only functions within a certain distance of a fridge, or a ship that only retain its function while its components are within a distance-margin from each other (Law, 2002). It is clear here that action possibilities depend both on the nature of the material and the actor relating to it, affordances are thus inherent in the relation between the two. Another example is a computer, it only provides actions possibilities for actors that know how to use it, and only within a network that provides electricity, Wi-Fi, and

other infrastructure.

A relational aspect is the scripts designers can embed in objects as studied by Akrich (1992). Objects here are constructed in a network (like a design project) that influences the material form of an object, with an intention to structure the relations and network the object will interact in. Scripts then function through a mix of taking advantage of action possibilities of the material as well as understanding the cultural aspects like norms that users will associate with the designed object.

However, scripts might fail or be de-scripted in unexpected ways, providing radically different action possibilities than envisioned, i.e. objects do not necessarily act as intended or expected by designer and recipients. ANT relates this to a process called translation (discussed later), so objects are also actors in their own right as they can affect or control how we act beyond the control of either the designers and the users. In our perspective every design, be it an object or a space, bears some inscriptions from the designers, a “vision of (or prediction about) the world in the technical content of the new object” (Akrich 1992). A FabLab often has an intention behind it, a script, or in the very least the specific machines in a FabLab does. Science Shops and Desis stage different physical spaces for interaction with scripts intending to facilitate them.

The point here is that although we might prescribe subjective meanings to objects and the material, like the value of gold or importance of access to green areas in cities, materiality does have inherent characteristics that structure interactions and relations. Scripts are overt attempts to affect, shape, or take advantage of this materiality.

I will spend the rest of this sub-chapter to expand upon specific places. This is an interesting discussion for the Transit research as we have researched 20 ideas & concepts for social innovation anchored in many distinct places. The difference between how an idea is translated and develop we assume is related to the particularities of a place, among other things.

Places and immutable mobiles

Places have developed into a very specific term referring to specific local spaces (Taylor and Spicer, 2007). Places have peculiarities and heterogeneities [...] special stories and local customs (Casey, 2003), which affect how local manifestations of global concepts emerge, how ideas & concepts are translated and take root. The concepts we have studied in our cases like Impact Hubs, FabLabs, or Time Banks stems from relational spaces, and are abstractions and generalizations of a specific space or object. There was a first FabLab, Impact Hub, or Time Bank before it became a concept that traveled. It aligns with Casey’s (2003) perspective that everything starts from the specific before becoming abstract.

With a ship metaphor, we have the archetypal ship and then we have Titanic or the Mayflower that are specific translations of the ship concept. These specific ships are intersections of material and relational spaces (relational spaces are discussed in the next subchapter). These archetypes of material objects like ships, knives, tables, houses are like immutable mobiles (Latour, 1987), ideas that travel with an immutable core that suffers little or no translation. However, in these examples the first material object that

gave birth to these archetypes are lost in the mist of time.

The idea of immutable mobiles can bring something to the discussion on what is traveling between places, and what the significance of the places where these concepts land is. For instance, what role & impact do the concepts of science shops, Desis labs, or FabLabs have? Which i try to answer in chapter 10.

Czarniawska-Joerges & Sevón (2005) from organizational studies argue that ideas need a material form to travel, they need to materialize, often in text but also through bodies, our minds, and personal interactions. Ideas of a space like a Fablab is then translated not merely diffused (Czarniawska-Joerges and Sevón, 2005), which always involve transformation. There are examples of concepts traveling without the label and labels being applied in name only (Solli, Demediuk and Sims, 2005). However, the core function must somehow stay the same, there must be an immutable mobile at the core or it is something new, something else, or by extension you could also conclude that the concept did not provide anything or is empty. The survival or stability of these archetypes are not interesting in itself, but to understand what the core is, what must be immutable to enable a new Science Shop or FabLab is practically relevant to advise stakeholders. The degree of desired immutability is also an interesting discussion I will take up later, as there is often a trade-off between diffusion & flexibility and control & immutability.

Returning to the discussion of place particularities. Take the concept of a house, and compare Greece, Denmark, and South Korea. Greece has such a warm climate that insulation and heating is of less importance (although cooling might be important), and the climate also renders the house less important as residents can stay outside for much of the year. Denmark places a premium on good insulation and heating, and bigger houses as houses are more important as the context for a bigger portion of our life, as we cannot stay outside during much of the year. Korea share characteristics of both places, as there is both extreme heat and cold during the year, putting a premium both on heating and cooling. However, due to historical practices almost all heating needs to be floor-heating, which in Denmark is a novelty or luxury addition. And due to the high population density and mountainous geography of Korea most housing is also apartment buildings, where Denmark is predominantly individual houses. Taking an example from our cases, the Living Knowledge network. How a new science shop can be founded at a university depends both on national legislations and university governance, i.e. do they have project-based education, is there a policy requirement of social responsibility, can science shop projects award ECTS-points, are there potential clients in the local context, are staff used to interacting with communities etc.

As illustrated places are also inherently material-semiotic. There are inescapable material aspects like climate and geography, but how to interpret, measure and handle these are relationally contingent. Specific networks have developed, like universities, that are historically and socially embedded and thus have particularities that must be understood as well.

Sociomateriality and material-semiotics

One a side-note, sociomaterial is also often used to connote the perspective I have discussed above with or without a hyphen. Actor-network theory was originally not sociomaterial, it merely advocated the idea of generalized symmetry that meant that human and non-human actors should be described in the same terms. There was then no presupposed difference between humans and objects, which would appear as relational effects in the network over time. ANT in that description does not take a stance on sociomateriality, but in effect see them as separate but entangled as most actors would be made up of both human and non-human actors. In practice the social was often favored and as mentioned Law (ref) saw the conception of materiality in ANT as insufficient, and was the first proponent of using the term material-semiotic instead of ANT as he saw it more a family of methods than a specific approach, after which his research started to diverge in a different direction than the other forefathers of ANT, focusing more on the material aspects.

The problem in research on sociomateriality is that the socio and the materiality are often construed as being two distinct and separable parts, where as described above I view all actors as inherently and inseparably both. {Bansal2013} also make a convincing argument that researchers within sociomateriality have also neglected the material like Law (ref) argues, although {Bansal2013} also claims that the natural environment exists independently of the social, which has been termed a “soft” approach to sociomateriality (Lamprou, 2017). That might be so but understanding and interpretation of the natural environment is inherently social, I will thus stay with my argument that the material and semiotic is inseparable. Lamprou (2017) also support the argument that the material and social are inseparable at an ontological level, referred to as the “strong” sociomaterial approach. However, I will like {Bansal2013} refrain from using socio-material to free myself from some of the historical baggage of that concept that I disagree with or find problematic with my current focus. I thus like Law find material-semiotic a clearer term, although I use it in a similar manner as Lamprou (2017) use sociomateriality.

Summary

- All objects are inseparably and simultaneously material and semiotic
- Materiality is not a neutral notion, we prescribe meanings to materiality and enact it differently depending on...
- Materiality & objects have certain affordances that structure interactions and relations, but the action possibilities inherent in an object is a characteristic of the relation between that object and an actor.
- Affordances of materiality can be manipulated through scripts...

This is also not an Actor-network theory (ANT) approach, but is inspired by ANT which is a disparate family of material-semiotic tools, sensibilities, and methods of analysis, a diaspora that overlaps with many other intellectual traditions (Law 2009a). ANT can be seen as a particular empirical translation of post-structuralism, and many

not embroiled in the tradition relate it to a distinct form of ANT as it was seen around 1990 (ibid), which we here try to avoid. ANT is in other words not a specific or coherent approach that is another reason I here term our approach as material-semiotic.

A flat relational ontology.

The first issue is that in a flat relational ontology the divisions between global and local is as mentioned by Law & Hetherington (2000) a relational effect. This is important to understand the interaction between LSIs and their global networks and other macro-actors. To handle scales/levels in a flat relational ontology we talk of macro-actors and punctualizations. In the process called *punctualization* several actors, a network, is grouped into a single actor that can be an international organization like Ashoka (Latour, 1999a). A macro-actor is thus a network, an association between actors, with a spokesperson equipped with a “voice” to speak and act on its behalf (Czarniawska and Hernes, 2005a). The difference between micro- and macro-actors is not in any ontological differences but due to negotiations and associations, and the macro-actor still exists on equal terms with any other actor, be it an individual or another organization. Such punctualizations only hold if the behavior, the input and output of the actor, remains stable and predictable. When an organization is unpredictable, when you need to understand or relate with specific actors inside the network the punctualization breaks. Organizations or networks negotiate internally on their aims, activities, organizations etc. to reach a degree of stability to be seen as an actor, sometimes referred to as strategic essentialism (Ashcroft, Griffiths and Tiffin, 2013). It is unlikely that an organization like the UN would ever be punctualized due to its size and complexity, you would always relate to at least specific parts of it, the security council or a specific agency. The question in our analysis is if any of the entities in our cases are stable and predictable enough to hold a punctualization, and if the actors we follow themselves understand these networks as punctualized actors. Punctualized networks & macro-actors is then how I represents global organizations in a flat relational ontology, and more importantly give advice on how to construct such macro-actors enabling practitioners to enter interactions with organizations like the EU commission, the EU or national parliaments, national tax authorities, various UN agencies, or international sources of funding like foundations.

A couple of examples to illustrate the implications of a flat ontology. In the traditional perspective you would see the US and China as two international actors, on a completely different level or scale than individual people like you and me. Donald Trump is an individual though, who may at this moment (April 2018) be starting a trade war with China. As he is the leader of the US we may however just see him as either the spokesperson of that global actor, or maybe even synonymous with the US or at least the White House, although internal divisions in the US and even the White House itself seems to make those macro-actors cracking at their seams currently. However, other individuals have an impact on what Donald Trump does, how he acts, like his trade or financial advisers. Thus, individuals can interact directly with

global actors, they exist on the same level or scale. The influence or power of such individuals is dependent on their position in their network as pointed out by Law (2000). So, Donald Trump only has influence because of his position as president, supported by various US institutions like the constitution (another type of network), and these advisers have influence due to their personal relationship to the president. There are few institutions supporting their position though, and can thus easily come and go. However, they can also influence the president in other ways, by controlling the information available, and through low-level means like removing documents from his desk or changing their order.

Another example from South Korea. The former president Geun-hye Park was recently sentenced to prison for corruption. When she was a president she likewise represented South Korea. One of the issues that got her impeached was that she allowed her childhood friend Choi Soon-sil to get “unwarranted access to the business of government”. Her friend was not a democratically elected official and was not part of the presidential administration. She was truly an individual that had affected how the global entity South Korea had acted, without having a “legitimate” position in the network supported by any institutions. This was unacceptable and illegal and led to the impeachment. In any case, this illustrated our point that it is always individuals that does something, the US or South Korea cannot *do* something as they are merely abstract entities, or what I would call punctualized networks and macro-actors, whose influence can be wielded by individuals with all the restraints that the position of a public office has.

In a flat relational ontology, the differences in power then relates to the specific positions in the network. Donald Trump has the power he has because he sits at a special place in a network, the oval office, he has maneuvered himself into being a spokesperson for a very powerful macro-actors, the US. The network is kept together by objects like the American constitution, the department of justice, the political parties, the financial system etc. These “institutions” likewise does not exist on a different level than individuals. Whoever sits as the United States Attorney General is likewise an individual. These big networks can in many instances be regarded as actors though as they behave in predictable ways. It all depends on the focus of research, if you want to blackbox a network and regard it as an actors, which is only possible if it is predictable to some extent. If we were trying to understand Mr. Trump, he, his family, advisers, and several key persons in the capital would be individuals in our analysis, while the UN, the EU and other “global” actors might be punctualized to be just that, actors. Punctualisations like any theoretical concept serve to simplify the world, and if the actors behave predictable in relation to the focus of the research there is no reason or necessity to study those networks in any more detail.

As is apparent in our explanation, all actors are networks and all networks are actors. Even Donald Trump himself is a punctualization. If doing a psychological analysis, he could be dissected into different actors and networks, to understand his different identities, constructing an explanatory model for why he acts as he does, his background, chemistry, relations, identity etc. Or alternatively he could be seen as a social construct as discussed in the next section on agency.

So, in a flat relational ontology everything exists on a continuum from the biggest network like the UN down to internal workings of the human body. It is hard to imagine the research question that would connect micro-biology of an individuals with the workings of the UN and depict it in the same network, but it would certainly be interesting.

Macro-actors are especially pertinent to the focus of this dissertation because constructing macro-actors is one of the only ways for local initiatives to interact with other macro-actors, like dominant institutions, many of which are the target for their transformative ambitions. An individual Science Shop is not a legitimate partner in the research programs of the EU commission, while the Living Knowledge network is. Likewise, the individual Eco-village or Transition Town do not have the “power” to influence our consumption practice, a dominant institution. Our case subjects range from traditional hierarchical organizations like Ashoka that are easily identifiable as macro-actors, to very loose social networks like the Seed Movement that require much more work to configure their network into a macro-actor seen as legitimate by influential actors of relevance.

Macro-actor is a rather unspecific term though, as it potentially refers to any actor-network composed of more than two identifiable actors. Organizations can be seen as complicated sets of macro-actors while the organization itself is also a macro-actors (Czarniawska-Joerges and Hernes, 2005). It depends on perspective, on what it punctualized, what the unit of analysis is in the specific case. In this dissertation I generally use the term macro-actor to refer to the leviathans of organizations, the macro-actors that are large enough affect world or national events likes the EU, the IMF, Google, national authorities etc. And the macro-actors powerful enough to interact with these leviathans. The purpose of many of our networks of local social innovations, I will argue, is to actually construct macro-actors of sufficient power to enter into these interactions, like the Living Knowledge network that through interactions with the EU commission tried and succeeded to insert community-based research into the agenda of the EU.

A short note on power. In many material-semiotic studies “the issue of power and construction of macro-actors become secondary” (Czarniawska and Hernes, 2005a). And while these approaches stand accused of lacking a power perspective, they on the contrary attack the conventional approach to power seeing it as the effect or results rather than the cause of events and actions (Ibid). This dissertation in contrast to most material-semiotic research has the construction of macro-actors as one of the main focal points. The construction of macro-actors is the endowment of power, or the pooling together of power, of a network to create an entity that is powerful enough to enter into certain relations & interactions. Social innovation networks might become macro-actors both through overt construction, natural development, or serendipity. As macro-actors they might act to empower the network, and local initiatives might enact them locally to wield their “power”. This is a large part of their function and why the emergence of power and macro-actors is a critical discussion in one of the chapters.

Relational Spaces

Material-semiotic approaches like ANT is as mentioned focused on relations

between actors, called networks, so focused that the material aspects are often neglected (Law, 1999a). This is problematic as relational and material spaces are co-dependent, to make an object in one space it may be necessary to work in another (Law and Hetherington, 2000; Law, 2002), or put another way *the spaces and places around us construct us as we construct them*" (Dale and Burrell, 2008). This is akin to the idea of enacted sensemaking by Weick (1988) that describes the process where we in our sensemaking process effects the context just as the context affects our sensemaking process, although he does not discuss materiality specifically. While I above argued for the inseparable nature of materiality and semiotics, I here argue that material spaces and relational spaces are distinct. This is not a contradiction. The meaning of a material space like an office-building is still inherently social. However, a relational space, a network, while it is materially constituted is not necessarily tied to a specific place especially since the advent of ICT (Castells, 2010). Indeed, the spatial context of organizing have been destabilized (Bock, 2016).

Objects and spaces are then always enacted in a multi-space manner and depends on their inter-relation for stability. ScS or FabLabs need to work in relational space to establish, obtain funding, resources etc. Additionally, the physical placement of their contact point and the specific department their lab or office is located at, will affect the relations that are established or maintained and by extension the possibilities to obtain resources. Indeed, purely relational spaces do not exist, but there is a large variation in how tightly an entity is materially anchored and linked to places.

Relational space is also where agency and intention of humans enter the picture, of empowerment and scripts, as agency is when any actor influences another (Sayes, 2014). Agency might be gained from the affordance of an object, the environment, or other actors might actively bestow agency through interactions – which I term empowerment – like donating funding through charity.

To understand this argument, it is important to keep in mind that a vessel like a ship, its affordances, and the system it operates within are made by relational means. The mathematics of engineering, the convention of SI-units, maritime law, education of navigators and captains, wharfs, the system of harbors, supplies, fuel etc. are all relational spaces composed of actors with intentions. However, as put by a geographer these spaces *exists only because objects exist and relate to each other* in material space (Harvey, 2004).

Elaborating a bit on this interrelation of spaces, the ship in our example is mobile in material space while static in relational space. All the objects, actors, and networks need to retain their position and function in relation to each for the ship to work. It is this constancy that enables its material mobility, so it can sail from London to Seoul, that Latour terms an immutable mobile (Latour 1986). The concepts of ScS, Desis Labs, and FabLabs are immutable mobiles, they travel from one university to another while retaining a core form & function. Entering an Argentinian FabLab, we assume, will on some level resemble entering a Danish FabLab. The claim by Latour (1986) is that immutability is necessary to move and survive, while mediating (Latour, 2007) or negotiating aspects outside the core likewise is crucial to adapt to new contexts. Sailing in the arctic requires something different than the Indian ocean and relating to the

Chinese coastguard requires different papers than the American coastguard, while at the core being the same activity. This is an alternative framing of why and how one-size does not fit all (Benneworth, Pinheiro and Sánchez-Barrioluengo, 2016). Immutability though is about movement, something moves, and the question is about the stability of the subject, which we assume is also a political fight between sender and recipient of such concepts like a FabLab or Science Shop.

Another type of relational space is a development project in a company or an education at a university. Both are relational constructs separate from specific material spaces, while still interlocked with them through university campuses or proto-typing labs. However, you cannot create an education without simultaneously creating a material space, intentional or not, where it manifests even if only digitally¹. An even more potent example is communication, interaction at a distance is impossible without objects (Law and Hetherington, 2000). Hundreds of years ago interaction at a distance entailed strong physical objects. A signed and sealed missive going from London to its colonies. The materiality of the missive, the network of couriers and modes of transportation used to deliver it. It is a mix of different spaces intruding into each other, enabled by the affordance of “things”, like paper, ships, horses, seals etc., and made necessary by the physical distance. The affordance of ICT have changed modern organizations and changed the relevance of physical distance (Bülow, Lee and Panteli, 2016; Cardon, 2016b), while heavily depending on the material objects ICT is built upon instead.

While this discussion may seem banal, ANT and the literature on empowerment, social innovation, and topics like university-community interactions that one of the chapters in section 4 focuses on seem to neglect the simple aspect of materiality. Indeed, many lines of research in STS seems to think that we can control, create or enact relational spaces at will and control the materiality that it forms. Clausen and Yoshinaka (2007) in their seminal article on staging socio-technical spaces, despite working with the material & technical, neglect the impact and affordance of materiality in the work environment, physical distance, and the specificities of the place where staging of their spaces take place. Nonetheless, we find the notion of staging, building on participatory innovation, crucial. Staging is the process of assembling actors, mobilization of findings, asking “Who’s in? Who’s out?”, including facilitating instruments and designed objects, and generally setting up a space where interactions can play out (Clausen and Yoshinaka, 2007; Clausen and Gunn, 2015). This process and the outcome I call configuring and configuration, as staging is an attempt to move actors in a network into specific configurations.

Rounding off the topic of relational spaces, its important to make clear that from this perspective there can be no social relations and relational space without the context of material space and vice versa. Indeed, the argument by Law (2002) is that creating a relational space have material consequences. I will go even further and claim that changes in material space likewise affect or enact relational and material spaces in an iterative process.

1 “Virtual” reality, or digital spaces, is also material as discussed earlier.

Agency

The location of agency, who exercises agency, is a pertinent question for material-semiotic approaches. We stick to a very straightforward but not simple definition of agency “as something that makes a difference in the course of another agent’s actions” (Latour, 2007). This does not necessarily exclude or contradict some of the conceptualizations of agency that has been going on in sociology. And there is still the question of *how* something obtains agency. So, I will start from the beginning.

There are many explanatory models for agency. From my perspective none of them are true or false, but there are better and worse approximations and explanatory models for what is going on. Better and worse often relates to specific times and/or contexts. I will argue that what was a good approximation 50 years ago may no longer be so because we have changed as a society, family patterns, careers, disappearance of life-time employment, education, social media etc. Social science thus has to keep enhancing or changing old models or create new ones in an endless conversation, the different models within institutional theory being a good example (Abdelnour 2017). The context of interest for this dissertation is networks & organizations and societal change, which make some models and discussions more interesting than others. I as mentioned have a flat relational ontology, which does not prescribe to institutions as it has often been conceptualized especially in early institutional theory:

“that organizations, and the individuals who populate them, are suspended in a web of values, norms, rules, beliefs, and taken-for-granted assumptions, that are at least partially of their own making’ (Barley & Tolbert, 1997, p. 93)”

This build on a view on institutions as large and complex structures existing mostly apart from the individual constraining their agency. I accept the idea of institutions but in a flat relational ontology an institution is an actor and a network just like any other actor, albeit usually a large network. If an institution is constraining an actor it is because it is acting on him, it has agency. Individuals actors can likewise act on the institution, possibly changing it. Newer camps within institutional theory also prescribe to the powerful individual actors view, the agentic turn in institutional theory as it’s called (Abdelnour 2017). My material semiotics are likewise actor-centric, but it is not human-centric, which I will return to.

The theoretical conundrum for institutional theory, at least the variant with powerful actors, is that for actors to be able to change institutions they need to be dis-embedded from them, and then they would by some definitions not really be institutions in the first place. In our view we have two actors interacting with each other. Power in our relational ontology comes from the size and reach of a network, and the position of the actor wielding the power. So, by mobilizing other actors it might be possible to build an opposing actor-network that can challenge an institution.

A thought example based on recent events, the MeToo movement. When I visited Korea for the first time in 2009, I remember a case where a high-profile entertainer

committed suicide, and left a note citing abuse as the cause. To my surprise many of my Korean acquaintances at the time were not shocked, and some of them even disdainful. The sentiment of the disdainful was that you should expect that kind of abuse in that industry, everyone knows that, if she was not willing she should not have entered it. The police did start a case, but her manager was acquitted. Abuse thus seemed to be a small institution, especially in showbiz. However, now in 2018 the MeToo movement is a large issue in Korea (like everywhere it seems). Politicians, actors, businessmen, academics, powerful figures across society have had to resign their jobs, and a few even committed suicide. So, an institution is starting to change and a new one develops, it seems. What happened here is that a network was constructed through media, social media, advocacy groups, networks, etc. of a size that could reach out of the US where it started and be enacted in South Korea. How this happened specifically could likely be a dissertation in itself, here I merely use a simple version to illustrate the explanatory model.

Had an actor been completely embedded in an institution they would not have considered to resist of course. However, the social is not something we exist in. We as mentioned see everything as material-semiotic. Institutions are thus materially manifested in our context. And as we move from one context to another, we move in and out of the influence of different institutions to some degree. Actors having lived abroad would thus have tried living outside the Korean institutions, and would realize the institution for what it was, just another actor that can be challenged.

However, we like institutional theory do not prescribe to the idea of collective agency where agency is an attribute of singular individuals that can then aggregate to groups, organizations, society etc. (Abdelnour 2017). Just as the foundational position of institutional theory see organizations and institutions as not straightforward derivatives of individuals (Meyer & Rowan, 1977). As argued by King, Felin, & Whetten, (2010) if collective entities like organizations are treated as actors then the collective agency must be more complex than the simple aggregate of individuals. I will delve further into this discussion in the sub-chapter on organizational theory.

The answer in our flat relational ontology is material semiotics, as discussed above. As mentioned objects are born from interactions, they contain our interpretations, norms, agreements, world perspective etc., giving permanence to our interactions and social relations. This is also why agency of organizations become historically contingent. Organizations are composed of objects, objects that contain the negotiations, agreements, associations born from previous interactions. Each object here has agency, exert some influence on how people act, and are thus actors.

Objects of course do not have a will of their own (Sayes, 2014) despite how ANT frames it, but objects and non-human actors are often the intermediaries through which actors translate their intentions onto other actors. Behind every object stands a network, a report for instance is constructed by numerous actors lending it legitimacy and power, as is posited within ANT every actor is a network and every network is an actor. However, a report will also “act” in unexpected ways, it might be used for arguments never envisioned by the authors, and it will undergo translations as it travels, i.e. they are not immutable mobiles. In this way material objects get a life of their own,

and it is this unpredictability that necessitates an unbiased approach to their role. The ascription of agency to objects is thus a methodological framework for putting emphasis on objects and materiality and giving us the tools to better understand the minute displacements, translations, interactions, processes, no matter the actors involved (Sayes, 2014), and not an actual belief in their ontological status. Our material semiotic is in this way an open methodology that allows various interpretations that support inductive conceptualization (Vinck, 2012), and objects gain agency through the networks they represent, without those networks necessarily being in control.

As networks like an organization expand and contain more and more actors, human and non-human, they grow in power and influence. It is as mentioned not just an aggregate though, because objects do not act as expected by their creators, they are actors in their own right. A contract or statutes have affordances, they give certain rights and conditions that can be enacted in expected or unexpected ways.

Inspired by the modular individuals of newer institutional theory (Abdelnour, Hasselbladh and Kallinikos, 2017) we also support the division of actors from individuals, as we following from our discussion do not see individuals as a mere aggregate of their experiences, skills, roles, capacities etc. All actors are networks, and the same goes for individuals. Individuals are thus also social constructions:

Conceiving individuals as modular enables the social (rather than cultural-cognitive or psychological) deconstruction of individuals (Abdelnour, Hasselbladh and Kallinikos, 2017, p. 1787)

We can thus conceive of individuals without delving into psychology but as part of sensemaking in collectives, which fits our purpose quite well. Individuals can thus be analyzed by looking at roles, narratives, vocabularies etc. A consequence of this approach is the individuals are not necessarily coherent beings but might shift between different identities from one moment to the next, what is called the dissensus perspective on identity (Hansen & Dorland, 2016). This will be discussed in the sub-chapter on organizational theory. However, due to the empirical data available in Transit individuals are not a focus in this dissertation as discussed in the methodology chapter.

Empowerment, Enactment and Affordances

The process by which local initiatives can gain agency, or how policy makers, international networks, funders or other can increase agency of local initiatives, is a crucial question for this dissertation. Empowerment is the most common term to discuss how one actor enables the agency of another. However, I see it as too simple, so will use three concepts to describe the process where local initiatives can gain through interactions with international networks and other actors – Empowerment, enactment, and affordances.

In simple terms empowerment is to enable actors to reach their goals (Adams, 2008), i.e. it is the creation of new or stronger actors by bestowing power and agency, stemming from research into social workers and clients among others. Here I especially focus on empowerment enabling communities to solve societal problems. Empowerment

is here changing or providing action possibilities if relating to design and staging. I thus see empowerment as an effect a powerful actor has upon a weaker actor, while enactment is something actors do on their own. It's a thin line as some resources are made available intentionally for enactment by local initiatives, i.e. it can be a process of co-production or co-creation, there are many terms for it. The notion of enactment refers to the fact that actors produce their environment (Weick 1995), in part at least. This in line with other constructivist perspectives within material-semiotics that denotes that there is *not some kind of monolithic, singular, fixed environment* (Weick 1995). We are neither the master of the environment though, it is an ongoing process of co-determination that Weick (1995) base on Follett (1924) who describes it as

The activity of the individual is only in a certain sense caused by the stimulus of the situation because that activity is itself helping to produce the situation which causes the activity of the individual (Follett, 1924)

This argument also means that processes are not time-lines with a start and end, there are no results but merely moments in time during the process. Yet all is not socially constructed and unstable. Enacted environments contain real objects like seeds, printers, and bicycles. The existence of these objects is not questioned, but their significance, meaning, and content is (Weick 1988), i.e. they can be enacted in different ways. And as mentioned we argue that materiality has affordances that structures social interactions through its limitations or possibilities, the ways it can be enacted. And these possibilities also depend on the actor doing the enactment, i.e. not all actors necessarily have the influence or abilities to enact an object. Enactment is thus an active choice of an actor to use specific structures and objects, like a constitution, infrastructure, rulebooks etc. to co-determine their environment.

Organizations in a flat relational ontology

Organizational studies can be traced back to the classical management theorists and industrial psychologists that were forerunners of the human relations movement (Burrell and Morgan, 1979, p. 123). This led into the social systems theory apparent in the Hawthorne studies that some say fathered the human relations school of management and showed that it is how the individual interpret and react to situations that determine an organization (Belliger & Krieger, 2016, p. 53). In the 50'ties when systems theory appeared (Czarniawska, 2005), the approximation of this model fit the sensemaking and organizing going on at the time quite well. However, the nature of our work environment, organizations, and family have changed markedly since then.

I will argue in this sub-chapter based on the assumption that we base our sensemaking and identity on constructing narratives that connect past experiences with our current situation, that the narratives and sense we construct is very different from previous generations. Let me start by an example illustrating my viewpoint.

At the moment I am in Korea, and Korean society seems to have a loose semblance with Danish society several generations. Many people still have life-time employments (if you are lucky to get into a large company) and they work very long hours. The company also takes care of them, it is a welfare system kind of like an extended family. This is what you would learn if going to the Carlsberg Museum in Copenhagen detailing the life of workers a 100 years ago. My father-in-law was a banker for three decades, had no time for hobbies, vacations, almost not even family. Being a banker is his identity, as that is almost all that he can draw upon. All his friends are bankers. All his past experiences are from banking, except a short mandatory tenure in the military and his time in high school. He is not unique, which make Korean people of that generation surprisingly (from my perspective) homogeneous. This also means that systems theory is here a good approximation. Consensus theories work as the homogeneity of Korean society reduces potential for conflict and the prevalence of confucianist thought that emphasize subordination and pacifism likewise reduces conflicts, creating a semblance of consensus as a universal state. Disclaimer, this example is a gross simplification and here used only as an illustration, although I at the core think that my observations are correct.

Compare to current Danish society. Many people change job every couple of years, certainly there is no guaranteed life-time employment. On top of that everyone is a member of numerous other networks related to their hobbies, professional allegiance, ethnic and religious loyalties etc. This create very different narratives when actors attempt to string together past, current, and expected future experiences together. Moreover, it gives actors so many options of enactments that a multitude of narratives can be constructed that are very unlike each other. These narratives can be enacted simultaneously creating what can seem a chaotic and contradictory identity to others (Hansen and Dorland, 2016), i.e. dissensus. The dissensus perspective I would claim is then now, in most western societies, a better approximation of society and individual identity. However, its a perspective that is not universally applicable not even within the “west”, as some people still have lifetime employment and few other affiliations of equal importance. And there are sub-groups or communities where there is largely consensus. In any case the subjects in this dissertation, largely socially engaged activists, are especially facing the problem of relating many different networks that are often not aligned in world perspectives, values, narratives etc. Take the Living Knowledge network of science shops, LSIs located at and funded by universities. The network and a local university might not agree on priorities and purpose. It is a situation of conflicting narratives and networks.

Of course, it is not only a changing landscape, it also depends on the research focus. One theory brings something else into focus than another. As described by Czarniawska (2005) administration theory was an applied science, i.e. not geared for the explanatory models striven for in social science, which had an impact on the organizational research field it birthed. I will give a nod of recognition to the equilibrium theory of organization advocated by Herbert Simon among others that tried to balance structure and human subjective rationality (Burrell & Morgan, 1979, p. 151). Simon in the second edition of his classic “Organizations” updates his definition of

organizations as systems of coordinating action among individuals (March et al. 1993), a definition we are sympathetic to. But this definition and the whole branch of research did not address how organizations themselves are constituted (Taylor and Van Every, 2011, p. 7). Taylor & Van Every (2011) goes on to claim that what is lacking is any real theory of communication, for him an essential part of constituting an organization, which gave rise to the CCO (communication constitutes organization) field of research. CCO is one of many network theories drawing inspiration from material-semiotic research, which only differs from actor-network approaches in their focus specifically on organizations and their combination of the sensemaking perspective of Weick with the actor-network perspective of Latour (Belliger & Krieger, 2016), which is what I find interesting here.

Weick (1995a p. 17) argues that cooperative action of any kind arises from activities of sensemaking and extends that into a discussion of organizations from a process perspective. Especially this process perspective, which brings in a temporal dimension, I find relevant. It is not that network theories like ANT do not have a temporal dimension, but it tends to focus on moments in translation, and relatively short time intervals if at all. I will thus in this chapter draw inspiration mostly from organizational theory like Czarniawska (Czarniawska-Joerges & Sevón 2005), Weick (), and Goffman () that are inspired by the same tradition. Sensemaking also bring a focus on the individual and the search for identity and meaning that actor-network theory has a hard time focusing on.

Sensemaking in social interactions

Sensemaking in very general terms are the process where people collectively give meaning to their experiences and is formed through connecting past moments with present experience (Weick 1995 p. 111), or as put by Czarniawska (2006 p. 1661) structures of events. One of the central elements of and contributions by Karl Weick is that organizational scholars should study structures of events rather than people or objects (Czarniawska, 2006). Seeing organizations as coming into being through interactions and needing to be enacted continuously so as not to dissipate, draws focus away from the actors and onto the actions through which the organization emerge. However, as I will show Weick and other scholars inspired by sensemaking fail to show how organizations actually emerge and how they are constituted. Another good point about Weick's sensemaking perspective lies in its potential to explain the role of agency (Mills et al, 2010) differently than how it is often understood in material-semiotics that tend to focus more on the action than the social construction of the individual. The tendency in sensemaking is usually the opposite (Maitlis & Sonenshein, 2010).

Weick related actions and interpretation to the concept of sensemaking that is how actors continuously relate past experience to the current moment, arranging it into a story that makes sense to them and is plausible to the other actors, known as a narrative. Sensemaking is thus related to moments of ambiguity where interdependent actors search for meaning and settle for plausibility (Weick 2005). Sensemaking is in this perspective central because "it is the primary site where meanings materialize that inform and constrain identity and action" (Weick 2005, p409). Episodes of sensemaking

produce and embed the outcome of interactions in non-human actors that slowly build up organizations, or as put by a communications scholar:

“Sensemaking is a way station on the road to a consensually constructed, coordinated system of action” (Taylor and Van Every 2000, p. 275).

Weick himself explored seven properties of organizational sensemaking: “identity, retrospect, enactment, social contact, ongoing events, cues, and plausibility” (Weick, 1995 p3), spending his whole second chapter on the exploration. He relates all these properties to the question “how can I know what I think until I see what I say” (Weick, 1995 p61), by the idea that we never really know what we mean before we articulate it. Sensemaking and action is thus intertwined. Especially as a scholar I can subscribe to that idea, to some degree, as many of the ideas and patterns that emerge as I work both with theory and empirical data is just too complex to hold in my head, and thus do not stand clear until I visualize them in text or sketches. Sensemaking is thus always both interpretation AND action, in my example the action of writing and analysis

Narrative Sensemaking

However, the very core of sensemaking as I read Weick is another question. Sensemaking is brought on by events that disturb the monotony of daily life, and when people are confronted by something unintelligible, something unexpected that they do not understand, they according to Weick ask “what’s the story?”. Even though Weick changed other parts of his perspective through the decades this is a question he repeats:

If accuracy is nice but not necessary in sensemaking, then what is necessary? The answer is, something that preserves plausibility and coherence, something that is reasonable and memorable, something that embodies past experience and expectations, something which resonates with other people, something that can be constructed retrospectively but also can be used prospectively, something that captures both feeling and thought, something that allows for embellishment to fit current oddities, something that is fun to contrast. In short, what is necessary in sensemaking is a good story (Weick, 1995: 60–61)

To focus on sensemaking is to portray organizing as the experience of being thrown into an ongoing, unknowable, unpredictable streaming of experience in search of answers to the question, “what’s the story?” (Weick 2005, p410)

The question stems from an understanding of meaning as being rooted in narrative. To create sense, we connect past experiences with current ones, arranging them into a sequence, a narrative, that explains what is happening and thereby informing action. An argument to focus on narratives over models is that complex situations must be met with complex models, and although stories simplify the world they do so less than formal models (Czarniawska, 2005). Having interviewed some of the same informants, on the same topics, over 2-3 years this perspective really starts to appear sensible to me. The details may change, some new events may be remembered, but it has consistently

been the same couple of stories with the same overall storyline, morals, and conclusions that I have been told. That largely seems to be how the past is remembered, at least for such monumental parts of one's life as your job.

Narrative have long been seen by several scholars as the form of communication that orders human action (Weick 1995, Czaarniawska 1998). Some even claim that without narrative there could be no agency at all (Belliger and Krieger, 2016). The literature on narratives is vast and inexhaustible, but the idea that organizations are constituted through narrative, through communication, can be traced back to Weick. For Weick storytelling is a creative process and not just interpretation of texts:

The act of interpreting implies that something is there, a text in the world, waiting to be discovered or approximated. Sensemaking, however, is less about discovery than is about invention. [...] A failure in sensemaking is consequential as well as existential. It throws into question the nature of the self and the world. (Weick 1995, p13-14)

Narrative sensemaking is thus not an interpretation, analysis, or consciously strategic. It is when we by an event breaking the monotony of daily life are forced to make sense of a situation in order to preserve or construct our sense of self in contrast to just running on auto-pilot, piloted by our habits, norms, routines etc. We are thus not talking about a board meeting in a large company in the process of agreeing on a corporate narrative for marketing purposes, or a job applicant laying a strategy and preparing his narrative for the big interview. It is not a strategic and considered process, it is something happening in the now. For Weick narratives is how we order our experiences to make sense of them, and how we express meaning to others, but it is likewise a messy social process where we fumble to create meaning and identity during interactions with others. Many scholars agree and deem narratives essential for our identity:

Through narrative identity, people convey to themselves and to others who they are now, how they came to be, and where they think their lives may be going in the future. (McAdams and McLean, 2013, p. 233)

In my earlier work I termed this narrative self-identity, in contrast to narratives of groups of actors like an organization, a network etc. Sensemaking is as visible in the quote above also closely related to plausibility, in contrast to accuracy, because the story that is constructed through sensemaking needs to make sense to the audience, to the actors taking part in the interaction, for it to inform action. So, what does sensemaking consist of:

the substance of sensemaking starts with three elements; a frame, a cue, and a connection.' (Weick 1995: 110)

A frame of meaning, which is relatively large and lasting (Goffman, 1974), a cue, and a connection. The frames can be usefully conceived as inherited vocabularies of society, organization, work, individual life projects, and tradition. (Czar Karl, p272)

This is closely related to the idea of vocabularies of motive (Mills, 1940) where inherent in language is inbuilt what a legitimate reason for specific actions is, whereby we often find ourselves creating a story legitimizing our past actions from the vocabulary available in a specific context. As commented by Belliger & Krieger (2017, p105) “stories that make sense are based upon stories that have already made sense in some form and have already been told and which are therefore known and more or less accepted by all involved in the sensemaking process”, i.e. they are part of the vocabulary in that context. This is shown perfectly by Hansen & Dorland (2016) in an analysis of an interview where the interviewee changes narrative and vocabulary several times during the interview. This first happens as the interviewee realize that he shares past career experience as a consultant with the interviewer, and thereby a whole new vocabulary of motive opens up. As the interview unfolded new vocabularies opened up and the narrative self-identity espoused changed in relation to being a family dad, being a consultant, being an expat etc. The point here is that narratives are often unplanned, even though they might be pieced together from old existing narratives.

As pointed out by Czarniawska, Weick also borrow a lot from Goffman just as I borrow the concepts of framing and staging that we will discuss later, which is another reason I find Weick relevant to include. Frame analysis as defined by Goffman is a theoretical framework for understanding how events are defined through frames that allow actors to “locate, perceive, identify, and label” (Goffman 1974, p27), very similar to sensemaking. What Mills refer to as vocabulary Weick calls frameworks, inspired by Goffman, defined as derived from past moments of socialization drawn into the now through cues that come from present events (Weick, 1995 p111). Like realizing that you share past experience during a conversation. The issue though is that we do not come from the same contexts, we do not share completely the same language, and we might even be unaware of that fact, an important question that the sensemaking perspective fails to deal with.

Enactment and sensemaking

A last concept that I find relevant from Weick is enactment. Weick also use many other concepts, but they are beyond the scope of this dissertation. He based enactment on two assumptions from American pragmatism (Weick 2009, p189) where he cites Reynolds (2003, p45):

(1) The world people inhabit is one they had a hand in making. And it, in turn shapes their behavior. They then remake it.

(2) Meaning and consciousness emerge from behavior. An object's meaning resides not in the object itself but in the behavior directed toward it.

From this inspiration enactment has been conceptualized in various ways as:

“both the process of making ideas, structures, and visions real by acting upon them and the outcome of this process, “an enacted environment”” (Weick 1998 as cited in Czarniawska, 2005, p. 271).

Disorder + confusion + insecurity = trouble.

Trouble + thinking = sensemaking.

*Probing for plausible stories that explain trouble = enacted sensemaking.
(Weick, 2010 p543)*

enactment is a concept developed to connote an organism's adjustment to its environment by directly acting upon the environment to change it. Enactment thus has the capacity to create ecological change to which the organism may have subsequently to adjust (Nicholson, 1995 p155)

Enactment is thus always connected to sensemaking, emphasizing that sensemaking is always both cognition and action. There is no definite formulation of it, and Weick changes his use of enactment over the years as well (Weick 2010). Introduced already in 1969 (Weick, 1969), in 1988 retrospective sensemaking is just one part of the conceptual system of enactment (Weick 1988), while it in 1995 (Weick 1995) is merely one out of seven properties of sensemaking. Looking at the second quote sensemaking comes before enactment, while earlier conceptualizations saw them as inexplicably tied together. However, as Weick (2010) shows not all sensemaking is enacted in the end, it sometimes does not result in action. Law (2004, p62-65, p155) argue that we can't do more than situated enactments and partial connections, and Weick (2010) admit he had been too naive, and enactment seldom is clear, i.e. if enactment is hesitant or fumbling it can misdirect sense. Although a bit confusing, it leaves me the opportunity to choose the approach I find most appropriate or even make my own conceptualization of enactment. Giving a more practical example. Taking a range of events, connecting them in a specific way, and telling a plausible story in a situation to affect the audience in an attempt to make sense both personally and for the audience, is an enactment of a narrative. This is a bit simple, and I will expand upon the concept in the sub-chapter "Staging and Framing" as I see the terms tightly connected, although I do not see them as inescapably linked to sensemaking.

The process of sensemaking

So far, we discussed what sensemaking is, but it is vague how sensemaking relate to organizations and how it unfolds. Weick being very fond of explaining everything in questions relate organizational sensemaking to "How does something come to be an event for organizational members? Second, sensemaking is about the question: What does an event mean?" (Weick, 2005 p410). When an actor is experiencing something unexpected and unexplainable it is brought into being as a situation, as an event, when it is being questioned and voiced.

Organization is an attempt to order the intrinsic flux of human action, to channel it toward certain ends, to give it a particular shape, through generalizing and institutionalizing particular meanings and rules" (Tsoukas and Chia 2002, p. 570).

So, organizing is part of the action in sensemaking, an attempt to channel all the actions of a group of actors to certain ends determined as the appropriate response during the sensemaking caused by an event, i.e. actors try to enact their sense back into the world to establish order. In this way sensemaking and organization constitute each other. Picturing a process of sensemaking (Weick, 2005 p411-413):

- Flux & Chaos: There is an infinite amount of events that surround us every day, which start as an undifferentiated flux of impressions and lived experience.
- Noticing and Bracketing: Sensemaking starts with phenomena being carved out of the stream of impressions and experiences, they have to be noticed as abnormalities or disturbances. Bracketing also simplifies the world.
- Labelling: Stabilizing the streaming of experience by labeling and categorizing interdependent events in ways that suggest plausible acts of managing, coordinating, and distributing.
- Retrospection: looking back over earlier observations and seeing or constructing patterns, related to the old adage being wise in hindsight, i.e. you relabel a past event as a mistake or something else based on current experience.
- Presumption: To make sense is to connect the abstract with the concrete. Interpretation and experimentation engaging the concrete, idiosyncratic and personal with the abstract, resulting in actions presumed to be the right course.
- Social: Sensemaking is influenced by a variety of factors, a “system” you could say that is previous interactions reaching through time and space through objects, like legal procedures to follow, work routines, morning meetings, talk around the water cooler etc.
- Action: After asking “what is going on”, come “what do I do next?”. Action is an indistinguishable part of the swarm of flux until talk brackets it and gives it some meaning, action is not inherently any more significant than talk, but it factors centrally into any understanding of sensemaking.
- Communication: As seen by Weick and others sensemaking is an activity that talks events and organizations into existence, and is explicitly linguistic, which I would challenge though as communication can likewise be non-linguistic.

While the first five points loosely can be seen as part of a general chronological unfolding for sensemaking, I would argue that the last three are general aspects of sensemaking. Although Weick himself emphasize “its culmination in articulation that shades into acting thoughtfully” (Weick, 2005 p413). Much more could also be said about sensemaking and Weick, but as sensemaking is here more of an inspiration and not my main framework, and I do not plan to explicitly use the list above in my analysis but take more as a general inspiration, I will not delve further into the discussion of the process. I also feel this covers the core of the modern interpretation of sensemaking, and there is no need to further repeat what other, notably Weick himself, have

explained better and in more length elsewhere.

Summarising the core of sensemaking

Weick has been prolific in generating concepts and terms, which all are of various uses, but not of equal importance for my purpose. And while the list on the process of sensemaking makes it easier to picture the process of sensemaking in real life, I will summarize the three most important aspects of sensemaking for this dissertation.

Narrative: Meaning in sensemaking is constructed by arranging past and current experience into a narrative explaining what is happening and why, ordering the chaotic flux of impressions in our everyday life, and thus prescribing specific actions. The uttering of the narrative into words is, for Weick, as important as the cognition, as you do not know what you think before you say it. This also implies that sensemaking happens in groups, as the narrative is spoken and targeted at someone, an audience, whether they are present or not. Sensemaking is then by nature always narrative sensemaking, although for ease of writing I will generally just refer to sensemaking.

Enactment: Weick over time changes his conceptualization of enactment, but as I read it you enact the narrative that you constructed through sensemaking and the actions it prescribes, thus making the narrative a self-fulfilling prophecy to some degree, making it enacted sensemaking. The narrative thus become part of the world, and affect future sensemaking, starting a cycle where actors are produced by and reproduce the environment, i.e. enacted sensemaking. I will argue it's a bit more complicated in the section "Staging and Framing".

Plausibility: The whole difference between Sensemaking/Weick and many other scholars in organizational theory, is the focus on plausibility instead of accuracy. Essentially, we only tell narratives we think the audience will believe. No one can ever have certain knowledge what someone will believe, thus it is about the plausible. This relates to several discussions within identity theory like impression management () and pluralistic ignorance () that engage in the same discussion from a different angle.

A process view on organizations

The process view on organizations that sensemaking illustrate is compatible with material-semiotic approaches and our flat relational ontology as they like Latour do no adopt a static view of organizations, where organizationz manifests itself in the day-to-day interactions of its members (Robichaud & Cooren 2013). Indeed, the organization is here slowly built up over time through sequences of events (Czarniawska, 2005), which then create a constellation of actors that is akin to an actor-network, although Czarniawska (2005) term these constellations action-nets rather than actor-networks. The two terms are closely related identical, but action-nets focuses on the actions, and each action is an actor in itself, while a traditional actor-network perspective focus on people and object as actors, which may relate to many different actions. The action-net perspective makes more sense for organizations as each action and the event it takes part in likely results in an object that represents that action through time and space, like a contract, meeting memo, or budget allocation. Organizations are constituted

in thousands of these objects over time, slowly forming and stabilizing it. ANT analyzes, as discussed in more depth later, seldom focus and analyze such large networks, although a branch of ANT research focuses on organizations (Latour, 1999b; Czarniawska and Hernes, 2005b; Robichaud and Cooren, 2013), how actor-networks are “stabilizes into so-called macro-actors, black boxes or institutions” (Hernes, 2008, p. 65). In my experience ANT typically do not focus on the embedded history as much either, where each actor in an action-net traces its agency back to an origin in an event/action that in this was is always embedded in the constellation.

Organizations are thus seen as a process to be identified in this dissertation. Ontologically an organization is brought into being as it is performed (Robichaud & Cooren 2013), or as commented by Hernes (2008) actor-networks are forever in the making and to assume that something is stable is simply a way of talking about the world. However, what then makes organizations different from simple interactions? Which is where our material-semiotic sensibilities come in that can explain how actions can act through time and space and form an action-net. The big question is how some relations and interactions make some networks robust and other not.

Objects is what enables interactions and social relations of the now to extend through time and space (Latour 1987). Objects contain our agreements, norms, interpretations etc., and will then have an effect on all subsequent interactions through their affordances and constraints. As over time more objects emerge in a network cementing the relations and slowly expanding the network, what we perceive as organizations emerge. So, what makes organizations different from simple interactions is the objects that stabilize them but also makes them historically dependent.

Networking and staging - forming organizations

Drawing on the hermeneutics of Ricoeur, Taylor (2009, p. 157) divides communication into conversation that is the constant shared talk in the now and the text that is the form of communication that may be extended in time and space through a non-human actor. This is reminiscent of Weick’s distinction between face-to-face physical interactions and the loosely coupled, distributed and mediated interactions (Belliger & Krieger 2016). The point here is that not all interactions birth objects, and we can largely divide events into those that do and do not translate into objects.

The CCO tradition cited here is also very limited as its purely linguistic. I find “texts” to be too limited, and the idea that organizations are merely built from endless rows of communication episodes too simplistic. Communication can also take place through any non-human actor, through scripts for instance (Akrich 1992), or through design of work space (Dale and Burrell, 2008). Materiality can be designed to structure, control, prevent or in other ways exert agency and control or convey information. However, the argument that texts and objects exist outside conversations, that they are “permanent” and can thus stabilize ephemeral interactions binding them over time

and space, fits well with our material-semiotic approach. Like a meeting memo documenting an agreement reached previously, or a seating plan in the office cementing a hierarchy. Panitz and Glückler (2017, p. 163) have an interesting study on how global industries constitute themselves and rewire themselves through ranges of business events like congresses:

periodic local encounter into the reproduction of an entire global industry's network

Belliger & Krieger (2016 p. 112) suggest understanding sensemaking as networking and as staging – networking defined as “bringing many non-human actors onto the stage of social interaction and extending interaction beyond the hic et nunc of face-to-face communication”. So, as soon as an object has been created you have the first part of a network. Rather than the term networking it would use the term enacting or configuring, as the purpose of staging is enacting actor into specific configurations as discussed further down. Belliger & Krieger (2016) argue if sensemaking includes networking and staging there is no gap between micro- and macro-actors as staging brings in actors that are not physically present (ibid). A bit strange comment though as ANT that Belliger & Krieger (2016) build upon generally do not accept the micro-macro distinction in organizational analysis in any case, as Hernes (2008, p61) comments:

“one of Latour’s most important contributions is his persistent argument against slicing the world into levels of analysis”.

I see sensemaking as contributing to configurations of actors as the narratives that are strung together and put into object forms also become part of network constellations. I do not agree with their use of the term staging, although I wholeheartedly agree that actors not physically present can be brought in through objects that act as what we would call intermediaries. However, staging unlike sensemaking is a very conscious and strategic activity, as discussed in the next section. I thus see it as problematic that Belliger & Krieger (2016) here ends up equating everything:

Networking, sensemaking, staging, and narrative all refer to the same process by which organizations are constructed, maintained, deconstructed, and transformed (Belliger & Krieger 2016 p. 246)

Whereby the terms lose their analytical significance. They do directly not claim that the terms are identical, but the difference is vague. I can agree that they are all aspects of organizing, but not that they are synonymous, especially sensemaking and staging I see as distinct. Sensemaking as the partly conscious but ad-hoc collective effort to construct meaning in a specific situation that depends on many actors and staging as a very planned and strategic effort where actors are enacted, and networks configured, for specific purposes. Staging is done with a plan and may stretch over many episodes, which is discussed in the next sub-chapter.

Implications of ICT for organizing

A quick side-note on ICT as it has been one of the biggest changes for human interaction in recent times and has been pivotal for several of our case studies. The perspective presented here also implies that the activity of organizing depends on the forms of communication and interaction available. What some have termed “new media” (ICT) has become the decisive form of communication and therefore condition how networking and organizing takes place (Belliger & Krieger 2016). Thus, the situation has changed. We seem to be entering the era of the global network society (Castells 2010a, 2015). There is nothing new about networks or globalization though (Steger 2002), what is new is the ICT based network technologies that provides new capabilities to an old form of social interaction (Belliger & Krieger 2016; Castells 2015; Sassen 2002, 2007). Many newer studies of social movements illustrate the impact of ICT (Castells 2010b; Moghadam 2012). If communication, in the broadest sense, is how organizations are constituted then information and communications technology have certainly affected organizations.

Staging & sensemaking

The term originates from Goffman (1959) who understood staging as when a social actor that is constantly concerned to insure the success of communication, interaction, and cooperation by means of mobilizing and drawing together many different actors like texts, scripts, supporters etc. An important aspect is the separation into back-stage and front-stage, where the back-stage is where strategic planning takes place, and the front where staging happens. Staging is all about the effort taken to define the situation, to frame the interactions, by means of controlling information through selectively enacting actors (Goffman, 1959). Research in design has raised Goffman’s metaphor from the focus on individuals to the network and shown how it through conscious staging is possible to manage innovation processes (Clausen & Yoshinaka 2007). It’s all about staging temporary spaces and organizations (Clausen & Gunn 2015), by controlling which human and non-human actors will be present. Clausen & Gunn (2015) use the term ‘staging’ to focus on the specific elements and types of interaction brought together.

Temporary organizations or spaces is an interesting notion, but they non-the-less span time and space through the objects that are produced, often stitching together strings of temporary spaces. Or as explained by Latour (1996 p. 231) the clothe we are wearing comes from somewhere else and the words we are using were not formed for this occasion, and the walls, floor, and ceiling were constructed by workers no longer present. Some of the actors brought into play are local and physically present, while others are far away and maybe even ephemeral, like the discourse on global warming or findings from fieldwork, which is how the local and global exist on a continuity.

Goffman also see the self as a social construct where individuals have no fixed core identity (Goffman 1959), also supported by newer research on identity (Alvesson 2010; Hammack 2008; McAdams & McLean 2013) that shows how hard it is to answer the question “who am I?”. Identity here is something arising on the stage during the play, where actors adopt roles depending on the situation. An important point is that roles & identities never exist alone. I recently became a father, that role only emerged because

there is a baby. I am also a teacher, which is only possible because there are students. This place constraints on the actor through expectations of the audience, the plausibility referred to in sensemaking above. However, the actor also acts as playwright, stage-designer, author etc. and is not merely a player, which is why it's a theory of staging. The actor can choose between available roles, choose which actors to enact on the stage, control the information available to the audience etc. Even during a single conversation role and identity can shift multiple times (Hansen & Dorland 2016), as the actor tries to enact various available roles to shape the situation (Weick 1995), only restricted by what the actor perceives as "believable". The point here is that actors are normally compelled or constrained to act within a spectrum of actions.

This is another aspect of what gives organizations, which in our flat relational ontology is assemblages of actors associating in certain ways that might appear as "macro" to onlookers, as they force actors into being and acting in certain ways. But what can enter an association are only elements in their concreteness and specificity (Michael 2017). More actors might be drawn into these relations which can then take on different forms - "but what is analytically resisted is recourse to 'broader' or 'higher' or 'deeper' social processes such as class or gender or market dynamics as a way of accounting for these relations" (Michael, 2017 p5). It all starts out from the specific and concrete actors that over time build larger and larger networks. Staging here is nothing more than mediating, translating, and enrolling human actors into a hybrid actor, a network, composed of human and non-human actors.

Other scholars within material-semiotics have analyzed specific examples, like the hybrid-actor of the CEO that is composed of a person sitting in a specific location in a network together with a computer with specific access (Law & Hetherington 2000). The CEO only has power because of the place he inhabits in the network, and only because of the objects that enable him to act at a distance. Clausen (2015; 2007, 2009) have some of the most specific research on staging in relation to organizations and innovation, showing how product development and innovation processes can be staged by enacting specific types of interaction, roles, and actors. In relation to our earlier discussion of macro-actors what is interesting is that actors can then stage themselves as spokesperson for these macro-actors, like a CEO or general secretary, or maybe just a chief press secretary. A macro-actor is thus a network, an association between actors, with a spokesperson equipped with a "voice" to speak and act on their behalf (Czarniawska & Hernes 2005), and part of staging is maneuvering into the role of spokesperson.

Different approaches to staging and organizations

Within the camp of process perspectives on organizations there are still variations, especially what has been called the entrepreneurial vs ecological approaches (Gherardi and Nicolini, 2005). They are not incompatible but complementary as concluded by Gherardi & Nicolini (2005) as they just focus on different aspects of how macro-actors emerge. This has practical implications for staging depending if you are a local social innovation initiative or a policy maker interested in broadly empowering such initiatives. The relevance in research of each approach depends on Unit of Analysis (UoA)

and delimitation, among others.

The entrepreneurial approach advocated by Callon, Latour and Law privileges the protagonist and develops a narrative trajectory that makes sense when focusing on specific translations like in the story of the scallops and the fishermen of St Brieuc Bay (Callon 1986) or specific product development processes (Clausen & Gunn 2015). Here staging is very concrete and specific, focusing on situations of face-to-face interactions between knowable actors.

The ecological approach privileges the actions while backgrounding the actors and stem from symbolic interactionism, from which Weick and Goffman emerged. It is visible from Czarniawska's focus on action-nets instead of actor-networks (Czarniawska-Joerges and Hernes, 2005). If focusing on hundreds of translations it is better represented in ecological terms, like the implementation of internal control procedures across local municipalities in Italy (Gherardi & Nicolini 2005). Looking at how actions create actors, i.e. objects, that span time and space in the ecological perspective. Rows of events slowly amass actors, creates a structure, which then structure subsequent actions. The protagonist is gone, there are thousands of actors operating within the action-net. Macro-actors like a government can affect whole action-nets by cementing or removing structures, for instance making science shops illegal or mandating science shops at all universities. Even here though there can be found a protagonist as well, a spokesperson might be wielding the full power of the macro-actor and could thus be studied as a protagonist, like a prime minister or president. Staging in the ecological perspective is a very different exercise, as the individuals and face-to-face interactions are mostly gone. It is macro-actors and objects being constructed to act at a distance across vast networks.

The entrepreneurial approaches like ANT thus focuses on unbroken chains of relations, connecting even the lowest levels or an organization with the CEO, which is why there are no levels. While The ecological approaches like CCO (communication constitutes organizations) do not focus on chains of relations or actions of actors but on chains of events of meaning-making expressed in texts. Action-nets while focusing on actions like ANT see the actions as the actors and not the objects or individuals, so actions in that approach corresponds more closely to events.

One might then best change between one and the other approach, when going from discussing the foundation of a single initiative or small networks or the very beginnings or an organization to looking at the change within gargantuan macro-actors like a public administration. What Weick himself terms ontological oscillation (Weick 1995 p. 35) referred to earlier that he views as a strength while others see it as a problem (Burrell & Morgan 1979). This is because such choices are not theoretically neutral (Gherardi & Nicolini 2005), so scholars must be aware if and how they switch and the implications. Especially in our case though, where we try to follow the emergence of a macro-actor over 3-4 decades, it will likely be unavoidable to combine both to generate a rich, thick, and convincing story of specific cases while also covering the breadth and width of our material.

Both perspectives offer insights for staging. It's a fine balance to either focus on how to affect or channel the dispersed agency of large ecologies, or the power and action

possibilities of a protagonist. On one hand it is staging for macro-actors on how to affect systemic change, on the other it is the possibilities for individuals or small initiatives to gain power and have an impact. One is how to wield the power of a macro-actor efficiently or how to change it, the other how to construct the macro-actor in the first place.

Chapter 5

Methodology

Disclaimer: Excerpts included from deliverable "D4.3: Methodological Guidelines for Batch 2" published in Transit.

Purpose: To create an overview of and discuss the methodology and research design used both in Transit and this dissertation to gather, order, and analyze data.

Summary: The chapter covers several distinct research activities. 1) The research design, 2) the methodological guidelines for the two batches of case studies, which largely failed in its intent to harmonize the case reports to facilitate easy comparison and analysis, and the meta-analysis that generated the critical turnings points database. 3) A discussion of the problems inherent in Transit and the empirical data I can draw upon in relation to my focus in this dissertation. 4) My approach to analytical generalization through typologizing that I have applied both in Transit and this dissertation, which I choose and adapted in order to handle some of the limitations imposed by my reliance on empirical data from Transit.

Findings/conclusion: The diffuse nature of social innovation combined with the empirical diversity of the case reports required a reflexive approach. The meta-analysis however served to solidify, substantiate, and/or falsify the findings from the comparative analyzes, leading the way to very solid although dispersed theoretical outcomes.

Before I start on this chapter it is important to understand that I did not influence the original methodology chosen for the first batch of case studies in Transit but was one of the main authors of the methodological guidelines for the second batch of cases, which gave me some opportunities in influence and adapt the methodology, and I contributed to the development of the meta-analysis. However, I have had to adapt to the methodological choices already made and negotiated in Transit and construct a methodology and framework in my dissertation fitting both the data from Transit and my personal interest and perspective, leading to some conflicts and difficulties in my theory development.

On another note, we have studied individuals, but have not spent enough time with each individual or in each organization to get into depth with individuals' identities. We thus delve no deeper than the interaction between individuals, and what we can infer from that, except for the Living Knowledge case study where some of the informants have been followed for 3+ years over numerous interviews, events, and conversations. The focus is thus mostly on organizing between individuals, staying short of analyzing individuals themselves.

I will start the chapter by a short overview of the empirical data that I have available through Transit and other sources, followed by the research design and methodology for gathering it, a discussion of the unit of analysis (UoA) in the form of a published article on the subject, a discussion of the inherent conflict between Transit and this dissertation, ending with a section on the method for analytical generalization I have generally applied in all my work.

The empirical data

This paper is based on three distinct sources of data from Transit: two batches of case studies (Jørgensen, Dorland, *et al.*, 2014; Jørgensen *et al.*, 2016) and a meta-analysis (Pel *et al.*, 2017). There were 20 cases studies in total, each comprised of minimum two local cases and the international network. In total, the cases involved 300+ interviews, 400-800 documents, and 240-1840 hours of observations, assuming all case studies adhered to the minimum requirements (Jørgensen, Wittmayer, *et al.*, 2014). I know that most cases involved more interviews than required but are unaware of how many hours of observation were done in general. The first 12 cases were conducted and analyzed comparatively in D4.2 (Jørgensen, Dorland, *et al.*, 2014), which fed into the planning and research design of the subsequent 8 cases. All 20 cases were comparatively analyzed through coding and topologizing as presented in chapter 4 in D4.4 (Jørgensen *et al.*, 2016). I conducted the case on the Living Knowledge network and science shops personally (Dorland and Jørgensen, 2016), while my colleagues at Aalborg University were involved in the fieldwork for 3 cases. After the end of the case study and the meta-analysis I have continuously been involved with the Living Knowledge network by helping to start new science shops, having seminars in Umeå and Lund in Sweden for instance, and presenting part of the research in this dissertation at the 8th Living Knowledge conference in Budapest May 2018. My role in the rest of the cases was,

as part of Aalborg University that were work package leaders of the qualitative data gather, to advice, consult and comment the case reports written by the consortium, and take part in the comparative analysis of the cases. In that capacity I wrote chapter 4 in D4.2 (Jørgensen, Dorland, *et al.*, 2014), chapter 3 in D4.3 (Wittmayer *et al.*, 2015), and chapter 1-4 in D4.4 (Jørgensen *et al.*, 2016). Some of the text in this dissertation is a further development of the work done for these deliverables.

The cases studies done in work package 4 (WP4) fed into the meta-analysis that covered 480 data entries from 80 different LSIs within the 20 networks based on 160-240 interviews, of which I covered 4 LSIs (24 data entries). However, not all 80 cases were finished or deemed adequate at the time of the analysis done in D5.4 (Pel *et al.*, 2017), which was then based on 67 LSIs covering around 400 data entries. Each data entry is 1,600-2,400 words, composed of raw interview data and analytic text by the researchers, which makes the total amount an estimated 2000 pages of text at the time of extraction. The entries in the database were ordered by tags, networks, and geographic location. To streamline the understanding among the researchers and ensure some harmony in how we applied our common vocabulary and interpreted the guidelines, both during the case studies and development of the CTP database, three theoretical integration workshops were held that encompassed both theoretical development and delving into the empirical data.

All data used in this dissertation is in the public domain and accessible at the Transit webpage (<http://transitsocialinnovation.eu/>), and all acknowledgments to the case researchers for both WP4 and the CTP database are done through references.

My personal data mostly relate to the Living Knowledge network, and I possess extra material beyond the published case study on the Living Knowledge network as I as the case researcher have unpublished interview transcripts and personal communication that are not accessible. I have also continued to gather data and do fieldwork in relation to the Living Knowledge network far after the case study and CTP analysis were finalized and have been in touch with more than 15 local science shops in the last couple of years. For instance, in 2017 I was in Umeå in Northern Sweden to hold seminars and help a group of university staff to start a new science shop, and in 2018 at the Living Knowledge conference in Budapest to present some of the outcome of the Transit project of relevance for science shops, as well as the final Transit conference in Rotterdam 2017 where I also presented for and interacted with science shops. I have also done a little fieldwork within FabLabs, Impact Hubs and Ashoka when opportunities presented themselves. For the rest of the cases I mostly have had to rely on the publicly available data, although I have been part of the team guiding, discussing, and commenting the case studies as they developed, giving me a more in-depth understanding of the cases than available only from reading the published reports. I also participated in the mentioned theoretical integration workshops that I will discuss further down. However, only having access to mostly secondary data has presented challenges both in Transit for us that did the comparative analysis and for this dissertation.

One implication is that I with exception of the Living Knowledge case do not have direct access to the interview data and observation notes, although the CTP database is largely composed of interview data alleviating some of the problem. All researchers

in Transit have faced this challenge, and the theoretical integration workshops was a way to combat eventual discrepancies or misunderstandings. And through my role in WP4 I have more in-depth understanding and overview of the cases than most other researchers in Transit.

Research Design Overview

In Transit an embedded case study approach was used to iteratively develop a theory on transformative social innovation (TSI) by jumping between empirical investigation and development of theoretical insights in a type of abductive approach inspired by the idea of a middle-range theory, although this proved challenging as discussed later. This approach combines both qualitative in-depth case-study analysis as well as a qualitative-quantitative comparative meta-analysis, which resulted in the critical turning points database described above. In WP4 that Aalborg University where responsible and package leaders for the focus is on grounding the theory through in-depth case study work.

The qualitative work package involved two batches of embedded cases studies henceforth referred to as batch one and two, first on 12 social innovation networks followed by a batch of cases focusing on a further 8 networks. Each case study encompassed minimum 3 embedded cases, two or more on local initiatives and one on the international network(ing). The two batches did not use the same methodological guidelines. Where the first batch was open and explorative, the second batch was intended to elaborate the TSI understandings as developed through the first batch of in-depth case studies and the version of the TSI theory at the time. I was not involved back when the research design and the first methodological guidelines for batch one were developed, but conducted one of the cases in the first batch on the Living Knowledge network and was one of the main authors for the guidelines for the second batch.

One of the big changes from batch one to two was an increased focus on TSI as evolving phenomena and the development of social innovation processes over time, where the first batch of case studies was based more on a variance theory perspective. I thus wrote a guideline on archival research and more instructions for drawing up social innovation timelines to help increase our historical understanding of the social innovation processes. To increase our understanding of empowerment processes and the interactions involved, we also included a specific focus on mapping actors and their relations in an actor-map, both as part of doing interviews and as a type of analysing data. The two batches still have broad similarities, like the embedded case design, unit of analysis (UoA), the mixed method approach, and the focus on interaction between different elements to co-produce transformative change. I will explain the case study methodologies more specifically below.

While I agree on the ideas behind the guidelines for batch one I largely disagreed on the way they were operationalized, as I will also discuss later, as it had negative consequences for our empirical work and my focus in the research, a focus which of course is rather subjective for the different partners in the Transit consortium. Basically while

both sets of guidelines were well written and developed there was a failing in staging the empirical work to ensure all researchers understood and agreed on the purpose and process, and in some instances also unrealistic expectations that all case studies conformed to a specific outcome despite the diversity of the empirical phenomena. This is especially strange as there was a general agreement and understanding that we were venturing into unknown empirical territory and the theoretical area was likewise immature and fragmented, and thus it was a fools errand to think we could predict and make the data conform to such specific outcomes.

After the empirical case studies in WP4 were completed a meta-analysis was started as part of work package 5 (WP5), the so-called quali-quantitative analysis that focused on the concept of critical turning points (CTPs). This process started at the end of the second batch of case studies. The meta-analysis did not require researchers to involve the same local initiatives that were subjects in the case studies among the four required from each social innovation network, but there were overlaps between the two sets of local initiatives. In Transit overall there has been 100+ different local initiatives involved. For instance, from the Living knowledge network that I were responsible for one local initiative were used both for the case studies and in the meta-analysis, bringing the total number of local initiatives from Living Knowledge up to five.

Integration of empirical investigations and theoretical development

The research design was built around the idea of a middle-range theory (Haxeltine *et al.*, 2015), which is a type of grounded theory as the theory is formed first and foremost through empirical work. Unlike grounded theory the theoretical work feeds back into new empirical investigations, and it is thus a process of iterating back and forth between theory generation and empirical work, in a type of abductive methodology (Alvesson and Skoldberg, 2009). In the single-case setup where both empirical and theoretical work is done by the same team this is rather straightforward, but in a multi-site project researching 20 networks with 60+ embedded cases carried out by 12 different universities across two continents this is a major hurdle. Especially as the leader of work package 3 (WP3), the theoretical work package, was not involved in the empirical investigations although other researchers were involved in both.

The attempted solution was a series of three theoretical integration workshops during the project, where all case researchers met each other, and the researchers involved in the theoretical work package. The idea was to streamline the understanding and vocabulary as well as sharing insights from the cases that could go into the theory development. This type of theory development on this scale is novel, and theoretical integration workshops can in themselves be seen as socially innovative but would in hindsight likely have been staged differently.

The problem was that practically there was little interaction between WP4 and WP3 during the first 1.5 year and the empirical investigations and theoretical development were running in parallel with little to no cross-fertilization. So, neither an abductive process nor empirically based theory development. The theoretical development was thus mostly based on desk-research and literature reviews, initially. The problem was

identified and criticized during the first theoretical integration workshop, and several actions were taken to further integrate the two work packages. For instance, I as one of the core members of the WP4 team went to a theory-focused workshop in Spain following the first theoretical integration workshop, to ensure that the first set of propositions developed in Transit was adequately grounded in our empirical data. The timelines in WP3 and WP4 were also altered to allow adequate time for the output of each work package to be considered in the work of the other. In the end WP5, the meta-analysis, managed to fully integrate the two streams of activities, as the focus in the qualitative survey were based on the outcome of WP4, and were used to substantiate, solidify, or falsify the propositions developed in WP3. The lack of initial integration did leave some footprints in the final theory though that I will discuss later.

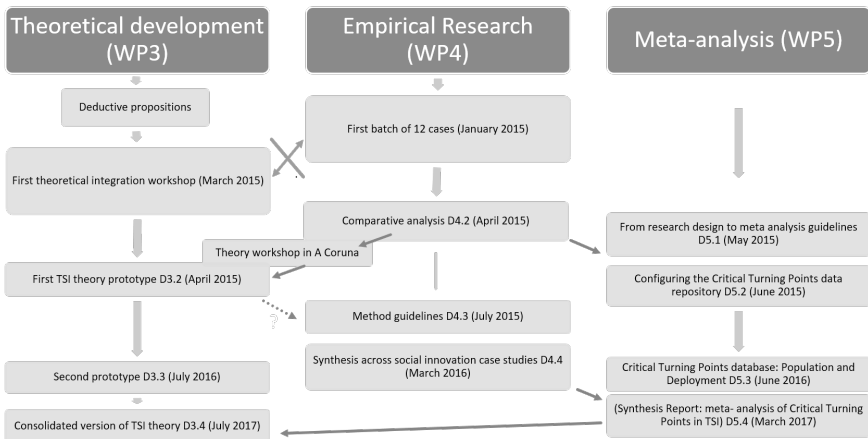


Figure 5.1 - Diagram over the process in Transit and relationship between different work packages and deliverables.

Research methods and methodology guidelines

Empirical case studies - work package 4

I will here shortly write an overview of the research methods and methodology for the case studies, going into as few details as possible, as it is hardly novel and a comprehensive overview can be gained from the Transit methodology documents D4.1 & D4.3 (Jørgensen, Wittmayer, *et al.*, 2014; Wittmayer *et al.*, 2015). The data are divided into three categories: document review, interviews, and participant observation. The guidelines had a minimum requirement for each category and templates to fill out to

document that the requirements had been met. I will here summarize the guidelines for each type of data.

Document review

Primary sources – documents authored by the initiative/network under study:

- Reflect on the author, target audience and the purpose of the document – for whom and what purpose was the document written (e.g. sales material)
- Reflect on the context in which the document was written – e.g. some types of meeting minutes may gloss away disagreements
- You might gain access to confidential or classified material that cannot be used directly in your report – but might be valuable for directing further research

Secondary sources – documents authored by outsiders to the initiative/network under study - both grey literature and peer-reviewed articles:

- This includes all documents authored by outsiders, also here consider the context, target audience and purpose of the document as well as the author.
- It does not only include documents that directly relate to or talk about the initiative/network under study, rather it might include documents clarifying aspects of the social context, such as public regulations, public discourses with regard to specific topics

Media – documents authored by outsiders to the initiative/network under study which feature in online and offline media (e.g. articles, films, blog posts):

- A media analysis includes pieces which directly relate to the initiative/network under study and gives a rough overview of how intense the media reputation of the initiative is:
- How many articles, films, radio contributions have been published? Can they be found on the internet (by external resources beyond the initiative)?
- What were the main reasons/pegs for the media contributions?
- Which media (mainstream newspaper, expert journals, internet platforms, You Tube, etc.)? Distinguishing e.g. between large and small media, and political orientation of the media
- If such analysis is not feasible the network/initiative should be asked about their reputation in the media during the interviews

Archival ethnography was another focal point, completely new to the second batch of case studies that I wrote a 3-4-page guideline on. It covered guidance on how to evaluate documents depending on their distance to a described event in time, to evaluate

archives from perceived “silences” like missing perspectives, time intervals, and achieve policies excluding certain kinds of information, and lastly how to deal with overabundance of material. We decided to include this section due to our increased focus on the historical development, and it became my responsibility as that came from my focus in the comparative analysis of the first batch of case studies.

However, I judge that these guidelines on archival ethnography were largely a wasted effort, which I will return to in the evaluation of the research design further down.

Interviews

Interviews were by far the largest source of data for most of the case studies in combination with observations, with a few exceptions. Transit interviews were organized as so-called semi-structured qualitative research interviews (Kvale 1996; Kvale 2008) defined as: “...an interview whose purpose is to obtain descriptions of the life world of the interviewee with respect to interpreting the meaning of the described phenomena” (Kvale 1996; p. 5). I furthermore specified that there should be a balance between interviewees from inside and outside the initiatives under study, based on my experience from batch one that had a very internal focus. This was yet again also largely a failure as the second batch of case studies mostly also had an internal focus and an imbalance in interviewees. Actor-network theory framed as out flat relational ontology had as mentioned above come more into focus in batch two, so there were also guidelines and instructions on how to gather data on relations between actors and a requirement to produce an actor-map diagram, which were more successful.

The requirements were a minimum of five-ten interviews per embedded case, although most did more interviews. A few cases also had three local cases instead of two, both with at least five interviews. So, while the cases studies collectively did minimum 300 interviews the depth of each embedded case were limited, which is one of the reasons that it was hard to get a balance between internal and external interviewees.

Participant observation

A great many forms, types and methods for participant observation was described in the guidelines, but in the end the types employed depended a lot on the specific social innovation network in question. The requirement for each embedded case was 10-80 hours for local initiatives and 2-12 hours for the international networks. The observation could be just observation, in some instance participation like workshops, or action-research where researchers actively worked for or in the networks/initiatives. The requirements were here very flexible as the nature of the social innovation networks were also very different, spanning from Basic Income that have few to no specific activities to Impact Hubs that have a daily work schedule for hosts. The border between the international network and local initiatives can also be very fluid for some of our case. In Living Knowledge for instance there were no separate organization or resources in the international network, it was a thin and dispersed organization where the local members collectively maintained various activities.

My observation was sometimes action-research and sometimes just participation, and took place during Living Knowledge conferences, EU project meetings, and

seminars at universities interested in starting science shops, and my co-author on the case study had personal work experience from a science shop (Dorland and Jørgensen, 2016).

Report templates and methodological guidelines

The idea behind the guidelines was on one hand to ensure quality of the empirical investigations, but just as much to ensure easy comparability across all the cases. We as the team responsible for the comparative analysis also had no way to handle the large quantities of data involved, and so had to rely on the case study reports and feedback from the case researcher on our analysis as a quality check. The WP4 group doing the comparative analysis collectively represented 7 of the 20 case studies, but for the remaining cases the analyses were based on the case study reports. In any case most of the “raw” empirical data is in languages other than English, which would mostly have made direct access to the raw empirical data useless as I am only proficient in English and Danish.

The individual analysis in each case report largely had three parts: the development of a timeline, the development of an actor-map, and the synthesis of the data into a specific template. Condensing and structuring data in a specific way is an analytic process and were different in batch one and two as the case report template was completely changed. For batch one the template was specified down to the smallest detail, with 3 levels of headlines. The idea was that this would make it extremely efficient to compare across the cases and ensure reliability of the research, which it did not though.

One of the issues was that the cases were so different that it was difficult to make them conform to identical templates especially as the templates were so specific, and thus the content in the different sections were hardly comparable in any case, and many unexpected phenomenon and findings turned up that did not fit into any specific sections in the template either. Differences in academic backgrounds also led to very different types of analysis. So, some case reports were largely thick descriptions with copious amounts of raw data in the form of quotes and observations, while other reports were highly condensed and generalized interpreted text. The frustration of some case researchers was palpable as they had a story to tell, but as it did not fit into the template they “hacked” the template, i.e. interpreted the intent of the different sections so widely that it could fit their story. As a result I for my part of the comparative analysis in D4.2 (Jørgensen, Dorland, et al., 2014) choose to read and code all the case study reports in batch one, a very labor intensive process, instead of as envisioned only reading one specific section across all the reports.

There was as mentioned an assumption that rigid and meticulous research design and methodology is a requirement for valid and reliable research, i.e. it should be repeatable. However, I would argue that that is a fool’s errand in this situation, and rigour in this type of qualitative research comes through reflexivity and transparency. On one hand the project is very explorative because social innovation is a new and rather undefined area and the UoA is so fluid that its near impossible to predict and define the outcome of the cases beforehand. Secondly, due to the evolving nature of the phenomenon under study and the focus on ongoing processes the findings can never be

repeated in any case. The impossibility of repeatability in qualitative research is hardly a new discussion, and I felt that the attempt to ensure reliability along this dimension did more harm than good here.

The template and methodology for batch one was already completed when I joined Transit and started as case researcher on Living Knowledge. I as well as many other case researchers in Transit disagreed with the developed template, which resulted in some large changes for batch when I was one of the main authors for the guidelines. For the second batch the template was thus very open-ended, with only 1-level headlines specified. This allowed flexible and rich cases that could develop during the empirical investigations and report what was interesting, relevant, and unique from the specific cases. What was reported was of course then very different from case report to case report. Instead a different way to ensure comparability was attempted (beyond the methodological guidelines above), by defining a common vocabulary, the design of a conceptual map/diagram as a guide, and an extensive interview-guide with questions on the different topics of interest coming out of the analysis of batch one. However, the number of guidelines, conceptual explanations, and especially interview questions became so extensive that it became impossible to cover for the case researchers. The case researchers thus only covered the sub-set of questions they found most interesting or relevant. Some few case researchers also choose to go in a completely different direction with their own analytical framework (I have chosen not to describe the analytical framework of Transit here but refer to it in the chapter on my own analytical framework), based on their own academic affiliation and background. I felt this was disloyal to the project consortium, I myself also applied my own framework and analysis on the data but did so in my own time and not in the case study report or comparative analysis, which made those reports of much less relevance for the project. It also somewhat fragmented the final theory along different lines. Lastly, as the team responsible for the comparative analysis realized the situation we developed a table for the case researchers to fill out that summarized the cases along more specific aspects with direct references to the case reports in case more details were necessary. However, again I found myself reading and coding the reports themselves, although I due to time constraints and a more specific focus at this stage only read specific sections of the reports and otherwise relied on the tables.

So, as I have pictured here the process was not without mistakes or difficulties but was actually satisfying and led to some impressive outcomes as the project was flexible and aware enough to adapt the process and activities along the way. There were also several other topics discussed in the guidelines, like researcher reflexivity, relations, reciprocity, and a whole section on how to operationalize the guidelines, but I feel there is little reason to repeat that here.

Meta-analysis methodology - work package 5

While I was also involved and co-author of the research design, methodology, and configuration of the CTP database (Pel, Bauler, *et al.*, 2015; Pel, Kemp, *et al.*, 2015; Pel *et al.*, 2017). My role in the development and planning was smaller than in WP4, and most of my time was used on empirical work and the comparative analysis across

the database. However, I did have some key input on the methodology and the design and operationalisation of the database.

The meta-analysis was designed to encompass the research philosophy that developed in Transit in the preceding phases of research, and somehow build on and deepen the Transit insights as developed at this stage. For instance, the meta-analysis was changed from the originally envisioned quantitative survey into a quali-quantitative analysis, and it was based more explicitly on a relational and process perspective on TSI.

The most obvious function of the meta-analysis was solidification, substantiation, and falsifying of theoretical constructs and hypotheses. A survey was deemed inadequate as it became clear that TSI was better understood through process theory than variance theory, and together with the developing relational perspective this resisted the decomposition of TSI processes into cause and effect that could be mapped and uncovered through a questionnaire. The proto-theoretical propositions coming out of WP3 and WP4 were not developed for falsification and verification either. In addition, the originally envisioned survey would not have reached a size that could generate statistically significant outcomes in any case. There were also arguments that such systemized and compressed outcomes that a survey could generate would be too 'dry', abstract, and general and thus not bring the practical insights that we aimed to.

So, the meta-analysis set out to qualitatively compare process data in relation to what was defined as critical turning points, defined as moments in TSI processes, marking the move from one phase in a SI initiatives history into another. Without the CTP the initiatives would be doing different things. At this stage we had several proto-theoretical insights on the processes in question as visible in my typologies in D4.2 and D4.4 (Jørgensen, Dorland, et al., 2014; Jørgensen et al., 2016) that are included in the next section as well, like the typologies on initiation & start-up patterns and growth & development. Several of these patterns of emergence and expansion seemed to denote phases, especially as the earlier and later manifestations (timewise) of some networks were assigned to different categories, and thus particularly suitable for such a meta-analysis to explore. We thus hypothesized that going from one phase to another would entail such critical turning points. The meta-analysis is aimed at producing a sequence of such specific points on timelines across a vast number of local initiatives.

As visible my early comparative analyses played a role in the choice of focus for the meta-analysis, although I escaped from the responsibility of writing any substantial part of the first deliverables in WP5. I will refrain from describing the decision and design that the meta-analysis underwent in any more detail and will merely summarize the final form. Each CTP is composed of data entries along six topics as explained in D5.4 (Pel et al., 2017, p. 11):

- **Contents.** What did this CTP consist of, and when (at what date or in which specific period) did it happen? In what way did it constitute a CTP? 2. Co-production. What particular events/people/developments/circumstances/conditions/ spatial environment made the CTP happen?
- **Related events.** What earlier events (coming from within or from outside) were crucial to the CTP to happen and when (at what date or in which period) did

they occur? Which important later events were evoked by the CTP and when (at what date or in which period) did they occur?

- **Contestation.** To what extent did the CTP involve contestation? What was the contestation about, and who were involved in it? How (if at all) was the contestation overcome?
- **Anticipation.** Was the CTP, as identified now, also understood as CTP at the time when it occurred? Or is it an understanding that developed later? Had it (and the events/people/etc. that evoked it) been foreseen or anticipated?
- **Learning.** What are the change ambitions of your initiative, and how did the CTP make a positive or negative contribution towards achieving those? If you were to draw a lesson about this CTP, what would this be? How does the CTP relate to the current challenges of your initiative?

That data stems from qualitative interviews, and each topic is described in 400-600 words composed of quotes and analytical text. The 6 CTPs for each initiative are covered by 1-3 interviews. Each individual CTP is thus usually based only on one informant, although I in my own data entries triangulated 2-3 sources for many of the entries. In any case, this means that the empirical data the CTPs are composed of is subjective, creating some limitations on what can be inferred from it. It is a great source of narratives, on what is seen as important by practitioners, on identity and motivation etc. It is a harder to use as mapping of the context of the initiatives, or a factual timeline for the total life of an initiatives. Not that the events uncovered are not true, but they will hardly cover the total life of an initiative.

I found the idea and conceptualization of the CTPs very interesting and relevant, as they are structures of events which make Weick's process approach to organizations especially relevant for this type of data (Czarniawska, 2006).

Dissertation vs Transit

One of the biggest challenges in this dissertation has been the limitations and the conflicts between the empirical basis provided through Transit and my own research focus. The previous sections described the empirical data, research design, and some methodological choices. This section will contrast the design of and data from Transit with this dissertation, discussing the potential conflicts and how they were accommodated. It has at time been an uphill battle, but despite these challenges the dissertation succeeded in finding a specific angle that accommodated both the limitations of the empirical data and the interests in social innovation from a more STS-minded perspective emphasising the materiality and spatiality of social innovation processes.

Most EU projects are composed of large consortia with multiple academic professions and cultural contexts, and disagreements around conceptual frameworks, theoretical perspectives, methodological approaches etc. are business as usual and to be expected. As Transit was my third EU project as I became a PhD fellow this was not entirely a surprise. However, there were three problems here. As a PhD fellow I was not the best equipped to tackle the ontological and meta-theoretical conflicts in Transit, a project with a theoretical focus on frameworks at a completely different level than previous projects I had worked at. Secondly, with a background in Science & Technology studies and Critical Theory I was part of a minority with my perspective in Transit. Lastly, I joined Transit one year into the project and thus had no influence on the initial decisions. Especially the guidelines for the first batch of case studies were formed and structured in a way and based on logics in opposition to my approach and perspective, as discussed in relation to the research design and questions above. The problems can be divided into two areas:

- Ontological differences: Both Transit and this dissertation based their framework on a flat relational ontology, although some cases adhered more than others to this agreed upon approach. Transit however saw SI as immaterial in its working definition, but luckily this did not exclude materiality as a focus in the empirical studies.
- Problems in research design: Especially batch 1 had a very different focus, while I was in a position of influence when designing the research guidelines for batch 2.

Ontological differences

The ontological and theoretical misalignment really became apparent at a 3-day working group meeting in A Coruña in the spring of 2015 on the theoretical framework, where I was representing the qualitative work package 4 (WP4) led by Aalborg University. On the agenda was a working definition for social innovation and the next version of our theoretical framework, supposed to form the foundation for the second batch of case studies. Among the discussions was the inclusion of a multi-level perspective (MLP) inspired framework, to defining the context for the second batch of

case studies along the lines of local, regional, and national foci. However, as we were committed to studying international networks, and still were far away from understanding how SI initiatives relate to their context, and even which context is relevant and its delimitation, would have made it problematic to predefine the context to be studied. Luckily, MLP was not adopted. A second discussion was centered around social innovation being exclusively social in ends and means, like Cajariba-Santana (2014) discussed in the literature review. I argued based on my roots in STS that materiality and technology certainly had an impact on social innovation, asking how they would distinguish a socially shaped technology meant to solve social problems from a social innovation. My success was only partial, and social innovation was defined as:

A change in social relations, involving new ways of doing, organising, framing and/or knowing. Objects of social innovation can be Ideas, objects and/or activities. These are 'socially innovative' – and can thus be referred to as 'social innovations' – to the extent that they imply/demonstrate a change in social relations (necessary condition) (Haxeltine et al. 2015).

A definition still exclusively focused on social relations, but not building a hard boundary excluding materiality & technology as Cajariba-Santana (2014). It even mentions that objects can be an “object” of social innovation, as long as the end result is changes in social relations. I still found this definition problematic, but more palatable than originally framed. The specific mention of doing, organizing, framing and/or knowing in the definition I just found unnecessary, as I prefer to place such additional conceptualization outside the definition itself. I can see the value depending on the specific focus in a case study or article, but personally never found it relevant for my research either.

Several other partners supported a flat relational perspective, in contrast to MLP, making that the dominant perspective in Transit. A flat relational perspective essentially meant an Actor-Network theory inspired approach, although the framework was still heavily inspired by structuration theory by Giddens as visible from some of the diagrams of the theoretical framework in Transit (Haxeltine et al., 2017), which invariably focus on different societal systems and institutions, an uneasy marriage with ANT. The 101-page theoretical framework document (Haxeltine et al., 2015) coming from the workshop in A Coruna also bear the imprint of every partner wanting their perspective and theoretical concepts reflected in Transit. Consequently, the final framework became so complex and encompassing that partners could, to some degree, pick and choose as desired dispersing the approaches rather than delimiting them, although the relational perspective became the dominant framing underpinning everything else. An extension of the relational perspective becoming the dominant framing the context was left open-ended, as discussed in the UoA article above, leading to a move exploratory research design for the second batch of case studies. I see this as my biggest success in these negotiations, which would never have happened had not several other partners likewise argued for a relational approach. How big an influence this had in the end is arguable, as some partners stuck to their own perspective despite any collective decisions in the project consortium, and as several other perspectives were likewise

included that ran a bit contrary to the ANT influence. However, it gave room for me in the project to use an ANT-inspired methodology and analytic framework for my own research activities and include it in the research guidelines I had an influence on.

In summarizing, my influence on and success in affecting the theoretical framework in Transit was limited, but I did create a space for using the methodology and theoretical perspective compatible with the research interest of this dissertation. The framework in Transit being so large and complex there are many other issues I could discuss, but I find the relational framework and definition of social innovation to be the most crucial. The research design and research questions it resulted in had a bigger impact.

Differences in research design and questions

Starting with the first batch of case-studies and the associated guidelines. At the time the field of social innovation was under-developed, even less than now, and Transit did not have a working definition yet as that was first developed between batch one and batch two as discussed above. Yet the guidelines were very specific with three research questions.

The first were a mapping and explanation of the case subject, which makes sense. The second was “How does the network/initiative engage with and relate to ‘innovation’ and ‘change?’”, detailing specifically social innovation, system innovation, game-changers, societal transformation, and transformative discourses as the aspects of relevance, which for me was problematic. It was, or should have been, a range of exploratory case studies as we had little idea of how social innovation played out, or even how it was defined. Furthermore, as was even part of the definition in Transit as explained in previous sections, our theory development was supposed to be based on a middle-range theory approach. It should thus be empirically founded, which it hardly is when the guidelines are based on hypotheses on what SI is composed of and how it happens. The third research question was “How were/are actors involved in the network/ initiative (dis)empowered regarding innovation & change?”, further specifying ‘governance’, ‘social learning’, ‘resourcing’, and ‘monitoring’ as the five themes of interest. As explained in the guidelines “We hypothesise that these are important factors in (dis)empowerment, while acknowledging there may also be other relevant factors involved in (dis)empowerment processes – which we aim to explore with the general/open question on (dis)empowerment” (Jørgensen, Wittmayer, *et al.*, 2014, p. 34). Although it starts with an open question, it again moves onto hypothesized aspects steering the research. What makes it yet more problematic was that the case-study reports had to follow a strict template ordered along the three research questions with each aspect detailed above as a sub-section.

This research design essentially made it impossible for the case researchers to bring insights specific to their case forward if not related to the pre-determined focal points. It also cut up the narrative on the cases into piece-meal sections, limiting insight into what was happening that a thick description could have given. The idea was that the case reports should be so similar that a comparative case analysis would be straightforward to carry out, where each section could just be compared directly across all the cases. However, the case researchers invariable did not follow the template or understood

the different aspects so differently that the reports could not be directly compared anyway. Many case researchers wanted to tell their story, to bring to light the insight gained through following their local cases, and so “hacked” the template to fit in their narratives, which I found understandable. Our case subjects are also so different in nature that they as empirical phenomenon would never be directly comparable anyway.

As a solution I in the end read all the case reports and coded each, instead of just comparing specific sections across all the cases, to gain the necessary insight into the cases. The theoretical integration workshop taking place shortly after the case studies ended also helped address many of the short-comings through discussion and feedback directly from the case researchers. Commenting on the analysis text of D4.2 by the case researchers likewise helped alleviate the issue.

The problem for this dissertation at this stage was essentially that a large part of the case reports was dedicated to topics I found of no interest. I choose to focus my part of the comparative analysis on the first research question in batch one and I in D4.2 wrote a chapter on “Development in transnational social innovation networks and initiatives”. I found this section of the case reports to be the most descriptive and open-ended, thus giving the “thickest” descriptions, allowing me to conduct a more empirically informed theory generation process. This has formed the focus of this dissertation as I have largely focused on different aspects of the nature of the international networks.

The outcome at this stage, D4.2, then fed into the theoretical work package (WP3) that encompassed the working meeting in A Coruna discussed above, among other activities. However, the theoretical framework document was written before D4.2 was finalized, and thus there was no empirical input to D3.2 (Haxeltine *et al.*, 2015). This critique was raised early and was one of the reasons I was invited to A Coruna to represent the empirical work package. Some considerations were made, but at this point there was essentially two independent theory generation streams, an inductive as represented by WP4 and a deductive as represented by WP3 that did not cross-fertilize each other, instead of having an abductive theory generation process as originally planned. This partly arose from inadequate time planning, the deadline for D4.2 and D3.2 being too close to each other for any interaction to take place. This was amended for the second batch of case studies with an altered time-plan and an increased frequency of meetings between WP3 and WP4 researchers.

The methodological guidelines for batch two (Wittmayer *et al.*, 2015) was markedly different from the guidelines for Batch one, and I were one of the main authors giving me some influence. I wrote chapter 3 on the “Transit Case study approach”, which however had to stay true to the conceptual framework in Transit despite any disagreement I had. I leveraged my influence largely around two issues, the case study template and research question one out of the three research questions for batch two (Wittmayer *et al.*, 2015):

- Social innovation (SI). How does SI emerge? How do SI-initiatives, SI-networks and the ‘SIs themselves’ relate and develop through space and time?
- Transformative social innovation (TSI) dynamics. How do social innovations interact with/ contribute to transformative change in a social context?

- Agency in (T)SI. Where lies the agency in (T)SI processes? How are actors dis/empowered in/by the SI-initiatives/ SI-networks in relation to (T)SI?

Question one was formed around my developing focus and meant to provide more empirical data on the aspects I found interesting, and where there was enough empirical data from batch one to build on for my analysis. The case study template was formed around three sections dedicated to each research question, with no further specified sub-sections. This radically open-ended structure, compared to batch one, allowed more exploratory case studies where case researchers could bring forth what was interesting and particular about specific cases. However, consequently the empirical focus was more fragmented, and the case study reports not directly comparable, but as I argued the first batch of cases were not comparable anyway as the case subjects and researchers were so different. And so, it would be more valuable to get deeper insight into the particularities of each case, rather than trying to enforce focus on specific pre-determined aspects.

This approach was partly successful. The inspirational interview questions for each research question were so extensive, as each of us authors of D4.3 wanted more data related to our specific interest, that it was virtually impossible to cover for the case researchers. Each case researcher thus focused on the subset of questions they found most interesting and most relevant for their case, resulting in some case studies largely lacking data on specific aspects. If this lack, for instance on translocal interactions, was because there were no translocal interactions taking place in that case or because a case researcher did not delve into this aspect was sometimes hard to determine. A single case report also went in a completely different direction drawing on a methodological and analytical framework specific to the academic discipline of the case researcher, more or less incompatible with the framework in Transit. This I would term disloyal to the consortium, as we all could have done likewise to get better empirical data fitting specifically to our research interest. To augment the data available for my research focus I conducted extensive research beyond the case study on the Living Knowledge network, and to a lesser degree on FabLabs and Impact Hubs, after the case studies had ended.

As a compromise for the now open-ended template case researchers were asked to fill out tables detailing specific aspects of their cases that we responsible for the cross-comparative analysis could use, instead of reading the case reports. This was a more fruitful approach, and for the second batch of case studied I did not have to read all the cases studied for my coding, only some of them. This last cross-comparative analysis, which analyzed both batch one and two, were published as D4.4 (Jørgensen *et al.*, 2016). The general incomparability of the case studies led me down the path of typologizing to generate concepts of relevance and get an overview of our empirical data. These typologies largely served as an extensive brainstorm that have informed the research I focused on subsequently. As described previously this also fed into the meta-analysis and the critical turning points database, which took the empirical data from WP4 very seriously as described above.

Summary

As this quite lengthy layout of the process in Transit has illustrated, there were three main problems. The layout and focus of the case study reports that limited and restricted the exploratory nature of the case studies and insights unrelated to the pre-hypothesized aspects of relevance, the invariable different understanding and focus of the case researchers, and the complex and somewhat self-contradicting theoretical framework. The first two challenges were met by on one hand choosing a focus of this dissertation with enough data in the first batch of case studies, and by extensively coding the case reports and engaging the case researchers. The problems with the theoretical framework remain, although aspects were introduced that gave me a space for pursuing a more ANT-leaning methodology. I could then in large part ignore what I see as contradictions in the framework of Transit, as long as I could gather enough empirical data of relevance, and then just deliver the analyzes I were obliged to.

In any case, all findings in this dissertation is strongly empirically based, and there is little point in crying over how much stronger or more extensive they could have been had the empirical data been more aligned with my research focus.

Analytical generalization and comparison

This section describes and discusses the typology generation methodology I have used for analytical generalization and comparison. The section has three parts beyond this introduction: the process, the types, and a description of the procedure I used in practical terms.

There have been arguments back and forth about generalizing based on qualitative data, especially during the “science wars” in the 90’ties, but it is now generally accepted as a possible and fruitful endeavor. Different approaches and models have developed over the last decades in articles and book chapters where scholars argue about the analytical strength of generalizing based on qualitative data (Kvale, 1996; Flyvbjerg, 2006; Mason, 2006; Ruddin, 2006; Tanggaard, 2009; Delmar, 2010), as well as a general discussion about traditional methods in social sciences questioning their purpose and usefulness (Law, 2004; Clarke, 2005). This chapter bases its perspective of generalizing on the understanding stemming from that development. The critique against generalization often running along three arguments (Halkier, 2011):

- The inductive reasoning coming out of grounded theory lacks abstractions and concepts and thus fail to generalize (Wasserman, Clair and Wilson, 2009).
- The richness and particularities of the data enables sophisticated understandings and it should not be reduced or generalized as it would lose that richness, i.e. an argument supporting thick descriptions as it’s called in ethnography. (Halkier, 2011)

- “The complexities of patterns in qualitative research and problems in representing complexities due to dynamic co-constructions of data materials or the messy relations between enactments of subjectivities and objectivities” (Halkier, 2011, p. 787).

This last argument is essentially an argument against social science methods and as noted by Halkier (2011) comes close to being anti-foundational, i.e. generalization is neither possible nor desirable, which I here argue against. However, I do think the critique has some merit as argued by Law (2004) who finds the emphasis on methodological rigor and repeatability problematic because it stifles the potential of social science. Beyond that the method emphasis puts blind faith in method without understanding that “science produces its realities as well as describing them” (Law, 2004 p13), which was also shown by research in Science and Technology studies decades ago (Latour and Woolgar, 2013). Of course, the outcome of research cannot always and only be communicated through thick descriptions, imagine a policy maker reading a 400-page ethnography at work on social innovation to get an idea how to allocate some funding for it or form a new policy, before moving on to a 600-page ethnography on circular economy. We need ways to generalize without losing what’s interesting.

The first answer is that the basis of qualitative studies must necessarily be much more specific and context bound than understanding of generalizations as universalizing (Halkier, 2011), i.e. insight gained from qualitative studies is context-bound. Social relationships and processes of transformation are both unique and recognizable, also referred to as the doubleness of the situation (Delmar, 2010, p122). As explained by Delmar (2010) studied phenomena are contingent on time, space, relations, power and context like society and culture, and there will always be recognizable patterns. However, such patterns are not enough even though they contribute to recognizability and thus generalizability, it is only if it is meaningful in the relationship between the typical and unique in practice in concrete situations (Delmar, 2010).

This is one of the reasons for the wide distribution of the Transit consortium and the case studies, to provide as wide an empirical foundation as possible, possibly illustrating context dependent insights.

This emphasises the argument for having many comparative cases to build up an archive where context-bound specificities can be drawn forth (Ruddin, 2006, p. 807)

And secondly, generalizing based on qualitative studies must recognize and try to represent the dynamisms, ambivalences, conflicts, and complexities that constitute various overlapping contexts and the knowledge-production processes in relation to these contexts (Halkier, 2011). One challenge is then how to create a convention of case study procedures guiding selection of comparable and comprehensive features of our cases as a basis of generalizations, as discussed above this did not completely succeed although I managed to identify an area in the first batch of cases (development and relevance of the international networks) that I selected as a focal feature for the second batch of cases. The typologising procedure I describe here is how to identify and select

features of relevance in already collected empirical material. The next sections discuss three different ways to make such generalizations based on typologising.

The process of generating typologies

There are largely three ways to generate typologies as discussed by Halkier (2011):

- The most common approach analyzes the totality of the empirical data and generates a limited number of ideal types, called **ideal typologizing**.
- An alternative is to focus exclusively on one feature ignoring all others and does not attempt to say anything comprehensive about a study, called **category-zooming**. This is especially relevant for very large studies where meticulously coding all the empirical material is unfeasible, like Transit.
- Lastly, **positioning** is a reflexive analysis underlining the unstable character of inferences as they are made as part of group interactions, negotiations, conversation processes etc. Categories here thus emerge in a form of social construction in negotiation with the subjects.

Ideal-Typologizing

The ideal typology stems from one of the founding fathers of sociology, Max Weber (1949, p42). He defined it as a one-sided focused synthesis of diffuse and discrete empirical phenomena into a unified abstract analytical construct that will never be discovered in this specific form:

“The ideal typical concept will help to develop our skill in imputation in research. It is no “hypothesis” but it offers guidance to the construction of hypotheses.” (Weber, 1949, p90)

An ideal type is constructed by condensing coded data patterns into a limited number of descriptions that underlines particular characteristics at the expense of others. This was the process by which chapter 4 in D4.2 constructed typologies on the first batch of cases studies in Transit (Jørgensen *et al.*, 2015, chap. 4). These descriptions were labeled with names representing one type in an ideal typology. And the descriptions were made so to be relevant for the research questions – e.g. how do social innovation initiatives emerge and develop. The typologies in D4.2 were more general and descriptive, covering several dimensions each, than the ones constructed later in chapter 4 of D4.4 (Jørgensen *et al.*, 2016, chap. 4). As the total number of cases after Batch one was smaller (12 after batch one, now 20 after batch two) it was necessary with categories spanning more characteristics not to end up with a one-to-one relationship between many cases and categories, which would bring us no further along the path of generalization.

The construction of such typologies was quite work intensive, with a round of basic encoding and relational categorizing of 12 case reports of up to 100 pages. Secondly the whole material was coded a second time in regard to the categories emerging from

the first round of coding, to see if some of the same interactions, patterns, or events could be inferred even if not mentioned explicitly. In addition, this second step of developing typologies involved analytical induction or the constant comparative method (Hammersley and Atkinson, 1995, pp. 232–236). The last step was to take the emerging patterns and reduce the complexity even further until we had typologies of 3–5 categories only building on 1–3 dimensions each. The typologies were only constructed on topics where there were meaningful differences between the cases, so they could realistically be assigned across all the categories.

It must be kept in mind here that the material I have available is not interviews or observations but analytical interpretations by the case researchers, with the exception of the case studies carried out by the authors of the cross-comparative analysis themselves. This means that it is not a typology of how these social innovation initiatives understand themselves, but of scholar interpretations, although a lot of direct quotes are available. However, here the distinction between ideal typologizing and category-zooming starts to dissipate, as the material coded here was guided to focus on specific categories in the first place. Then the difference is merely when in the process the category-zooming took place.

In either case it is usually an iteration between ideal typologizing and category-zooming, as otherwise as pointed out by Halkier (2011, p 792) many other patterns as well as the overlaps, ambiguities, and other complexities run a risk of not getting represented in an ideal typology.

Category Zooming

In contrast to ideal typologies category-zooming focuses on a specific aspect. Thus, it usually does not say anything comprehensive about the study but goes into depth with the details and complexities of a single point. The three aspects focused on in D4.4 (Jørgensen *et al.*, 2016) – emergence, dynamics, and agency – is a form of category zooming. The process of writing academic papers is typically also a type of category zooming, where academics draw out specific data from a larger study to discuss a specific issue, exemplified by the articles in section 4 of this dissertation.

An advantage of this method is that it ensures that what is compared across several cases is sufficiently identical to be analytically compared (Halkier, 2011, p792). In practice, single categories are placed in context and their non-essential character is underlined. In Transit this advantage is especially important due to the wide variety of social innovations studied. The focus area of emergence in D4.4 that I was responsible for is thus a form of category-zooming, just taking place very early in the process before the empirical data is gathered and was meant to ensure that the empirical data would be sufficiently comparable. The relative success of this approach was discussed in the previous sub-chapter. Here the point is merely to illustrate that my impact on the research design was based on the analytical methodology I planned to apply.

Category zooming can also be a response to ideal typologies, when scholars feel that they fail to represent some details or complexities. Category zooming can represent contradictions and exceptions, and glide between ideal types. This way of generalizing can be used to underline the contingency of types and categories (Halkier, 2011,

p793). The category zooming done here makes inferences on the patterns of emergence, dynamics, and agency of social innovation initiatives, but not, for example, on the individual motives for engaging in social innovation.

The emergence and development of social innovations is a specific category, a category chosen as focus initially in D4.2 by me and thus represents category zooming in relation to all the empirical data and various other possible focus areas in Transit. The coding in Batch one used ideal typologising within this specific category, emergence and development of social innovations. Batch two is a hybrid, it again category-zooms based on the coding done in Batch one and the typologies it resulted on, but also generates ideal typologies from Batch two cases independently of the previous coding. Without doing ideal typologizing on Batch two independently, i.e. foregoing all the categories identified in the first comparative analysis, we would risk losing certain insight springing from the unique cases and our altered case research approach.

The themes taken up in the papers outlined in section 4 are in this way also based on category zooming. This iteration between ideal-typologizing and category-zooming may be a bit unusual, but other empirical examples of typologising like Halkier (2011) have smaller single case studies and thus do not face the same challenges. The size of Transit makes it necessary to iterate to arrive at aspects specific enough for us to say anything definitely; alternatively, this dissertation would have taken up even more space. Thus, this dissertation is not a full analysis, but a careful unfolding of chosen areas. The danger of this approach is that the areas of focus chosen are not the most interesting in relation to transformative social innovation; this however would not affect the appropriateness and quality of the hypotheses that are made. This danger has been tackled through a very thorough and careful process of selecting these areas of focus as explained previously.

Positioning

In contrast to the previous approaches to generalization that are applied in tandem in the Transit project, the main point of positioning is that the contents of speech and actions are constituted by social dynamics like group interactions, negotiations, discourses, and conversational processes. This is illustrated by more critical perspectives on interview data, arguing that interviews cannot be taken at face value, i.e. there may be misinformation stemming from impression management, identity work, occupational lies etc. that I have applied in my earlier work (Hansen and Dorland, 2016). In consequence, the inferences and generalizations based on speech and actions in the empirical data must include such communication processes and their potential consequence for the interpretation and analysis (Halkier, 2011). I in my dissertation need to consider not only the communication processes between the case researchers and the case subjects, but between us (the WP4 team) and the case researchers as well, which has been addressed through the comparison tables and continued inclusion of the case researchers in reviewing the comparative analyses.

This type of generalising is typically conceptualised as voices, stories, positions, discourses etc., with the common characteristic being that subjects can occupy these positions in various degrees in different situations and negotiate between in the same

situation. This relates to the instability of the individual in an interview situation and the contradictions that may result (Hansen & Dorland, 2016), and thus enables scholars to represent some of the communicative dynamics that constitutes the social construction of categories, relationships and processes.

This type of generalization can be built in two steps. First going back and do a selective coding of interactions where categories central to the question at hand is taking place - for instance the definition of the various terms and concepts used in the interviews, or merely just the objective and subjects of the case study and why they should participate, what they might get out of it. This will then form the following interviews or conversations. In *Transit*, this type of generalizing has taken place at the theoretical integration workshops to streamline and negotiate the understanding of the case studies as well as the basic concepts used in *Transit* between us and the case researchers, serving to eliminate the necessity of analysing the communicative process between the case researchers and us. Streamlining between *Transit* and the case subjects took place through the final conference and advisory board between as well as in the process of developing a manifesto for transformative social innovation.

However, my dissertation clearly has a special challenge as much of the empirical data I have access to is based on scholars' interpretations, which is a weakness no matter how many processes we set up to alleviate the problem. The case researchers and not me would have to consider communication processes and social dynamics, which they have done in different ways based on the common methodological guidelines. I must trust that the case researchers have done so adequately, which they based on the documentation provided with the case reports and the theoretical integration workshops have done. However, it still limits the kind of analyses I can do on the material, like the individual identity analysis of the informant in Hansen and Dorland (2016) that I had originally envisioned for this dissertation.

Summary

In conclusion to the process discussion the distinction between 1) and 2) can be hard to see and relates mostly to how much the typologizing process is theoretically informed in my opinion. Ideal typologizing starts more in a grounded theory process by coding all the material without pre-defined categories, while the categories used in category-zooming is likely based on some theoretically informed hypotheses or previous analyses. However, the data itself is in the first place likely focused on categories, aspects, features etc. chosen during or before the case-study and thus is already a form of category-zooming. This discussion and distinction thus mostly make sense in relation to traditional ethnographies based on thick descriptions. I still find it relevant as it is how I have operationalized my abductive research process (Alvesson, Skoldberg and Sköldberg, 2009), and the two processes of ideal typologizing and category-zooming is how I iterated between more deductive and inductive approaches to my analysis. It should just be clear that this is in no way a dissertation and analysis based on grounded theory and a "pure" typologizing approach, as there due to the way the data has been gathered are many layers of interpretation and analysis.

Typology types

Beyond the different ways to generate typologies they can also take different forms. Typologies can be descriptive or conceptual (Collier, Laporte and Seawright, 2012), explanatory/theoretical (Doty and Glick, 1994), or merely classification schemes (Doty and Glick, 1994). Conceptual typologies establish a property space and its categories have a kind of relation to the overarching focus of the typology while the categories in explanatory typologies are hypotheses in themselves (Collier, Laporte and Seawright, 2012).

Some claim that typologies can only be classifications that while useful as temporary devices in the process cannot explain anything and thus discourage their use (King, Keohane and Verba, 1994). Bacharach argue that “typologies are limited to addressing the primary question asked by descriptive researchers - the question of what, rather than the more theoretical how, why, and when” (1989, p497), and can thus cannot be seen as theory. I contend that some typologies are mostly just descriptive or classifications, but like Doty & Glick (1994) argue they can also be complex theories incorporating multiple levels of theory. My typologies illustrate this perfectly as they started as mostly classifications and over time developed into more explanatory typologies, ending with the typology in chapter 8 that synthesizes several typologies into a theoretical typology illustrating how multiple levels of analysis and theory generation can be incorporated.

Unlike classification schemes that have definitions helping to sort phenomenon into categories, ideal-typologies contain theoretical abstractions that might exist (King, Keohane and Verba, 1994), and they are very complex phenomena described in multiple dimensions. Each ideal type is constituted in a unique combination of dimensions. Each dimension is a qualitative theoretical construct (Collier, Laporte and Seawright, 2012), which is why these typologies incorporate multiple levels of theory including descriptive typologies. The descriptive type is just theoretical in a grounded theory way, which I have personally used a lot as part of the process in constructing more explanatory typologies although they were based on partly interpretative data.

Procedure for generating typologies

It might seem a bit contradictory to first argue against rigid methodologies focusing on validity and repeatability, while then continuing into a theoretical and methodological discussion of typology generation. However, its essential to condense and communicate research findings even though I personally prefer thick descriptions. The positions argued by Law (2004) is not against method but against blind application of rigid methodologies, the crucial point is thus to be reflexive (Alvesson, Skoldberg and Sköldberg, 2009), and adapt and develop methodology as necessary, although as commented by Law (2004) it is more work-intensive. The purpose of method in social science is not repeatability either, which from my perspective is a pipe-dream anyway, but to give insights and be transparent about how they were reached. The methods I sketch out above on the analytical process and here on the practical procedure is thus for inspiration, for as Alvesson (Alvesson, Skoldberg and Sköldberg, 2009) argues it is

still important to be broadly read for creative research. And we all face the challenge after months and years of case studies how to start ordering and analyzing it.

Concept formation and typology structures

Collier, Laporte and Seawright (2012) lay out a very structured approach for creating typologies that I found inspiring despite their tendency to approach qualitative research as natural sciences, stemming from their attempt to encompass both quantitative and qualitative data.

- Concept formation: the overall idea or concept measured by the typology.
- Dimensions: Attributes of the overall concept, often two dimensions but sometimes three or more.
- Diagramming: Often the familiar 2x2 matrix with a dimension along each axis, but typologies with more than two dimensions require other diagrams like a branching tree.
- Cell types: Each combination of dimensions is a “cell”, which I would refer to as a category in the typology and might correspond to an ideal type.

Collier, Laporte and Seawright (2012) have many more guidelines but I find these to be the essentials. They furthermore advance in a rather mathematical manner, i.e. correlations, regressions, medians, percentiles etc., which I find of little relevance in the typologies I discuss here that are qualitative in nature with little to no chance of being reduced to numerical variables. However, carefully considering the overall idea addressed by a typology, the significant dimensions of that concept, followed by mapping out the potential categories is a crucial exercise. The way to identify these dimensions and the idea is through coding, along the three lines discussed above, which is where methodological rigor in my understanding enters the picture.

Coding for typologies

There is nothing fancy, complicated, or novel about coding. It is a slow and labor-intensive process, and if you do not find it so you are doing it wrong. Many years ago, while still a student, I read Hammersley & Atkins (Hammersley and Atkinson, 1995, 2007) that had a section on generating concepts through coding that I have followed loosely since, also called the constant comparative method, although I have advanced it considerably with for instance the typology ideas outlined above.

When coding it is essential to read transcripts closely and not to rely on field notes, summaries, or just skim the text to get an idea of the topic. While coding is certainly a creative process there are strategies available. Initially it is important to look for interesting patterns; surprising or puzzling phenomenon; apparent inconsistencies or contradictions; expectations based on common sense, official accounts, or other theory (Hammersley and Atkinson, 2007). This is what Alvessons (Alvesson and Kärreman, 2011) describes as looking for breakdowns in understanding and mysteries.

Practically I employ coding software called Nvivo that allows organization of coding

in hierarchically nested nodes. When reading material, I mark text and, in the first read-through, create and name nodes as I identify concepts and categories. I might start completely open-minded or might look for data related to specific phenomena in a form of category-zooming. In category-zooming I often use an already established database with nodes from earlier research or informed by a literature review. It is important to distinguish between observer-identified concepts (Lofland and Lofland, 2006) and concept coming from the actors, following in the footsteps of the actors as Latour (2005) would say.

In cases like Transit with large amounts of material I continue coding creating new nodes, sometimes changing names of old ones, or changing in the hierarchies as I go along. After reading 10 interviews I have likely found new categories I did not consider in the first text, so you have to start over reading from the beginning with the new insights. The categories are usually rather mundane in the beginning, but becomes increasingly more analytical and complex.

This goes on in an endless iteration, interrupted by gathering data and reading literature, as its essential in reflexive/abductive research to adapt the study as it goes along (Alvesson, Skoldberg and Sköldberg, 2009). I usually start coding before data gathering is done, although this is not always possible. The process is essentially endless until a decision is made to stop, that enough have been identified of interest to move on to writing and analyzing in more depth. The concepts identified so far are usually not well described and more akin to sensitizing devices (Bowen, 2008).

As an example from Transit, I in the meta-analysis did a coding around the “kinds of empowerment” from international networks in our cases. After 2 weeks of coding I had marked 398 pieces of text from 48 sources divided across 89 nodes, to a depth of 4 levels. This was a category-zooming type of coding based on coding from earlier material that identified categories of relevance. Level 1 and sometimes 2 of the hierarchy was thus pre-defined, also a few extra nodes at level 1 and 2 were added in the process as well.

At this stage many of the building-blocks for a typology is here. My second level of nodes are often potential overall ideas that a typology could address. The third-level nodes are less clear-cut but do inspire potential dimensions of the typology. Here creativity as well as trial-and-error enters the pictures, and Collier, Laporte and Seawright (2012)’s approach is useful in mapping out potential typologies. This will likely lead to conceptual typologies initially, i.e. very descriptive and not explanatory. However, using such a typology as basis for further data gathering and coding leads the way to explanatory typologies, which my typology on empowerment led to as visible in D3.4 (Haxeltine et al., 2017, chap. 5).

It is important to remember that the property space defined by the identified dimensions contain many combinations, which is what we call ideal types, many or maybe even most of which does not correspond to any actual cases. However, I often find it a useful exercise to assign the case subjects to different types, just to see how the data and typology relate to each other. Some of the ideal types may also be nonsense because certain combination of characteristics just does not make sense. This is more often the case when there is more than two dimensions.

Summary

This sub-chapter outlined and discussed approaches in analytical comparison and generalization in qualitative research as well as common criticism against it, continuing into a discussion specifically on the three common ways to generate typologies and how they have been used in this dissertation and Transit. Subsequently I describe the various types of typologies this type of analytical generalization can lead to, and the procedure I followed when coding data and defining typologies.

I argue that typologies are not merely an ordering of data best suited for classification or description but complex theories of multiple levels. Typology generation can likewise be both inductive or deductive, but I have iterated between the ways I generate typologies and work with the empirical data and theoretical inspiration in a type of abductive research process. This somewhat complex and very reflexive way to integrate the different typology generation processes has been a necessity due to the type of empirical data I have access to and the research process in Transit that also enforced an iteration between empirical work and theory generation.

While I in the start mostly used it in a descriptive manner to get some insight into and overview of the data, I gradually developed my understanding of typologizing and the procedure I followed to generate increasingly complex and theoretical typologies with more explanatory power.

SECTION 2

Chapter 6

Detecting Social Innovation agents: Methodological reflections on units of analysis in dispersed transformation processes

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Published in The European Public & Social Innovation Review (EPSIR), ISSN 2529-9824.

The original is available here: <http://pub.sinnergiak.org/index.php/esir/article/view/45>

The version embedded in this chapter has only been reformatted to fit the layout but is otherwise unchanged.

Abstract: Considering that it is important for the social innovation research field to confront its methodological challenges, this contribution addresses the challenge of choosing appropriate units of analysis. In processes of transformative social innovation, the agency is distributed and therefore fundamentally difficult to detect and ascribe. This contribution addresses the challenge to develop methodologies that are consistent with this relational ontology, critically evaluating the three main unit of analysis choices that guided an international comparison of 20 transnational SI networks and their local manifestations. Methodological lessons are drawn on the actors that SI can be ascribed to, on the transnational agency through which it spreads and on the relevant transformation contexts involved. This provides SI research with methodological tools to handle the elusiveness of SI agency, a methodological challenge that becomes particularly pressing in attempts towards systematic comparison of cases.

Keywords: Social innovation, methodology, unit of analysis, demarcation, networks, actor network theory, coproduction, transformation

1. Introduction: Elusive agency in Transformative Social Innovation

It is increasingly believed that social innovation (SI) can contribute to meeting grand societal challenges and have wider structural impacts beyond geographically confined and institutionally marginal projects (Moore & Westley 2011; Loorbach et al. 2016; Klein et al. 2016). Many researchers and practitioners have particular interests in such transformative social innovation (TSI). Apart from the potentials towards ‘humanized’ economic relations as emphasized in the Social Economy tradition (Moulaert et al. 2013), SI is currently also considered for its potentials towards systemic changes in terms of social inclusion, sustainable development and welfare state reform (Avelino et al. 2017; Haxeltine et al. 2017). Empirical examples of such TSI are the social entrepreneurs who seek to contribute to a social or solidarity-based economy, ethical banks aimed to transform the banking sector, or seed exchange initiatives who seek to revolutionize the prevalent social relations and institutions that govern these natural resources.

In our development of TSI theory, we have therefore conceptualized SI activities as part of broader transformation processes. Social innovation initiatives can be seen to promote social relations within their Ecovillages, Hackerspaces or Transition Towns, but also beyond those immediate contexts. Crucially, their transformative significance resides in the ways which these new social relations amount to the challenging, altering and/or replacing of dominant institutions. And in turn, such processes of institutional change are shaped by broader shifts in the social-material context. As will be clarified further in subsequent sections, we thus see TSI as a multi-player game, a process in which transformative change is typically co-produced through highly dispersed agency (Pel et al. 2016; Cipolla et al. 2017).

Importantly, our relational theorization of broad TSI processes was accompanied with practical-engaged commitments. The TSI theory development was to clarify the challenges and opportunities for the individuals and collectives undertaking attempts at TSI, and to generate empowering insights for them (Avelino et al. 2017). As discussed by Haxeltine et al. (forthcoming) in this special issue, we have therefore sought to fine-tune a relational conceptual framework that would be attentive to the particular role of SI initiatives as key trailblazers of TSI. Crucially, these considerations of normative commitments and ontological assumptions forced us in turn to reconsider the methodologies through which to empirically study TSI processes: However carefully selected, would the SI initiatives be appropriate empirical entry points into these elusive realities? Which SI agents to observe and generate empowering insights for? What empirical observables do SI cases consist of? How to arrive at methodologies consistent with our ontological assumptions?

This contribution addresses the methodological challenge of choosing appropriate units of analysis (UoA) in SI research. As also indicated by Bouchard & Trudelle (2013) and Callorda Fossati et al. (forthcoming), the normative contestations and theoretical ambiguities surrounding the SI concept raise basic methodological challenges of identifying SI cases and case populations. Along a similar line of inquiry,

we confront the specific challenge of making consistent UoA choices. These can be relatively straightforward when working with theories in which the principal ‘driver’ of innovation is already identified (e.g. in social entrepreneurship, ‘grassroots’ or public-sector innovation accounts of SI). By contrast, our conceptualization of TSI rather followed the theoretical and methodological interrogations raised by relational approaches such as actor-network theory (Latour 2007; Michael 2016) and the co-production of knowledge and society (Jasanoff 2004). Instead of the static and singular initiators, followers, receivers, objects and contexts of innovation presupposed in rigid methodologies, we therefore sought to be methodologically sensitive to mutually defining and intermittent entities, and to processes in which organizational boundaries are still under negotiation. More generally, we sought to account for the ways in which UoA choices slice up and thereby produce SI realities (Asdal & Moser, 2012; Law 1992; Venn et al. 2006). We address two research questions in this article: How to choose the UoA in social innovation research? Which approaches are appropriate for the investigation of dispersed transformation processes?

In the following, we critically evaluate our case research on 20 international SI networks and their local manifestations in various European and Latin American countries. After clarifying key elements of the research context that our methodology had to be consistent with (section 2), we invoke various advances towards relational methodologies to clarify our approach of embedded, fluid and provisional UoAs (section 3). Next, we describe and draw methodological lessons on three UoA choices. These pertain to 1) the puzzling co-existence of socially innovative initiatives and the SI they promote; 2) the elusive agency of locally rooted and globally connected SI networks and 3) the open-endedness of the relevant transformation contexts (section 4). Finally, we answer our research questions and discuss broader implications for SI research (section 5).

2. Research context: Empowering SI initiatives in dispersed transformation processes

Our first research question has been deliberately formulated as a procedural question. Quite little can be said about UoAs that would be adequate in all kinds of SI research, but it is possible to formulate generic considerations to ensure that UoA choices are consistent with their research context. As underlined in Moulaert (2016) and Haxeltine et al. (forthcoming), methodological choices are not only intertwined with the research aims to be methodologically supported, but also with the broader process of reality construction that SI research entails. Our experiences are particularly instructive as our UoA choices needed to be consistent with three somewhat conflicting elements of the research context, namely 1) our normative commitments, 2) our ontological assumptions and 3) our ambitions towards (collaborative) comparison.

First, our research project started from normative commitments aiming to develop empowering knowledge: The developed insights should support SI initiatives in their

attempts to challenge, alter, and/or replace dominant institutions (Avelino et al. 2017, Haxeltine et al. 2017). We therefore avoided the currently so popular systems-theoretical approaches (e.g. sustainability transitions, national/regional innovation systems), with their typical lesser attentiveness to the behavioural and governance aspects of situated agency (Cf. Jessop et al. 2013). Instead, our in-depth case studies were to remain attentive to rather social-psychological and organizational processes (Haxeltine et al. forthcoming). We therefore selected 20 cases of transnational SI initiatives for their apparent transformative ambitions. Taking these transnational networks and their 'local manifestations' in various countries as our focal actors, our empirical research has paid specific attention to the empowerment processes of governance, social learning, monitoring, and resource acquisition.

Whilst being normatively committed to closely observe the situated struggles of certain SI initiatives, we also had become aware of the theoretical reasons to de-center these initiatives from the analysis. Regarding this second issue of ontological assumptions, we had conceptualized TSI as broad, relational processes. In line with relational understandings of institutions (Emirbayer 1997; Lowndes & Roberts 2013), the intended challenging, altering and/or replacing of dominant institutions would also be accompanied by the reproduction of those. Moreover, such processes of institutional change would in turn be shaped by broader shifts in the social-material context, such as the financial-economic crisis or the ICT revolution (Loorbach et al. 2016; Haxeltine et al. 2017). Understanding TSI as a process in which transformative change is typically co-produced through highly dispersed agency (Pel et al. 2016; Cipolla et al. 2017), our empirical investigations would have to be sensitive to this highly dispersed SI agency. In line with Lévesque (2016) we thus considered that we could follow situated SI initiatives in their attempts at making transformative impacts – yet that more macroscopic approaches would be needed to gain understanding of the initiatives' resonance with other processes of change and innovation.

Third, our UoA choices have been informed by ambitions towards comparative insight. Striving for a TSI middle-range theory, systematic confrontation of emergent theory with multiple cases would make for more solid and therefore more empowering insights (Haxeltine et al. forthcoming). In line with McGowan & Westley (forthcoming) and Geels (2007) we reached for insights beyond the short-lived and confined accounts of SI initiatives, aiming to identify patterns in SI evolution. This in turn entailed that we had to confront persistent limitations to comparability: As pointed out already by Bouchard & Trudelle (2013), the notorious ambiguity of the SI concept would also manifest through ensuing divergences in the 'casing' (Ragin & Becker 1992) of individual studies. Likewise, the comparison of TSI cases would necessarily be exploratory in character, due to the relative immaturity of SI theory (Cajaiba-Santana 2014). Finally, there was the practical circumstance that our collaborative research involved researchers from different disciplinary backgrounds and institutes. This made the challenge to establish the appropriate UoA particularly pressing: Necessities towards harmonization had to be balanced against the requisite flexibility of only 'sensitizing' (Charmaz 2006) concepts and demarcations. Our harmonized approach should still be able to accommodate a diversity of empirics and case constructions.

These normative commitments, ontological assumptions and comparative ambitions made for a research context with a degree of conflicting demands. Accordingly, the challenge of appropriate, consistent UoA choices amounted to a balancing act: SI initiatives would have to be focal actors, yet we would also observe their co-production with and embedding in wider networks. Similarly, UoA choices would have to be rigid enough to ensure comparison, but also flexible enough to retain context-sensitivity. In the next section we discuss how we have taken up this methodological balancing act by building on various advances towards relational methodologies.

3.0 Units of Analyses in TSI: Embedded, fluid, and provisional

Reconsidering our UoAs for their consistency with the broader context of our TSI research, we had to confront basic questions on what, precisely, to observe in our case studies. As such, our reflections can be positioned alongside questions on the identification of SI cases (Callorda Fossati et al. forthcoming), ‘systems’ (Carlsson et al. 2002) and ‘networks’ (Venn et al. 2006), similarly questioning common understandings of UoAs in innovation research. We reconstruct in three steps how we arrived at a case study methodology based on embedded, fluid, and provisional UoAs.

3.1 Empowering SI initiatives?

In order to meet our commitment to ‘empowering’ TSI insights, we chose extensive case study research to study this ‘contemporary phenomenon in its real-life context’ (Yin 1981:59). It also seemed obvious what SI actors and other entities to observe: Various researchers within our consortium had established relations with, or were members of, somehow ‘transformation-minded’ SI initiatives that seemed to exemplify the TSI phenomenon or aspects of it. This led us to identify a quite clear focal UoA: SI initiatives, as groups of individuals promoting certain innovative social relations, exerting collective socially innovative agency through various organizational forms (Haxeltine et al. 2017). This focus on SI initiatives was a neat UoA choice that provided our TSI research with a central innovation actor. Without such leading protagonist to follow and engage with, it is difficult to gain understanding of the passions and politics of innovation ‘journeys’ (Miettinen 1999).

Still, even if meeting our normative commitments, our action research inclinations and our need for clearly demarcated cases to compare, we soon realized that this methodological focus needed refinement. Through our relational understanding of empowerment, it became obvious that SI initiatives could not be taken as natural ‘units’ – the very capacity of diverse individuals to organize such collective action would have to be investigated. Moreover, case study handbooks advised to maintain a simple focus on just one or two key issues (such as empowerment), but advised against simple

understandings of the UoA. The latter is ‘typically a system of action rather than an individual or group of individuals’ (Tellis 1997:4). Likewise, we came to realize that especially in research on SI and social movements (Marco Giugni, McAdam and Tilly, 1999), ‘the boundaries between phenomenon and context are not clearly evident’ (Yin 1981: 59). In the end, we came to appreciate these points as reminders of the need to work with consistent UoA. In light of our ontological understanding of TSI as highly dispersed and contextual transformation processes, our methodological identification of focal agents had to be reconsidered.

3.2 Relational methodologies

Searching for the appropriate relational approaches to the UoA issue, the methodological sensitivity of actor-network theory (ANT) scholarship has been particularly instructive. The very concept of the ‘actor-network’ indicates a relational understanding of social reality. Notions of actors and networks are not taken as indications of ontological essences, but rather as ways of dissecting, ‘punctualising’ (Law 1992: 4/5; (Latour, 1999) and ordering ever-dynamic processes of network formation between heterogeneous elements. SI ‘initiatives’ or even trans-national networks can thus be considered as singular actors (Czarniawska & Hernes 2005) as far as they are coherently represented through spokespersons or unifying banners, yet they can also be considered as networks of diverse individuals. In relational methodologies, SI initiatives are thus approached as fragile, transient ‘units’. Their collective agency can only be sustained if the relations between their diverse constituents remain harmonious despite possible internal crises – otherwise, an initiative dissolves into its constituent parts and ceases to be an actor. Invoking various advances towards such relational methodologies, we came to an approach premised on embedded, fluid and to a certain extent *provisional* UoAs.

Embedded UoAs. Various moves towards relational methodologies have pointed out how the study of innovation processes involves innovation networks, within which the supposedly leading innovation champions are embedded. Relationally-approached case studies have shown innovation as highly dynamic ‘whirlwind’-like processes, in which innovation is achieved by a multitude of dispersed actors (Akrich et al. 2002; Lévesque 2016). Relational modes of investigation also underline how such processes unfold in social-material contexts in which texts, technologies, and infrastructures play significant parts (Law and Hetherington, 2000; Law, 2002; Sayes, 2014). These often extensive social-material webs are the typical way in which relational approaches seek to unravel ‘micro-macro’ interactions: Rather than positing ‘levels’ and ‘structures’, they chart multiply embedded actors (Putnam 2013). Other particularly relevant approaches for our topic were the ‘mobile methods’ (Büscher & Urry 2009) proposed for the study of moving phenomena (like SI), the methodological focus on the currently so fast travels of (socially innovative) ideas (Czarniawska & Joerges 1996), and the idea of studying the SI initiatives as ‘translocal assemblages’ (McFarlane 2009: 562). The latter concept, expressing how locally rooted initiatives become ‘glocal’ actors by becoming internationally connected, exemplifies how relational methodologies led us to investigate the SI initiatives as *embedded* UoAs.

Fluid UoAs. In conjunction with this relational attentiveness to embedded UoAs, we have also approached our UoAs as fluid entities. Latour (2007) presents ANT as a critical attitude that relentlessly interrogates apparently obvious UoAs and supposedly singular causal origins. Latourian ANT is then *'not a theory of the social, but a suggestion for of how to study the social'* (Czarniawska 2016:4). Michael (2016:25) similarly characterizes ANT research through its search for a basic, a-theoretical empirical vocabulary, stripped as much as possible of ontological assumptions about UoAs, entities and causal processes. This methodological sensitivity towards exploration is particularly suited for the study of innovation phenomena: Emphasizing that these are becoming realities, a relational perspective has the important methodological implication of investigating how also the innovating actors and entities themselves are subject to change (Bueger 2013:340). These relational understandings of unstable and fluid UoA further instructed us towards empirical investigations that questioned the SI initiatives as neatly demarcated prime movers of SI. On the other hand, however, the approach of 'fluidity' was kept in check by our commitments to systematic comparison and methodological rigour. We also realized that the fluidity was difficult to articulate: Linguistically, there would have to be discrete subjects (Emirbayer 1997) to whom the innovation could be ascribed.

Provisional UoAs. We have had to balance our acknowledgement of embedded, fluid innovation actors with some stabilizing assumptions and provisional UoAs. The methodological attentiveness to fluidity ensured consistency with our ontological assumptions on dispersed TSI processes, but this rather particularistic approach did little for the desired harmonized data gathering. Whereas relational approaches are typically deployed to unfold the complexities of single cases, our research context was rather geared towards theory-building from comparable sets of cases (Eisenhardt & Graebner 2007). Deciding to work with a set of reasonably well-defined, stabilized UoAs, we thus departed from the relational embrace of fluidity. On the other hand, our understanding of working with provisional UoAs still reflected the pragmatic-explorative attitude that characterizes much research in the relational mode: Considering that empirical investigation into entirely 'fluid', undefined UoA is practically near-impossible, assumptions are necessary. Other than rejecting the ever-arbitrary 'punctualization' of distributed networks, Law (1992) rather outlines how one can gain insight by exploring different tentative orderings. In this view, a UoA is the tentative assembling and holding together of contexts to describe or explain specific processes (Law & Moser, 2012: 334). To distinguish a UoA from its context is to tentatively enact a version of reality (Asdal and Moser, 2012). Working with provisional UoAs, our UoA choices thus became part of an iterative-reflexive methodological procedure. In this respect it was similar to the 'progressive contextualization' of Vayda (1983) and the 'constant comparison' between empirics and emergent categories as advocated in grounded theory (Charmaz 2006).

3.3 Operationalization into case research guidelines

Having developed the general relational approach, the challenge remained to

translate it into operational, practical guidelines for case research in various empirical contexts. In order to enhance comparability, our guidelines for in-depth case studies on 20 transnational SI networks (Cf. Transit 2017) have stipulated 7 UoAs. These are displayed in Figure 1 below. The dotted lines indicate the fluid and provisional understanding of our UoAs. Furthermore, the so crucial relations between entities are indicated through double arrows, and the principle of embedded UoAs speaks from the overlaps between them.

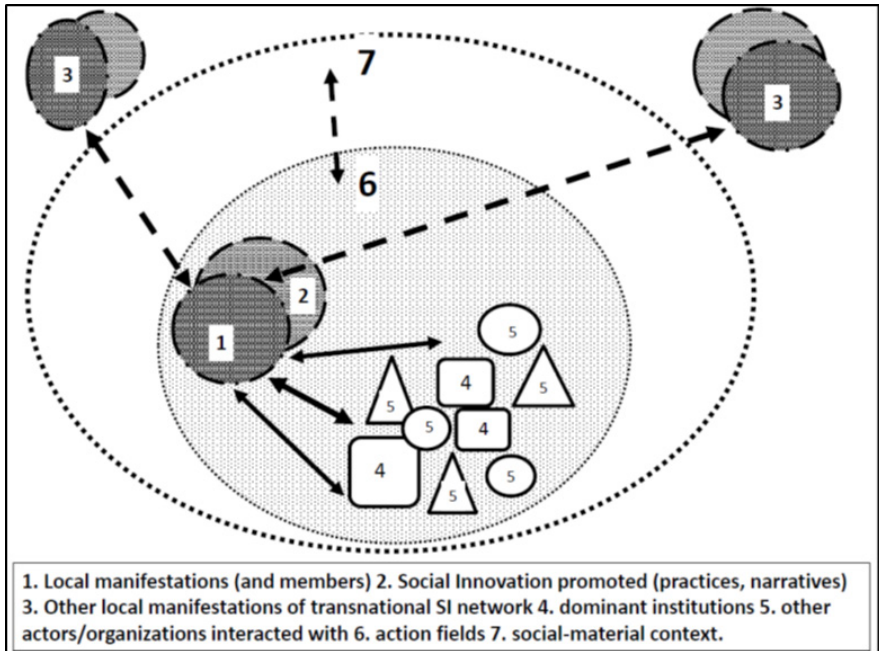


Figure 6.1: Units of Analysis in Transformative Social Innovation research.

The diagram contains three important UoA choices through which we operationalized our general relational approach into concrete guidelines for empirical investigation:

1) SI initiatives were taken as focal protagonists or spokespersons, but we also studied the socially innovative ideas, objects and activities promoted by them.

2) Local SI initiatives were studied as embedded UoA, as parts of locally rooted and globally connected SI networks. This served to explore their networked, co-producing agency.

3) The local SI initiatives were studied within the dynamic contexts that they sought to change but were also being changed by. These open-ended contexts consisted of provisional UoAs such as ‘dominant institutions’, ‘other actors/organizations interacted

with', 'action fields' and 'social-material context'.

These main UoA choices bring out how our striving for a consistent relational approach eventually materialized in concrete research activities. These choices are instructive for their combinations of up- and downsides, as will be critically discussed in the next section.

4.0 Detecting SI agency: three UoA choices

Whilst focusing on the 'local SI initiatives' as the key protagonists to empower, our research context has also committed us to critically reconsider their central place in the investigation of TSI processes. Our search for a consistent methodological approach led us to work with embedded, fluid and provisional UoA. In the following, we discuss three concrete UoA choices in more detail, considering critically how they facilitated but also complicated our empirical investigations. We distil lessons on the puzzling co-existence of SI initiatives and 'the SI itself' (4.1), on the elusive agency of locally rooted and globally connected SI networks (4.2) and on the open-endedness of the relevant transformation contexts (4.3).

4.1 The SI initiatives/'SI itself' dyad

Throughout our research we have struggled to grasp 'the SI', both as a theoretical category and as a UoA. Just as in SI discourse more broadly, we sometimes took it to refer to certain socially innovative actors (a Timebank), but also sometimes as label for the ideas, objects and activities that these collectives were promoting ('timebanking'). We have therefore considered various contemporary social-theoretical accounts (e.g. on co-production, on practices, on discourses) to untangle what actors, practices, narratives or other possible entities 'the SI' should refer to. Seeking to inform this ongoing theorizing through relevant empirics, we have approached this basic puzzle of SI agency through an embedded UoA approach. Our methodological guidelines therefore contained sempirical questions not only on SI initiatives, but also on the 'SI itself' – which we thought of as an ever-accompanying but not entirely overlapping part of a 'dyad' (Cf. figure 1). We approached the 'SI itself' as provisional, sensitizing UoA: Inspired by Czarniawska & Joerges (1996), we have studied it as a continuously transforming stream of socially innovative ideas, objects and activities.

This methodological distinction of the SI initiative and 'the SI itself' has been a quite fruitful application of the relational approach. It has helped us find out how the apparently simple unit of 'the SI' exists in miscellaneous forms: We saw how SI initiatives promoting the basic income and solidarity-based economy were not simply doing or 'implementing' social innovation, but were rather acting as vehicles for the dissemination of socially innovative discourses and narratives of change. Slow Food could similarly be seen to gain prominence through certain Slow Food initiatives, but the 'SI itself' also appeared to have its own life as a set of ideas and practices on alternative food

consumption and production. Likewise, we observed how Hackerspaces, Fab Labs, Impact Hubs and other SI initiatives acted as concrete collectives and spaces where SI could be detected – whilst also referring to socially innovative narratives and practices with an existence apart from the associated initiatives. We thus learnt to appreciate how many SI initiatives could in fact be considered lead protagonists in SI journeys, yet not without relying strongly on the broader circulation of socially innovative discourses and practices. The latter came forward as crucial ‘macro-actors’ (Cf. section 3.2) in the formation of SI networks. The SI initiatives could nurture, influence and amplify them, but lacked full control over them.

Even if generally fruitful, the work with the SI initiative/‘SI itself’ dyad has also been challenging. A first difficulty has been that it complicated the desired comparative analysis. Even if many case studies elicited the intertwined developments of the two mutually embedding UoAs, case reports displayed different foci. They often highlighted either the SI initiatives or the broader evolution of socially innovative practices and ideas. The case comparison therefore had to build on a diverse set of evidence. Second, it often proved challenging to investigate the ‘SI itself’. The problem seems to be that this UoA is not simply the counterpart to SI initiatives, but rather pertains to a diverse set of empirical observables that is difficult to demarcate: Does ‘the Basic Income’ refer to concrete proposals for institutional reform, to a new governance philosophy, or to a (hypothetical) social-economic arrangement? How to empirically distinguish an Ecovillage and the various socially innovative relations promoted through it? How to study ‘timebanking’ or ‘cooperative housing’ in their multiple forms and widely dispersed contextual translations?

The relational methodological sensitivity to the mutual embedding of SI initiatives and the associated ‘SI itself’ can therefore be considered fruitful, but it is not without its downsides. Helping to unravel the quite different SI ‘dyads’ in our 20 case studies, it crucially substantiated our emerging theoretical ideas about dispersed and co-produced agency (Cf. section 2). This work with embedded UoAs demonstrated convincingly how ‘the SI’ cannot be casually reduced to either SI initiatives or to socially innovative ideas, objects and activities. Still, the typical practical downside was that case studies became difficult to contain, due to the many entities and developments to attend to. And as case researchers were thus forced to choose their own focus and demarcations, the subsequent case comparison turned out challenging: The very basis for comparison had to be elaborated in the course of our case analyses.

4.2 The translocal agency of SI networks

A second concrete application of our relational approach was to study our focal actors, the local SI initiatives, as parts of transnational SI networks. This work with embedded UoAs was to explore and unpack the theorized networked agency of SI initiatives. In line with theories on ‘glocal action’ (Gupta et al, 2007), we understood the SI initiatives as ‘locally rooted and globally connected’ collective actors, acting not in isolation but rather in networked constellations of actors. Each of our case studies

was therefore built up in tripartite fashion. Featuring analyses of the transnational SI network and of two 'local manifestations' in different countries (e.g. Transition Towns in the United Kingdom and in Denmark, Participatory Budgeting practices in Brazil and in the Netherlands), they provided multiple 'points of entry' (Putnam 2013) into SI networks. In our methodological guidelines we formulated empirical questions on the interactions, the mechanisms of empowerment, and the circulation of resources involved with these broad networking processes. Taking the embedded twins of 'SI networks' and 'local manifestations' as provisional UoAs, we sought to remain sensitive to their fluidity: The networking dynamics were bound to manifest quite differently across cases.

This application of the relational approach to UoAs has turned out particularly fruitful. It has added considerable depth to our understanding of the 'glocal' agency in its various forms. The transnational level could take the shape of incidental policy transfer, EU-based networking or truly worldwide SI movements. Likewise, the 'local manifestations' could refer to SI activities of different neighbourhood, regional, or even national-level scope. Moreover, the transnational linkages proved to 'empower' the local SI initiatives in ways that differed significantly across cases. The empirical results crucially challenged simple and generic understandings of the kinds of empowerment at issue, unpacking it into distinct rationales of network formation such as access to international funding, construction of legitimacy, knowledge sharing, facilitation of local embedding and creation of visibility (Haxeltine et al 2017). Likewise, the reconstruction of the various network formation processes challenged easy understandings in terms of 'franchise' models: Sometimes the local initiatives were identifiable origins of network formation (like the Totnes Transition Town), but sometimes they rather came forward as local followers of international alliances and discourses (Slow Food, Timebanks). These relational investigations brought important nuance to our general theoretical understanding of 'distributed TSI processes': In some cases, the networks were indeed driving 'powerhouses' of transnational SI movements, but in other cases they hardly came forward as acting entities that could speak on behalf of their constituents – providing little more than ideological labels for local action.

However fruitful in several respects, the binary focus on local and global SI agents also evoked certain complications. It facilitated the detection of the dispersed and elusive SI agency, but also enacted (Cf. section 3.2) it in sometimes debatable ways. Even if methodological guidelines and discussions amongst researchers ensured reflexive awareness of the fluid and provisional nature of the local initiative/global network entities, the dual-level UoA also invited a certain reification of actors. The very distinction of two levels sometimes obscured the vast empirical diversity in network configurations: In some cases, there were indeed distinct network organizations with international secretariats (e.g. Time Banks, Ashoka), but in other cases there was rather a more diffuse networking activity, sustained through the international contacts of individuals working for local SI initiatives (e.g. Living Knowledge and INFORSE). Moreover, the methodological set-up generated a host of borderline cases. Quite regular complications were the phenomena of multiply affiliated local manifestations, of local manifestations that resisted being labelled as members of certain transnational

networks, and of overlapping or even competing transnational networks (Timebanks). In fact, even our identifications of ‘local SI initiatives’ were sometimes challenged, as our ascriptions of collective agency proved not to fit with these deliberately loose organizational forms (Hackerspaces, FabLabs).

The overall conclusion is therefore that the embedded UoA approach to ‘glocal’ SI networks has been a worthwhile reconsideration of the focus on local SI initiatives (Cf. section 3.1). Much of the agency of the latter focal protagonists would have remained obscure without this empirical sensitivity to distributed agency. Ironically however, we have also seen the downside of our dual focus: The very simplicity of the ‘local initiative’/ ‘translocal network’ distinction has introduced some insensitivity to the often even significantly more complex distributions of SI agency. This underlines the importance of approaching these UoAs as provisional entities.

4.3 Open-ended SI transformation contexts

As discussed in section 2, our ontological assumptions required us to ‘de-center’ our main innovation protagonists by investigating how SI initiatives operate within broader co-production processes and transformation contexts. We have deliberately treated these transformation contexts as quite open-ended, formulating only some provisional UoAs as rough, sensitizing understandings of the kinds of phenomena to explore and compare. As footholds for exploration, our case study guidelines distinguished ‘dominant institutions’ (challenged by SI initiatives), ‘other actors/organizations interacted with’, ‘action fields’ as the immediately relevant context, and ‘broader social-material context’ as the general backdrop of the TSI processes (Cf. figure 1). This open-ended approach has been inspired by the typical warning in relational methodologies against structuralist enactments of relevant context (Asdal & Moser, 2012). Even if we were theoretically drawing upon more articulate understanding of contexts in terms of dominant ‘regimes’ and hegemonic structures, we sought to avoid premature assumptions about such structures. Instead, we sought to work with more fluid UoAs and accordingly dynamic and less clearly structured transformation contexts, similar to the ‘arenas of development’ approach of Jørgensen (2012). This choice was also informed by our consideration that there is as yet no extensive body of knowledge on TSI to base more specific UoA choices on. This called for an explorative approach as well.

Our open-ended approach to ‘context’ has in fact delivered some of the typical fine-grained insights, highlighting the diversity of contexts in which SI initiatives operate. With regard to the ‘dominant institutions’, the key element of transformation contexts typically challenged by SI initiatives, our initial theoretical projections were enriched in several aspects:

- The relations of SI initiatives with their institutional contexts turned out to be seldom as adversarial as suggested by many theorizations along the ‘challengers versus incumbents’ scheme.
- Many initiatives did not emerge within literal institutional voids, but often

developed and sustained themselves by drawing upon their institutionally abundant settings – collaborating and co-creating with public authorities, universities, NGOs, etc.

- Whilst some initiatives displayed intensive dialectical confrontations (Argentinean cooperatives, ethical banks), others rather seemed to exist as parallel and relatively self-contained ‘shadow systems’ (Ecovillages, Timebanks).

Importantly, our investigations of transformative contexts explored diverse networks and institutional constellations, rather than assuming monolithic systems and deterministic path dependencies. Postponing theorizations on possible driving factors and transformation pathways, our explorations thus remained sensitive to the broad variety of socio-economic and social-psychological motives underlying the agency of SI initiatives.

We have also encountered the downsides of our open-ended approach, however, which to some extent were inherent. Our empirics reflected the general difficulty in relational modes of investigation to account for no longer fluid and dominating social structures, i.e. the processes occurring ‘behind the backs’ of SI initiatives (Lévesque 2016, see also Haxeltine et al. forthcoming). Apart from the great attention to the internal processes within SI networks, most case studies have focused on the context of ongoing interactions with organisations, institutions and discourses in the relatively immediate surroundings. Generally, the case studies thus told little about the path dependencies and political-economical processes through which SI initiatives gained traction or not. Even if various relevant observations have been made on societal ‘game-changers’ such as rising structural unemployment (Basic Income), the 2008 economic crisis (ethical banks), Peak Oil (Transition Towns) or the market breakthrough of renewable energies (INFORSE), these observations also reminded of the limited availability of historical data in most cases. In turn, this revealed our strong reliance on data gathering through interviews and (participative) observation, typically staying close to the focal UoAs.

In conclusion, the work with open-ended transformation contexts has done important explorative work in helping to bring out the greatly different modes of existence that SI networks have in society. Focusing on the relatively immediate surroundings of SI initiatives, it has provided empirical insights in the ‘arenas’ and ‘action fields’ of SI. This has helped to meet our striving for empowering knowledge. Still, the relatively ‘inward’ focus on SI in-the-making has only partly satisfied the theoretical interest in broader co-production processes, leaving little empirical basis for systematic comparison of historical paths and mechanisms. Part of this is due to issues of data gathering techniques, time and resource constraints and limited availability of historical data. It also reveals a certain methodological trade-off, however: The methodological acknowledgement of fluidity tends to undermine the search for explanatory context variables.

5. Conclusion: UoA choices and research contexts

This contribution has described our methodological struggle with an issue that

arguable has broader relevance for SI research: Seeking to develop empowering knowledge on transformative SI processes, we ran into the circumstance that this agency is difficult to detect. Once taking the insight seriously that TSI involves broad processes of changing social relations in which agency is distributed, important conceptual and methodological challenges arise on the observation of SI agency. We have therefore raised two research questions (section 1): *How to choose the UoA in SI research? Which approaches are appropriate for the investigation of dispersed transformation processes?*

We have deliberately provided a procedural answer to the former question. Clarifying the kinds of considerations underlying UoA choices, our methodological reflections become more transferable to other research contexts. We have underlined that the key to UoA choices resides in the consistency with the broader research context that the methodological choices are to serve. In this regard we have identified 1) normative commitments, 2) ontological assumptions and 3) ambitions towards comparison as particularly important elements of the research context (**section 2**).

Our own attempts to make such consistent methodological choices were strongly driven by the ambition to support our emerging relational theoretical framework with an accordingly relational approach. Engaging with various advances towards relational methodologies, we have arrived at an approach of embedded, fluid and provisional UoA. Crucially, we have subsequently translated these general principles into operational guidelines for case research (**section 3**).

As these further operational choices are ultimately determining for the methodological consistency, we have discussed three of those concrete UoA choices in more detail. Critically evaluating both their bright sides and their shadow sides, we arrived at the following methodological reflections:

The empirical attentiveness to the SI initiative/SI ‘dyad’ has proven to be a fruitful application of the idea of embedded SI agents. Our empirical insights have brought significant nuance to the basic concept of ‘the SI’ – which cannot be simply taken to refer to either SI initiatives or the ideas, objects and actions that they promote. As typical downsides, this relational approach is quite laborious and demanding on the researcher, and the relative lack of a stable empirical focus poses challenges to systematic comparison (section 4.1).

The exploration of ‘glocal’ SI agency through the twin UoAs of transnational SI network and local SI initiatives has similarly proven valuable in clarifying SI agency as networked agency. It has helped to unpack the specific ways in which transnational networks empower SI agency, identifying different patterns of network formation and the associated agency through networked ‘macro-actors’. This exploration of actor relations challenged various theoretical assumptions about TSI agency. A downside of the work with the ‘transnational’ and ‘local-level’ SI agency is however that these twin UoAs are easily reified – if forgetting about the provisional status of this two-level heuristic, it even starts to obscure the complexity of SI networks (section 4.2).

Finally, the work with an open-ended notion of transformation contexts has provided useful empirical insights in the ‘arenas’ and ‘action fields’ of SI. The explorative approach brings important nuance to overly schematic theoretical assumptions about

the transformation contexts in TSI processes, such as those premised on a ‘challengers versus incumbents’ juxtaposition. On the other hand, our reflections confirm how the sensitivity to fluidity comes with a methodological trade-off: Leaving relatively little empirical basis for systematic comparison of historical paths and mechanisms, it becomes somewhat more difficult to provide firm accounts of what ‘happens behind the backs’ of situated SI initiatives (section 4.3).

The identified upsides and downsides of our UoA choices also have broader implications for SI research. As argued above, this is not a matter of wholesale adoption, but rather of fine-tuning and adaptation according to the demands set by other research contexts. The following two avenues for methodological advances deserve particular consideration:

First, it has become obvious how the fruitfulness of a relational approach to the UoA issue depends much on the ambitions towards comparative insight. Considering that there is still much to explore about the complexity of SI phenomena, there are good reasons to push the relational program further. It could be exploited through in-depth case studies, disclosing for example in further detail how a certain socially innovative practice is circulating in society (Cf. section 4.2). On the other hand, there are also strong comparative ambitions in SI research, involving efforts towards explanatory theory (Haxeltine et al. forthcoming), mapping (Pelka & Terstriep 2016; Schröder et al. forthcoming) and longitudinal research (McGowan & Westley forthcoming). For such ambitions towards systematic comparison, a degree of stabilizing assumptions and complexity-reduction is necessary (Eisenhardt & Graebner 2007). In this regard our experiences remind however that it is not only the question how much embeddedness and fluidity a comparative research design can bear, but also how much it needs. Promising ways of striking such balance between particularism and crude generalization are Qualitative Comparative Analysis methods (Byrne 2005) or multiplicity-oriented approaches (Pel 2014).

Second and finally, there are various avenues for methodological fine-tuning regarding the issue of empowerment in distributed SI processes. This issue became particularly pressing in our research context, in light of our ontological assumptions of broad, distributed TSI processes. Arguably it is pervasive in SI research more generally, however: Considering that strong commitments to developing empowering knowledge are rather inherent to SI research (Moulaert & van Dyck 2013; Jessop et al. 2013), it is accordingly important to account for the ontological assumptions and UoA choices through which SI realities are ‘punctuated’ (Law 1992) and ordered. Casting certain groups of actors as lead protagonists and innovation heroes (Meijer 2014) whilst backgrounding others, we have shown how these choices are neither obvious nor innocent: Our distinction between ‘local manifestations’ and ‘transnational networks’ helped to elicit the typically distributed SI agency, but as a simple dichotomy it also obscured some aspects of it. It is therefore worthwhile to develop methodologies in which the principal SI agents are not presupposed, acknowledging that they are often *yet to be detected*.

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SECTION 3

Empirical analysis

- ◇ Chapter 7 - Comparative analysis of our case studies on social innovation
- ◇ Chapter 8 - Synthesis of typologies on constitution of SI networks

Chapter 7

Comparative analysis of our case studies on social innovation

Disclaimer: The section is based on chapter 4 in D4.4 (Jørgensen et al., 2016). It has received a foreword, and the text has received a few minor updates and corrections.

Purpose: To give an overview and insight into the breadth of the empirical data gathered through the case studies in Transit as well as details of the case studies through representative examples.

Summary: The case studies in Transit were analyzed in two comparative reports, D4.2 and D4.4. The two batches of the case studied used different methodological guidelines, to take advantage of the insight gained from analysis of the first batch in the second as part of iterative research design. I in my first analysis in Transit focused on the development over time and organizational forms of the social innovation networks we studied, and in the second analysis deepened the temporal and organizational focus, as well as expanding with general characteristics like types of material manifestations, social innovations, and resources observed in the cases. The analysis presented here is thus very explorative and descriptive, and presented through a range of typologies.

Findings: When characterizing the networks along the generated ideal-types, I found the embedded case set-up, assumptions about, and definition of social innovation networks and local initiatives to be problematic. They are neither organizations, social movements, nor distinct networks depending on the case in question. Many other insights will be taken up in subsequent chapters.

This Chapter is largely based on the comparative analysis I have done in D4.4 and D4.2 (Jørgensen *et al.*, 2014, 2016). The text has been substantially updated since those documents to streamline the vocabulary used in this dissertation, making the text more clear, and in some instances update with additional observations from the case studies. The text is thus not identical but recognizable, and some parts will be almost identical. Also, while I have written the text included here, it has been done in collaboration with the case researchers who have commented and determined the location of their cases in the various typologies. I should then also note that I did not agree with, or initially share the same understanding as the case researcher in all the case studies, leading to the inclusion of specific networks in specific categories in the various typologies. By inclusion, I do not mean a one-to-one relationship between cases and types, but rather than a case is an empirical example of specific characteristics of a type. However, I have let the case researchers have the final say if they deemed their network to illustrate an ideal type or not. In any case, the findings here are solidified, substantiated, or falsified through analysis of the data gained in the meta-analysis (Pel, B. *et al.*, 2017). The text has not been updated with data collected subsequently, like the meta-analysis or the additional research I have done on the Living Knowledge network. This chapter thus also shows a step in the process and development of the theory in this dissertation over time.

Purpose of this chapter

This chapter is largely composed of descriptive typologies intended to give an insight and overview of the data along different lines of interest in relation to the research questions “How does social innovation (SI) emerge? How do SI-initiatives, SI-networks and the ‘SIs themselves’ relate and develop through space and time?” that was the topic of chapter 4 in (Jørgensen *et al.*, 2016, chap. 4), and a core part of the methodological guidelines for the case studies presented by the questions 1.1 and 1.3-1.6 in D4.3 (Wittmayer *et al.*, 2015):

- What exactly is ‘socially innovative’ about the SI-initiative? How and to what extent do which ideas, objects and/or activities that they are working on imply/demonstrate a change in social relations and new ways of doing, organizing, framing and knowing?
- What is the SI-initiative under study regarding aims, core values, principles and activities, and regarding its physical manifestations and artefacts?
- When, how and by whom was the SI-initiative founded?
- How has the SI-initiative developed?
- How does the SI-initiative relate to and deal with established ways of doing, organizing, framing and knowing?

There were also other core research questions but I have in this dissertation mostly focused on this aspect of the case studies. As this was written as an explorative and descriptive analysis as part of a Transit deliverable, there will be few to no theoretical

references in the text and little use of the theoretical concepts laid out in my framework. Several of the concepts might have been used with some advantage here to relate to the discussion more clearly, but that was impossible due to the context the text has been written in.

Table 7.1 - overview of social innovation networks

Name	Description
Ashoka	Network for financial support to social entrepreneurs. This is done by selecting entrepreneurs to support financially and giving them access to their network of sponsors and other entrepreneurs.
Basic income	Connects people committed to basic income and fosters informed discussion. The LSP's here are mostly national associations.
Desis Network	Network for design for social innovation and sustainability. Members are independent and there is no fee.
Living Labs	Co-creative, human-centric and user-driven research, development, and innovation. Members are independent but pay membership fees.
FabLabs	Digital fabrication workshops open to local communities.
FEBEA	Different types of credit cooperatives mostly focused on ethical banking, this network is based in the EU.
Ecovillages	Network of eco-villages and other intentional communities.
Hackerspaces	User driven digital fabrication workshops. This network lacks any kind of formalization, not even having a homepage or member-list.
Impact Hubs	Global network of co-working spaces for social entrepreneurs.
INFORSE	International network of sustainable energy NGOs
ICA	Associations that co-work in the production of sustainable inclusive habitats
La Via Campesina	Aiming for family farming to promote social justice and dignity emerging from an opposition to neo-liberalism
Living Knowledge	Network of science shops and community-based research entities
Participatory Democracy	Network of communities and municipalities reinventing how public money is spent and prioritized
RIPESS	Network for the promotion of the social solidarity economy
Seed Exchange	Protects biodiversity by defending seed freedom for integrity, self-organization, and diversity
Shareable	Connecting and empowering urban sharing initiatives aiming for a sharing transformation
Slow Food	Linking food to a commitment to sustainable local and global development
Time Banks	Networks facilitating reciprocal service exchange
Transition Towns	Grassroots communities working on 'local resilience'

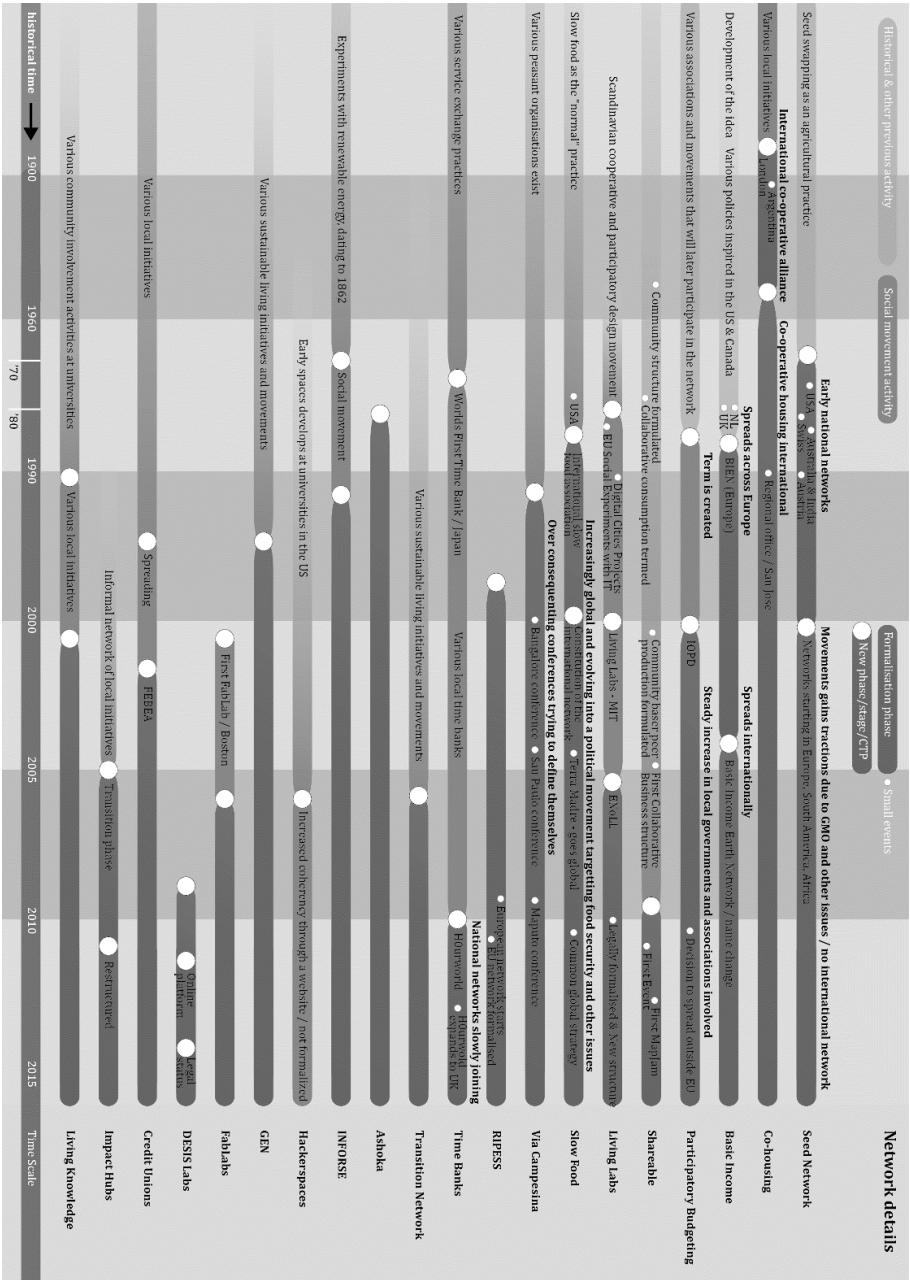


Figure 7.1 – timelines of the 20 case networks

The diagram in figure 7.1 on development details of the various international networks is made from the comparison tables supplied by the case researchers and therefore build on their interpretation of which dates and events that are important. There are three different phases of formalization pictured in the diagram illustrated by different color gradients, as well as white dots that illustrate the networks going from one stage to another:

- Historical practices, ideas, and activities that somehow are linked to the contemporary network. Either as a direct continuity, like co-housing or by enacting historical “ideas” about the practice.
- When a social movement developed that to some degree can be identified as an entity and a predecessor to the international network in our case studies.
- Lastly a formalization of some kind leading to an international network, a critical turning point for the organizing and activities. There can also be several stages in formalization and development, depicted by large white circles.

The stages depicted by the white dots is an early form of the critical turning points that became the focus of the meta-analysis. It is important to notice that the temporal timeline at the bottom is not linear. It is also important to understand that this is a gross simplification and all the networks are not simply going through the same process of formalizing. Indeed some are also going in the other direction sometimes, the networks are not all aiming at a high degree of formalization either, and even within the blue formalized phase, there is a large variance between networks in how formalized they are. In short, this diagram is far from detailed enough to convey all the details and variance within the networks themselves, like the degree of formalization that is largely lacking in the illustration, where only hackerspaces have been deemed as completely non-formalized. Formalization refers to the fact that one or more distinct translocal organizations are identifiable for outside actors. Formalization is thus a relative term, and formalization degree should not be compared between networks but only temporally inside each.

The Seed Movement, for instance, could also have been seen as more of a social movement than a network as there is not even an international network covering all European initiatives. A network like Ashoka is also much more formalized than Living Knowledge that is not even registered as a legal entity.

The focus of the diagram is time, so the diagram should be seen as a set of timelines. What the diagram does show is when a group of people started organizing around a common cause/idea/activity translocally; first, maybe in an informal way, and later with a gradual formalization of the different ideas and activities. The diagram is thus meant to give an impression, a sense of the emergence of the analyzed transnational networks, and the differences between them. The diagram does not intend to lead to any conclusions, but rather give an overview that together with the rest of this dissertation may lead to some hypotheses on TSI emergence, dynamics, and agency. The above diagram provides a general overview of the evolution periods of the cases and their differences.

An interesting observation from the diagram is that in recent times networks more or less always formalize some translocal organization, whereas earlier (before 2000 and further back) the movements while translocal did not condense into more organized networks or create organizations to the same degree.

The typologies – an overview

The section is based on chapter 4 in D4.4 (Jørgensen et al., 2016) with a few minor updates and corrections.

The typologies are generated based on the methods of analytical generalization in chapter 3. However, the nature of TRANSIT is not as straightforward as most of the examples used in the various methodological discussions, where usually one case study is generalized. Multi-site qualitative projects like TRANSIT severely lacks in the literature, not just in SI research but in general. Here we have 20 case studies composed of 60 embedded cases (20 networks + 40 local manifestations) done in two batches, where the focus and structure of the data reported have changed between the two batches. For some case like Living Knowledge 10+ local cases were researched as part of the local network, but in much less depth than the two designated case studied of local cases. In other instances like for Impact Hubs 3 local cases were researched in depth. So, the 20 networks + 40 local cases is a minimum requirement that many case researchers exceeded.

The second batch has been coded separately before going back to the first batch of case studies, in order to let any characteristics and insight arising from them come to their full right. The case researchers were asked to fill out comparison tables on specific aspects of the cases for the second batch of case studies, to lessen the work of reading and finding the relevant data for the typologies in the case reports. The analysis of the second batch thus relies on the case researchers providing adequate data for comparison, and I have only read specific parts of the case reports, where I for the first batch of case studies meticulously coded all the case reports, except two reports that were not finished in time. For these two cases, I initially relied on summaries supplied by the case researchers as well as comment and conversation with and by the case researchers. Data from CTP database has not been used for these typologies due to the timeline of research activities in TRANSIT, i.e., I was doing the coding for this typology before the CTP database was completed. However, the CTP database was used to subsequently substantiate, solidify and/or falsify the outcome of this typology.

The typologies are not meant to be fully exhaustive of the characteristics that can be observed in the cases in the different categories, but are meant to capture the main types, and are expanded to the degree that each network can be found to share some characteristics with at least one of the categories. The typologies are meant to give a broad understanding of the types of observations made in the cases, without being exhaustive, and without having to go into details with all the cases. The typology has thus mostly served as a brainstorm for topics to analyze further in specific articles, as

will be apparent in the chapters in section 3.

Each typology is given a distinct name attempting to capture the essence of the category. Below each category is written the networks that share the characteristics of this category, followed by bullets laying out the core characteristics of the category. The networks mentioned should share all and each of these characteristics unless otherwise noted. However, networks are diverse and may contain local initiatives that both share and doesn't share specific characteristics. For some categories, especially those encompassing many of the cases, a description, and discussion of how some of them relate to the category is included below the category, often related to illustrate maximum variation or critical cases.

Table 7.2: Overview of the typologies developed in this chapter

Development patterns	
Initiation & Start-up Patterns of local initiatives	
<p>This typology is focused on local initiatives: initiation is how the first local initiatives of a network start up, emerge, formalize, or in other ways come together to form a local social innovation initiative.</p> <p>Such emergence happens both before or after an international network is formed, and with or without support from a network. However, the focus here is strictly on the process of forming local initiatives, whether it relates to international networks or not.</p>	<p>Development of independent local initiatives: This type of initiatives starts up unrelated and unaided by international networks.</p>
	<p>Simultaneous development and co-influence: The most distinctive feature of this category, compared to the previous, is that the local initiatives have contact with and influence each other. Here there is an active exchange and development between different local initiatives and the international level.</p>
	<p>Guided expansion: Some regional, national and local branches are actively and strategically founded by international networks.</p>
	<p>Historical practices: This category represents cases that are very varied due to their foundation in diverse historical practices. It might be a direct continuity, which involves a long historical development of the respective initiatives, or a new group of actors picking up an old idea.</p>

Growth & Development patterns of local initiatives	
<p>Focused on local initiatives: How have local initiatives grown and developed over time, after emergence /formation.</p> <p>Some slowly integrate with society and become part of daily life and the institutional landscape, while others continue to grow without any apparent master plan, and yet others are so dynamic and varied that the development of local initiatives within a network defies a general characterization.</p>	<p>The integrated innovation: Some local initiatives, after an active and turbulent time, slowly become part of daily life, taken for granted, or in other ways so integrated/embedded in society that it becomes hard to discern it as a social innovation. Sometimes networks move their focus into other/new social innovations, and sometimes they slowly fade.</p>
	<p>The patchwork networks: These networks are so diverse that it is hard to talk about any general characteristics of local initiatives encompassing their whole network, beyond their diversity. The same network may encompass both festivals, public institutions, NGOs, university departments etc.</p>
	<p>The organic bottom-up growth: Some initiatives keep growing bottom up, seemingly without any intentional action or strategy of an international network or organization. They keep growing and expanding without centralized supervision or strategic intention.</p>

Diffusion of international networks	
<p>Focused on the international networks: How are the international networks trying to expand or diffuse their social innovation is the central question here. What is the explicit strategy or process, from the perspective of the international network?</p> <p>This may be through a clear strategy, which is the focus of this typology, although some networks have mostly spread without any intentional strategies or actions, as depicted in the first category. Local initiatives may both be older or younger than the international network, and then join later, or be founded directly by the international network, although this is rare among our cases.</p> <p>This covers the whole “history,” but some networks change over time and have therefore been divided into early and late phases.</p>	<p>The academics / non-directed expansion: Some ideas for social innovations start in academic circles and are spread through conferences, articles, books and other forms of communication and dissemination. The ideas are then picked up by other academics, organizations like political parties and NGOs, or individual citizens.</p>
	<p>The event maker: Some international networks play out related to non-daily activities like yearly conferences or festivals, or more frequent local events like food tastings. Some networks have daily activities, but the events are significant for recruitment, diffusion, forming strategies, electing leadership etc.</p>
	<p>Organized expansion: Some international networks actively spread and create new regional, national and local branches. The international equivalent to the guided expansion category.</p>
	<p>Service organizations and lobbyists: Some networks have been created/expanded by political decisions like Time Banks in Spain, while others exist and grow through their ability to lobby and affect policy makers. This last type is largely composed of international networks that specific functions for the members.</p>

Characteristics of the expansion of international networks	
<p>Focused on international networks from a local perspective: Why are local initiatives joining the social innovation network, who are the local initiatives that join, and how is the joining taking place.</p>	<p>Branding and blueprints: Some international network organizations operate as a form of license owners, with legal control of the brands, and providing blueprints in the form of documentation, handbooks, operational guidelines, legal disclaimers etc. Some networks also provide such blueprints without any “brand” or legal requirements for their use.</p>
<p>Unlike the previous category that focused on the actions of the international networks, this typology focuses on the growth of the international network <i>from the perspective of the local initiatives</i>, i.e., why and how they join the international network.</p>	<p>Strength in numbers: Some social innovation initiatives need a critical mass to be effective, and so have a natural inclination to merge into national or international networks. Networks that act as service organizations are typical of this type, and they typically emerge when a critical mass of local initiatives exist.</p>
<p>The aim is to explain the nature of the growth of international networks, by explaining why and how local initiatives become members of the network.</p>	<p>Umbrella networks: Some membership affiliations give the possibility of funding and other resources, for example from the European Commission. Local initiatives here often exist before a network is formed and join to get access to resources, and there is more variety between initiatives. Network growth thus consists of co-opting existing initiatives. This can in some ways be like “strength in numbers,” however, the purpose is different, as these initiatives join for convenience and opportunity and not because a critical mass is a necessity to function.</p>
	<p>The socialite networkers - Peer-support and knowledge exchange: Sharing ideas, models, experiences on implementing, operating, getting funding etc. is a core reason for joining an international organization for many of the cases. In some ways, these networks function as extended employee rooms where colleagues can discuss problems in their daily life.</p>

Typologies on the general characteristics	
Manifestations	
<p>Focusing on where and how social innovation initiatives interact with the world, where they can be encountered, how they <i>manifest</i> in the world.</p> <p>Sometimes various social innovation initiatives can seem very abstract, and it is unclear how they interact with the world. If someone was interested in seeing them or becoming a member, where would they go and how would they interact with the initiatives? Space is an important aspect here, although a few networks relate very little to specific places & spaces.</p> <p>It is important to remember that these categories, as all ideal-types, are not mutually exclusive.</p>	<p>Physical Spaces: All these social innovations have a specific physical place that actors go to become part of or in other ways interact with the local initiatives or the international network.</p>
	<p>Virtual Spaces: All social innovation networks have web-pages, while it is not central to their purpose for all of them, for this ideal-type of networks it is often at the core or the very least crucial for their activities if not vital.</p>
	<p>Temporary Spaces: There are no offices, workshops, contact points, no web page carrying out essential activities, the temporary space is both the activity and the manifestation of the network. This is mostly related to event type networks as explained above. They may have web pages and other spaces, but the temporary spaces are essential.</p>
	<p>Artefacts: These networks and local initiatives play out in relation to specific objects, often physical like seeds or production equipment, but digital artefacts like software is just as relevant.</p>
	<p>In affiliations – social relations: These networks and local initiatives exist through and manifest in interactions, practices and activities, and without these continuous activities the social relations would likely dissipate, and the networks cease to be active. In Living Knowledge the reason for joining is to share in the social relations in the network. All social innovations, of course, have social relations, but some networks like FabLabs have a strong material manifestation that the social relations are attached to and social relations have been necessary for their establishment. In contrast, networks in this ideal-type manifest mostly through interactions and social relations.</p>

Aims and Values	
<p>Aims, values, purposes, missions, visions, are all usually linked together, but may, however, be distinct from what local initiatives are doing, and what is socially innovative about them. The stated purpose of a social innovation network, the values it espouses, the narrative of change it tells, is the focus of this typology.</p>	<p>Sustainable lifestyle movements: These movements are characterized by having, to some degree, an internal focus on developing themselves, their practices, and their ideas, although they are also trying to affect actors outside the local initiatives. They want to change the world, make society more sustainable, changing the economy to have a fairer valuation or resource distribution, and other focuses and they want to do it by example, often experimenting with new forms of living.</p>
	<p>Emancipation movements: These networks are generally ideologically motivated, at least in the rationale behind the networks, and aim at empowering more or less well-defined groups outside their own initiatives & network.</p>
	<p>Entrepreneurial Support: These networks support entrepreneurial activities by providing access to resources and infrastructure. Impact Hub and Ashoka are the obvious networks here, but FabLabs and Hackerspaces also enable entrepreneurs although in a less structured way.</p>
	<p>Fine-Tuning: Some of the initiatives are not “revolutionary,” but merely envision adjustments within existing systems. It is a discussion of degree whether something is a minor change, revolutionary, or transformative.</p>

How are the initiatives trying to make a difference?	
<p>In difference to the previous typology, this category comprises actual activities and not espoused intentions. This typology is not about what is socially innovative about the initiatives, but the ways the networks try to implement/reach the aims explained in the previous typology. Some of the categories may be akin to a social innovation, like the connection hubs (first category), but this is merely a coincidence.</p>	<p>The connection hubs: These networks accomplish their aims partly by connecting different actors with each other. The networks that manifest in interactions & social relations belong here, among others.</p>
	<p>Practice/Living focused: GEN and Transition Towns are the most encompassing networks; they try to alter entire communities and lifestyles to become more sustainable. Other networks like co-housing, the seed network, or slow food target specific practices like eating and enjoyment of food, our housing, or agricultural practices etc.</p>
	<p>R&D Centres: FabLabs, ENoLL, and Hackerspaces are all technology focused and providing spaces and tools for developing or producing new technology. Hackerspaces are not explicit about any such purpose but provide such opportunities. Desis labs are focused on making a sustainable design, which does not necessarily relate to technology.</p>
	<p>Support for groups: Credit Unions offer access to finance for social entrepreneur and disadvantaged people. RIPESS is a support organization aimed at the solidarity economy and any network within this area. Lastly, Via Campesina is exclusively trying to support farmers.</p>
	<p>New Policies: Few of the cases studies work explicitly with policy. Basic Income and Participatory budgeting work directly with policy as their primary purpose is to affect policy and implement their innovation.</p>

What is socially innovative?	
<p>As many of these cases have been chosen with the assumption that they represent different types of social innovations, it is important to discuss what is socially transformative in the cases. This is what this typology focuses on.</p> <p>It is important to note that this is purely an exploratory exercise, based on the focus on social relations emphasized in the working definition of social innovation adopted in Transit. The typology is not theoretically informed, beyond the theory that influenced the guidelines for the case studies that the typology is based upon.</p>	<p>Social relations in communities: These networks and initiatives work with the social relations in communities, with the practices in daily life, often but not always in relation to the environment and sustainability.</p>
	<p>Social relations between authorities and citizens: Networks in this cluster aim to alter public systems, governance approaches, or policy, in order to change the social contract between the state and its citizens etc.</p>
	<p>Social relations for knowledge exchange: These initiatives facilitate knowledge exchange, which then may lead to other innovations that would facilitate completely different changes in social relations.</p>
	<p>Relations for empowerment/approval, funding, and support: The social relations created by the international networks somehow empower the local initiatives, and that is what is socially innovative about the <i>international networks</i>. The local initiatives are mostly disregarded here, as they are too diverse to discuss in general terms in relation to the kind of innovations they foster.</p>

While the focus of these typologies is mostly on the emergence and development a lot of other insights also turned up during the coding on characteristics of the cases, which are relevant to get a general understanding of their nature. These typologies were meant to map out the property space of the cases in Transit and not necessarily the extremes of the dimensions of the typology, i.e., it is mapping the extremes in the property space of empirical material and not the extremes of the hypothesized property space.

However, as some of the typologies focus on characteristics that was not part of the focus in the methodological guidelines, and because there were some many aspects in the guidelines as discussed in the previous chapter, the empirical data might lack some consistency. So, if some networks are not used as an exemplar for a specific category it does not necessarily mean that they do not share some of the characteristics, the data on that network merely did not contain any information related to the specific category. This chapter should then be used as an inspiration and insight into the characteristics of the cases and not a full analysis or mapping of the case reports in relation to these analytical focal points. For some of the categories some of the networks are also marked as (early) or (late) to connote that the relation to a specific character has changed over time, or by "specific local initiative" to connote this characteristic is only specific to that local initiative among those that we studied in that network.

Typologies on the general characteristics of the cases

How networks are materially constituted

Following from our material-semiotic perspective this is especially relevant, but no matter perspective all networks and process is like globalization are necessarily materially constituted. The problem though is that the material aspect can become neglected in other perspectives, and various social innovation initiatives & networks can then seem very abstract. It is then unclear how they interact with the world and are materially constituted, and it becomes challenging to provide practical insight and advise to policymakers and the practitioners that is one of our aims. The question here is thus if someone was interested in interacting with them, becoming a member, or to help their cause, where would they go and how would they interact with the initiatives?

Dimensions and focus

The concept addressed by this typology is one of manifestation – how do initiatives create and stabilize networks by constructing material artefacts and spaces as well as performing practices and interactions. This is based on research from STS and organizational studies that illustrate that knowledge cannot travel unless it manifests in a material form and that everything must necessarily manifest locally to affect the world (Law and Hetherington, 2000; Czarniawska-Joerges and Sevón, 2005), including abstract processes like globalization. It is important to note the one such material form that knowledge can travel in is us, our brains as Czarniawska-Joerges and Sevón (2005) comments, which however lacks temporal and material stability when we go to hold a presentation or meeting its a one-time performance that quickly dissipates unless stabilized in notes, recordings, pictures or other material artefacts. This is why networks based on events and/or practices need to be continuously performed to survive and can have relatively low temporal stability. This leads to the two dimensions of this typology, the temporal stability, and the strength of the material manifestation. Strength here is a qualitative assessment. Artifacts like tools and text are for instance easily moved, lost, or changed, while buildings and villages will last for years although their use and interpretation can change.

Manifestations	Physical & digital manifestation low	Physical & digital manifestation high
Temporal stability high	Artifacts & Digital spaces	Physical spaces
Temporal stability low	In interactions	Temporary spaces

Physical spaces

Examples: Impact Hubs, Desis Labs, GEN (eco-villages), Credit Unions, FabLabs, Hackerspaces, Transition Towns, Living Knowledge (early), Co-housing, ENoLL (Living Labs)

- The local social innovation initiatives manifest in a specific physical space
- The space plays an integral part in the activities of the social innovation initiative

All these social innovations have a specific place that actors go to become part of or in other ways interact with the local initiatives. FabLabs, Hackerspaces, Desis Labs, Impact Hubs and ENoLL are composed of workshops, offices, or laboratories, i.e., specific rooms or buildings. Transitions Towns, GEN, and Co-housing relate more to neighborhoods, towns, apartment complexes and the practice of living as well as the real estate markets.

Science Shops tried to fashion themselves as physical “shops” where citizens could come to “shop” for research aid, or sell their projects you could say, although this over time moved to a more digital model it has in recent years seen a small come-back in Germany. In all these initiatives the purpose was in providing a physical space like FabLabs that provides a place for digital manufacturing, or their activities could not be carried out without a designated physical space like science shops that needed it to get into contact with the communities they focused on. So, the physical places either play a part in the staging efforts, is the envisioned outcome of the staging, or both.

Digital Spaces

Time Banks, INFORSE, Living Knowledge (late), ENoLL, Transition Towns, Basic Income (BIEN)

- There is a distinct digital space that is integral to the purpose of the social innovation initiatives and the network – its one of the main anchor points for interactions

All social innovation networks have web-pages and back-end interfaces; however, it is not central to their purpose or organizing for all of them. Impact Hub, for instance, could also function without a homepage or its interface, and so would an Eco-village. In both cases, it is the co-location of actors that is crucial, and web pages mostly serve dissemination of information or logistic purposes but has even in these areas not served a critical role and is indeed not related to their daily activities and social innovation. The later model for most Science Shops would not function without their web pages, as they act as the storefront where contact is established, and projects are often facilitated between civil society and the university digitally as well.

The Living Knowledge network itself does not even have a physical manifestation; it is embodied in a webpage that contains an archive of all Living Knowledge projects to date as well as a member list. The Living Knowledge network interestingly did not even form before ICT emerged and were able to facilitate the organizing efforts. It seems the meager cost of ICT platforms like a webpage has been crucial for non-for-profit networks with few or no resources. Without the homepage, you could imagine that Living Knowledge essentially would slowly dissolve, as there is no staff either to

keep performing network activities actively. Of course, the social relations that Living Knowledge is a manifestation of would still exist, but ICT here serve to maintain the relations as well as helping diffusion in the periods between activities. For ENoLL the website is also critical, and it also has a knowledge sharing part only accessible for its members. For Transitions Towns their Transition Culture blog was important in the growth & diffusion of the network. The BIEN network and all basic income proponents, whether affiliates or not, use the Internet to amplify relevant news, to organize on and off-line activities, to interact and share, and to introduce newcomers to the topic (e.g., on pages explaining the concept and its history). More recently, crowd-funding initiatives are using the web to realize the experience of a basic income for some: whenever a particular sum is collected, a basic income is handed out through a lottery system (e.g., € 12,000 become a monthly, tax-free payment of € 1,000 for the lucky winner in the German case). ICT is thus central for the social innovation itself in relation to BIEN.

While digital spaces thus seldom are the primary manifestation of a network or the local initiatives they usually serve a key function in dissemination, logistics, organizing, and may even be the platform through which their social innovation is carried out. They are also important in maintaining social relations in geographically dispersed networks, although it seems important to have periodic face-to-face interactions that then often take place in temporary spaces like a conference, seminar or workshop.

Temporary Spaces

ENoLL (Manchester), Seed Movement, Slow Food, Living Knowledge

- May not have permanent physical spaces or activities
- Events, festivals, conferences or other temporary physical activities are how these initiatives manifest themselves

The local initiative of the Seed Movement in Brighton is a good example; it is a yearly festival focusing on seed swapping, no more no less. There are no offices, no webpage facilitating essential activities, the festival is both the activity and the manifestation of the movement in Brighton. Slow Food is a bit similar, focusing on events related to food in various ways. ENoLL is generally different, but one of the local ENoLL initiatives listed in Manchester is also a yearly festival, here focusing on digital technologies. However, this local initiative seems rather unusual compared to the network as a whole. Living Knowledge has EU project as one of the most significant activities for the network; it is where local initiatives meet and where a development of the networks happens. Otherwise, local initiatives in Living Knowledge would seldom meet and interact face-to-face, which seems crucial, and there would be produced very few objects to help stabilize the network.

Temporary space can thus both be the main manifestation of a network and the outcome of the interactions, but it can also merely be a space used to facilitate or maintain the network and not the envisioned outcome in itself. Here there is often a large distinction between the local initiatives and international network, in that local initiatives often have a permanent space with the exception of the seed movement in Brighton and

Living Lab in Manchester, but the international network like in Living Knowledge is ephemeral. Temporary spaces for the last category then serve a core function as space where local initiatives of a network can interact face-to-face.

Artifacts

FabLabs, Hackerspaces, Seed Movement, ENoLL, INFORSE

- Artifact, mostly physical objects, play a key role in these social innovations.

The Seed Movement is focusing on seeds, a very specific, concrete, and physical object. FabLabs and Hackerspaces focus on technology objects but their focus is more dispersed, but at least FabLabs are tightly bound to physical hardware like 3D-printers, CNC-cutters, computers, and the products you can manufacture with them. ENoLL, focusing on digital technologies, may or may not be dealing with specific artifacts depending on the local initiative in question. However, virtual artifacts, like a piece of software are just as relevant. Lastly, INFORSE is working closely with renewable energy technologies, especially embodied in Wind Turbines for the Danish case. Other cases may be dealing with the specific artefact on a case to case basis, but not universally as part of their social innovation.

In Interactions - social relations / bodily constituted

Ashoka, INFORSE, RIPESS, Science Shops, ENoLL, IOPD, Via Campesina, Shareable, Seed Movement, Impact Hub

- The interactions and social relations facilitated or created by these networks are part of the focus and aim of these social innovation networks, and they often have little or no physical manifestation themselves beyond the local initiatives and the interactions through which they are constituted.

Science Shops connect civil society organizations with researchers and/or students that can help them. These relations and the projects that are carried out is how the science shops manifest themselves, especially newer science shops that may not have any office or other space except for a digital platform. The Living Knowledge network is necessarily also a web of local initiatives affiliated with each other, more so than many other networks, as there are no other manifestations of this network except a homepage. The materiality here lies in the interactions, and there networks and initiatives are only “alive” while they are performed. The interactions of course also birth artifacts and relations, but without continues interactions, these networks would likely dissipate.

Shareable connect like-minded initiatives, and like Living Knowledge is essentially a webpage picturing these connections and regular events. It is, however, harder to see what these interactions and relations accomplish, which in the case of Living Knowledge is various very concrete projects and research. Ashoka connect their members to an exclusive network of other social entrepreneurs and possible funders, which is a significant part of how they aim to empower Ashoka fellows, even though Ashoka

has various other very material manifestations like offices. Participatory Budgeting focuses on and tries to renegotiate the relations between public authorities and the citizens. This also characterizes the Seed Movement to some extent, they build relations around exchanging seeds, so it is tightly bound to their practice and the interactions around seed swapping. This is also limiting the local seed initiatives ability to scale up.

Aims and Values

Aims, values, purposes, missions, visions, and their transformative ambitions are all usually linked together, but may, however, be distinct from what local initiatives are doing, and what is socially innovative about them. The stated purpose of a social innovation network, the values it espouses, the narrative of changes it tells, is the focus of this typology.

Dimensions and focus

The concept addressed by this typology is of transformative ambition of the networks, what are they aiming to change and how. This is typically represented through various narratives, like Transition Towns that talk about reimagining and rebuilding our world, initially drawing on narratives around peak oil and permaculture. This is the imagined change, the focus of the transformation, and another aspect is the way the networks imagine this change will take place, the way they work and the activities they carry out. One of the dimensions here is then the internal vs. external focus that refers to the beneficiaries of their social innovations and activities. For Transition Towns it is their members, while for Living Knowledge they target disadvantaged groups in society trying to give them access to a resource at the university, i.e., actors external to the network. The other dimension is the relation to existing systems. Very generally speaking most of our networks try to either create a new system, like an alternative to capitalism that Time Banks strive for, or fix a problem within the existing systems like Impact Hub that through social entrepreneurship work within the system of capitalism to fund social innovations. The border between new systems and fixing the existing system is fluid and depends on the unit of analysis, as some networks work to replacing sub-systems while keeping larger systems intact. The definition of systems is here in itself a fluid entity.

- Concept: Aim, the transformative ambition of the network, the type of change aimed at.
- Dimensions: 1) relation to existing systems, 2) internal vs. external focus

Transformative ambition	Internal	External
New systems	Lifestyle movements	Emancipation
Repair systems	Entrepreneurial support	Fine-tuning

Sustainable lifestyle movements

Time Banks, GEN (Eco-villages), INFORSE (International Network for Sustainable Energy), Transition Towns, Co-Housing, Seed Movement, Slow food

- Tries to develop a more sustainable society focusing on environmental, social, or economic aspects.
- See society as prioritizing values incorrectly
- Developing new systems to replace existing systems or shadow/parallel-systems existing current side-by-side systems

These movements are characterized by having, to some degree, an inwards focus on developing themselves, their practice, and their ideas, although they are also trying to affect actors outside the local initiatives. They want to change the world, make society more sustainable, change the economy to have a fairer valuation or distribution, and other focuses. Also, they want to do it by example often by experimenting with new forms of living, working, eating, growing etc.

Time Banks work on an alternative economic model based on service exchange among the members. Some imagine it to replace capitalism, while others see it as a parallel system.

Transitions Towns, GEN, and co-housing focus on new ways of living and building communities. This range from a rather pragmatic focus on providing affordable housing to disadvantaged communities, to completely alternative ways of living to experiment with new family patterns or zero-energy housing.

INFORSE exemplify some of this characteristic as some members have been active in developing renewable energy systems like wind turbines, while other members are living the good example i.e., using renewable energy or building zero-energy housing and communities.

The seed movement is also tied to a discourse on food sovereignty and diversity, in part sparked by the emergence of GMO food, but also driven by personal interest in seed swapping, gardening, and agriculture of the members. It is interesting to remark how other innovations like Slow Food have adopted the seed movement motivations.

Emancipation movements

Desis, Credit unions, FabLabs, Hackserpaces, RIPESS, Science Shops, Via Campesina, Basic Income, IOPD (participatory budgeting)

- Targeting groups outside the movement
- Having an ideological purpose to some degree related to democratic and sustainable development
- Some of the initiatives provide infrastructure for cooperation and co-production

These networks are generally ideologically motivated, at least in the narrative behind the networks, and aim at empowering groups outside their initiatives. This group of networks most closely resemble the traditional social movements that have been the focus of research for decades (Snow, Soule and Kriesi, 2004) state-of-the-art essays by internationally recognized scholars on an array of topics in the field of social movement studies. Contains original, state-of-the-art essays by internationally recognized scholars Covers a wide array of topics in the field of social movement studies Features a valuable introduction by the editors which maps the field, and helps situate the study of social movements within other disciplines Includes coverage of historical, political, and cultural contexts; leadership; organizational dynamics; social networks and participation; consequences and outcomes; and case studies of major social movements Offers the most comprehensive discussion of social movements available (Snow, Soule and Kriesi, 2004).

Take Living Knowledge that focuses on empowering civil society by offering free access to research, connecting civil society organizations with researchers and students. Some FabLabs and Hackerspaces may belong to this group, but the local initiatives differ a lot in their narratives between them.

Basic Income and IOPD have some similarities in that they fight for democracy, freedom, and equality through changes in policy, targeting beneficiaries largely outside their membership (in the case of Basic Income, it is even considered essential to the concept that the basic income will be a universal entitlement). Basic income, in particular, relates to female emancipation and invokes general ideas about emancipation from paid work and full employment policies to allow people to find and live for their true purpose in life, sustained by a monthly payment to every individual that is high enough to ensure basic subsistence and social participation.

Via Campesina is an international network that fights for farmers, although many of these farmers have been enrolled as members over time, and so its a mix of internal and external beneficiaries.

Entrepreneurial support: spaces and infrastructure for members

Impact Hub, Ashoka, FabLabs, Hackerspaces, ENoLL, Credit Unions

- Likewise targeting a group outside the movement
- Developing different types of infrastructure for entrepreneurial activity

The clients of Impact Hub - technically the paying members of the local hubs - are regarded as members of the movement and also the target group that the network aims at enabling in their innovative entrepreneurial pursuits and helping to have an impact. Thus, members and local Impact Hub organizers are part of their project to change themselves and based on it, change the world. Ashoka is likewise aiming at empowering social entrepreneurs. FabLabs, according to the FabLab Foundation, also aims at supporting inventors, while some also have a focus on making the world a better place.

FabLabs and Hackerspaces may partially belong elsewhere, as the movements have an ideological and political rationale behind it. However, the local initiatives diverge a

lot from each other, with FabLab Amersfoort wanting to use the tools of digital fabrication for the good of the community and local economy, brandishing a narrative of emancipating production from big conglomerates. The two movements are in general focused on providing help-to-self-help. There are significant discrepancies between different members of these two networks in how politically motivated they are. Besides, it seems that some of the local initiatives might as well interchange their movement or network affiliation, and some are members of both networks.

ENoLL is a bit in the same “boat” as FabLabs and Hackerspaces, as some labs are aiming at facilitating innovation especially related to technology. However, there is no specific focus on commercial affiliations in either Manchester or Eindhoven (our two local cases) even if some of the spaces provided can be used for such.

Credit Unions provide entrepreneurial support through fund-raising activity to the Third Sector (social and solidarity economy) as well as financing profit-making enterprises within sustainable production and not-for-profit institutions or associations with cultural, environmental and social goals. The goal here is thus to make access to financial capital more equitable, working at “fixing” parts of capitalism.

Fine-tuning

IOPD (participatory budgeting), Living Knowledge

- Tries to alter systems rather than changing them

Some of the initiatives are not “revolutionary,” but merely envision minor adjustments within the existing system. It is a discussion of degree whether something is a minor change or revolutionary like Participatory Budgeting that tries to alter the governance of budgets in cities to involve citizens more, altering the governance mechanism slightly while keeping the overall city governance intact. Living knowledge also aims at changes to university-civil society interactions but do not aim to alter the structure of the universities, at least not among our cases. Its here about ensuring equal access to knowledge across society by giving free research aid to communities unable to afford it, by working within the existing universities.

This difference from this category compared to entrepreneurial support is the focus on improving conditions for actors external to the networks themselves. Entrepreneurial support instead focuses on creating spaces, infrastructure, and improving conditions for their members/clients with the assumption that they will improve society and solve social problems. Entrepreneurial support is thus working towards a more indirect impact.

How are the initiatives trying to make a difference: strategies and actions

This typology is not about what is socially innovative about the initiatives, but the ways the networks try to implement/reach the aims explained in the previous typology.

Some of the categories may be akin to social innovation, like the connection hubs (first category), but this is merely a coincidence. The dimension of internal vs. external focus of the networks is identical to the previous typology, while the other dimension focuses on action type ranging from supporting other actors to do the actual actions for achieving the goal to being out on the front-line themselves.

Concept and dimensions

The concept addressed by this typology is the approach to transformative change, what specific strategies and actions the networks use to carry out and implement their social innovation. There is some overlap with the previous typology that focused on the ambition, on what the networks imagine, their vision of a new or different world. Here the focus is specifically on what are the networks doing in practical terms, irrespective of what their goal is. The first dimension is internal vs. external focus, as the previous typology, that focus on if the networks mostly interact with their members/clients or with external actors. There is a fluid distinction is about the strength and longevity of the relations to the beneficiaries, which for the external is temporary and usually confined to a specific project or interaction, and for internal is long-term and related to membership fees and other formal relations. The other dimension is action vs. support that focuses on if the networks directly try to implement their envisioned change, the ambition focused on in the previous typology, or if the network tries to provide spaces and infrastructure for other actors that then carry out the activities creating and changing systems.

- Concept/Idea: Strategy or plan for achieving change
- Dimensions: 1) action type: support vs action, 2) internal vs external focus

Strategies and actions	Internal	External
Action	Practice	New policies & products
Support	Incubators	Connection hubs & lobbyists

The connection hubs & lobbyists

Ashoka, Living Knowledge, Shareable, Impact Hubs, Time Banks

- The innovations embodied in these networks lie in their ability to connect actors – brokering new interactions & relations
- The changes in society aimed at are often facilitated by these connections and not the initiatives themselves

Living Knowledge explicitly tries to empower civil society by offering free access to research; this happens by connecting CSOs and other civil society actors to researchers and/or students at the university. Science Shops are most often not doing the research themselves, but provide spaces and infrastructure enabling other actors to solve problems through research.

Shareable also work to connect local initiatives in specific cities working with

concepts or activities related to the sharing economy together, and thereby empowering by enabling exchange of experience, creating funding opportunities, partnerships, etc. Part of the mindset is that it is wasteful to reinvent social innovations that are already being practiced just because you are unaware of them. They thus carry out map-jam events in cities, to map what is going on and connect initiatives.

Ashoka is a little different, they offer their members access to the Ashoka alumni network and thus acts as a hub, but they also have a range of other services meant to empower their members. The main pathway to change is enabling the Ashoka fellows, and not carry out project and activities on their own.

Lastly, Time Banks connect people that can help with a specific task that is needed, and facilities payment in the form of connecting with yet other people that can provide a service in return. This example is on the border between support and action, as the network does actively build the infrastructure constituting the alternative system to capitalism, while it is the beneficiaries that carry out all the actions that constitute this new economic system.

Practice and daily life

GEN, INFORSE, Transition Towns, Co-housing, Seed Network, Slow Food, Shareable, Basic income

- These networks try to affect how we live our whole life or specific practices like consumerism or reliance on fossil fuels

GEN and Transition Towns are the most encompassing networks; they try to alter entire communities and lifestyles to become more sustainable.

Other networks like co-housing, seed network, or slow food target specific practices like eating & enjoyment of food, our housing, or agricultural practices, etc.

Shareable is a bit more diverse with initiatives targeting everything within the sharing economy like repair cafes that try to affect consumer practices - getting us to repair products instead of buying new.

Basic income inspired initiatives that crowd-fund and distribute fairly substantial monthly payments for one year and are aiming at letting people experience and see in practice what it means to receive basic income. These initiatives are meant to make the abstract concept tangible, concrete and understandable.

Incubators, Laboratories, and (alternatives for) R&D centers

Impact Hub, Desis, FabLabs, Hackerspaces, ENoLL

- These initiatives are trying to facilitate innovation, often in relation to technology, by providing infrastructure & spaces affording experimentation and knowledge exchange

FabLabs, ENoLL, and Hackerspaces are all technology focused and providing spaces and tools for developing or producing new technology. Hackerspaces are not explicit about any such purpose but do provide such affordances.

Impact Hubs again provide a space, here for social entrepreneurs, although not

focused on either design or technology, still, entrepreneurship is an activity aimed at producing innovations.

Desis labs have as its primary aim to foster social innovation towards sustainability through design, which does not necessarily relate to technology. Desis is a borderline case that also shares characteristics with new policies & products, as they often actively carry out projects on their own that produce sustainable products for beneficiaries external to Desis, although they also provide a space for students and beneficiaries to develop sustainable design and learn about sustainability.

Support for groups & networks

Credit Unions, Via Campesina, RIPESS

- Providing services or support to specific groups

Credit Unions offer access to finance for the social entrepreneur and disadvantaged people. RIPESS is a support organization aimed at the solidarity economy and all initiatives within this area. Lastly, Via Campesina is exclusively trying to empower farmers. It can be said that what these networks do is not always social innovation, but they empower the social innovation of other actors. Providing finance, for instance, is not innovation in itself. However, providing finance to a group that never had such access before, is creating new social relations and enabling agency. In the same way, the other networks provide services to groups that did not have such support before.

New Policies & products

Basic Income, IOPD, Via Campesina, Seed Movement, Slow Food

- Aiming at changing policy and/or systems.

As mentioned, few of the cases studies work explicitly with policy except Basic Income and Participatory budgeting that have as their main purpose to affect policy. In both cases, changes in policy and the role of the government are both the means and the end to implement the networks' social innovation (and in that sense, social innovations in the policy-sector and generally changing governmentalities have a role to play in the advancement or implementation of the social innovations). In the case of basic income, for example, local, regional and national governments in different countries are currently developing plans to experiment with basic income (plans vary across countries in terms of methodology, aims, and scope). Further, individuals and networks on a national and international level have repeatedly organized petitions or, in the case of Switzerland, national referenda.

Via Campesina also works to affects policy, but their purpose is to empower farmers, and this might also be achieved in other ways.

Slow Food aims at changes in the current food production systems to provide good, clean and fair food for everyone. The movement claims "the right to food" as a human right. Besides, Slow Food pursues a change in global and local policies, providing advice and support to governments and institutions like the EU (through the Slow Food Brussels' liaison office). Slow Food's political agenda is gaining presence in the

international scale, oriented against globalization of non-sustainable agricultural practices or international treaties (TTIP).

Typologies on Development Patterns

Two of the interesting characteristics of social innovation initiatives and networks is how they grow and spread, or diffuse and scale up depending on how you put it. Spreading or diffusing is how a social innovation jumps from one place to another. Some initiatives are inspired by developments and ideas from other cities or countries and decide to start like-minded activities at home, which is one of the ways a social innovation is spreading. Alternatively, some social innovation networks actively start/plant new local initiatives in other countries and regions as a type of business expansion, colonization or missionary activity. The two typologies named **Diffusion from the international network** and **Characteristics of the expansion** both relate to spreading and are focused mostly on the international networks.

Growth or internal development in contrast to spreading is how an existing network and its local initiatives develop without establishing new local initiatives, a more inwards type of growth. Logically I assumed that social innovation networks spread before growing, however, there are some mixed cases, where existing social innovation initiatives are co-opted into other social innovation networks, like a FabLab or HackerSpace adopting the label of a Living Lab. So, the spread of a specific social innovation network can happen independently of how a local initiative has developed. The point here is that there might be several disparate timelines within a network and it is not a simple pattern going from an initial idea and local initiative to a gradual expansion and development. This distinction developed especially during the coding of Batch 2, where Batch 1 has a more simplistic understanding of the networks, for instance labeling and co-opting of existing initiatives were noted very explicitly in the last 8 case studies. The two typologies named **Initiation & Start-up Patterns** and **Growth & Development Patterns** both relate to growth or internal development in contrast to diffusion and are focused on local initiatives.

On a side note, sometimes the variance inside a social innovation network is so large that different local initiatives, or different regions, could belong to different patterns of growth. In some networks, the international organization and the local initiatives could be rather distinct and different types of organizations. Some social innovation networks also change the way they grow and expand over time complicating matters further, making it necessary to group some social innovation networks into early and late phases. Characteristics that only pertain to a specific part of a case are marked with (network) denoting the international networking, (initiatives) denoting the local manifestations. Sometimes a characteristic only related to a specific part of a case and will be denoted with ("initiative name") referring to the specific local initiative. Sometimes parentheses will also be used to specify early of late phases in the development.

Initiation & Start-up Patterns

Initiation is how the first local initiatives of networks start up, formalize, or in other ways come together to form a local social innovation initiative. An issue when talking about patterns of how local initiatives start is as mentioned the time aspect, as several international networks have changed pattern during their life. Living Knowledge is here a good example, where they initially started independently from each other, and no international network existed, but after the formalization of Living Knowledge, several new science shops have been funded through EU projects run by the network. Credit Unions (FEBEA) is a bit the same. The network FEBEA likewise supports some processes of enlargement especially in recent years, but each credit union emerges as grassroots innovations. The network gives support and advice, but without creating new initiatives by themselves (I.e., it is not like branches of a bank).

Another side note, as mentioned in the methodology, these categories are ideal-types and thus not mutually exclusive. Besides designating a late and early period in the life of a social innovation network, some networks simultaneously grow new initiatives in different ways simultaneously and thus share characteristics of several ideal types although this might be hard to give an overview over based solely on the case studies as our breadth is limited to 2-3 local cases per network. The meta-analysis will later remedy this.

Concept and dimensions

The concept addressed by this typology is one of emergence & diffusion in relation to social innovation networks, what are the patterns we have observed empirically. The first dimension is the age of the local initiatives vs. the network, if they predate it or not, and the second dimension the degree of involvement of the network in the emergence or establishment of local initiatives. The first dimension is fluid as illustrated by the diagram in the start of the chapter, as the networks often gradually emerge and formalize over time.

- Emergence: How do the local initiatives emerge
- Age of initiatives vs. the network; Involvement of the networks in local emergence

Emergence	Initiatives older	Network older
Network involvement high	Historical practices	Guided expansion
Network involvement low	Development of independent local initiatives that retain a loose organization	Simultaneous development and co-influence

Development of independent local initiatives that retain a loose organization

Living Knowledge (early), Credit Unions (early), INFORSE, Hackerspaces, DESIS, RIPESS, GEN, Co-housing (late), Basic Income

- Local initiatives predate network formation
- Initiatives are based on an idea or ideology
- These initiatives tend to have a higher than average age among the sample of cases
- The networks remain loose after formalization
- The formalized networks are typically only covering a subset of the existing local initiatives in the movement. Sometimes there are competing networks.

Living Knowledge like many networks relating to social movements of a certain age is later additions in the social movements they relate to. For instance, the first science shops stem from the late 70s and early 80s while the Living Knowledge network was not inaugurated until 2001. The local initiatives thus started without having any formal contact with other initiatives, and it seems there was a development in that time of similar ideas simultaneously across the countries in northern Europe as part of a social movement. Some formally adopted the name of science shop, hearing about the concept through it seems random circumstances like word-of-mouth or articles, while other local initiatives only later even heard about the Dutch concept (the original science shops).

Hackerspaces are a bit similar, tracing their roots back to university environments in the 60s, while no efforts were made to group them before the rise of ICT in the last 1-2 decades. Some of the local initiatives in Hackerspaces, as the only ones among our cases, actively oppose being affiliated with an overarching movement or organization.

Co-housing is likely the oldest and most historical of the social innovation networks among the cases (late 18th century), the way local initiatives started was a mix of different processes, where one of them was an independent development of local initiatives, often associated with workers' social movements and other politically active organizations. The South American initiatives, on the other hand, seem to have been started with a higher degree of involvement from the wider international networks at the time. The movement is characterized by a very early formalization of an international network, likely tied to the great labor movements of the time.

RIPESS is another type of organization, a non-specific service organization not catering to a specific group of social innovation initiatives but targeting the social and solidarity economy and initiatives & networks that can identify with it in general. As such all members existed before they became affiliated with RIPESS, whose purpose is to connect different existing networks.

Simultaneous development and co-influence

Time Banks, FabLabs, Transition Towns (initiatives, early phase), Basic Income,

Slow Food

- Local initiatives and membership organizations form more-or-less simultaneously
- Different networks of local initiatives and membership organizations may form
- These may subsequently cooperate, perhaps merge, or may remain as alternatives

A second trajectory is when local initiatives and network organizations are co-formed, which may arise because the operational and supporting functions of the social innovation separate very clearly. The former constitutes the practice carried out through the local initiatives and the latter constituting complementary facilitating actions and activities that are best addressed at meta-level and provided to local initiatives through a support organization.

It may be that some of those involved in creating the first local initiative almost immediately create an umbrella organization to support their own and other local initiatives (as was the case with Timebanking UK and FabLabs at MIT, or Slow Food in Italy), or that an existing organization with a more general mandate to support social innovations takes on the role of supporting a specific new social innovation (as was the case with the local Timebanking initiative Health & Family in Spain).

A new organization might also emerge dedicated to a task and lending new impetus to older, pre-existing local initiatives and networks as was the case with the European Citizens' Initiative for an Unconditional Basic Income that triggered the formation of new national groups that joined the BIEN network, and who became itself, as UBI-Europe, a BIEN affiliate at the regional level. In this trajectory it is possible for several different network organizations to form, to co-exist and to grow, each with an associated set of local initiatives as members. The membership organizations may be differently constituted, organized and governed and may exert stronger or weaker influence or control over their members and over how the local initiatives and the social innovation evolve. This may lead to some significant differences between networks. Different dynamics are then possible, including partnership, merger, co-existence, and competition among networks.

We can observe, within the Slow Food Movement, a processes of “pollination” of the slow food discourse; especially at the beginning (90s), when Italians – or people who had previous contact with Slow Food in Italy – moved to USA, Mexico, etc., and founded the national branches SF in USA, Mexico, Brazil, Argentina, Colombia. Besides, the International Network creates national branches in strategic countries like China, where grassroots initiatives are not permitted, or they have to deal with legal restrictions (the network can reach agreements with governments).

The most distinctive feature of this category, compared to the previous, is that the local initiatives have contact with and influence each other. The initiatives in the previous category do not live in isolation from each other, but here there is an active exchange and development between different local initiatives and the international level that affords a level of co-development.

Guided expansion

Co-housing (early), Slow food, Ashoka, Impact Hubs (late phase), Living Labs, Living Knowledge (late), Transition Towns (network, late phase)

- An international organization or network directly support the founding of some local social innovation initiatives
- Support can take the form of funding, staff, knowledge resources, directives (? - pulse from co-housing)

Some international networks actively spread and create new regional, national and local branches.

Ashoka is the most direct and involved in opening new local initiatives owned by them, thus retaining complete control of their expansion.

Impact Hubs, on the other hand, do not own or control local Hubs, but they control their brand and have an approval procedure for new initiatives, so in this way maintain some level of control and guide the expansion. Its a type of federation, as the legal entity, owns the brand, but the members own the legal entity. This is however not how Impact Hubs started, as the hubs initially started as independent local initiative before the Impact Hubs network was created, and there was a tumultuous process where the founder had ownership of the network organization, before the current organization emerged.

Slow Food is a global association with a large variation between countries. Sometimes, the level of dispersion is so high that the international network is not capable of “control” what local convivia (local initiative) do. However, Slow Food dedicates resources to support local convivia and national branches, hiring project managers and involving members of each regional area in the international board. Since we have interviewed some spokespersons from Europe, North and Latin America, we have the perception that the network tries, at least, to ensure that all local manifestations be real entities with members and local leaders. It is more difficult for them to limit the “use” of the Slow Food’s branch (Snail, KM0) despite their norms. The European perspective seems to be more “structured,” and, for example, the German national association has substantial control over convivia. Still, Slow Food controls their brand, in theory. The local groups are strongly committed to the Slow Food goals. Some national networks (e.g., in Germany) also rule the local convivia financially. So, governance and organizational type vary strongly across the network.

Transition Towns at the international level, the Transition Network, are quite active in supporting and promoting the development of the movement in new countries. That is the central area of growth currently. However, initially many of the local initiatives developed as described in the previous category.

Neither Living Labs nor Living Knowledge provide any funding for their local initiative but share some characteristics of this type as they apply for EU projects together with the local initiatives, which provides funding from third parties. For Living Knowledge, funding was also provided directly for establishing new science shops in some of the EU projects. Normally the local initiatives in these networks provide

resources for running the international network; the reverse is an exemption to the rule. What can be said in general is that the international network enables access to resources that would otherwise not have been accessible, even if they do not provide these resources directly themselves. They in later years have also been active in founding new local initiatives, although this a minority of the new initiatives being established. However, all new initiatives do have interactions with the network during emergence.

The cooperative movement, as described in the case study, sent out a pulse to the regional/national branches to start up co-housing initiatives, although it is a bit unclear due to the historical nature how the regional branches carried out this order. It also seems like the old European countries were active in spreading the cooperative movement to Latin America. However, modern cooperative movements like the German local case started without support from any international organization. Also, it seems the original initiatives in Europe more than a hundred years ago also emerged independently. The network as viewed in TRANSIT could alternatively be seen as several different social movements at different times, or revivals of the same social movements in different places at different times, as it is tough to draw an unbroken line geographically and temporally between the cases described in the study. The cooperative movement is a good illustration of how social innovation is reconceptualized over time as the context changes.

Historical practices

Time Banks, Co-housing, Seed movement, Co-housing

- These networks change a pattern of how new initiatives start over time
- Typically, quite old and historical social innovations of 30+ years
- The continuity is often related to a specific practice

This category is represented across the previous ideal-types, representing those networks that change over time and at some points like sharing the characteristics of one or more ideal-types. The networks sharing characteristics with this category do not necessarily fit specifically in other categories either through their varied and changing nature, often due to the long historical development of the initiatives & networks like the cooperative movement described above (Co-housing). There is no single specific way that initiatives here start up, to say anything you would have to focus on specific periods and maybe areas.

The seed movement is based on one of the oldest practices, agriculture, although I do not know how to put an age on the movement itself. The network itself is not that old, but the practice the local initiatives in our cases identify with is ancient, dating back possibly to an early agricultural society, with the local case in Brighton building their narrative on old Celtic celebrations. Earlier there was no social movement as such as it was common practice everywhere, only after the green revolution when agriculture became industrialized did anyone see the need for a network to preserve the practice of seed swapping and preservation. A pertinent question here is what is it that has continuity, what is it that dates to before the green revolution or even Celtic times in

this social innovation network? There is no old local or international initiative; the age pertains to a practice that this network tries to preserve or revive. Given the nature of this network, there is a great variation of how the practice is carried out, as well as a plethora of different initiatives not necessarily directly related to each other or members of the same international network or organization.

Time Banks is also old, albeit on a much shorter scale dating back 100-200 years and embodies the practice of a service exchange drawing from two historical initiatives (one in the US and one in Japan). This practice could likely also be extrapolated back to a time before modern civilization, and notably capitalism, but the initiatives do not seem to do so in their narrative. Especially the emergence of ICT has seemed to change the nature of this practice and how new initiatives emerge, as this development enables the transferability of services through time and space and between individuals easily and conveniently. Earlier it was necessarily based on trust, and personal relations was essential. Now the trust is moved onto software and an organization, and personal social relations take a back-seat.

Co-housing is an old initiative where some networks have a firm continuity with the same organizations for more than 100 years, while some cases also emerge independently. However, how and why co-housing initiatives start has changed a lot. Originally it was a political movement providing cheap housing to the working class, which still seems to be the case in South America, while the local case in Germany (Vauban in Freiburg) is more concerned with sustainability and alternative living. The social innovation has thus moved from the “co” relating to solving challenges of financing together, to the “co” in many new initiatives to focusing on living together. It is also worth noting the extreme changes in the political environment during this period.

Growth & Development Patterns

How local initiatives grow and develop over time is just as important as the initial start. Some slowly integrate with society, while others grow without a master plan, and yet others are so dynamic and varied that the diversity of the local initiatives defies a general characterization, which in itself is a characterization.

Concept and dimensions

The concept addressed by this typology is one of temporal development. In contrast to the previous typology that focused on a specific point in time, the time of emergence, this typology focuses on the development from the time of emergence until now. This has been a focus I developed and retained from the very beginning of Transit. This typology is more specific and focused than the earlier typology on the same focus from D4.2 (Jørgensen *et al.*, 2014), focuses on the significance of the networks for the local initiatives that we study and the changes in the social innovation and/or transformative ambition that the initiatives focus on. The first dimension is the significance of the network in the development of the local initiatives, and the second dimension is the degree to which the innovation becomes embedded in society over time, and so relates to development in the stability, focus, and scope of the social innovation the initiatives work towards.

Temporal development	Network relation low	Network relation high
Innovation embedded high	Integrated innovation	Traditional innovation paradigm
Innovation embedded low	Bottom-up growth	Patchwork networks

The integrated innovation

Co-housing (Germany/Vauban), Science shops, Participatory Budgeting, INFORSE

- The social innovation becomes incorporated or embedded into mainstream practice and societal institutions
- The social innovation may over time cease to be viewed as a social innovation
- The social innovation may alternatively change focus and be reconceptualized over time

Some local initiatives and social innovations slowly become embedded in society, taken for granted, or in other ways so integrated with a society that it becomes hard to discern it as social innovations. Alternatively, the nature or purpose of the social innovation changes to focus on something new, depending on what is understood as being socially innovative about a specific network or initiative. A pertinent question here is when does something stop being a social innovation? Are windmills and renewable energy still seen as innovative and/or alternative? The Danish INFORSE member VE is an example of a dynamically developing initiative when some of the social innovations become embedded in society, the organization develops new ways of being innovative in relation to renewable energy (see figure 4.2).

The co-housing initiative in Vauban, Freiburg, is here a fascinating case. It was initially very active and vibrant, and some parts of it still are, but now a new generation of people are moving in who were not part of the creation of the neighborhood and have different perspectives and priorities. These families, who are buying the homes on the open market, are maybe not interested in the social movement of co-housing or the original sustainability focus of Vauban. This is only the case for a part of the houses and apartments in Vauban though. Another part is in the self-organized housing cooperatives where the members decide on new residents. Anyhow, the overall result is a decrease in social engagement in the quarter of Vauban. The Vauban case is fascinating as we, on one hand, have observed this development from a social innovation to a partly integrated or embedded innovation in “real-time”, i.e., within a very short time-span, and that Vauban in itself is an illustration of the reconceptualization of an older social innovation, the social innovation of co-housing from the 19th century.

Now, Scandinavia and northern Europe, in general, have from 10-20% of the population living in co-housing initiatives, as defined in the case co-housing case study

(REF). In Denmark, these initiatives date back about 100 years (sociale boligselskaber). However, many people might not be aware that they live in a co-housing initiative. Now it is part of the rental housing market, offering cheap competitive rental apartments, and thus institutionally embedded. This type of housing is also subsidized by local authorities and part of any developing urban area. Even if people are socially involved in their local association, it is doubtful that they see it as a social innovation as that has been common practice for generations. The European co-housing initiatives we have researched within Transit have little interaction with the international network, neither the old or new initiatives. A hypothesis could be that as societal integration progresses, there is less need for the resources the network can provide. The other part of the case study in Latin America illustrates perfectly as the is still large political opposition to their social innovation they rely on support from the network to a much more significant degree. Even Vauban that is also a new initiative, and who did face some opposition in the city council, were still building on legally accepted and institutionalized forms of ownership with a long history and thus did not face opposition from the state itself.

Some of VE's activities are co-developed with others, and – as time goes by – taken over by others. When looking closer into VE activities, discover how VE is constantly maneuvering in relation to other actors; in relation to conflicts; in relation to opportunities and in relation to the development of the energy system. These maneuvers are represented by the messy lines in the central arrow (Elle et al., 2015).

In participatory budgeting processes for some local initiatives, citizens transfer their vote to somebody else rather than participating in the process personally. This shows how innovation can be reduced through lack of active involvement over time. However, does low involvement or activity imply an innovation has become integrated? It might merely mean that the relevance is decreasing, the organizing has become more efficient, or that the members and potential beneficiaries are losing interest in the innovation, i.e., they do not necessarily value the benefit anymore. It might also still be beneficial or socially innovative, but the internal governance has changed, and now they found an innovative way to focus their dispersed agency reducing the time requirement of participation while retaining the benefit. It is important to point out that the episode referred here only refers to the local case in Porto Alegre, and Participatory Budgeting in the Netherlands still gain interest from both civil servants and citizens. So, the two local cases seem very different.

The social innovation of Living Knowledge, the international network of science shops and similar community-based research initiatives, may be integrated to some degree. At the Technical University of Denmark, where one of the local cases took place, it is no longer novel to interact with society during studies and there is a wide diffusion of participatory research, two aspects of the social innovation that the local science shop worked for. Although it varies widely between countries and universities how common it is for students to interact with society during their studies, and for researchers to have partnerships with civil society groups in an equitable manner. This also illustrates that something might be a social innovation in one location but part of mainstream practice in another. However, this only encompasses part of the equation

namely the connection from the university to society. There is seldom any formal implemented way for disadvantaged groups or CSOs to get into contact with the university even in the places where students and researcher commonly interact with CSOs. So, while parts of the function the science shop carry out, i.e., providing students with some real-life experience based on participatory research, have become integrated into institutions and practices to some degree, other parts have not.

The patchwork networks

Living Labs (ENoLL), Shareable, Seed movement, RIPESS

- Local initiative growing independently of the international network
- Very diverse local initiatives which does not necessarily have anything in common
- Interconnects different types of social innovations, initiatives, and networks

Some initiatives are so new and young, still sputtering with energy and enthusiasm, that it is hard to talk about patterns yet. Others are very short-lived, serving a specific purpose or being convenient at a particular time, but then quickly passes away or the local initiatives' relation with a specific network starts to fade or pass into inactivity. Other ancient networks have developed in many very different directions at different times that they have now splintered into a variety of different types of initiatives that are hard to classify as one type or another even if dividing the network and initiatives into late and early phases.

RIPESS has been initiated to connect, unite and create an ideological banner for very diverse social movements and social innovation initiatives around the world that somehow pursue economic practices that are more solidarity-based and serving people and planet rather than (only) profit. The intercontinental network-of-networks was founded to bridge the divide between North and South (or between developed and developing) countries. United under the banner of the Social and Solidarity-based economy, the divided (and therefore weak) patchwork was to become a serious counter-force against the neo-liberal course of economic globalization. Even if uniting and providing an ideological banner/umbrella, RIPESS has the self-understanding that it remains nevertheless a patchwork of similar yet also diverse initiatives, developing under very different societal conditions.

Living Labs, at least the Manchester initiative, is a good example here. The living lab that was the focus in the case study was closed but served a specific purpose in starting up projects and making international connections, while it lasted. The remaining Living Labs in Manchester are still alive, and very active, but they hardly identify with being Living Labs although they are listed as members, so in this sense, the network could be called passive or inactive. Because of these characteristics, it is hard to say anything about the growth patterns of the local initiatives. They are also very different; one of the Living Labs in Manchester is a yearly festival, while another is a non-profit digital innovation organization committed to science, technology, arts and culture, which among other things also hosts a hackerspace. The case of the Eindhoven living lab seems more connected to the network as it currently is (since 2016) an effective member of ENoLL

and that means that it now has a strong tie with the network. However, if some (political) circumstances had changed in another direction, this type of commitment to ENoLL would not have been likely, as during the interviews the position of Eindhoven within ENoLL was still unclear. However, it was clear that the experiments that are labeled as living lab initiatives in the city have much more solid support and are likely to be sustained regardless the type of connection that the initiative has with ENoLL.

Shareable, especially the initiative in Nijmegen, is composed of numerous other local initiatives like Repair Café's and car sharing initiatives, which do not identify as members of the Shareable network and have little in common with each other. They only very broadly share a type of practice involving sharing of resources, be it knowledge, competences, or physical things like a car or a garden. Their rationale behind their activities and how they identify with them varies broadly. Of course, it depends on who is defined as the local initiative, if it is the people responsible for Shareable Nijmegen or the local initiatives that are its members and on the bottom of the structure that shareable Nijmegen is composed of. Here we tend to view the very bottom of the organizational structure, the individuals and the initiatives they are active in, as the focus. These are where the growth takes place, and the foundation of Shareable is built.

The seed movement is in many ways an odd network compared with the other cases in Transit. Some local initiatives start from a family history of farming and seeds passing through the generations, others start from a fight against big corporations trying to patent seeds, as well as fights for food sovereignty and diversity, and others are built on hobby gardeners who do seed swapping. There are also different international networks & organizations, an ecology you might say, and we might speculate that we are talking about different social innovation activities and movements that are only bundled together in the Transit project under a common denominator due to an association with seeds and agriculture, and not because there is any organizing taking place across them. However, they are tied together by the practice of seed exchange and their support of agrobiodiversity. So, although the disparate roots of the various components of the movement seem like a patchwork, they are tied together through an overall focus.

The organic bottom-up growth

Basic Income, Via Campesina, Desis labs, Science Shops (Living Knowledge), Credit Unions, Time Banks, GEN, Seed movement

- Local initiatives initially grew independently of any network
- Despite their independence, they depend a lot on sharing core ideas and activities within the network
- Growth often depends on serendipity
- Inspired by ideas, ideals, and/or practice

Some initiatives keep growing from the bottom up, seemingly without any intentional action or strategies of an international network or organization. They keep growing and expanding like a plant without the supervision or intention that a building

would require.

The seed movement, unsurprisingly diverse as it is, is mentioned here as well. Here it is more the practice that is in focus rather than the ideas.

Basic income is here a good example with several waves of new initiatives emerging. The idea of a basic income emerged on both sides of the Atlantic more than two centuries ago and had experienced waves of attention at different times and places since. Since the 1970s and 80s, and often in tandem with fluctuations in structural unemployment, basic income has been in the limelight (e.g., in the form of publications or petitions), and occasionally even on the political agenda (in the context of welfare reform and even implementation of experiments). While BIEN itself does not actively seek to sign up members or form new initiatives, new groups that commit themselves independently to promoting the idea like to acquire the label “BIEN affiliate” and the (academic) authority it lends to their activities. The network has experienced continuous growth since it was founded as an organization 30 years ago.

Living Knowledge grew similarly, with the idea of traveling around, or local initiatives starting up with similar ideas independently and later joining the international network as they learn about it. Thus, there is a degree of serendipity about the growth, who heard something from someone about this type of initiative starting up in the Netherlands back in the late 70'ties and early 80'ties. Especially in these networks that stem from older initiatives (20+ years) from before the time of ICT seems to depend on some serendipity. Ideas and knowledge were not flowing as smoothly.

Via Campesina is a bit of the same, similar ideas independently resulting in new local initiatives. Local initiatives often start as protest movements reacting against policy measures or other developments, invigorating people to come together around a common cause. It is thus a bottom-up growth with an external trigger. However, there are also other local initiatives not starting explicitly due to external triggers, service organizations more akin to guilds for farmers, promoting their interests generally. Via Campesina is thus composed of various farmers movements that only later become part of Via Campesina as the organization expands internationally. How the diverse local movements started and grew are very individual.

GEN is based on a decades-old communal movement that was inspired by the eco-movement in the eighties. Finally, several concrete steps helped GEN to be born: in 1994 the second international meeting was held, resulting in a coordinative secretariat in Denmark funded by GAIA Trust and a website was launched. In 1995 more than 400 members of existing ecological communities came together in Findhorn ecovillage. After this meeting, 20 ecovillage members decided to formally establish the Global Ecovillage Network (GEN) after the Danish network was established already, funded by GAIA trust.

Diffusion from the international network - the method/strategy of diffusion

How is the international network trying to expand or diffuse its social innovation? This may be through an overt strategy, although some networks have mostly spread

without any intentional strategies or actions as depicted in the first category. Local initiatives may both be older or younger than the international network, and then join later, or be founded directly by the international network, although this is rare among our cases.

Concept and dimensions

The concept addressed by this typology is about expansion and scaling – how do the networks disseminate, diffuse, and scale up. The focus is on the network itself as scaling is typically not something happening, in our cases, from the local initiatives. The first dimension is about intentionality, which ranges from the very overt planting of new local initiatives to the passive stance of a network where interested actors have to search for and approach the network actively. The second dimension is the “level” that the network is working on to scale up their social innovation and enable the expansion of the network, ranging from interventions, workshops and other events among the local initiatives to interactions with national and international actors like the EU, governments, ministries, NGOs, etc. As we work with a flat methodology levels here is merely an analytical construct where large networks, like an organization, has been punctualized into a single actor, a macro-actor, enabling us to discuss interactions between networks while defocusing from the individuals actors the networks are composed of.

Expansion	Intentionality low	Intentionality high
Action level high	Lobbyists	Organized expansion
Action level low	The academics	The event Makers

The academics – traveling ideas

Desis (early phase), Living Knowledge (science shops), Basic Income, Participatory budgeting, Credit Unions (early phase), Hackerspaces, Time Banks (Early Phase)

- Slow diffusion of ideas that inspire people with little intentionality from an international network
- The ideas often stem from or interact with academic circles
- Action is often bottom up, as locals create initiatives before becoming a member of an international network
- Ideas often come top-down

Often these are divided into early and late phases corresponding to before and after an international network emerge. In early phases, there is then no influence at all from an international network, although in later phases there may be influence or support from the network but still no direct hand in founding new local initiatives. Some ideas for social innovations start in academic circles and spread through conferences, articles, books and other forms of communication and dissemination. The ideas are then picked up by other academics, organizations like political parties and NGOs, or individual citizens. This category is thus a study of how ideas travel, how they take roots in many and sometimes random places and the networks that let such ideas often

without any idea where they might land. Articles in traditional media, documentaries on YouTube, academics articles, books, etc. are all examples of such omnidirectional and uncontrolled dissemination of knowledge.

The idea of Basic income spread in this way, and while it can be said that individuals and groups decide independently to subscribe to the idea, the BIEN network can be accredited with being an active promoter and a constant diffuser of the idea which falls on more receptive ears at times of crisis. In the BIEN case, the ‘little intentional behavior behind expansion’ can be perceived in the form of media ‘hype’ and the chain of media reports and reactions on those through which the concept spreads – notably through new media. There is a mixture of unintentional exposure to basic income and dispersed contributions that make it a “trending topic” on the one hand and on the other hand intentional, purposive incitement of media hype and advocacy by network members or independent basic income advocates acting as opinion leaders. This form of spreading or diffusion is usually bottom up, as individuals work together around an idea that however often comes from the top! Creating their initiatives from the inspiration they have received.

Living Knowledge and Desis Labs evolved in much the same ways, ideas flowing around leading to local initiatives that were later collected into an international network, science shops, and design labs at universities respectively. It is important to point out that networks like Desis Labs and IOPD (Participatory Budgeting) work to provide a common identity and continuously align local manifestations towards a common focus (for example, through regular events). It varies if there was any interaction or not between the local initiatives in the various networks before the establishment of the international networks.

The event makers

Seed Movement (Brighton), Slow food (Terra Madre), Via Campesina, FabLabs (maker fairs), Shareable (mapjams), GEN (conferences), IOPD (Network conferences), Basic Income (various events)

- Conferences, festivals, courses or other types of events play a pivotal role in diffusing knowledge and interest
- The activities of the networks often play out in connection with these events

Some international networks play out related to non-daily activities like yearly conferences, festivals, workshops, demonstrations and other local and place specific events. Unlike the previous category, the arranging of events is a very intentional action from the network that often also is a way to create attention locally or internationally.

The seed movement in Brighton, for instance, do not have an office or daily activities but revolves around a yearly seed-swapping festival. Other local initiatives, like the local case in Hungary, are different though and may have offices and daily activities. It is difficult to characterize the network as the movement is not unified into one network, and there are even competing or at least multiple organizations within the movement.

Shareable and Sharing Cities expand through map jams where people do map

sharing initiatives in their cities, enrolling some of them as members while others are connected through a very informal relationship. One of the purposes of map jams is also not to “reinvent the wheel,” i.e., starting initiatives like already existing initiatives.

GEN and Via Campesina both expand and define their activities through conferences, much like the international IOPD (participatory budgeting) network with their annual conference and “best practice” reward.

The BIEN network was founded at the first international conference on basic income, and there have been biennial conferences in the 30 years of its existence. While initially more academic in character, conferences, especially since the early 2000s, have taken a noticeable policy-orientation and include growing numbers of non-academic, more politically oriented participants. These conferences are the events that bring the community together and a hot-spot of debate and activity.

Slow Food was also inaugurated at a conference, and the local initiatives largely play out as different food-related events. The network organizes two big events every second year, several sectorial events each year, and regional branches replicate the model worldwide (if they can gain external support).

Other international networks also have conferences, like Living Knowledge, and play a role as the place that allows face-to-face interactions between the members and thus serve as a space to develop new relations and talk about future activities like project applications.

This typology thus illustrates events as an intentional activity as a way to disseminate knowledge and create attention, but also as a staging of a space where the network members can meet and develop the network, which might relate to new projects, futures events, decisions on internal governance etc.

Organized expansion

Co-housing, Impact Hub, Credit Unions, Slow Food, Ashoka, Transition Towns

- The international network has a direct influence on new initiatives access to resources
- These networks formal and legal organizations
- They have explicit expansion strategies

Some international networks actively spread and create new regional, national and local initiatives that function as branches of the leading organization. Some networks also function as a type of federation where the local initiatives are independent, but the network owns and controls the brand as well necessary infrastructure that the local initiatives depend upon.

The cooperative movement (Co-housing), as explained by the case researcher, worked by incorporating existing co-housing networks into their network and working to promote new co-housing initiatives to the existing members of the cooperative movement. In contrast to just labeling existing initiatives, the movement here actively sought to incorporate existing co-housing networks into a more formal membership

structure. Co-housing is here a separate sub-network of the larger cooperative network.

Impact Hubs are a type of federation and do not actively expand their network, but they are a formalized legal organization that own the brand of Impact Hubs, and new members need to be approved, and in this way, they have a controlled or organized expansion of the network.

Transition Towns has a strategy of supporting national hubs, which is a very overt and organized way of expansion, as well as membership fees.

Ashoka is the most direct in their expansion, as they own the local offices, and can thus close them as well, which happened to a Hungarian office that was later reopened.

Lobbyists

INFORSE, RIPESS, Living Labs, Credit Unions, Time Banks

- Expanding or surviving by affecting policy, often through lobbying
- Offer better access to third-party funding

This type of network works intentionally at the more national or international level by improving the framework conditions of their members, thus removing barriers or providing access to resources or infrastructure. This takes place through lobbying, negotiation, or other types of interactions with powerful networks. This indirectly also enable the expansion of the network as the conditions improve but are classified as low intentionality because it is indirectly as opposed to directly funding or in other ways creating new local initiatives.

Credit Unions were facing problems and eventual demise pending new EU directives following the financial crisis, which they averted by banding together as an international network and lobbying the European Union for changes to the suggested policies.

Time Banks is slightly similar, as they faced potential challenges from national tax authorities in the UK. The national network handled negotiations with the UK tax authorities and lobbied for the interest of time banks, succeeding in getting a conditional tax exemption for their service-exchange activities. One of the network organizations also produced software that facilitated service exchange as a type of online banking, which as infrastructure for the network likewise improved the framework conditions.

RIPESS is an archetypal example. It is a pure service organization existing to handle the interests of its members by lobbying the EU and global institutions like the United Nations as one of their main functions.

Living Labs is a bit different as the EU created it and its quick expansion is a direct result of EU policy and funding. It is now a legal entity, an International Non-Profit Association under Belgian Law that offers services to its (paying) members and has no formal ties with the EU anymore. It applies for project funding and lobbies with the EU, but also (and possibly even more) the EU uses the ENoLL network to get access to the living lab community.

Characteristics of the expansion - describing why and how local initiatives are joining

Why are local initiatives joining the social innovation network? Who are the local initiatives that join? Also, how is the joining taking place? Unlike the previous category that focused on the actions of the international networks, this typology focuses on the growth of the international network from the perspective of the local initiatives, i.e., why and how they join the international network and their motivation for doing so.

Concept and dimensions

The concept addressed by this typology is motivation, why are local initiatives founding or joining international networks. This typology is essentially a mapping of resources & infrastructure that networks give access to and local initiatives find crucial. If local initiatives cannot see what they get out of being in a network, they will often become inactive, which we have examples of. The first dimension is the degree to which the network gives access to resources like funding, visibility, or legitimacy through a brand. Resources are here understood very broadly — the second dimension sensemaking, which relates to more intangible and internal motivations for joining a network. There might not be any direct and tangible reward to membership, and the motivation can relate to a type of altruism or ideological charity, i.e., they are paying membership fees to enable the network organization to conduct projects and missions to spread the network ideology. Alternatively, the motivation might relate to one of personal identity & peer-support, although we have little empirical data on this aspect.

Motivation	Resources Low	Resources High
Sensemaking High	Strength in numbers	Branding & Blueprints
Sensemaking Low	Networking	Umbrella & Labelling

Branding & Blueprints

Impact Hubs, FabLabs, Ashoka, Living Knowledge, Transition Towns

- Membership necessary to use a name, brand, or other resources of the network
- Often knowledge is provided in the form of blueprints, templates, business models, operational procedures, how to set up new initiatives etc.

Some international network organizations operate as a form of license owners. The Impact Hub association own the name and brand of Impact Hub, which is owned by the members, and you need to become a member approved by the network before you can use it and get access to the resources of the network.

FabLabs are often started by buying a blueprint package developed by the FabLab foundation that entails equipment and consumables, and training can be obtained from MIT. However, it is possible to start a FabLab and use the name without buying this blueprint as one of our cases did.

Ashoka is a bit atypical, as the local initiatives are not started in the same way as in any of the other case studies; local offices are here planted and owned by the

international organization, who very strictly control the Ashoka brand.

Also, other networks like Living Knowledge share these characteristics, as they provide a tool-kit for how to start a new science shop, and various other documents like a handbook detailing operational procedures, although this aspect is peripheral in Living Knowledge.

Strength in numbers - policy fights & lobbying

RIPRESS, Credit unions, time banks, Basic Income, Co-housing, Via Campesina

- Banding together to focus the dispersed agency of a network, often targeting policymakers
- Often involves politically active networks

Some social innovation initiatives need a critical mass to be effective, and so have a natural inclination to join in national or international networks. Time Banks for instance only function when they have enough members to provide diverse services that can be traded. Some networks also face oppositions and/or barriers in the form of legislation and policy that can more easily be challenged through the strength of numbers in democracies. Time Banks in the UK had to negotiate with the national tax authorities to see their activities as tax-exempt and such engagements would be difficult for local initiatives that individually represent few people.

Credit Unions, on the other hand, faced threats from new EU directives following the financial crisis and had to band together in a European network to lobby the European Commission for changes.

RIPRESS is a bit similar, they are not fighting or lobbying for specific issues, but support the solidarity economy in general, and some of the other social innovation networks among our cases are even members of RIPRESS.

Basic Income and Via Campesina have as their purpose to affect policy, and because of the nature of this purpose need a critical mass. Co-housing partly like Time Banks needs a critical mass to function as a construction of buildings require much funding and usually approval from local authorities. Co-housing also historically was a very politically active movement, although it is unclear how active they are in this regard in the contemporary network especially in Europe.

Concept as an umbrella label

Living Labs, Shareable, Living Knowledge, GEN

- For older initiatives initiation is often unrelated to inclusion in a specific social innovation network
- Social innovation networks may provide funding or other resources for newer initiatives - but this does not necessarily translate into a firm allegiance or affiliation
- Some local initiatives like the label as it gives them influence and/or legitimacy even if it comes with no funding

- Very loose social networks

Some membership affiliations give the possibility of or improving access to funding and other resources, often from the European Commission or other international funders. Some of the local initiatives exist before a network is formed and join up explicitly to get access to resources. Network growth thus consists of co-opting existing social innovation initiatives. This can in some ways be similar to “strength in numbers,” however, the purpose is different, as these initiatives join together for convenience and opportunity, and their continued involvement with the network has in several cases been observed to be quite short.

This might seem like a harsh description, but from the Living Lab case in Manchester or the Shareable case in Nijmegen, the different local initiatives seem uninterested or aware of their membership. Manchester is especially striking as the main Lab initiative in the city closed after they obtained the benefits they wanted, in the form of projects and international connections, exemplifying the labeling for an opportunity. On the other hand, the network also obtained something from them, an impact in the form of project outcomes, and strength in numbers the network could enact in interactions while the relationship lasted. In the Romanian Science Shop case the activity likewise only lasted while the network provided project funding, but the problem here was that there was no other funding once the project ended, and volunteer work could not sustain the same activity level and relationship with the network.

Both Manchester and Eindhoven also ‘make use of’ other networks, such as the Eurocities Knowledge Society Forum. Besides using ENoLL (European Network of Living Lab) for its services, living labs also use their ‘ENoLL’ label which they can keep for life, even if they stop paying membership fees. Besides the strong focus on joint project acquisition in ENoLL, there is also a strong emphasis on knowledge sharing during the yearly open living lab days and mainly across effective members and strategic partners.

Living Knowledge is a bit different in this regard, as this is not the primary function of the network, even though some individual local initiatives rely on and join up because of the opportunity for EU projects and funding. The network also predates such opportunities, although the formalization of the network may in part be because of the increased ability to seek EU funds.

GEN (mainly GEN Europe) is also quite active in fund-raising from the EU for mobilities and education programs and partnerships (Grundtvig, Erasmus+).

Similar across all the initiatives here is the very loose nature of the networks; the international network has little or no say in the activities and organizations of the local initiatives. Basic Income also deserves an honorable mention, sharing all the characteristics except the acquiring the label for funding opportunities.

Networking - Peer-support and knowledge exchange

Shareable, GEN, Living Labs, Living Knowledge, IOPD, Seed Movement, Slow Food, Impact Hubs

- The international network functions as a hub connecting local initiatives, space

where interactions can take place

- New social relations, peer-support, and knowledge sharing plays a large role
- Diffusion largely happens through labeling existing initiatives as part of the network

Sharing ideas, models, experiences on implementing, operating, getting funding etc. is a core reason for joining an international organization for many of our cases, what we in some cases call service-organizations. Just as important is the peer-support in the face of opposition in the local context to keep up motivation. In some ways, these networks function as extended employee rooms (or “spaces”) where colleagues can discuss problems.

One of the older science shops from the 1980'ties explained that their primary reason for engaging in international networking activities was to get this peer-support, talking with colleagues doing similar activities and facing similar problems, and above all understood the reason and ideology and what they were trying to do, which often lacked among their colleagues in their local university. This is also because science shops are typically tiny entities with 2-3 staff, supported by a range of student assistants. This was before the formalization of Living Knowledge but has continuously been one of the main purposes of the network, also in recent years.

GEN provides a platform for exchange between ancient knowledge, mainly from the South and social innovations from the North. The result is often low-tech innovations like clay and straw building techniques, passive solar power, up-cycling and a lot of social innovations like community circle communication and conflict resolution techniques and team working tools.

In Slow Food, international events are described as value learning and knowledge exchange opportunities. Besides, as Peace (2008) has remarked, Terra Madre or Salone del Gusto are critical spaces to transmit SF's discourses for change, to “spread the word” by displaying a “number of rituals and discursive events out of which a sense of global community arises” (Peace, 2008:36). Networking events help to build a collective identity; participants feel they belong to a global community which contributes to change the world in a positive way. Symbolism and emotion are strategic to create this community engagement that goes beyond the network, becoming a global phenomenon (as Terra Madre does).

It might seem obvious that one of the reasons for joining an international network is to socialize and do “networking”. This category may be most interesting for the networks that do not share this characteristic.

Conclusion and summary

State of these typologies

As the current form of the typologies emerged from coding done two years ago, it is based on an early form of the framework used in this dissertation. It has not taken the data gathered subsequently into account either. The data and analysis done in the meta-analysis are presented in the next chapter, which also resulted in a typology. Chapter 8 integrates all the various typologies presented here in chapter 6, in chapter 7, and typologies produced in Transit not included in this dissertation, into a theoretical multi-level typology. Therefore, I did not find it necessary to rewrite or substantially update the typologies in this chapter, as that is handled thoroughly in chapter 8, and this chapter then gives insight into the research process and a clearer overview of the various aspects of our case studies without making it theorized and abstract.

It might still be hard to exactly imagine what is going on in all the social innovation networks we have studied, but it has been impossible to present them in any more detail due to space constraints, but the case reports themselves are available at the Transit webpage (<http://www.transitsocialinnovation.eu/case-studies>).

Secondly, I applaud anyone who read the typologies from one end to the other and reached here and have not merely used them as a reference. It is a long and very descriptive chapter, but the empirical material is vast, and I at a time deemed it the only way to give an insight and overview of the cases in relation to my topic of interest. I will still contend it is the best way for readers interested in such a depth of knowledge, although the typologies might better be looked up when reading the chapters in section 4 when more details are relevant that could be included in a paper submission. A better way might have been to write a description of every network in relation to the ideal-types described here, rather than going through the networks for each ideal-type. However, this would have been even more long-winded as the typologies mostly only use exemplary cases to illustrate the breadth and width of the property space of each ideal-type.

Findings and problems

As will be apparent from the typology on the nature of our cases, i.e., are they networks, organizations, social movements, etc., the embedded case set-up posed some challenges and confusion. In some instances, the international network can be seen as an extension of the local initiatives, while in other instances the international network is an entirely different entity doing different activities, having different aims, and a separate organization. Although it might have been useful, no typology had at this time been made specifically on the differences, similarities, and relations between the international networks and their local initiatives. I found that it was necessary with a more reflexive stance towards the definition of a network, and instead of moving away from it all together I started distinguishing between social movements, networks, organizations, etc. Take the Seed Movement case study, for instance; it is a study of a social movement that is not a single network, with several competing organizations

on the international level. FabLabs, on the other hand, is mostly a single network, but a network with several different organizations with none of them in control. This dilemma that grew out from the attempt to write the typologies in this chapter is one of the specific challenges taken up in chapter 8.

This challenge also affected the development of the theoretical framework, as from a process view on organizations this is less complicated, as the different types of movements and networks have organizing processes and the formal classification of the networks in our cases in relation to traditional organizational theory is of less relevance. The question is then if they do organizing, which all do except for the Seed Movement and Hackerspaces. Organizing is taking place within both of course, just not as unified networks, which means several distinct organizing processes are going on and there is no direct link between them. Thus, no recognized macro-actors has developed as discussed later, which is one of the core characteristics analyzed in this dissertation.

Another question at the time was if there were several organizations or one in these networks in general, like Living Knowledge and the local science shops. This is also more simply to distinguish with my framework, as it depends on the staging, depending on the interaction and context in question a science shop can enact themselves as a distinct local grassroots initiative or enact themselves as the local manifestation of the Living Knowledge network. The networks are both one and multiple organizations simultaneously depending on how you draw the lines and construct the narrative and the specific interactions in question. The sensemaking perspective as apparent in chapter 4 made me realize that there are several overlapping and intersection temporary spaces, organizations, in any network. Sometimes this is significant sometimes it is not.

A problem I encountered when coding for these typologies was the sometimes very abstract and generalized description in some of the case studies. It is like I noted in the discussion of sociomateriality a seeming oversocialization in the cases (Bloomfield, Latham and Vurdubakis, 2010), which gives some analytical insight but at the cost of insight into what is happening on a daily basis in the local initiatives. This poses a problem due to the focus of this dissertation and the flat relational framework in Transit, as it breaks the ability to trace an unbroken line from the local to the global in the empirical data. This realization came chronologically before the framework described in this dissertation, and this was a deciding factor in relying so much on a material-semiotic perspective and concepts like affordances that counter the oversocialized analysis taking place in the case studies (Bloomfield 2010). The detailed coding done for the typologies were here also crucial, as it sorted out the empirical data of relevance from the more interpretative text. It has also to some extent been possible to infer some of the daily activities and how the networks are materially manifested through coding of the interpretative text. However, as this is very time intensive, the typologies have also relied on discussion with and feedback from the case researchers.

Chapter 8

The constitution & configuration of organizations in Social Innovation networks

Disclaimer: Preprint version. Submitted as a research article to International Review of Applied Economics upon invitation. Presented at ISIRC 2018 in Heidelberg.

Abstract: Social innovation (SI) is an emerging area of research and policy aiming to address social challenges. While recent years have seen a lot of research and several projects on SI, there has been a lack of cross-fertilization with other theories of change and innovation. This paper takes a sociotechnical and flat relational perspective inspired by science and technology studies (STS) to ensure a focus on the technical and material as well as the local rootedness of SI. This contribution elaborates how SI networks & organizations are configured to focus the dispersed agency of the members and facilitate different forms of empowerment and societal change. This is done through development of an ideal-typology focusing on the constituting of SI networks through the dimensions of network stability, network resources, macro-actor strength, and manifestations. The base dimensions are developed from a long range of typologies iteratively constructed in Transit the last 4-5 years based on case studies within 20 SI networks. Transit through a bottom-up focus looked at the distributed nature of SI agency, and this paper develops this perspective aiming to give practitioners, researchers and policy makers insight that can help them to empower SI initiatives.

Keywords: social innovation, organizational theory, networks, relational constructivism, distributed agency, actor-network theory, macro-actor, typology, sociomateriality

Social innovation (SI) is an emerging area of research and policy aiming to address social challenges. However, the units of analysis are diffuse and ill-defined (Pel, Dorland, et al. 2017), who are being studied and what is the SI? Social innovation networks, social movements, transnational social movement organizations, advocacy networks are just a few of the terms in use (J. Smith, Plummer, and Hughes 2017). In this paper I focus on SI networks as defined by Pel, Dorland, et al. (2017) that in the Transit project (www.transitsocialinnovation.eu) served to exploratively research “SI ecosystems” (Pel, Wittmayer, and Dorland 2018). SI network is an interesting concept because it is relatively unconceptualized and captures vastly different types of organized activities related to social innovation, and not only traditional units of analysis like social movements (Snow, Soule, and Kriesi 2004) or non-profit or social entrepreneurship organizations (Westley et al. 2014; Doherty, Haugh, and Lyon 2014). SI networks are thus all types of organized activities aimed at social change, and SI ecosystems are grouping of related networks (Pel, Wittmayer, and Dorland 2018). The question on what a SI network is remains open and how such networks are constituted as organizations, which this paper will try to answer through a unifying theoretical contribution encompassing social movements, NGOs, companies, and other types of coordinated activities. The aim is to provide insights on how and why these network form, i.e their constitution, to enable policy makers and other stakeholders to empower SI initiatives. The overall research question is thus:

How are social innovation networks constituted as organizations to enable the transformative ambitions of their members?

Transit studied 20 social innovation networks like Transition Towns, Living Labs, the Seed Movement, Living Knowledge, to name a few. While many single cases on social innovation have been studied before few projects have conducted a qualitative multi-site study and tried to systematically develop theory on how these SI initiatives interact with or contribute to societal change. The Transit project aimed to develop a theory of Transformative Social Innovation through a middle-range theory approach (F. W. Geels 2010). This paper builds on the Transit research (Jørgensen et al. 2014, 2016), trying to qualify some of the research outcomes beyond a descriptive approach seeking to close gaps by using a theoretical typology generation approach, building upon a vast range of typologies generated during Transit (Jørgensen et al. 2016, 2015; Pel, Dumitru, et al. 2017; Haxeltine et al. 2017). One of the gaps, for instance, is that many of the typologies were descriptive and not explanatory. Another gap is the lack of integrative theoretical work in existing theory on different research areas and organizational types related to societal change within this area like traditional social movements research (McAdam, Snow, and McAdam 2010), transnational advocacy networks, (Norman 2017), social movements in the network society (Castells 2015), social entrepreneurs (Westley et al. 2014), and organizational theory (Czarniawska and Hernes 2005). The typology developed here pictures how different transformative ambitions leads to different types of organizing, and how these organizations develop to fulfil specific needs of the local initiatives.

This paper invokes a relational constructionist perspective (Hosking 2011) inspired

by actor-network theory approaches to organizational theory like Czarniawska (2005) and Belliger & Krieger (2016) that is compatible with the theoretical framework in Transit, while enabling a discussion of organizations in more depth. This also implies that networks are configurations of actors that focus their distributed agency, an interesting perspective as it contributes with a bottom-up understanding and shows how local initiatives within networks working for SI can make a difference and contribute to societal transformation.

This paper answers the research question through a typology over the elements that constitute social innovation networks as organizations (or not) based on analytical generalization approaches within qualitative studies like Flyvbjerg (2006), Halkier (2011) and Collier (2012).

The paper proceeds as follows. **Section 2** discuss existing conceptions of SI and a working definition in relation to the research question, and the relevant dimensions of SI networks. **Section 3** lays out the methodological and conceptual framework for typologizing. **Section 4** condenses the typologies generated in Transit four dimensions. **Section 5** unfolds the typology, and **section 6** answers the research questions and reflects on broader implications for SI research.

Social Innovation and conceptual framework

Some of the most prevalent assumptions about social innovation is: its immaterial (Cajaiba-Santana 2014), its dichotomous relationship with technical innovation (Howaldt and Schwarz 2010), that it's about social change (Moulaert et al. 2005), that its apolitical (Lawrence, Dover, and Gallagher 2014), that it's about meeting unmet needs (Pol and Ville 2009; Anheier et al. 2017) that is the most widespread understanding, although a few like Cajaiba-Santana (2014) challenge this definition because of its normativity. I do not adopt these definitions as they seem too limited to grasp the enormous area that researchers within SI engage with, although I favour the more expansive definitions focusing on social needs and societal change (Anheier et al. 2017), but support the viewpoint that social innovation is a new paradigm innovation (Howaldt and Schwarz 2010; van der Have and Rubalcaba 2016) that is more transparent and democratic approach in contrast to top-down approaches (A. Smith 2017). Doing a comprehensive literature review on SI and engaging in the definition discussion is beyond the scope here, but I find it problematic that many definitions see SI as immaterial.

There is also a limitation in the inherent assumptions or limiting perspectives. In relation to more traditional views on innovation, like the prevalent technical or technological focus that is more incremental and less radical, SI is about social change and transformation (Haxeltine et al. 2017; Anheier et al. 2017). One of the questions is how to understand and analyze social change. Following the argument above and the gap in SI literature on the material aspects, models of 'socio-technical' change is especially

relevant (F. Geels 2005). Scholars from Science and Technology studies (STS) working with sociomateriality have illustrated the impact of materiality on the social and vice versa for decades (Bijker 1997; Latour and Woolgar 2013; Akrich 1992), ultimately technologies are socially constructed (Bijker and Law 1992), and “The indivisibility of socio-technical dynamics has been a mainstay in sociological research” (Schubert 2018, p377). Reading SI literature insights from STS are missing.

Thus, my working definition see SI is a new innovation paradigm that can involve any and all types of innovation aimed at solving social problems and is democratic and transparent in its ends and means.

The decision to draw in STS has many other consequences beyond a focus on materiality in the analysis. It’s an inherently interdisciplinary research tradition with many different perspective and approaches, and I am here inspired by Actor-Network theory in the tradition of Latour (2005) and Law and Hetherington (2000), and organizational theory drawing on this perspective (Czarniawska-Joerges, Sevón, and Sevón 2005; Czarniawska and Hernes 2005; Robichaud and Cooren 2013) thereby trying to unify some of the different strands of research related to SI organizing.

One consequence is that it implies a flat relational ontology, which is especially interesting when studying international networks as it sheds light on how they are locally rooted. There is no ontological difference between individuals, objects, and networks, collectively called actors. To avoid confusion in distinction between the different types of actors, I will include the concept of macro-actors (Czarniawska and Hernes 2005).

A macro-actor is the ability of a network to act and be perceived as an actor, i.e. the typical organization that we all sometimes refer to in the 3rd person. Any actor composed of other actors is then essentially a macro-actor. Here I use the term macro-actor of actors that are powerful enough to participate in international interactions with other networks and entities like the EU, national authorities etc. The difference between a macro-actor and an actor is thus one of scale and power, and a macro-actor is essentially a type of organization. According to Robichaud and Cooren (2013) organizations are constituted through episodes of interactions, for them communication, building on an ANT perspective. This bring crucial insight to how texts, and other objects coming out of interactions, slowly constitute a network, which eventually may gain enough influence and stability to be a macro-actor. Constitution refers to the constitutive parts of a network, which can be objects in the form or contracts, statutes, narratives, webpages, brands, coming out of previous events and interactions. For interactions to have any lasting permanence such objects are crucial (Latour 1987).

Lastly a note on agency, which in ANT is seen as the ability of any actor to make a difference in the actions of another (Sayes 2014). By extension I here define empowerment as enabling or increasing the agency of an actor, a simplified but adequate definition. Much more could be said about SI studies from an ANT perspective but that is beyond the scope of this paper.

Methods: Analytical generalization and ideal-typologizing

Different approaches have developed over the last decades where scholars argue about the analytical strength of generalizing based on qualitative data (Delmar 2010; Flyvbjerg 2006; Mason 2006; Ruddin 2006; Tanggaard 2009; Collier, Laporte, and Seawright 2012), as well as a general discussion about traditional methods in social sciences questioning their purpose and usefulness (Law 2004; Clarke 2005). This chapter bases its perspective of generalizing on the understanding stemming from that development, and I will here summarize some consequences and insights.

Social relationships and processes of transformation are both unique and recognizable, also referred to as the doubleness of the situation (Delmar 2010). As explained by Delmar (2010) studied phenomena are contingent on time, space, relations, power and context like society and culture, and there will always be recognizable patterns. However, such patterns are not enough even though they contribute to recognizability and thus generalizability, it is only if it is meaningful in the relationship between the typical and unique in practice in concrete situations (Delmar 2010). This is one of the reasons for the wide distribution of the Transit consortium and the case studies, to provide as wide an empirical foundation as possible to enable illustration of context dependent insights (Ruddin 2006, 807).

And generalizing based on qualitative studies must recognize and try to represent the dynamisms, ambivalences, conflicts, and complexities that constitute various overlapping contexts and the knowledge-production processes in relation to these contexts (Halkier 2011), which I do through typologies.

There are different ways to construct typologies like ideal-typologizing, category-zooming, and positioning (Halkier 2011). The first category is the most common and condenses the data on a subject into a limited number of types through analysis. Ideal-types do not correspond to specific SI cases, i.e. each ideal-type can represent concurrent development in several cases. In addition, typologies can be descriptive or conceptual (Collier, Laporte, and Seawright 2012), explanatory/theoretical or merely classification schemes (Doty and Glick 1994). Conceptual typologies establish a property space and its categories have “a kind of” relation to the overarching focus of the typology while the categories in explanatory typologies are hypotheses in themselves (Collier, Laporte, and Seawright 2012). Unlike classification schemes that have definitions helping to sort phenomenon into categories, the ideal-types of explanatory typologies contain theoretical abstractions that might exist (King, Keohane, and Verba 1994) and are very complex phenomena described in multiple dimensions. Each dimension is a qualitative theoretical construct (Collier, Laporte, and Seawright 2012), which is why these typologies incorporate multiple levels of theory. The typologies generated in this paper have 3 levels. The original typologies generated in Transit, the dimensions developed here, and “the grand theory” (Doty and Glick 1994) addressed by the final typology.

Typologizing approach: Concept formation and typology structures

The first process is concept formation and typology structure. Collier et. al (2012) lay out a very structured approach for creating typologies:

1. Concept formation: idea addressed by the typology
2. Dimensions: Attributes of the overall concept
3. Diagramming: The property space, often the familiar 2x2 matrix
4. Cell types: Each combination of dimensions is a 'cell', category or potential ideal type.

Carefully considering the overall idea addressed by a typology, the significant dimensions of that concept, followed by mapping out the potential categories, is a crucial exercise. The way to identify these dimensions and the idea is through coding, which is where methodological rigor enters the picture for theorizing based on qualitative data.

Coding procedure

There is nothing fancy, complicated, or novel about coding. It is a slow and labor-intensive process, here done with inspiration from the section on generating concepts in Hammersley & Atkins (2007). It is essential to read transcripts closely and not to rely on field notes or summaries. While coding is a creative process there are strategies available. Initially it is important to look for interesting patterns; surprising or puzzling phenomenon; apparent inconsistencies or contradictions; expectations based on common sense, official accounts, or other theory (Hammersley and Atkinson 2007). This is what Alvesson & Kärreman (2011) describes as looking for breakdowns in understanding. The coding strategy centered followed an abductive research process, which established the significance of the international organizations and translocal interactions for local SI initiatives as focal points in the first part of the Transit project. Theoretical propositions were generated in an interplay between empirics and literature, which formed the basis of a coding strategy meant to solidify, substantiated, or potentially falsify the propositions. The sociotechnical perspective informed this strategy, especially the perceived lack of the material and technical in both empirical accounts and conceptual development, which led to several categories and dimensions related to how SI and SI networks manifest and are constituted.

Practically the coding software Nvivo were used, which allows organization of coding in hierarchically nested nodes. During coding text were marked and in the first read-through nodes were create and named identifying concepts and categories. It is important to distinguish between observer-identified concepts (Lofland and Lofland 2006), and concept coming from the informants. This coding goes through several iterations of the material as patterns and new categories emerge. As an example, from coding for the meta-analysis in Transit around the “kinds of empowerment” from international networks in the case-studies. After 2 weeks of coding 398 pieces of text

from 48 sources were marked, divided across 89 nodes to a depth of 4 levels. At this stage many of the building-blocks for a typology is there. The second level of nodes are often potential overall ideas that a typology could address. The third-level nodes are less clear-cut but inspire potential dimensions of a typology. Here creativity as well as trial-and-error enters the pictures, and Colliers (2012) approach is useful in mapping out potential typologies.

The data: The dimensions of SI networks

Figure 8.1 – illustration of part of the coding categories in hierarchically nested nodes in NVIVO. The first row of numbers refers to unique sources and the second to references.

Meta-analysis	51	533
1 - Kinds of empowerment	48	392
1.1 - types of exchanges	36	101
Concepts	2	2
Conferences and other events	20	40
Exchanges between macro-actors	2	2
Individuals active in the global	3	3
International exchanges with external actors	21	35
Outreach activities	2	2
Publications	3	3
Structures, codes and governance	4	5
Through projects	5	7
1.2 - types of empowerment	43	207
Affordances	10	14
Bringing together and networking	6	7
Environment & sustainability	3	4
Financial	20	32
from local to international	10	13
Legitimacy	22	43
Lobbying	2	2
Narratives and stories	9	14
Organisational maturity - development	8	9
Sharing experience & Learning	23	48
Dissemination	5	5
Education & Training	8	10
Emotional support	6	7
Creating cohesion and community	2	2
Tools	1	2
Visibility	10	20

The dimensions are based on a range of conceptual and theoretical typologies constructed in Transit. These typologies are used as dimensions, and the ideal-types they

contain as variables for that dimension. The typology in this paper is thus built iteratively starting with the comparative analysis of the first case studies in D4.2 in Transit (Jørgensen et al. 2015, chap. 4), to the second batch of case studies in D4.4 (Jørgensen et al. 2016, chap. 4) to the final theory in D3.4 (Haxeltine et al. 2017, chap. 5), to the conceptualization of the dimensions in this section and the final typology. All the typologies in Transit have been developed in collaboration with the case researchers that have had a final say on their evaluation. The four dimensions of the typology in this paper, their variables, and the specific typologies they are based on (referred to by the names of the deliverable they are published in) are:

- (1) **Manifestations:** Physical space, Digital space, temporary spaces, practices & interactions, objects.
- (2) **Network stability:** Integration & embeddedness, stability, translocal links.
- (3) **Macro-actor strength:** Formalization, homogeneity, non-human actors, network size.
- (4) **Network resources:** Visibility, Legitimacy, Access, Support & Knowledge.

The strategy for forming these dimensions, was to encompass as many of the earlier typologies and as much of the empirical data as possible, while covering aspects crucial for a sociotechnical and flat relational perspective like the materiality of SI networks and the formation of macro-actors.

The main purpose here is to explain the dimensions and illustrate how they have been configured to constitute SI networks that can empower SI initiatives, and thereby enabling SI. Based on these dimensions each case was given a high-low. The high/low evaluation is not a numerical or quantitative analysis. It's a qualitative judgment based on observations and interviews by the case researchers and the author. Some of the SI networks might be on the edge if they are high/low. However, this is not of any big consequence as the purpose here is to establish a property space and construct ideal-types spanning the extremes. If no empirical cases fall outside the property space it is of less consequence if they should have been tilted a bit towards one dimension, their characteristics will still be represented in the final ideal-types.

Manifestations

This dimension is the tangible aspect of a network's constitution, and the dimension relates to the degree social relations are embedded in material objects, interactions, and practices. All organizations must be materially manifested somehow no matter how loose they might be, even knowledge need a material form to travel (Czarniawska-Joerges, Sevón, and Sevón 2005), and social relations are ephemeral if not embedded in objects (Latour 1987). There is a distinction between manifestations of local initiatives and the network organization. In some networks these two aspects are separate organizations, while for others the network functions through specific configurations of local initiatives. The case-studies also made it clear that ICT (internet communication technologies) have greatly expanded the possibilities of manifestations and extended

the reach and efficiency of traditional manifestations like text objects.

High-scoring networks are Co-housing, FabLabs, Ashoka and Impact Hubs that entail brick & mortar local initiatives like office buildings, workshops, labs, maybe a recognizable brand and logo. These networks encompass all types of manifestations to some degree. The international organization also have distinct manifestations from the local initiatives, like a HQ, a 'university', a registered NGO, their own staff etc. They also feature well-known narratives like Ashoka's 'Everyone a Changemaker', which is a type of object manifesting both as texts, media, and in personal interactions.

In low-scoring networks it might only be temporary physical manifestations like the seed swapping events in the Seed Movement, academic conferences in Basic Income, or maybe only digital spaces & knowledge objects like some new science shops. Networks that are typically very locally focused like the Seed Movement and focused on practices have less need of material objects to maintain social relations and enable interactions over long distances. For them the local spaces where they can meet and interact is enough. There are typically no distinct manifestations for the network and the local initiatives, like the Living Knowledge network that can only be interacted with through local Science Shops, or RIPESS that only have the network level and are manifested through continental networks and the board.

Network stability

Network stability relates to the institutional embeddedness of SI networks social innovation that refers to if it integrates with societal systems loosely understood. Stability relates to temporality of the network and the local initiatives, which for instance can be an apartment building that is very stable or legal contracts. And translocal links relates to organizational structures and interactions that can also lend stability to local initiatives or the network by transferring resources.

Co-housing in Denmark was a transformative innovation 100 years ago but is not innovative now. A significant percentage of the Danish population today lives in these co-housing associations, without seeing it as an innovation. It has a very high temporal stability through its buildings. The innovation became institutionally embedded in Danish societal institutions as local authorities funded new co-housing initiatives up through the 40'ties, 50'ties, and 60'ties. In other contexts like Argentina it is still innovative and facing opposition from the established political system.

Other networks like Ashoka, Impact Hubs, Living Labs, and Slow Food have manifestations in the form of local offices, labs, convivia etc. that gives them stability like co-housing, as well as network infrastructure like digital platforms and legal frameworks. The translocal links also helps to build a brand, visibility, and legitimacy that stabilizes the local initiatives, as discussed in the last dimension. These networks also attach themselves to societal discourses, like social entrepreneurship that embed them into the growth & innovation agenda.

Other initiatives tightly integrated with societal systems are science shops and Desis labs that integrate with universities and education systems, without being very stable as Science Shops are composed of staff and not buildings and so require little initial

investment but higher operation cost. Unlike a co-housing association there is no sunk cost and no tenants that cannot be legally evicted. Science shops have been very good at producing knowledge objects in the form of reports, documentation, articles and other media that lend stability to the concept and network. This type of initiatives tries to increase stability by embedding into university strategies, governance structures, and curricula.

There are a few low temporal stability cases like some local initiatives of the seed movement that only exist as it is being practiced, like the annual seed-swapping event in Brighton. The institutional embeddedness is very low as it is not part of or in any way related to societal structures. Basic Income is another low example, which only exist if members keep the societal discourse going and keep arranging events like conferences and public meetings. The knowledge objects like articles, books, reports etc. need to be enacted continuously for the network to stay alive.

Macro-actor strength

These are all variables that help construct or lend strength to macro-actors, which are essential for lobbying activities but also generally for the network to work on the context to improve the framework conditions for their members. Formalization refer to the existence of statutes, mission, vision, governance structures etc. Homogeneity to uniformity of transformative ambitions and approaches across a network. Non-human actors are if networks have constructed knowledge objects, discourses, concepts, brands etc. lending influence and strength to the network. Lastly, network size is essentially the accumulation of critical mass that in some interactions also gives agency. It is crucial to point out that these are all materially rooted characteristics. Without objects in physical and digital forms that can circulate and represent a network its impossible to constitute a macro-actor (Czarniawska and Hernes 2005). ICT however have enabled the constitution of the new type of translocal actors, new possibilities for focusing dispersed agency, which compared to the international organizations of the past is less resource-intensive and less in need of central organizing. This is visible as networks with few resources and no central organization manages to constitute macro-actors.

In the high end we have Ashoka, a well-recognized organization with a brand and a very structured hierarchy and approach with a high formalization and homogeneity. Local offices wield the legitimacy of the organization in their interactions locally to get sponsors. Impact Hub is another example constituted more like a federation, they keep tight control of their brand and have a common approach, the art of hosting, and transformative ambition across the network. Living Knowledge is a network with strong macro-actors but 'thin' organizations, constituted through construction and configuration of objects generated through research projects.

FabLabs is an interesting network in the low end. The FabLabs concept is a well-known network that can be enacted locally to gain some legitimacy and visibility, but no one is in control of it. The network is not a macro-actor, no one can speak for the network or movement. However, this lack of control seems to have enabled a rapid

expansion, i.e. control and slow growth vs flexibility and rapid growth. The transformative ambition of FabLabs is not homogenous either as illustrated by Smith et al. (2017). Impact Hubs interestingly had the same challenge. Suddenly there were hubs everywhere and everything was a hub. So, the network re-branded into Impact Hub and trademarked it, a conscious step in constructing a macro-actor by keeping control through a legal framework.

Network resources & infrastructure

Network resources refer to the infrastructure built up by a network and the objects that circulate within. These resources were identified as the most critical for the networks through a conceptual typology in D5.4 and developed into a theoretical typology in D3.4.

Slow Food is an exemplary network with a lot of resources & infrastructure. They conduct projects, have their own university, several objects & events like the Ark of Taste and the biennial Terra Madre that give visibility, a distinct brand, prominent people travelling around promoting the concept etc. The members pay a fee, and there are at least 1300 local initiatives around the world, which means there is a lot of financial resources to build a strong brand and infrastructure.

Compared with the Living Knowledge network that is a loose association of Science Shops, with no membership fees, no staff, and no funding. The resources stem from the local members, like knowledge and legitimacy transferred through mentoring visits, and from the large amount of knowledge objects produced in research projects. These objects have established the network enough as a macro-actor that it has enabled members to gain funding from the EU and other 3rd parties. Living Knowledge is a good example of how far you can get through intelligent deployment and use of knowledge objects. In their niche the network has been successful and have had an impact on the EU's various research frameworks.

Low-scoring networks are Shareable and RIPESS. These are networks of networks working to promote and lobby for the solidarity economy. There are few interactions between the members, and the whole purpose is to lobby macro-actors to improve the framework conditions for solidarity economy initiatives & networks.

Results: The Ideal-typology

The dimensions, which can be relative high-low values between the cases, theoretically gives a property space of $4^2=16$ ideal-types several of which will be empty, theoretically unlikely, unsurprising, or overdetermined (Bennett and Elman 2006). The identified combinations are listed in table 1. HHLH means that the type represents High-High-Low-High combination of the dimensions. Most networks share characteristics of several ideal-types as there is a great deal of variation between contexts and over time, but most are predominantly one type at a specific point in time.

Table 8.1 – Property space based on combinations identified among our cases and how many networks predominantly represent that type empirically

Combination	Networks	Ideal-type name
HHHH	5	A. Solid global organizations
LLLL	1	E. Networks around ideas and ideologies
HLLL	2	D. Dispersed locally focused networks
HLHL	3	C. Parallel practices & systems
LHLL	2	G. Integrated innovations
LLHL	3	F. Secondary networks
HLLL	1	B. Institutionally embedded federations (merged)
HHLH	3	B. Institutionally embedded federations (merged)

As visible there are most solid global organization, which likely is because of selection bias, i.e. Transit were interested in strong networks. Then there is a group of weak networks that either are social innovations that yet are on the idea stage, very young networks, or are so locally focused that no network organization and/or macro-actor has developed or is of little importance currently. Then there is a smaller group gravitating towards the middle that are either so alternative that they have a harder time to gain traction and homogeneity to constitute themselves, or so niche that it is challenging to scale up the network and construct a recognized macro-actor.

A choice was made to stay within a property space that is empirically based, and thus exclude hypothetical ideal-types. Analyzing combinations that did not appear, they seem unlikely like a LLLH combination that would be a strong infrastructure and many resources flowing through the network, which is unlikely without any tangible manifestations. The other combinations with only one high value are very interesting, as I will discuss below. Combination with only one low value are generally unlikely, as strong networks by their nature become strong across the whole board. The only appearing type here is HHLH, which is because these networks have so far failed to focus their dispersed agency into a strong macro-actor. The ideal-types are explained in table 2, and give an overview on how they are constituted, their function (how they empower), and the one or two networks best exemplifying each ideal-type.

Table 8.2 - ideal-type overview

Title	Constitution	Function
<p>A. Solid global organizations</p> <p>Exemplified by: Ashoka & Impact Hub</p>	<p>Manifestation: Strong across all dimensions. Both local initiatives and the network organization have distinct manifestations.</p> <p>Stability: Strong formal organization with high formality and homogeneity that helps maintain stable translocal links</p> <p>Macro-actor: Networks are perceived as conventional organizations, successfully focusing the dispersed agency into tangible macro-actors.</p> <p>Resources: Abundant resources within all dimensions.</p>	<p>Provides all types of resources and serve as a foundation for the members and is a strong macro-actor that enables a societal impact and network interactions.</p>
<p>B. Institutionally embedded federations</p> <p>Exemplified by: Living Knowledge & Desis Labs</p>	<p>Manifestation: Strongly but locally focused. Few distinct manifestations of the network. A federation or association and not an organization.</p> <p>Stability: Successfully embedded into institutions and taking advantage of existing infrastructure. The networks become secondary organizations to their host institutions. Few translocal interactions.</p> <p>Macro-actor: No influential macro-actors and are often lower in number as they are targeting niches specific to the societal systems they have embedded themselves within.</p> <p>Resources: Knowledge & legitimacy, little infrastructure</p>	<p>General support across all aspects, although less effective than type A, and initiatives can exist outside the network. Allows greater variety and flexibility, while ensuring some stability for the members.</p>

<p>C. Parallel practices & systems</p> <p>Exemplified by: Eco-villages (GEN) & Time Banks</p>	<p>Manifestation: Very local in the form of various alternative forms of living and working, thus few translocal link and flow of resources.</p> <p>Stability: Locally focused and embedded, local activities and manifestations vastly outnumber network activities. Buildings give stability.</p> <p>Macro-actor: Networks resemble social movements although they might have one or several organizations working within</p> <p>Resources: Few resources, but provide infrastructure and arrange events</p>	<p>Service organizations that serve the members in specific ways, like infrastructure, lobbying, arranging events, facilitating knowledge exchange etc. Members do not depend on the network.</p>
<p>D. Dispersed and locally focused</p> <p>Exemplified by: Seed movement & HackerSpaces</p>	<p>Manifestation: very local manifestations embodied in practices and interactions, often in temporary spaces like events, and often related to hobbies and spare-time activities</p> <p>Stability: Low due to lack of embeddedness and manifestations that could give temporal stability.</p> <p>Macro-actor: Akin to social movements with no organizations recognized as macro-actors speaking for the movement</p> <p>Resources: Few resources and little infrastructure</p>	<p>Serve specific function at the local level. There is not a single network serving any specific function, but multiple organized activities around events, knowledge exchange, political activism etc.</p>
<p>E. Ideas and ideologies</p> <p>Exemplified by: Basic Income</p>	<p>Manifestation: Network composed of global social networks exchanging knowledge, manifested as events, meetings, temporary experiments etc.</p> <p>Stability: Not institutionally embedded, and no temporal stability</p> <p>Macro-actor: Have one or more organizations and the macro-actor is constituted as a discourse and concept.</p> <p>Resources: Few resources beyond knowledge objects</p>	<p>Strong network specifically around knowledge exchange & generation, and lobbying.</p>

<p>F. Secondary networks</p> <p>Exemplified by: RIPESS</p>	<p>Manifestation: Only as network organisations with few or no manifestations relating to local initiatives</p> <p>Stability: Low, relying on contributions from other networks.</p> <p>Macro-actor: Network of networks, and there are thus no local initiatives having the secondary network as their foundation.</p> <p>Resources: relying on digital infrastructure.</p>	<p>Serve specific functions like lobbying, sharing experiences, connecting to relevant partners, at the network level.</p>
<p>G. Integrated innovations</p> <p>Exemplified by: Co-housing association</p>	<p>Manifestation: both locally and as a network but not strongly</p> <p>Stability: Integrated into the institutional landscape and thus hardly seen as innovative contemporarily. Strong temporal stability.</p> <p>Macro-actor: Declining strength after institutional integration. Very context dependent – i.e. integrated in some contexts while still being a non-integrated social innovation in others.</p> <p>Resources: Few resources in the network</p>	<p>Network going from being all-encompassing networks to losing importance as their innovation becomes integrated.</p>

These ideal-types exemplify different ways the networks empower their members through unique configurations of how they are constituted through the four dimensions. Networks have developed to serve specific functions for their members, and these functions in some way dictate how they are constituted. The configurations essentially relate to degrees of homogeneity, independence, and flexibility in relation to how effectively their distributed agency can be focused in macro-actors, resources can be pooled, and infrastructure constructed. Type A essentially must conform much more strictly to governance of the network and contribute with resources, like paying membership/franchise/royalty fees. In exchange the network builds a strong brand that empower all members, develops and facilitates knowledge exchange, arrange events, and interact with other networks and organizations to improve the framework conditions of the members. The trade-off is that not everyone can or will conform, which limits the expansion of the network. The ideal-types can be clustered into three categories:

- There are the secondary networks (Type F) that are typically advocacy networks doing lobbying for their members and function as a kind of trade associations for SI networks within specific sectors, like the solidarity economy or sustainable living, similar to what have been called coalitions (Davies 2016). Conflicting logics of the very diverse members are handled by restricting the coalition to a specific focus and the members retaining full independence. These networks score highly in a single dimension as necessary to fulfil that function. The members have their own networks to fulfil other functions, and/or local initiatives

have no primary network, but multiple affiliations as needed.

- There are the all-encompassing networks that are integral in the functioning and life of the local initiatives, relating to type A & B, delivering both resources and stability. While translocal interactions typically do not occur daily, the local initiatives would likely not exist without the network, and this network form also entails organizational governance, i.e. a trade-off in independence & flexibility.
- Then there are the rest, which I term auxiliary networks. While being the primary network of their members, they either have not needed an all-encompassing network as that is not crucial for the members, have failed to develop such a network, are still in the process of developing it, or have regressed from the all-encompassing type to an auxiliary network. They are often very strongly constituted in one or two specific aspects, as that is what the members have needed like Type C have needed a macro-actor to influence politics. This resemble what have been called federations in organizational research (Provan 1983; Dicken 2008). Governance is delegated to the local members and adherence to network decisions voluntary. The local members can thus operate within different logics, like some FabLabs that focus on education, others on social entrepreneurship, and some on facilitating conventional innovation. The loose association between members limit potential conflicts, while also limiting influence and development of network resources.

The value of the typology is the mental model it provides for practitioners and policy makers on network building and configuration that can empower the members and enable SI. There are three main questions: what do the SI initiatives need (the local focus), how can a macro-actor be constructed that enabled interactions with or impact on the intended target (the societal focus), and the organizing taking place to constitute a network that can focus the dispersed agency of the members into a macro-actor (the process). The typology exemplifies different options, from federations to service organizations and parallel systems.

The local focus

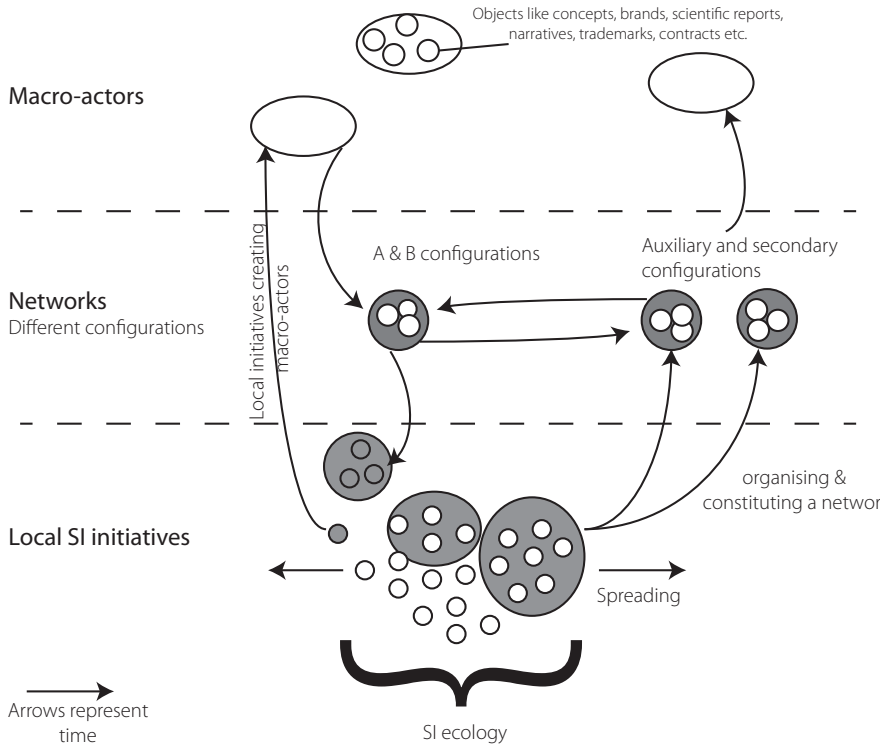
As an example, if the local need is increased visibility and legitimacy to attract members/clients and funding a type D, C or F configuration could work. The need is for an organizing activity producing local events of some form that is visible and/or produce objects that can be enacted to gain legitimacy. These configurations serve specific functions and do not limit the autonomy of the members. The challenge in this example is to gather a group of initiatives that can potentially share a common narrative and ambition for societal change (Type D+C), and thus organize events and produce objects that empower them collectively, or gather a heterogenous group with a more peripheral relation to each other and focus their distributed agency much more specifically on one function (Type F) like lobbying for the solidarity economy like RIPESS (Jørgensen et al. 2016). If there is a necessity for more resources, infrastructure, internal governance

etc. and an organization that can work on improving the framework conditions of the members more broadly, and thus indirectly empower them, a type A or B is necessary.

The process

It is possible to develop in different direction. Going straight from E to A is challenging but going E>D>F>B might be possible. An interesting new development is local initiatives that go directly to founding an international network organization by creating a macro-actor like Transition Towns and FabLabs. This organization then facilitate creation of new local initiatives. This has been enabled by ICT that has markedly lowered the cost and increased the reach of such macro-actors as shown by other authors as well (Castells 2015). These networks essentially always start as type A or B configurations as the founder is in control, but as is the case for FabLabs can develop into more loose and auxiliary networks. A couple of other can be seen observe, like C and D that are very similar but might just be at different stages of development. D would essentially become a C- or B-type if it succeeded in constructing a macro-actor. Both could become A-types over time, if they constructed network infrastructure and reached a higher level of formalization and homogeneity. However, they might not be interested. Instead of being member of a solid and resource rich network an initiative might be a member of several different networks that serve specific functions for them and give access to specific resources, which enables them to retain a lot of flexibility and autonomy, at the cost of stability and the influence a macro-actor can give. Staying locally focused and replication an innovation from local-to-local however limits system change as shown by Westley et al. (2014).

Figure 8.2 – process of organizing and constituting networks and macro-actors



The Societal focus - constructing macro-actors

How the geographically dispersed SI networks can have a societal impact, how they can focus their dispersed agency, is the function of macro-actors. A group of initiatives can after they have started their organizing effort start to produce objects like brands, scientific documentation, narratives, contracts, media etc. that all play a part in creating a macro-actor by giving legitimacy & visibility by drawing on societal discourses, the legitimacy of 'science', on societal institutions etc. (Pel, Dumitru, et al. 2017), stabilising agreements, facilitating travel of knowledge (Czarniawska-Joerges, Sevón, and Sevón 2005), and countless other functions. Objects give stability to social relations and enable interactions to span time and space (Belliger and Krieger 2016), and are therefore essential especially for geographically dispersed networks. This can happen by creating and funding a separate network organization or through collective but distributed efforts of the network, two options that require different levels of homogeneity, formalization, governance, and resources. Once a configuration of actors and objects have been created with enough visibility and legitimacy to be recognized by other actors (a macro-actor), like regional & national authorities or international bodies like the EU, the local initiatives collectively start having an impact on system change .

Discussion & Conclusion

Social innovation is increasingly seen as a new innovation paradigm and a governance principle as the prevailing top-down interventions and innovation management proves increasingly ineffective (A. Smith 2017; Schubert 2018). The idea of SI networks stems from the emerging interest in social innovation as a solution to many of the challenges in the developed world, and the accompanying necessity to understand the phenomenon, which led to the question: **How are social innovation networks constituted as organizations to enable the transformative ambitions of their members?**

A theoretical problem relates to the plethora of definitions and the unreflective or restrictive units of analysis (UoA) they enforce that run counter to an ambition to solve social problems and study change on a societal scale. Especially the immaterial emphasis is problematic, taking lessons from STS is crucial to understand SI as a sociomaterial process. As illustrated by Geels (2005) technology can be crucial in system change. So, SI can be material both in its ends and its means, and materiality is a crucial part of the UoA, and as shown objects are necessary to construct the network configurations and macro-actors necessary to facilitate system change.

Rising to this challenge I have developed a comparative empirical analysis based on a typology approach (Halkier 2011; Collier, Laporte, and Seawright 2012), that as one of its dimensions looked at the material manifestations and configurations of SI networks across 20 case studies. The typology contains multiple levels of theory as it is based on earlier conceptual and explanatory typologies (Jørgensen et al. 2016; Pel, Dumitru, et al. 2017).

The research question can be answered in three stages. 1) SI networks need to be understood as composed of local initiatives and network organising that may be a distinct entity or manifested through the collective agency. 2) In either case networks are necessarily materially constituted and best understood through physical, digital, and temporary spaces, objects, and practices. These manifestations of a SI networks can be configured in various ways to construct infrastructure & resources, to focus the dispersed agency of a network into a macro-actor to gain influence at the network-level and facilitate system change, and to gain stability by integrating in societal institutions and maintaining translocal links. 3) Analyzing across these four dimensions led to a property space spanned by seven ideal-types, which exemplify different ways that networks empower their members. The ideal-types could further be ordered in three types of relations between local initiatives and networks: all-encompassing, secondary, and auxiliary networks. Where a network is placed relates to both what the members need and what has so far been successfully constructed.

The typology contributes to a deeper understanding of organizing in relation to SI and can contribute to a more reflective practice and facilitation by policy makers, but the typology is not a strong claim on how this increases agency and are thus meant to be generative of further discussion. The findings can be related to research on coalitions among trans-national activists (Tarrow 2005), configurations among SI organizations (Westley et al. 2014), and new modes of social movements in the internet

age (Castells 2015). Common for these very different streams of research is that they focus very specifically on one type of SI or organization, like the tangible social entrepreneurship organizations of Westley et. al (2014) and Doherty et al. (2014) to the loose social movements of Castells (2015). Westley et. al (2014) in a similar fashion describe various configurations for scaling up SI that also illustrate the need for network and macro-actor construction, but is very intangible in how this is done, focusing on learning, ‘energy’, quality etc. Here I have analyzed across the different forms, types and degrees of organizing, and been specific (although many of the details need to be looked in the base typologies referred to in the text) on how they are constructed and manifest materially and locally. Many organizational forms within SI is not tangible organizations as conventionally defined. These alternative organizational forms solve some of the problems related to governance in face of hybridity and contextual diversity as shown by Doherty, Haugh, and Lyon (2014), while still reaping many benefits.

This paper does not provide insight into the specific social and systemic changes identified in relation to the empirical cases and the configurations in the typology they led to, as that was beyond the scope of the paper and impossible within the length-limitations.

The practical implications reside in the mental models the typology afford on the different types of networks, which function they serve, what they provide their members, and what is necessary to constitute them in both material and social terms. There is no recipe for how to constitute a network and construct a macro-actor, but the typology affords reflection. Each ideal-type corresponds to specific configurations of these elements that empower the members in certain ways. The typology thus potentially informs both practitioners and policy makers on the important questions on what is needed locally and which type of networks to develop.

Declaration of data availability

The data that support the findings of this study are openly available in the critical turnings points-database and the project deliverables of Transit at <http://www.transitsocialinnovation.eu>

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SECTION 4

Understanding

- ◇ Chapter 9 - A process perspective on the creation of an organizational space serving as foundation for social innovation at universities
- ◇ Chapter 10 - Space configurations for empowering university-community interactions
- ◇ Chapter 11 - Building local agency for social innovation through the formation of transnational networks

Chapter 9

A process perspective on the creation of an organizational space serving as foundation for social innovation at universities

Abstract: Social innovation is currently trendy both in politics and academia but lack empirical contributions and methodological development. The paper gives insight on how to stage the configuration of an action-net that can serve as foundation for an organizational space facilitating interactions between universities and communities leading to social innovation. It is based on a study of a Science Shop that operated at the Technical University of Denmark from 1987-2012. This insight is based on an organizational process perspective, novel to the field, drawing on the concepts of sensemaking, staging, and action-net inspired by material-semiotics and symbolic interactionism. The discussion arrives at four fruitful strategies for creating organizational spaces and provides valuable insight into the empowerment potential of trans-local networking for local social innovation initiatives. Lastly, the paper highlights and evaluates the combination and applicability of sensemaking, staging, and action-nets to understand organizing in network-organizations.

This paper is an in-depth analysis of a local Science Shop and the Living Knowledge network (LKN) that is a network of science shops and community-based research initiatives, seen as an exemplary case of an older social innovation (SI) network. The purpose here is to bring insights that can help policy makers and practitioners alike on how to facilitate the emergence and development of networks that contribute to solving societal problems, often framed as SI. As this is a relatively long introduction, We will start out with the research question:

How have the Living Knowledge network and the local Science Shop initiatives created an organizational space and developed activities that serve as a foundation for social innovation at universities?

This question is crucial as the developed world is facing numerous challenges to the modern welfare state. SI research is often focusing on such problems as justice, fairness, poverty, environmental preservation, social exclusion, aging demographic, gentrification etc. (Lawrence, Dover, & Gallagher, 2014; Lehtola & Stähle, 2014; Moulaert, MacCallum, Mehmood, & Hamdouch, 2014; Mulgan, Tucker, Ali, & Sanders, 2007). What is different from other types of innovation research is the focus on societal change and not specific delimited problems or projects. In contrast to some social movements, many practitioners in social innovation do not exclude the private and public sectors as partners in SI. There are many different movements or networks working to solve some of these problems, like Transition Towns, Living Labs, the Seed Movement, Living Knowledge, to name a few. These are some of the networks that are part of a larger study of 20 SI networks in the Transit project (Jørgensen, Avelino, Dorland, Rach, & Wittmayer, 2016; Jørgensen, Dorland, Pel, & Wittmayer, 2015). Few projects to date have conducted a qualitative multi-site study and systematically developed theory on how SI initiatives interact with or contribute to societal change like Transit.

Transit aimed to develop a theory of Transformative Social Innovation, through continuous iteration between theorization and empirical research. This paper is a continuation of this process, and we here try to qualify research outcomes and close gaps by using an organizational sensemaking perspective, as discussed later. Our focus in Transit was especially on the aspect of international networking among the local initiatives, and the final theory developed a typology of the types of resources and empowerment that can come through the construction of an international network. However, the analysis was necessarily quite general & abstract due to the vast empirical material and thus did not shed light on the activities necessary for constructing organizational spaces in specific contexts. We thus here go into depth with one case through a solid theoretical framework inspired by organizational studies, to show how an organizational space for SI can be created at a university and how the international network can contribute or be enacted, with the intention of solidifying the Transit research and providing more practical insights on specific strategies & activities. Multi-site qualitative research is also rare within both innovation research and organizational studies, making this empirical article a valuable addition to organizational studies and one of the only articles to deal with geographically dispersed collective sensemaking processes.

LKN is interesting as a case in many ways because they work across public sectors and civil society, are not restricted to specific problem areas, have been proliferate in

producing text objects, and share characteristics with many social innovation networks like their very loose organization. The age is also an advantage as it allows studying both good and bad times, as well as the impact of ICT on their activities, and qualitative in-depth studies of especially older social innovation networks that are still vibrant are lacking within SI research. The focus is thus not on the SI itself, which for Science Shops is novel relations and interactions between universities and communities, but on how and why spaces for social innovation can emerge and develop.

The focus in this article is thus on the network formation & development of the Science Shops and LKN to better understand the emergence process and anatomy of social innovation networks and their local initiatives, and the specific interactions this entails.

On Science Shops and the Living Knowledge Network

The concept of Science Shops (ScS) developed in the 1970s at Dutch universities in response to a growing demand from citizens and Civil Society Organizations (CSOs). Thus the ScS model challenged the traditional orientation of science towards how knowledge is developed (Dickson, 1984; Wachelder, 2003). ScS aim to strengthen the influence of communities on societal issues through access to scientific knowledge i.e. opening the ivory tower of the university (Farkas, 2002; Leydesdorff & Ward, 2003). ScS are still innovative despite having existed for 4-5 decades, as current research still define interactions with communities as a “third” mission (Haywood & Besley, 2014; Jongbloed, Enders, & Salerno, 2008), keeping them at arm’s length. LKN interestingly did not emerge until 2001, which as we will show relates to the political context at the time.

Even though LKN have produced countless knowledge objects in the form of reports, articles, or other documentation, scholarly work on ScS has as noted by Wachelder (2003) been scarce, although ScS have earlier been mentioned widely and often positively (Farkas, 2002; Irwin & Wynne, 1996; Sclove, 1995). However, there has been a continuous procession of EU projects since the inauguration of LKN in 2001, many of them analyzing the operation and impact of ScS (DeBok & Steinhaus, 2008; Hende & Jørgensen, 2001; Jørgensen et al., 2004) and more recently in Transit (Dorland & Jørgensen, 2016). However, these have been reporting of and conclusion on empirical case studies with little generalization or theorizing, i.e. it has not been discussed in relation to innovation and not been brought into play in research. Since 2003 there have been two notable exception (S. Brodersen, 2010; Schlierf & Meyer, 2013) that with different frameworks focus on their function and impact, both taking a knowledge approach to their studies. Schlierf & Meyer (2013) focus on the specific problem of invisibility of knowledge work, while Brodersen (2010) focus on empowerment of CSOs (civil society organizations). None of them focused on the development of the ScS themselves and the workings of the network.

Brodersen (2010) points out that from the mid 90’ties the political context changed with right-wing governments, neo-liberalization, commercialization of research, new public management etc. that entailed a measurement agenda and demands on efficiency etc., which has been a general trend (Brennan & Naidoo, 2008), which led to a decline

for ScSs. Schlierf and Meyer (2013) supplement by explaining why ScS fail to make their impact visible in measurements. Their claim is that work with knowledge transfer, mediation, or brokering is generally invisible as there is no procedures to measure it. This observation is not restricted to ScS. The impact of knowledge and the producers are quite visible, but after knowledge has successfully been put to work somewhere the work of the intermediary that made it happen is forgotten, which is the main function of ScSs. And despite the focus of universities contribution to innovation (mostly commercial) the last two decades (Jongbloed et al. 2008, p.306), there seems to be a lack of published evidence that demonstrates the impact of public engagement and what is often called the third mission (Emery, Mulder, & Frewer, 2015), supporting Schlierf and Meyer's (2013) claim. The Transit case study largely confirmed this development (Dorland & Jørgensen 2016), and as science shops generally do not provide chance of commercialization they were gradually closed or lost funding. When the ScS emerged in the 70-80'ties this was less of an issue, but as it became a problem starting from the mid-90'ties the formation of LKN around the new millennia should then be seen in that context. This case study is thus on one hand a story about how the organization of LKN enabled the agency of local ScS, and on the other how ScS created a space for social innovation locally.

Approach and research questions

There are several gaps in the research of relevance beyond the lack of research specifically on Science shops and how they enable social innovation. 1) What kind of activities and strategies are effective in creating spaces for social innovation. 2) How networks in the field of social innovation like LKN can increase the agency of local initiatives. We can likely learn much from the founders' reasons and experiments, as we now 17 years later have a thriving network. 3) Approaches to studying emergence and organizing, as these networks start as disparate and distributed activities that gradually become more organized through interactions and collective sensemaking, the material aspects of which are underexposed.

Because these SI spaces start as very informal and the networks as disparate and distributed activities that gradually becomes more coordinated through interactions and developing social relations, we adopt a process organization view on LKN inspired by scholars like Weick, Goffman, Czarniawska, and Latour that form and interesting marriage of actor-network theory and organization studies. This approach enables us to study the emergence process of these organizations, and how a foundation for SI is created. The process perspective also brings more focus on the earlier underexposed material aspects like the "props" in Goffman's dramaturgical stage that are often material, and the inanimate objects travelling through the links in LKN that as we will show have agency or serve as agents for transferring agency. Weick's process view on organizations that focus on series of events is also especially applicable to our empirical data in Transit, where the meta-analysis (Pel, Dumitru, et al., 2017) focused on identifying series of critical events connected through for local initiatives.

The aim, in line with the Transit project, is to provide practical insight to practitioners and policy makers as well as academics, and we focus equally on how the

organizing effort in the network can empower the members and how a space for SI can be created locally. This we assume is linked strongly to the organizing and coordination of actions that is at the core of being an organization. Although the focus here is on one case, we will play up against the other SI networks studied in Transit to qualify and test the analysis and findings in this paper to increase the potential of generalizing to the wider field of SI research. From the research question and this discussion three sub-questions emerge:

- **How has a space for social innovation been created by Science Shops?** This brings focus on the local and specific organizing of the science shops and the “space” they constitute.
- **How has the Living Knowledge network (LKN) and the science shops emerged and formed over their lifetime?** This brings focus on the temporal aspect of the network’s development.
- **How and what kind of empowerment does the formation of a social innovation network like Living Knowledge facilitate for the local initiatives?** Together with the previous questions on the temporal aspect and the specificities of the local this question should enable us to knit together an understanding of how a global actor that can empower local initiatives can be created.

A process & activity view on organizations

This section is based on a flat relational ontology as that is the perspective Transit used when conducting the case-studies, inspired by a semiotics of materiality (Callon, 1986; Latour, 2005; Law & Hetherington, 2000). This brings focus to the non-human actors. However, material-semiotics and related approaches like ANT are theories of social order and not of organizations, which is why we are equally inspired by organization theory. This chapter thus aims to review literature of relevance and construct a framework for studying and understanding how the activity of organizing can be studied in our case.

The process view on organizations can be traced back to Weick who further drew inspiration from Goffman, Allport, and a range of other sociologists that focused on interactions between individuals in daily life (Czarniawska, 2006). Weick however took it further and saw strings of events as a process that established collective sense-making. Sensemaking in very general terms are the process where people collectively give meaning to their experiences, and is formed by connecting past moments with present experience (Weick, 1995, p. 111), or as put by Czarniawska (2006, p. 1661) structures of events. Weick (1995) famously asks “what’s the story?” as the core question in sensemaking, and plausible narratives that connect past and the present is at the core of sensemaking. Another critical aspect is that sensemaking is always both

cognition and action as according to Weick you cannot know what you think before you say it (Weick, 1995). This gave rise to other streams of research like CCO in the early 80'ties that illustrate how organizations are constituted through strings of communication of events.

We thus see organizations as a process to be identified in the study, i.e. how LKN and the ScS are organizing, and ontologically an organization is thus brought into being as it is performed (Robichaud & Cooren, 2013). However, what then makes organizations different from simple interactions? Which is where our material-semiotic sensibilities come in that also serves to counteracts the overemphasis of linguistics in the sensemaking perspective.

Material-semiotics

Our material-semiotic perspective is a non-linguistic approach to organizing and communication focusing on the many objects born from interactions that extends an interaction into something “permanent” spanning space and time. Latour (1987) contrasts this to baboons where interactions and relations are ephemeral as they do not use objects to stabilize their society as explained by Belliger and Krieger (2016, p. 140):

Primates have only their bodies and their physical co-presence in the here and now with which to construct social relations and they therefore must re-construct these relations anew at every moment

Which prevents primates from ever assembling larger and larger networks, i.e. organizations. It is thus non-human actors that make us human, and the social world is made up of associations between human and non-human actors. Drawing on the hermeneutics of Ricoeur, Taylor (2009, p. 157) divides this process into conversation that is the constant shared talk in the now, an event, and the text or object coming out from the event that is the form of communication that may be extended through time and space. Communication, or ‘talk’, can also take place through non-human actors, through scripts for instance (Akrich, 1992), as materiality can be designed to structure, control, prevent or in other ways exert agency and control or convey information, like Dale and Burrell (2008) have shown in architecture and office design.

Different perspectives within the process view

Within the camp of process perspectives on organizations there are also variations, especially what has been called the entrepreneurial vs ecological approaches (Gherardi & Nicolini, 2005). They are not incompatible but complementary as concluded by Gherardi & Nicolini (2005) as they focus on different aspects of how macro-actors, i.e. organizations, emerge. The relevance of each approach depends on Unit of Analysis (UoA) and delimitation.

The entrepreneurial approach advocated by Callon, Latour and Law privileges the protagonist and develops a narrative trajectory that makes sense when focusing on specific translations like in the story of the scallops and the fishermen of St Briec Bay (Callon, 1986) or specific development projects (Clausen & Gunn, 2015). We will argue that this perspective tends to be too linear, especially Callon’s four moments

of translation. The ecological approach privileges the actions while backgrounding the actors and stem from symbolic interactionism that Weick and Goffman emerged from. It is visible from Czarniawska's focus on action-nets instead of actor-networks (Czarniawska-Joerges & Hernes, 2005). If focusing on hundreds of translations it is better represented in ecological terms, like the case of implementation of internal control procedures across municipalities in Italy (Gherardi & Nicolini, 2005).

In this case we will lean on the ecological approach, as it makes more sense to focus on the actions taken when following the development of LKN and a local initiative over 3-4 decades, and because the actions and activities that enabled the organizational space is more interesting than the specific actors, although the two are not wholly separable.

Staging, sensemaking & organizations

The last part of the framework focuses on how organizations emerge, for which we will draw on the concepts of sensemaking and staging. Staging originates from Goffman (1959) who understood staging as a social actor that is constantly concerned to insure the success of communication, interaction, and cooperation by means of mobilizing and drawing together many different actors like texts, scripts, narratives, supporters etc. An important aspect is the separation into back-stage and front-stage, where the back-stage is where strategic planning takes place that here is termed staging, and the front where the staging strategy plays out and sensemaking occurs.

Goffman see the self as a social construct where individuals have no fixed core identity (Goffman, 1959), also supported by newer research on identity (Hansen & Dorland, 2016; McAdams & McLean, 2013) that shows how hard it is to answer the question 'who am I?'. Identity here is something arising on the front-stage during the play in a process of sensemaking, where actors adopt roles depending on the situation. However, the actor also acts as playwright, stage-designer, author etc. and is not merely a player, which is why it's a theory of staging. The actor can choose between available roles, choose which actors to enact on the stage, control the information available to the audience etc. Even during a single conversation role and identity can shift multiple times (Hansen & Dorland, 2016), as the actor tries to enact various available roles and construct plausible narratives to shape the situation (Weick, 1995), only restricted by what the actor perceives as believable or socially acceptable.

Research in design has raised Goffman's metaphor from the individual to the network and shown how it through conscious staging is possible to manage innovation processes (Clausen & Yoshinaka, 2007). It's all about staging temporary & organizational spaces (Clausen & Gunn, 2015), by controlling which human and non-human actors will be present and maneuvering them into specific configurations. Staging is an act of trying to configure an action-net in a specific way. This is what gives organizations, sequences of interactions that produce objects, roles, texts, that can be enacted in later interactions while also shaping them, forming an action-net. At some point action-nets become so complex that we *black-box* or *punctualize* them into single actors in our analysis (Latour, 1999). The underlying complexity is then acknowledged but rendered implicit and only the input and output are foregrounded. Czarniawska and Hernes (2005b) take this a step further when discussing macro-actors that are

punctualized networks that can act as and be understood as actors by other actors, an organization. What is interesting is that actors can then stage themselves as spokespersons for these macro-actors, thus effectively wielding the dispersed agency of a SI network like LKN. A macro-actor is thus an action-net, an association between actors, with a spokesperson equipped with a “voice” to speak and act on their behalf (Czarniawska & Hernes, 2005a).

So, in the process view we have the actions taking place on the stage during events, and the objects travelling between events in space and time stringing them together into an action-net, an organization. Sensemaking is the process where actors string the events together in a specific understanding and involves both cognition and action (Czarniawska, 2005), it is the collective effort to find and construct meaning in a chaotic world by stitching together experiences of the past with happenings in the now. Staging is the other part of the process that in contrast is a conscious effort where actors are enacted and action-nets configured for specific purposes through an overt strategy (Clausen & Yoshinaka, 2007), which of course follows from the sensemaking and is often an attempt to affect subsequent sensemaking of others, i.e. sensegiving.

Methodology

The researcher doing the LKN case had direct access both to the local staff at the ScS at the Technical University of Denmark (DTU) that we will use as an exemplary case, as well as several academics from DTU employed from before the ScS was established in 1987, but unrelated to the ScS, as well as several of the community partners over the years. The co-author worked at the ScS for 25 years but was only involved after the final draft was complete, to avoid bias. Several of these informants have provided feedback on this paper, corroborating the understanding of the context at the time, and providing a balanced perspective of the ScS in question. In total 13 ScSs have been part of the case study, although only five of them in-depth, which have helped to give a general understanding of the concept and its history. The author has also participated in three LKN conferences and been observer in one EU project.

The methodology used for all cases in Transit is explained in details elsewhere (Jørgensen et al., 2016; Pel, Dumitru, et al., 2017; Pel, Dorland, Jørgensen, & Wittmayer, 2017; Wittmayer, Avelino, Dorland, Pel, & Jørgensen, 2015), and we will here only shortly summarize. There were twenty cases each comprised of two local cases and the international network. In total, the cases involved 300+ interviews, 400-800 documents, and 240-1840 hours of observations, based on the minimum requirements that in most cases were exceeded. Interviews were semi-structured, and observations ranged from passive to action-research depending on the case. This was followed by a meta-analysis focusing on critical turning points (CTPs) on the emergence and development of local initiatives that covered 480 data entries from 80 different local initiatives within the 20 networks based on 160-240 interviews. However, not all 80 cases were finished or deemed adequate at the time of the analysis this paper draws upon, which was then based on 67 LSIs covering around 400 data entries. Each

data entry is 1,600-2,400 words, composed of raw interview data and analytic text by the researchers, which makes the total amount an estimated 2000 pages of text at the time of extraction, of which 180 were on ScS. CTPs are structures of events, which make Weick's process approach to organizations especially relevant (Czarniawska, 2006), although it has to be kept in mind that it's based on retrospective sensemaking.

The Case: Story of Videnskabsbutikken

Videnskabsbutikken (VB) is the Danish name for Science Shop DTU, which is used as an exemplary case. The empirics are ordered as subsequent events to help analytically string together an action-net to see how VB was created and supported over time. There are three essential aspects of this story, the space, the activities that created it, and the agency gained from LKN.

The pilot project. Event 1 relates to a request in 1984 by a labor union on how the equipment, competences, and employees from a shipyard closing might be used trying to save jobs. This event was unplanned and not part of the staging for VB. There was a group of left-wing students and faculty members that wanted to help society, which we term activists. It led to event 2 that was a collective sensemaking among several groups at DTU that framed the previous event as showing the necessity for a more formalized open door for civil society organizations like labor unions, which the university were receptive to at the time. This coincided with event 3 that was an encounter with the ScS concept that the activists grabbed onto, also inspired by the alternative technology movement (Smith, 2005). The ScS concept thus became one of the objects that were enacted, together with the story of the shipyard that was framed as a sign of the demand for research aid in civil society (S. G. K. Brodersen & Jørgensen, 2012), in a staging process meant to create VB, illustrated in figure 9.1. Here collective sensemaking was essential, the process of aligning the management and VB with each other. This was also possible at the time because the management was a senate of academics, colleagues to the activists, and were open to negotiation and discussion.

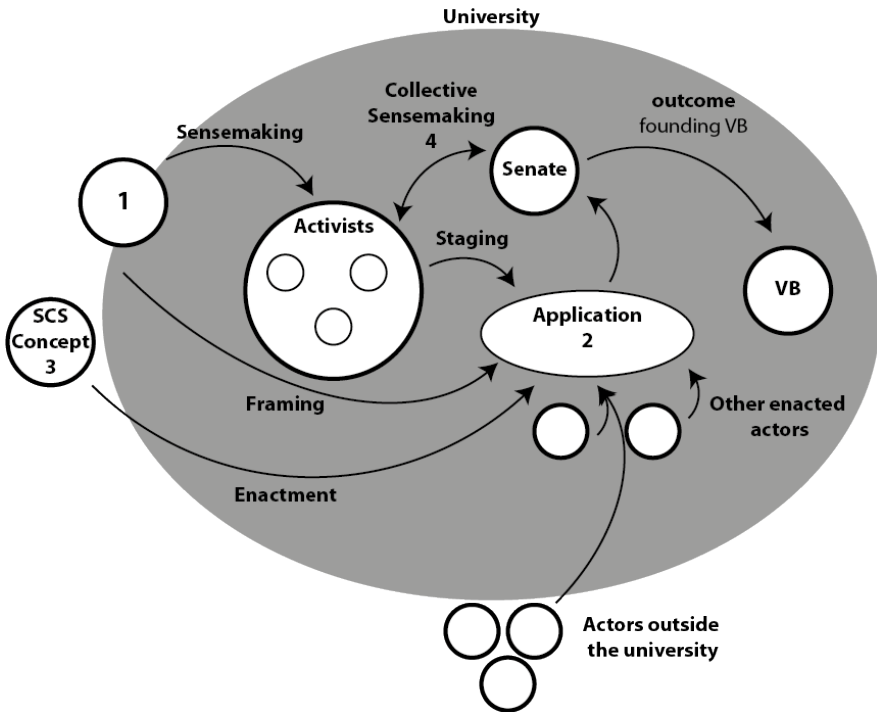


Figure 9.1 - Sensemaking and staging diagram describing the process of founding VB.

Numbers refer to events.

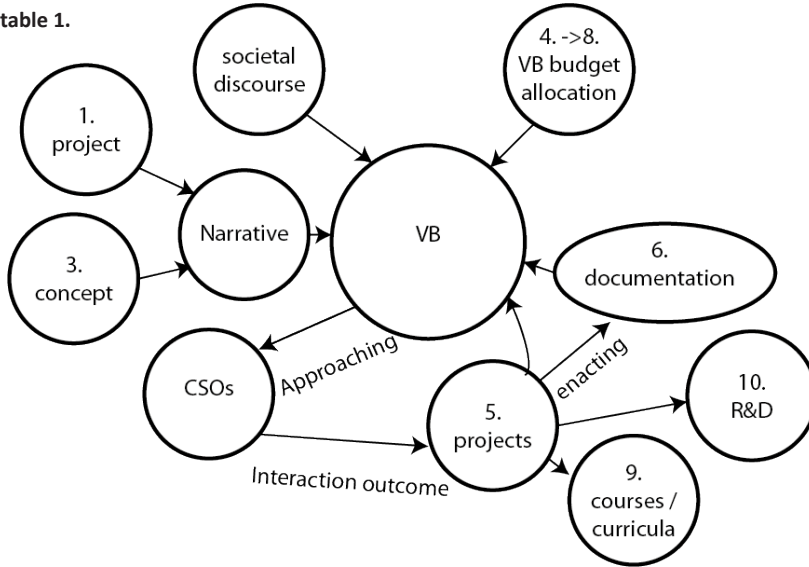
These objects together with a show of broad interdisciplinary support from several institutes framed in the application succeeded in getting funding for two positions, event 4, divided between a part time administrative *coordinator* (the general term used for managers in ScS) that we will refer to as Coordinator, part time secretary, and some student assistants.

Staging for expansion. The role of being an administrative coordinator did not afford the possibility of doing research or teaching, thus constraining Coordinators action possibilities (Belliger & Krieger, 2016), which led to staging efforts by him to change his role. In this staging Coordinator proactively approached communities to establish relations and make them approach VB for help, event 5, that he used to produce documentation of the effectivity of and demand for VB, event 6, thus constructing a success narrative. The documentation and narrative were enacted when after the three-year pilot VB applied for becoming a permanent initiative, event 7. On the stage were several other actors, like local unions that the university were more inclusive of in the 80'ties, as well as discourses on the role of technology and social responsibility of universities, and several others. All actors that could be enacted during staging for becoming a permanent initiative. Coordinator applied for additional staff and funding as well as an academic position for himself and were approved, event 8.

As illustrated, taking place in an academic setting text objects play a large role, and events are distilled into texts that are enacted during staging, like interactions with

CSOs that turned into documentation. Separate events and actors were enacted as a narrative that convinced the management to fund a pilot project, and subsequently make it permanent.

Figure 9.2 - Action-net around VB early 90'ties. Numbers refer to actors resulting from events in table 1.



The staging strategy by the activists is played out by enacting objects into a configuration forming an action-net that can align VB and the university management, which here in the beginning was a reciprocal collective sensemaking process. The action-net around VB is pictured in figure 9.2 for the early 90'ties. The action-net is a structure that supports and protects VB but is separate from VB that is a specific organizational space. VB at this point had a range of affordances:

- A place where civil society, students, and researchers could interact mediated by VB staff
- A place where resources were safeguarded for use by CSOs
- A place where students could experience a different type of learning
- A place where researchers could pursue partnerships and research with no external funding
- An incubator that developed societal challenges as new research areas and courses at the university

All characteristics that enabled innovation to flourish. For social innovation, which is about new/changed social relations, it was essential that there was a space with resources that could facilitate the creation of relations. Important resources here are staff

that can mediate & translate and a place to meet and interact. Longevity & continuity also proved important as it takes experience to mediate & translate.

The golden years (1988-1995). The permanent initiative became known as interdisciplinary center, of which VB technically was a sub-division responsible for taking community requests, although we refer to the whole entity as VB here. The academic role gave different action possibilities, enabling VB to create & teach courses (event 9) and conduct research on its own (event 10), the last two points in the list above. VB started with two staff but grew to 10-15 people including PhDs and student helpers within a decade and established the research areas of urban ecology, organic food production, and cleaner technology. Until the mid-90'ties VB had its own offices. The action-net was in these years expanded by objects in the form of reports, articles, documentation etc. stemming from their courses & research projects. We have chosen not to focus on specific events in this period, as none are critical turning points. The framing of and sensemaking in VB fitted the university at this time.

The downturn. The downturn started when the interdisciplinary center closed, VB merged into an institute, and the research group was physically split up, event 12. The associated researchers and staff were formally employed at various institutes, which meant that there were no formal objects, like contracts, that tethered the group together except Coordinator and one colleague that had hours earmarked for VB activities. So, when the physical frames changed, the loss of co-location, that over time led to the loss of social relations and interactions as there were no objects to stabilize the relations, like a contract or a curriculum. First people stopped coming to the weekly meetings, then got other positions, their own research projects etc. Ironically this disintegration came from an attempt to safeguard VB for the future, as the rector at the time advised Coordinator that being an independent center was too vulnerable in case of future budget cuts and merging into an institute would safeguard VB. VB's action-net then did give it enough stability to survive, although a large part of that action-net dissipated. In any case, Coordinator still had his foundation (base funding) and in the late 90'ies went in another direction to expand and secure VB, international networking.

International networking. This process started around 1997 when the American researcher Richard Sclove noticed the Danish ScS as he already had connections to the movement in the Netherlands and community-based research units in the US, event 13. Richard Sclove facilitated contact to Henk Mulder, coordinator of a ScS in Groningen. This took up speed with a Nordic conference on Democracy and Knowledge in 1997, event 14. Around the same time, an officer in the EU Commission encouraged the ScSs to make a project application to the EU STRATA program, event 15, which resulted in the EU project SCIPAS, event 16, that included a Work Package with focus on the formation of an international network.

The modern era. The transition to the 21st century was a turning point with the university governance system changing from a university senate of academics to a government appointed rector, changing the actors on the stage, event 17. This was accompanied by a shift in university policy that emphasized commercialization of science, event 18, which seems to be a general development at the time (Jamison, 2008, p. 120). According to Jamison (2008) this is causing a significant deterioration in scientists'

academic freedom and universities' autonomy, exactly as observed in the case of VB, as former allies were pressed on time and got other priorities and work assignments. With a rector-led management contra a senate, there was also less negotiation, and less possibility of effecting collective sensemaking. The new rector had radically different priorities, which essentially made the action-net of VB invalid as many of the objects lost legitimacy and influence, like the narrative around helping CSOs, the ScS concept, documentation of student projects etc. New narratives had to be enacted, new objects constructed, more in line with the new sensemaking of the university management. Around 2000 the staff is down to 3-5 people.

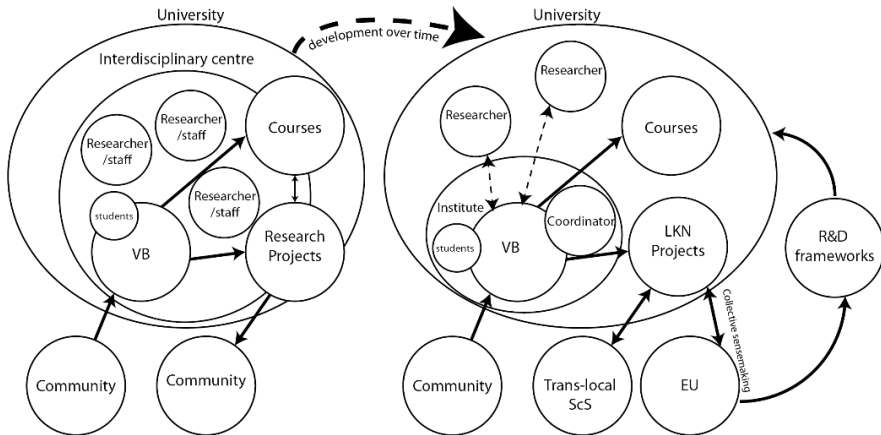


Figure 9.3 - Change in the action-net around VB over time

The establishment of LKN on the last day of the 1st Living Knowledge conference in 2001 facilitated a come-back, event 19, and the EU projects running in lieu of the network over the next years funded new projects and staff substituting some of the lost resources. The conference together with the project documents are milestones for LKN (Hende & Jørgensen, 2001). The first EU project constructed a range of texts documenting and framing the value of ScSs and created a space where the local ScSs could establish closer relations with each other, learn how best to operate, establishing infrastructure, and go through a process of collective sensemaking. The network then provided new roles as well, ScS were now not only a ScS but also local representatives of an international network, which several ScS have commented really meant something locally (Pel, Dumitru, et al., 2017).

Strengthening VB. Coordinator was in a continuous process of sensemaking and trying to embed VB more strongly at DTU, for instance by framing good stories in the university newspaper to co-orient the university with VB, event 20. VB could however not enact current DTU policy as it was earlier. Coordinator's sensemaking did evolve while under pressure, and Coordinator started a partnership with Lyngby-Taarbæk municipality that he earlier would have seen as beyond the scope of a ScS.

This partnership could be showcased at DTU as well to show that VB was relevant. Coordinator also had a continuous consideration if they should even try to enter the limelight by telling good stories or remain under the radar for survival. There was also a national magazine that ran until the mid-00'oes. It was closed as ScSs at other Danish universities slowly changed to do commercial projects with companies, event 21, moving away from the original idea of a ScS as seen by Coordinator and his colleague. Rather than showcasing commercial cases, which would have made other enactments of the ScS concept possible, they closed the magazine. To give an impression of the activity level at this time, VB in 2009 had 24 available projects on file and completed 10, mostly within environmental research and design for disabled. In comparison, during the pilot VB received 223 requests over 3 years of which 37% were finalized or running by 1987 (Jørgensen, 1987).

Closure of VB. By 2012 there was little funding left and the two staff worked in VB as part of their normal duties as academics, i.e. there were no ear-marked hours for VB. Coordinator saw all or most of his research as part of VB, although it had shifted more to pro-active research in contrast to request-based, and it was not visibly VB-related for his colleagues. Many of the interactions with communities over time also developed to personal relations between a researcher and a community. Coordinator's colleagues in the department at this time also had little relation to VB. The network VB represented thus became smaller. The institute director was also forced to streamline the institute and defend its staff positions in relation to the university strategy, coinciding with densification of office space that brought attention to the VB office, that made the institute director ask Coordinator if VB was still relevant and 'if he couldn't just stop doing it', event 23. This shocked Coordinator and illustrate the lack of collective sensemaking that Coordinator at this time was not fully aware off. Soon after the rector, who were unaware that VB still existed, randomly walked past the office and demanded its closure, event 24. A flurry of negotiation followed, and Coordinator created an alliance with the external relations office and technically became a sub-unit responsible for civil society requests.

VB eventually closed around 2012 due to accidental circumstances as the last two VB staff moved from DTU to Aalborg University, event 25. This also shows how ScSs are often attached to specific staff. However, this also means that some of the action-net survived and was used in research and projects by Coordinator in his new position.

Table 9.1 - Chronological event overview for VB

Date	ID	Activity description	Object or space	Effect/impact
1983	1	project with shipyard (CSO)	story	affecting sensemaking
1984	2	Discussions at DTU – Staging for VB	application	assembling an action-net
1984	3	Excursion to Dutch ScS	ScS concept	enacting a concept for legitimacy
1985	4	Interaction with the senate	contract & budget allocation	formally founding VB
1986	5	Approaching and doing projects with CSO's	project reports	Action-net building
1987	6	writing documentation	texts & statistics	creating support actors
1987	7	Staging for becoming permanent	application	formally changing affordance of VB
1989	8	Negotiation with the senate for becoming permanent	contract & budget allocation	cementing change in the institutional structure
1990	9	Establishing & teaching courses	curriculum & students	new spaces where input from society can be anchored
1991-3	10	Establishing new research areas	Project outcome	Strengthening VB's action-net
1995	11	Handbook for science shops published by VB	handbook (text)	stabilising the procedures by putting them in text
1995	12	Interdisciplinary centre closed, VB merged into institute	new (smaller) office	losing spatial context for extended VB group
1997	13	Start of staging for LKN	none	new trans-local social relations
1997	14	conference on democracy and knowledge	media + documentation	part of the path to LKN?
1998	15	EU application - staging for SCIPAS	application	staging for SCIPAS - negotiating a network
1999	16	Project work in SCIPAS	Project contract	creating a relational space for developing LKN
2000	17	New university governance implemented	policy documents + regulation	disintegrating action-net of VB

2000	18	Policy change and focus on commercialization	policy documents	changing vocabulary of motive at the university
2001	19	Final conference SCIPAS, founding of Living Knowledge	LKN webpage & texts	stabilizing network created in SCIPAS through scientific texts
2001	20	Showcasing stories	university newspaper	Creating visibility and facilitating collective sensemaking
2006	21	Closing Anvendt Viden	preventing objects from being made	Controlling enactment possibilities
2007	22	Partnership with Lyngby-Taarbæk municipality	narrative	Creating legitimacy for VB
2008	23	Crisis in sensemaking for Coordinator	Reduced budget and time allocation	Crisis in sensemaking for coordinator
2009	24	Rector walking by and demands VB closed	emails + governance text	Negotiations with vice-rector and new action-net
2012	25	VB closes as staff moves to Aalborg University	office closes	Action-net carried over to AAU to some degree

Discussion

The creation of a space for social innovation

The focus has been on how to create and maintain an organizational space that allows social innovation at universities. VB enabled innovation by carefully constructing various objects and configuring them into an action-net around VB that made certain resources available and safeguarded them for use by CSOs, as well as stabilizing VB as a distinct organizational space within the university. One of these resources was staff that mediated the new relations between CSOs and the university. These relations, beyond being a means to solving societal problems for the clients, contributed with knowledge to the university that led to innovation in the form of new research and courses. This is a bit akin to research on the fuzzy front-end in innovation, its necessary with a flexible space (Brønnum & Clausen, 2013) to allow innovation to flourish. Broadly speaking VB went through three phases of staging: 1) staging for founding, 2) staging for expansion, 3) staging for survival.

The process of creating VB

VB space was created through a continuous iterative staging process by the activists and later Coordinator where objects were constructed during events for later enactment and configuration into an action-net with an intention of affecting the sensemaking of the university management and/or stabilising the existing action-net, illustrated in Figure 1-3. These actions result from Coordinator's own sensemaking process. It would be more precise to talk of sensemaking and sensegiving (Weick, 1995), as the story is from the perspective of Coordinator. Sensegiving refers to how VB tries to make the university management understand them in relation to the management's perspective on the purpose and role of the university, as opposed to the sensemaking VB has gone through. Some events like event 1 was not part of a staging effort, and only framed as part of a story in retrospective sensemaking, and then enacted as part of a narrative together with the ScS concept and societal discourse when staging for VB.

The iterative & parallel process of staging & sensemaking

It is crucial to understand that this is not a linear process where staging, sensemaking, and construction of objects follow upon each other, all three are constantly ongoing. Its a game of action and re-action to opportunities, threats, and crisis. Its all about creating an action-net around the space to support and protect it. However, the action-net can fall apart. In a traditional ANT perspective this would mean that you jump between all four moments of translation continuously (Callon, 1986), with no start and end to the process, which is why we argue that a linear perspective does not work. Sometimes old events are reframed, or new objects must be constructed for future staging possibilities (Gephart, Topal, & Zhang, 2010) like documentation for the expansion, event 6.

Adapting and protecting the VB space

The VB space saw little change in focus and purpose after the first years except event 22, but funding decreased which led to a lower activity level. However, the action-net that created and safeguarded the VB space changed markedly over the years as the sensemaking at the university changed. Initially the narrative of the open door and helping CSOs was powerful but lost traction over time. VB thus from the mid-90'ties faced a series of challenges. The three counter-activities was I) to gain resources from elsewhere through international networking (event 12-16+19), II) to adapt VB and enable new stories by partnering with a local municipality (event 22), and III) strategic staging with intention of sensegiving at the university by constructing various objects (event 20). Activity II was the biggest change in how the space operated, the inclusion of public authorities as clients, and came from a sensemaking process of Coordinator where he realized that it was essential to tell new stories at the university, a realization that the context had changed. This was part of the efforts in activity III where Coordinator showcased stories in various ways around the university. None of these activities are radically different, it is a way to reconfigure and stabilise the action-net without changing the VB space. The most interesting aspect is the international networking, how it can contribute to staging locally. Although Coordinator voiced that he is unsure exactly what he gained from LKN, the network essentially contributed to the action-net around VB in all areas, as we will show in the rest of this section.

Nature of LKN

LKN is coordinated, it has norms, rules, a framework, and a strategic direction, all characteristics of an organization (Sillince, 2010), although it is in a constant process of negotiation & reenactment and is not formalized. More specifically it might be termed a *network organization* that usually refer to those organizations that are unstructured or loosely connected (Belliger & Krieger, 2016, p. 64). This is a vague definition that most of all is characterized by what it is not, i.e. it's a garbage can definition, a criticism Belliger & Krieger (2016) share although they fail to develop any specific characteristics. A crucial characteristic is that all ScSs, with only 2 exceptions, are part of a university and are thus members of separate organizations simultaneously. It's a typical conflict also prevalent in companies, for instance in the matrix organization where projects become more powerful than the base organization (Clark & Wheelwright, 1992). However, in the case of universities it becomes more extreme as the members are part of completely disparate organizations like EU projects, companies, professional networks, or social movements unrelated to the base organization.

LKN is what we call a transversal organization as it intersects several other organizations, i.e. unlike projects in a matrix organization LKN spans several distinct organizations unrelated to each other. LKN is also a secondary organization as it is not where actors derive their resources and physical location from. There is nothing unique in actors being part of several organizations, the unique characteristics is that LKN intersects in the same activities, processes, and relations in the workplace as the primary organization. They are interspersed on top of each other, unlike a housing association that operate in the private sphere outside work. This means that LKN participate in the sensemaking process of actor's work-identity, sometimes in opposition to the main organization, while only contributing with limited resources. It likely only function here because universities themselves are composed of loosely coupled groups, institutes, research centers etc., organized anarchies as some term them (Czarniawska, 2005).

LKNs contribution to motivation and identity

Sensemaking among LKN members thus need to satisfy multiple organizations simultaneously. It's a double-edge sword as while it supports VB and the narrative of Coordinator, it also prolongs the crisis in sensemaking as DTU and VB remain in opposition, and VB might have adapted into something acceptable to all parties that for Coordinator though might have been seen as a demise of VB. Coordinator had around the founding of LKN worked 15+ years in VB since he received his PhD, which meant his work-narrative and identity was based around VB and community-based research, which he was unwilling to compromise. As illustrated in other research we can enact different parts of our past as different roles and identities in the now (Hansen & Dorland, 2016), telling different stories, but Coordinator had only one dominant narrative. So, although the university is the more powerful of the two organizations it did not provide any alternative narrative for Coordinator at the time.

This illustrates the strategic possibilities of local staging as well as its limitations. The local ScS, here VB, mostly get resources from their universities but LKN strengthen them to get or maintain these resources, while holding them to the collective

sensemaking in LKN, thus safeguarding the space for social innovation for CSOs and disadvantaged communities. LKN is thus argued by Haug (2013) a space and not an actor, here a space that enables a sensemaking process. This peer-support as many ScS term it that LKN enables is one of the ways LKN empowers. Many staff at ScS explain that they would never have worked at a university if not for the ScS, and they might have lost motivation and left or closed the ScS without the peer-support from LKN. How long can you survive in an organization without support when you realize that your sensemaking is in opposition to the rest of the organization? Likely not long.

LKNs contribution to the action-net

LKN is part of the action-net represented by the website and the various publications from SCRIPAS and later projects. LKN enable ScS to get international funding, and the various objects like Hende & Jørgensen (2001) can give legitimacy locally. However, it has seldom been observed that specific texts have been used in this way, it's more the collective sum of objects that lends legitimacy to it as a macro-actor. The biggest contribution are the projects that are part of the action-net while they last, temporary spaces (Tukiainen & Granqvist, 2016) established by contracts and funding that allow interactions and contribute with resources. These relational spaces, together with the place-specific biannual conferences, allow a collective sensemaking process and strategic staging for further projects. It has also enabled the ScSs through the LKN macro-actor to have a collective sensemaking process with the EU commission, which has resulted in community-based research and ScSs specifically being part of the research frameworks of the EU (Dorland & Jørgensen, 2016). This can then be enacted in the university context, i.e. there is external funding in this area. LKN also gave legitimacy to the narratives VB tried to enact, i.e. 'it is not just our idea there is a whole international network'.

Productive strategies for staging an organizational space for social innovation

Based on the analysis of VB and Coordinator, as well as other ScS around Europe, we will suggest a productive strategy for staging an organizational space that facilitates SI at universities. It contains four distinct aspects that might be carried out sequentially or individually, and as illustrated by the case it is necessary to iterate between the activities.

Organizing a space for sensemaking

A collective sensemaking process is important among a group and their supporters to create an organizational space. This process is the first phase in constituting an organizational space. This process is the forerunner for constructing objects that can later be enacted in an action-net to give it strength and stability. After founding it is important to facilitate spaces where such collective sensemaking can continue. VB created a new space through LKN that was essential for constructing objects that could be enacted as various resources protecting and stabilizing VB.

For collective sensemaking to happens it is crucial to have a space, somewhere to

meet, somewhere where the sensemaking can happen. Locally its manageable even without funding, but for LKN both projects and conferences were essential. Even though “space” is not understood here in a material sense, face-to-face interactions proved crucial for sensemaking in case. ICT can maintain relations but not create or develop them. This relates to the idea of a macro-actor that can wield the dispersed agency of a whole network, but without a collective sensemaking process and construction of objects, no macro-actor can be constructed.

This translocal organizational space that LKN is was crucial here because ScSs faced growing opposition locally across Europe, and they thus needed new allies that could strengthen both their sensemaking and enable construction of new objects replacing objects that had lost influence.

Constructing allies

Once a space has been established, i.e. a group of actors has a been through a collective sensemaking process and started organizing efforts, it's important to construct objects for later enactment. Coordinator spent time writing documentation showing the demand for VB, which coordinator enacted in an application (event 6). In SCIPAS Coordinator produced reports documenting positive impact on research and education at universities (event 19). In Ireland a ScS spent time in a collective process at their university for formulating a strategy to insert community partnerships as a requirement for all faculties. These documents the ScS later enacted to elicit collaboration on community projects across the university. LKN as a network also successfully interacted with the EU commission to insert the idea of community research and ScS as a concept into future research frameworks that could later be enacted across universities in the EU (Dorland & Jørgensen, 2016).

Enacting objects to gain agency

The objects and roles described previously are here enacted to gain agency. Event 1+3 where framed and enacted in event 2 through an application. In some circumstances it has been fruitful to enact the role of being a representative of an international network, observed at several ScS as well as other SI initiatives (Pel, Dumitru, et al., 2017). Sometimes a letter of recommendation or a visit from an established ScS has been necessary to adequately enact this role. Other empirically observed strategies is enacting local and national policy documents in interactions with the university.

Facilitating collective sensemaking.

There are two types of collective sensemaking: 1) in a supportive context and 2) in face of opposition. The second type of collective sensemaking necessitates what is referred to as sensegiving. Initially VB as described in the first stage above were in a supportive context. There was numerous discourses and objects that were already accepted at the university and could be enacted, sensegiving was not necessary. This was possible as their espoused purpose back than was accepted as important at DTU, and because the management was composed of academics that were colleagues to the activists and were open to discussion & negotiation.

In the later years VB kept very strictly to their established sensemaking while the

sensemaking of the DTU management changed. VB tried to facilitate a framing of VB inside the managements that related to the new perspective on what was important at DTU, like partnerships with public authorities (event 22), and excellent student projects (event 20), i.e. sensegiving. A ScS in Cyprus enacted the university strategy that required social responsibility of the university based on national legislation (Dorland & Jørgensen, 2016), arguing that a ScS could fulfill that requirement for the university. Another ScS in Crete enacted the project-based education system with the argument that the ScS could supply projects for the students (Dorland & Jørgensen, 2016), i.e. increased time-efficiency for a mandatory task. The Romanian ScS network InterMEDIU started and gained support by enacting the possibility of international relations and funding, in that case through an alliance with the national Dutch ScS network (Dorland & Jørgensen, 2016). There are thus various opportunities to facilitate sensegiving by enacting other actors, and the degree of support and opposition is a fluid dimension.

Conclusion

ScS focus on communities without access to research. The social innovation is to create new relations between communities and researchers that help them solve specific problems, which might lead to a whole range of other innovations. For this an organizational space with resources where the actors can meet and interact is necessary. The focus of this paper has been on how to create and maintain such a space. We have done this with a framework of sensemaking, staging, and action-nets that respectively explain how we make sense of the world and align with other actors, strategically plan how to impact the sensemaking of others and protect the space, and lastly the configuration of actors resulting from the interactions planned during staging. They thus respectively focus on the cognitive and action-processes and the resulting outcomes. Practically we arrived at four fruitful strategies:

- Organizing a space for sensemaking: Collective sensemaking is necessary to construct a macro-actor that can wield the dispersed agency of a network, but sensemaking needs to have a space to unfold like a project, conference, or within a course, where face-to-face meetings are as crucial as ICT.
- Constructing allies: Action-nets are largely composed of objects framing past actions/events. During events its crucial to construct objects that later can be enacted, like scientific documentation, media coverage, signed memorandum of understanding etc.
- Enacting objects to gain agency: Specific objects can give agency in specific situations. The question is what arguments are accepted in each interaction, what are the priorities, goals, motivations etc., and then ask what object can deliver that.
- Facilitating sensegiving or collective sensemaking: Either if there is enough

common ground to build or facilitate collective sensemaking through interactions and negotiation or frame the space in a specific way by enacting actors that facilitate sensegiving that aligns the space in the perspective of the management with one or more goals they find relevant.

Reading Goffman, staging is the conscious and careful effort to create or affect a network by enacting certain actors and excluding other (Goffman, 1959), an attempt to configure an action-net. This can be done by creating and circulating narratives framing events a certain way to affect the sensemaking of others, i.e. sensegiving. Staging is thus an overt organizing effort while sensemaking is related to the process taking place under the conditions created through staging. Inspired by design studies (Clausen & Gunn, 2015; Clausen & Yoshinaka, 2007) we thus expand Goffman's perspective with staging by and in organizations. Clausen & Gunn (2015) applied staging in a product development setting, while we show its value in relation to universities and international networks.

VB and other ScS are indisputably part of their university while often not being aligned with the sensemaking process of the university management, supported by the alternative ongoing sensemaking in LKN. LKN can do this because it's a special type of organization:

1. LKN is a transversal organization in that its members are members of multiple organizations.
2. LKN is a secondary organization as all members gain funding resources and physical location from their universities.

Secondary organizations are akin to 'partial organizations' (Haug, 2013), although we refrain from using that term as we see network like LKN as full organizations. Two organizations are thus intersecting in the members, with potentially incompatible sensemaking processes and conflicting staging efforts, a special challenge in this case in comparison to many other transversal organizations like research and development projects in matrix organization (Clark & Wheelwright, 1992). Sensemaking as adapted by Belliger & Krieger (2016) and the various works of Weick referenced in this paper fail to address such contradictions. Universities are large networks that have diverse narratives and sub-networks that take part in different sensemaking processes. And in loosely-coupled organizations like universities contradictions can coexist. Some ScS have found part of the collective sensemaking at their university they could enact in policy documents despite a turn towards commercialization of research (Pel, Dumitru, et al., 2017).

It could be relevant to pursue further research of organizing in a dissensus perspective in the university context that see identity as multiple, conflictual, and in process (Hansen & Dorland, 2016), to analytically be able to work with the contradictions with transversal organizations. LKN is an organization, so is DTU, and VB is a part of both, showing that organizations are multiple and overlapping, here dragging VB in different directions, but also sustaining heterogeneity (crucial for innovation) at the cost of prolonged conflict. Future research should also focus on the international, or

trans-local, aspect of organising in relation so SI that we have touched lightly upon. He we do address past questions on the role of face-to-face meetings (Haug, 2013), but it deserves a dedicated analysis and discussion.

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Chapter 10

Space configurations for empowering university-community interactions

Abstract: Universities are seen by some as a possible source of solutions for a sustainable transition and societal challenge. This contribution sheds light on how universities can help empower communities and solve societal challenges locally based on a three multi-site case studies on Desis Labs, Fab Labs, and Science Shops. This paper takes a sociotechnical and flat relational perspective inspired by science and technology studies (STS) focusing on the material and spatial aspects of how these spaces are configured, to ensure the practical relevance for policy makers and practitioners. The analytical generalization methodology condenses the qualitative data into a three-category ideal-typology encompassing affording-, mediation-, and impact-oriented spaces that each represent a specific configuration of actors, researchers, students, communities, spaces, infrastructure, equipment, facilitators etc. The ideal-types each empower in different ways, require different resources to create and operate, and translate differently into specific local contexts.

The question in this article stems from a curiosity on how universities as part of their work with societal challenges can cooperate with and empower communities, due to the mounting societal challenges for the modern welfare state (Haxeltine et al. 2017) and increasing demands of measurable societal benefits (Olmos-Peñuela et al. 2016). The article contributes to the literature on the third mission of universities and university innovation systems. There are several issues with the third mission concept, like the prevalent economic focus (G. Trencher et al. 2014), how it fails to deal with the diversity in types of institutions, contexts, and community engagement (Benneworth et al. 2016) as third mission perspectives have been shown to be geographically contingent (Loi & Di Guardo 2015), the failure to value the work of knowledge intermediaries (Schlierf & Meyer 2013) that makes non-economic impact invisible and works against open research behaviour (Olmos-Peñuela et al. 2016), the essential explorative nature of university-society interactions (Meyer & Kearnes 2013), all aspects that make one-size-fits-all policy concepts like the third mission inadequate (Benneworth et al. 2016). The dominant innovation paradigm also lacks transparency and is hardly democratic where spaces like FabLabs may represent an alternative innovation paradigm (Smith 2017).

The article thus takes local university specificities and historical trajectories into account illustrating how some types of initiatives fit better at some universities and places. We also have a political interest in democratizing university-community interactions, contribute with a theoretical framework and empirical cases on how universities may contribute to enable citizens involvement in innovation, and show how grassroot movements may develop their capacity to co-create sustainable solutions. But very little research has been occupied with the development of a theoretical informed framework enabling the analysis of how different models for university-community interactions enable empowerment of local communities. The article is based on three multi-site case studies within the international networks of Desis Labs, FabLabs, and Science Shops. These cases are part of a larger study of 20 social innovations networks in the Transit project (www.transitsocialinnovation.eu).

In the third mission perspective, the two traditional missions of higher education institutions are teaching and research (Bernardo et al. 2012), and everything else have in the Humboldtian universities in Europe and the English-speaking world historically been a form of charity called community engagement or outreach that kept society at arms-length (Schoen 2006). These activities are now often referred to as the third mission that typically is everything related to external actors (Benneworth et al. 2016; Jongbloed et al. 2008), or all activities beyond the first and second mission (Göransson et al. 2009).

These activities often focus on technology transfer and commercial partnerships (Benneworth & Jongbloed 2010; Bleiklie & Kogan 2007; Olmos-Peñuela et al. 2016; Slaughter & Rhoades 2010; Thune et al. 2016; G. Trencher et al. 2014), and are mostly measured in economic terms (G. Trencher et al. 2014). It is interesting that despite the focus on universities contribution to innovation (mostly commercial) the last two decades (Jongbloed et al. 2008), there seems to be a lack of published evidence that demonstrates the impact of public engagement as part of the so-called third mission

initiatives (Emery et al. 2015; G. P. Trencher et al. 2013), beyond attempts that problematize the evaluation and current focus of the third mission (Schlierf & Meyer 2013; G. P. Trencher et al. 2013).

However, there has also been a move from simply contributing to economic development to transforming and co-creating society (G. Trencher et al. 2014), which is the trajectory our three cases build upon. The operation and impact of science shops have been analysed before (DeBok & Steinhaus 2008; Hende & Jørgensen 2001; Wachelder 2003), and more recently in the Transit project (Dorland & Jørgensen 2016). This literature is more descriptive than explanatory, which is useful for comparing our cases but adds little theoretical input to the understanding of how universities can empower communities. Research on FabLabs is also scant beyond the transit case study (Hielscher et al. 2015), with a few recent publications (Kohtala 2017; Smith et al. 2017), and this research does not focus on community empowerment or the empowerment impact is unclear. For FabLabs few if any has also focused specifically on university related FabLabs.

To study the interactions and empowerment processes we turn to Science and Technology Studies (STS) building on the tradition of Law, Akrich, Latour and other performative approaches to innovation and change (Akrich 1992; Bijker & Law 1992; Latour 2007; Latour & Woolgar 2013). We adopt a particular perspective on STS emphasizing its practical relevance by focusing on how innovative processes are staged (Clausen & Yoshinaka 2007). The staging approach contributes a spatial perspective on university-society interactions to focus on the context and specific actors and objects that facilitate and afford the empowerment process. As such it enables us to ask who and what is being involved in what way and seek to relate outcome to particular choices of organisational engagement. This fits well with the relational approaches from STS like actor-network theory (ANT) and the notions of staging and configuration (Clausen & Gunn 2015; Clausen & Yoshinaka 2007), which refers to the process of configuring and the final layout of these necessary elements. The empirical cases fit well with a spatial perspective as they all relate to and their impact depends on specific spaces and places. The Science Shop (ScS), FabLab, and Desis lab (DL) networks are all composed of local initiatives that are place specific. The research question then becomes:

How can university-community interactions involve and empower communities through specific configurations of spaces? A spatial perspective further helps to bring the material aspect into the analysis making the findings more practically relevant.

Article structure

The article is divided into 7 sections. 1) This introduction. 2) The following section on theory discusses the literature on spatiality and STS. 3) Our methodology briefly refers to the methodology of the TRANSIT project that the empirics stem from and explains our analytical approach. 4) Case presentation. 5) Analytically generalizing the data into conceptual ideal-types, which are then combined into a theoretical explanatory typology on different space type configurations. 6) Lastly, the contribution is discussed in relation to our objective of empowerment and providing practical advice

on staging these space configurations. 7) The conclusion ends with an overview of the findings.

Spaces

There are multiple forms of spatiality (Harvey 2004; Law 1999, 2002; Taylor & Spicer 2007), and different spaces, networks, or topologies are overlapping each other (Law 1999). Spatial metaphors also abound within STS (Clausen & Gunn 2015). The purpose of a space perspective is to focus on the spatial and material dimensions of our cases and whether and how such universities-community interactions can contribute to empowerment of communities. Empowerment is here understood in simple terms as enabling actors to reach their goals (Adams 2008).

This relational approach to space is inspired by theories within STS such as Actor Network Theory (ANT) but help maintain a focus on the spatial dimensions of relations and emerging networks. In an actor-network perspective empowerment is the process by which one actor enables the agency of another actor, a simple working definition. However, Law who is one of the founding fathers of ANT admits it has neglected materiality and focused too much on networks and the relational despite being heralded as material-semiotic (Law 1999, 2002; Law & Hetherington 2000). This is problematic as all actions are situated, they depend in essential ways on its material and social circumstances (Suchman 2007). Empowerment is likewise a material phenomenon as all interactions leading to empowerment take place in a socio-material context (Carlile et al. 2013; Dale & Burrell 2008). This perspective is also helpful as Science Shops¹, Fab Labs, and Desis Labs are all composed of entities bound to specific organizational and physical places, like a lab connected to a specific department at a university, which has place specific particularities (Casey 2003). Because of this material neglect in ANT we refer to relational spaces instead of networks. Our conceptualization of space is composed of three distinct aspects of space – the material, relational, and place specific dimensions. The differentiation into space types is not a division into distinct ontological regions but an analytic distinction between components of a single mesh.

Materiality of objects and spaces

Materiality itself is not a neutral notion (Carlile et al. 2013). In an Euro-American perspective the most obvious definition is the material dimension, spaces like offices, buildings, parks (Lefebvre 1991), or absolute spaces that can be drawn in an Euclidean coordinate system (Harvey 2004; Law 2002), or spaces as measurable distance (Taylor & Spicer 2007). The most tangible definition is that things are “made of matter” or touchable “stuff”. And different stuff give different possibilities for action that Gibson (2014) describe as affordances.

Affordances are action possibilities that are part of the material nature of objects, the

1 *The biggest formal network here is called Living Knowledge*

environment, or context. In contrast, empowerment traditionally is seen as a powerful actor delegating power to a weaker actor (Adams, 2008), i.e. the recipient is passive. The actor gaining agency is not passive in an affordance perspective; it is these actors that take advantage of the inherent possibilities of objects. A bridge can be walked; water cannot, unless you are a Water Strider. ICT only empower actors with the proficiency to use it. So while the actor and the environment make an inseparable pair (McGrenere & Ho 2000), materiality is in this way important in structuring the world. Other scholars within STS have also worked with how materiality can be explicitly designed to structure interactions in certain ways like scripts (Akrich 1992). A FabLab and its equipment often has an intention behind it, a script. Likewise, scripts of Science Shop and Desis Lab spaces try to stage interaction in certain ways.

The point is that although we might prescribe subjective meanings to objects and the material, like the value of gold or importance of access to green areas, materiality does have inherent characteristics. What can occur in a space is in some ways prescribed or limited by its materiality.

Relational Spaces

We use the term relational space instead of network to emphasize the spatial nature and to analytically separate relations and materiality. However, the spaces are co-dependent, to make an object in one space it may be necessary to work in another (Law 2002; Law & Hetherington 2000), as the spaces and places around us construct us as we construct them (Dale & Burrell 2008; Weick 1995). Objects and spaces are then always enacted in a multi-space manner and depends on their inter-relation for stability. A ScS or FabLab needs to work in a relational space to obtain funding, resources etc. Additionally, the physical placement of their space and the specific department their lab is affiliated with will affect the relations that are established or maintained and the possibilities to obtain resources. Indeed, purely relational spaces do not exist, but there is a large variation in how tight an entity is materially anchored. Relational space is also where agency and intention of humans enter the picture, as agency is when any actor influences another (Sayes 2014).

Elaborating a bit on this interrelation of spaces and what Latour terms an immutable mobile (Latour 1986): The concepts of ScS, DL, and FabLabs are immutable mobiles, they travel from one university to another while retaining a core form and function. Does an Argentinian FabLab resemble a Danish FabLab? What is (i)immutable and how are the manifestations different/similar in different places? The claim by Latour (1986) is that immutability is necessary to move and survive, while mediating (Latour 2007) or negotiating aspects outside the core likewise is crucial to adapt to new contexts. This is an alternative framing of why and how one-size does not fit all (Benneworth et al. 2016).

Places

Places have developed into a very specific term referring to specific local spaces

(Taylor & Spicer 2007). Places have *peculiarities and heterogeneities [...] special stories and local customs* (Casey 2003), which affect how manifestations adapt. Specific ScS are intersections of material and relational spaces. It also relates to immutable mobiles that in all there is something fixed that travels, the idea of a DL, ScS or FabLab.

You have an idea like FabLabs picked up by actors at a university, the concept then clashes with the particularities of the specific place. But what is travelling, FabLabs is merely an idea after all. We have observed that there is a wide range of spaces calling themselves FabLabs that seem different, but we assume there is an immutable core. There is also a difference between established ‘archetypes’ that are part of our institutional landscape and culture, like universities and hospitals, and novel ideas and concepts like FabLabs. Such institutionalized concepts have affordances. A kindergarten, grocery store, or toilet automatically elicits specific behaviour or expectations and sometimes entails regulation and implicit scripts that can be used in staging new iterations of these space-types. As the FabLab idea is gaining recognition, it is also slowly getting institutionalized and gaining affordances. It is dangerous to over-simplify institutions like a university, though, as they are not monolithic institutions but composed of a wide variety of internal groups (Pinheiro et al. 2016). In the cases actors actively draw on such archetypes in staging of new manifestations of space-types like FabLabs.

Methodology

This paper is based on three distinct sources of data from the Transit project: two batches of case studies (Jørgensen et al. 2015, 2016) and a meta-analysis (B. Pel et al. 2017). Twenty international networks were studied of which this paper focuses on three (Cipolla, C., Joly, M. P. and Afonso 2015; Dorland & Jørgensen 2016; Hielscher et al. 2015). In the case studies of each network two local cases and the international interactions were studied through semi-structured interviews, participatory observations, and document analysis (Jørgensen et al., 2014). The meta-analysis studied four local initiatives within each network through a concept called critical turning points (CTPs) mapping the development of each initiative over time in order to substantiate, solidify, and/or falsify the findings from the in-depth case studies (Bonno Pel et al. 2017). We will here not go in further depth with the methodology of the case studies. Citations and references to the CTP-database is handled by citing the working paper B. Pel et al. (2017).

Different approaches and models have developed where scholars argue about the analytical strength of generalising based on qualitative data (Delmar 2010; Flyvbjerg 2006; Halkier 2011; Mason 2006). The data has been analysed through ideal-typologizing (Collier et al. 2012; Doty & Glick 1994; Elman 2005; Halkier 2011), and stemming from one of the founding fathers of sociology, Max Weber (1949 p. 42). Typologies can be descriptive or conceptual (Collier et al. 2012), explanatory/theoretical or merely classification schemes (Doty & Glick 1994). Conceptual typologies establish a property space and its ideal-types have a kind of relation to the overarching focus of the typology, while the ideal-types in explanatory typologies are complex

hypotheses in themselves and built on multiple levels of theory (Doty & Glick 1994). It is important to remember that the property space defined by the dimensions contain many combinations, which is what we call ideal-types that do not directly correspond to cases. The 2-dimensional typology is the typical matrix with four ideal-types, if using binary dimensions that can be high-low. Several ideal-type combination would likely be empty, theoretically unlikely, unsurprising, or overdetermined (Bennett & Elman 2006).

In this paper we will construct conceptual typologies around the main aspects of material and relational spaces, which will be used as the building blocks for an explanatory typology around ideal-types of spaces for university-community interactions leading to empowerment. The construction of such typologies is work intensive, with iterative rounds of coding. The whole material has been coded three times, as the categories and patterns continuously emerging need to be checked across all cases. From the second step of developing the typologies the constant comparative method was used (Hammersley & Atkinson 1995). The most prevalent categories and patterns emerging were used as the dimensions of the typologies.

Case presentation - The three social innovations

The three concepts we focus on are Science Shops (ScS) related to the Living Knowledge network, Desis Labs (DL) connected to the Desis Network, and FabLabs often seen as part of the maker movement. Table 1 gives a short overview and description. Empirical examples will be presented as part of the analysis and discussion to make the discussion more precise and interesting. Beyond these cases, we have been in contact with ten additional ScS and engaged with researchers working with DL and FabLabs. FabLab & ScS cases have been anonymized.

Table 10.1 - case overview

Case names	Case description
Danish Science Shop (VB) Irish Science Shop 1 (DIT) UK Science Shop 2 (NI)	The science shop movement started in the 70'ties and created the Living Knowledge network around 2000. A ScS is defined as providing independent, participatory research support in response to concerns experienced by civil society (Dorland & Jørgensen 2016). The network has a narrative about "opening the ivory tower" that refers to establishing relations between universities and civil society. The work is usually done by students as part of their education.
Desis Lab Florianópolis (NAS) Desis Lab Belo Horizonte (BH) Desis Lab Polimi (Polimi)	Purpose of Desis is to promote design for sustainability in higher education institutions, and also predominantly use students as labour. There is no formal open door, and DL usually design their own projects and actively approach communities. The network was founded in 2014, based on activities going back to 2007.
FL2 FL3 FL4	The FabLab concept aims to provide open spaces where people can access digital fabrication equipment. They are not necessarily linked to universities, but we only focus on those that are. The diversity of models, purposes, and capabilities varies greatly. The first FabLab stems from a course at MIT in 2001.

Analysis & Discussion

Throughout this discussion we will give an insight into the three dimensions of material, relational, and place in relation to empowerment. The three international networks together span a wide spectrum of configuration of spaces for interactions between universities and communities, and this section maps out the property space that the collective mass of cases constitute.

Relational space

The first aspect is the creation of relational spaces, which we generalize into demand- and supply-based models. The supply-based approach is common among DL. Here

researchers and students affiliated to DL actively approach communities for projects. For the demand-based model common among ScS and FabLabs communities actively approach the university. Here the challenge for ScS is to set up procedures for accepting requests, creating visibility, and man-power to handle requests. For FabLabs, an unfacilitated space, the cost lies in the initial investment and sometimes part-time caretakers/technicians, but like ScS also in creating visibility that is a general challenge across our cases (Bonno Pel et al. 2017). A difference between DL and ScS is that ScS facilitate new relations and interactions between groups external to the ScS across the university. There is a large variance though with VB having their own research staff enabling them to conduct research on their own, while DIT and NI only have administrative staff, like most ScS, and depends entirely on collaborations with researchers at the university.

In FabLabs where there is little or no staff the relations are structured through the objects made available and conditions of use and access. Membership fees also embody and stabilise the relationship and can help define it as causal or “serious”, so some external actors enter a permanent relation as members, volunteers or care-takers/supervisors, a type of relation unique for FabLabs among our cases. Relations may also be anchored to members personal projects, as people come for the project and not the FabLab per se, and thus cease coming after their projects are done. This is problematic for FabLabs that rely on having a community. These temporary relational spaces anchored through projects is common among all cases, but not so problematic for ScS and DL who only extend the relation if the original challenge was not solved.

The pertinent question is who these spaces aim to empower and in what way. Despite the similarity and overlap between ScS and DL the models are very different, with ScS facilitating relations from communities into the university and DL starting projects based on curricula needs and research interests. DL work specifically with design & sustainability and can be exemplified by NAS that developed packaging for micro-businesses in a poor community enabling their products to enter the retail system, a very tangible impact, that also enhanced their teaching activities. ScS aim to solve a large variety of problems experienced by a community within the expertise of their university in areas like law, environment, health, philosophy, design etc. Crucially, their citizen-informed problem approach allows ScS to inspire new research areas, seeing knowledge from citizens as equally valid and important, and providing problem-based education.

FabLabs aim to provide access to digital fabrication technology, and in the movement, there are some discourses on emancipating citizens from global production systems, on transparent and democratic innovation etc., but we have found no evidence of tangible outcomes that empowered members in our university-related cases. There are a few references to what has been produced, but that seems to be of less importance, as the key focus is put on the relational space they create and the learning it facilitates. We do know that some companies came out of FL3 but have few details. Some non-university FabLabs, like the one in Amersfoort (Hielscher et al. 2015), have shown clear signs of empowerment in their interactions with the local Transitions Town, but interestingly all university-based FabLabs lack clear evidence of outcome.

Many university-based FabLabs also restrict access to students and faculty, which the founders of FL2 found a bit problematic as essential members disappear from the community upon graduation restricting long-term community building. FL2 also hired a technician to instantiate a very specific culture and set of practices, i.e. embedding culture, behaviour, and identity to control how the relational space formed and developed as there were no permanent staff present. Other FabLabs also faced restriction imposed by the university, like FL3 that had challenges in accessing the buildings outside normal hours and had to rely on technicians to handle the equipment because ‘our insurance doesn’t cover’ (B. Pel et al. 2017), limiting community interactions. Summarising we have two dimensions of relational spaces:

Operational Model: The main difference here is the internal/supply-based vs external/demand-based model. It is about who takes the initiative to create relations, and perspective on who has the knowledge on what the problems are. The demand-based approach is more resource demanding as staff and/or infrastructure needs to be available continuously for external communities that approach with problems or projects, which then need discussion, translation, and facilitation, while the supply-based approach often can fit within the normal duties of research and teaching.

Impact vs process – Relations as ends or means: Lastly, there are the focus on relations and interactions (process) vs the outcome and impact. FabLabs need to build up long-term relations, they need members as source of labor (volunteers), knowledge, and sometimes funding. It seems for university FabLabs the relational space is the goal; the ongoing relations and interactions is what facilitates learning and innovation in the community. ScS also aim to establish relations between communities and the university, which is their social innovation, but only temporarily around projects as the focus is the outcome. Desis Labs are focused on teaching communities about sustainability and solve social problems through design, it’s a transition agenda, although some individual DL may focus more on ongoing relations.

The traditional ScS model is an A-type while VB share characteristics of both B and C, where Desis commonly seems to be B. Desis Polimi also range between A and B, showing that the types are partly context-dependent. Lastly, Fablabs are typically C, they need and rely on creating new long-term relations. Our analysis leads us to three ideal-types:

- **Academically-oriented research:** University actors define projects and approach communities on their own based on student needs and research interests. Building relations is not the objective but rather solving specific challenges and having an impact.
- **Citizen-informed research:** Communities need to actively approach the university. Relations to appropriate researchers are then actively facilitated. This type is impact-oriented, and permanent relations are sometimes established but is not the goal. Relations often cease once projects have completed.
- **Bottom-up interactions & relations for learning and empowerment:** Communities neither are approached nor are interactions facilitated; however,

building up permanent relations are important as the community itself provides many of the resources affording learning, innovation, and empowerment. Providing infrastructure and resources to attract and empower communities is thus essential.

- Top-down defined interactions for learning and empowerment: empirically empty ideal-type in the empirics. This represents more traditional outreach and education activities conducted in communities as discussed in the introduction.

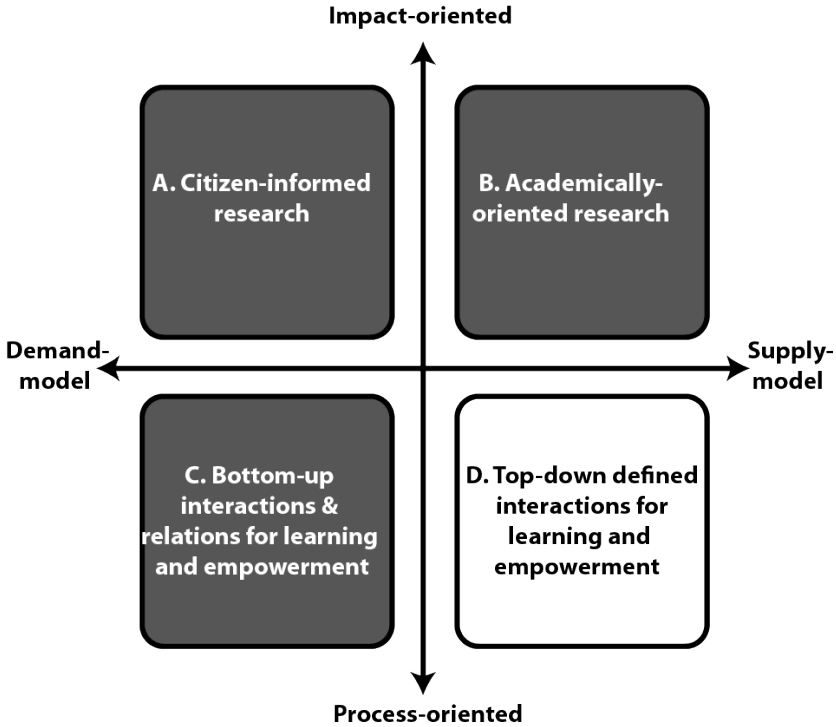


Figure 10.1 - Variables of the relational space types among our cases

Material space and objects

Materiality appears in form of the spaces & objects by which the initiatives facilitate new relations and interactions. Objects are also produced during interactions between communities and universities, enabling agency through objects like scientific documentation from ScS or new packaging for products from DL.

Knowledge objects in the form of reports, blueprints, documentation, handbooks and other documents both in physical and digital forms are produced in all the cases. But, mostly only ScS use knowledge objects as facilitators of empowerment directly, for instance by giving a community scientific documentation they can enact in interactions with public authorities, in relation to pollution for instance. One of the challenges here

is to give knowledge a suitable material form, as knowledge cannot travel without being manifested (Czarniawska-Joerges et al. 2005). VB had a project on carbon-footprint of food that was turned into a visual presentation based on the food pyramid, instead of a scientific report, enabling its use in the kitchens & cafeterias of public institutions. Especially for ScS knowledge objects play a significant role in this empowerment process, while Desis and FabLabs do not explicitly use knowledge objects as facilitators of empowerment. The product packaging designed by NAS for instance that were standardized and fulfilled legal requirements thus enabling access to the retail system, is a very different type of object. This difference might be because ScS often have staff dedicated only to defining knowledge needs and evaluating appropriate form of knowledge outcome for empowerment. DIT and VB both explain how crucial it is to analyse and translate the needs of a community before approaching university partners. Desis on the other hand are as designers generally more focused on material objects. Polimi work more with urban spaces, like a new food-market meant to attract local produce from the surrounding countryside in Milan, where the empowerment happens through the physicality of the space and the relations Polimi try to create around it. There are few knowledge objects here.

For FabLabs, it is the interactions around their equipment, the relational spaces they enable, where heretofore unrelated actors meet and interact. FabLabs create new communities. However, again the details are sparse on what is produced, and the most tangible outcome seem to be the emergence of some companies in FL3 that acted as a co-working space. The cases report some examples of physical goods produced, but based on our own observations, these goods do not seem to empower the actors producing them. The materiality is easy to spot. The equipment acts as configuring elements in the staging process, i.e. in FabLabs the tools and machinery attract members and facilitate interactions and have allowed companies to form. The significance is hard to spot though, as we do not know how crucial FL3 were for these companies, and the learning facilitated around the equipment what does it enable in the end? A small quote illustrating the discourse around university FabLabs from FL3 (B. Pel et al. 2017):

Cross-faculty, cross-discipline – I don't want to say interdisciplinary, but multidisciplinary, trans-disciplinary. That's exactly what we represent for the university, something that represents something that brings donors round

The materiality is thus a configuration tool for creating relational spaces enabling grassroot innovation to some extent as companies have been observed to emerge, although the produced objects do not seem to enable local agency.

A ScS in contrast traditionally depends on materiality mostly as a contact point that has a higher visibility, easier access, and lower barrier or cost of entry for local communities than entering a campus and trying to figure who might be able to help with specific research questions. This relates to the demand-driven ScS model that depends on communities actively approaching. There is some commonality with FabLabs here. Desis Labs on the other hand are supply-driven and mostly depend on physical spaces as office for their own staff, and spaces as temporary contexts for interactions with communities. Having an office is more crucial for Desis than ScS, as they conduct the

projects themselves, where ScS to a large degree also depend on other actors at the university that already have their own space. The functions of material space can be summarised as:

Creating relations: The geographic placement, design of a digital space, advertisements and news stories, social media etc. are different ways initiatives try to create visibility and lowering the cost of establishing relations with communities. Especially crucial for demand-driven models.

Objects as facilitators of interactions: Some initiatives, notably FabLabs, rely on material objects for the ongoing interactions and maintaining relations. Here communities gain agency from the equipment available in the space and the interactions with other members around these objects.

Objects as carriers of agency: The objects coming out of projects is another source of agency. Products that fill an unmet need, knowledge objects that can be enacted to gain agency or facilitate learning, or objects that play a part in services & systems.

This analysis showed that materiality is critical as co-carrier of agency, as materiality does not carry agency on itself, as pointed out earlier knowledge cannot travel unless manifested (Czarniawska-Joerges et al. 2005). Here Desis is commonly a D-type and ScS B. The Low designation is not negative, it signifies a different and less resource-intensive way to operate. FabLabs are A. It is not that FabLabs do not produce objects, that is indeed their purpose, but that is not how users are empowered and that is not the discourse around them either cf. the quote above. The predominant ideal-types here:

- **Producers & designers:** These types of spaces aim at a material outcome that if successful empower the community through its affordances.
- **Co-working space for learning & innovation:** Spaces where the empowerment comes from the process and not the outcome.
- **The meeting grounds:** Spaces are materially-configured to foster new relational spaces as the outcome, where the materiality affords attraction of members and interactions between them.
- **Discursive space:** Represents initiatives that never get off the ground – meetings and discussions around projects and initiatives have not materialized. Empirically empty ideal-type.

These are the extremes of the material aspect of the property space, and all our cases lie in between.

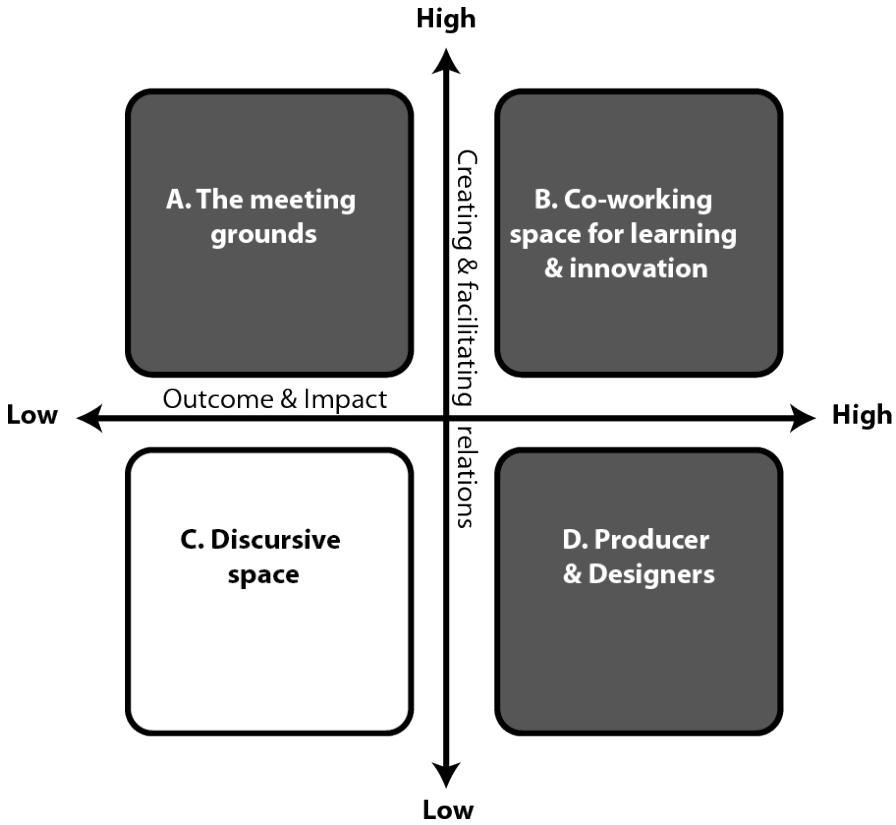


Figure 10.2 – Importance of materiality for university-community interactions - dimensions and ideal-types

Place – the local sociomaterial context

Essentially place can structure or limit the options for staging the material and relational spaces laid out above. University and education systems is one of the most crucial context-dependent case variables, and they potentially give access to resources but at the cost of complying with their systems. This depends on university governance and education type, i.e. is it possible to embed the initiatives in curricula and/or research, and if a university values social responsibility or community outreach etc.

For instance, a ScS relies heavily on students as researchers and researchers as supervisors. This fits very well with project-based education systems if ScSs can award ECTS credits. In the absence of project-based education, ScSs would have to rely on volunteers. Desis Labs have the advantage of running their own design educations and can thus use their students and run projects internally. Diversity for ScSs are greater though, as they can be based in engineering, law, or philosophy departments or be interdisciplinary, while Desis Labs are exclusively design-related.

Lastly, there is the neighbourhood, the communities and local problems present, which influence the kind of projects Desis and ScS are running. In some areas of Brazil poverty and social exclusion is a problem, and both NAS and BH thus have more projects of an economic nature, helping these groups becoming part of the economic system. For Polimi its more about sustainable consumption and living, for instance having projects on co-housing and use of more locally produced food. For VB projects in the 80'ties and 90'ties focused on pollution, work environment, and organic food. For FabLabs this relate to the demography of their members. For our Brazilian Desis cases there is a challenge with distances to communities that they are trying to help, sometimes making it hard to maintain interactions. For ScS NI that is a similar challenge as they try to cover a whole region, resulting in long commutes. The two most crucial place-specific variables that affect our cases:

- University & education systems: This relates to the possibility of embedding or interfacing with the university, taking advantage of existing resources.
- Local context & neighbourhood: Which actors and social challenges are present locally as members or clients for the initiatives and as focus for projects.

We will not condense these dimensions into ideal-types, as they mostly determine which ideal types are most relevant from the two previous sections. Can projects not be embedded in the education system a supply-based model makes more sense, and ScS have indeed been observed to adopt such models if they have not been able to draw on students and award ECTS-points.

Ideal-type typology of space-types

Combining the ideal-types from the material and relational dimensions, eliminating those combinations we do not have empirical basis for, leads to three ideal-types:

- Affording spaces have affordances but are passive. Based on co-working spaces, meetings grounds, and the bottom-up interactions through a demand-based model. Materiality is crucial due to this passivity that depends on actors approaching and becoming members, volunteers, and carry out the interactions that the space affords. Most FabLabs fit here, although some do have staff that conduct events, lectures, projects etc. The basic elements in a FabLab are machines configured so it allows interactions that attract members. These spaces are very place-dependent, as the materiality needs to provide action possibilities of relevance for the actors present in the context. Learning is the biggest focus in the empirics, although hypothetically material outcome might as well or even better empower potential members. Empowerment thus comes through learning from the interactions taking place and activities afforded by the space. Some companies have been observed to start out from such spaces for instance.
- Mediating spaces facilitate contact into the university by connecting to researchers and students with the relevant competences. Projects are thus citizen-informed, based on the demand-based model, but there are staff translating and defining knowledge needs and research projects based on the requests. The other

dominant aspect is co-working space, as it's a two-way interaction where the knowledge of the citizens is equally valid, and communities gain agency from the process, learning new skills for instance. It is the specific configuration of actors, researchers, students, communities, and facilitators that enables empowerment. The ideal-type also encompass meeting grounds and the producers, as the space has affordance facilitating new relations & interactions and are focused on the project outcome as necessary to translate knowledge and define needs, but to a lesser degree than the next ideal-type. This ideal-type are typically small entities, containing 1-3 staff, but the relational space it establishes goes deep into the university taking advantage of available resources. ScS are typically mediating spaces, as illustrated in Figure 4.

- Impact-oriented spaces conduct projects on their own and are proactive in establishing relations with communities and focus in impact through project outcomes. Based on the supply-driven model and the producers. These spaces are larger than mediating spaces as they contain enough resources to run whole projects. Most Desis labs share these characteristics, where design departments, educations, or labs use the researchers, students and infrastructure they have available and focus it on social innovation and sustainability. The ideal-type thus depend less on the university and don't mediate contact. Empowerment for communities comes through the outcome of the projects, often new products, urban spaces, and/or systems. There is also an aspect of citizen-informed projects, as various forms of participatory research & design methodologies are used.

These three ideal-types map out the extremes of the property space as illustrated in Figure 3 that we have observed empirically and give three models for how to set up a space depending on the available resources and infrastructure. The argument for mediating and impact-oriented spaces is essentially to use resources, like students, for socially useful projects instead of on virtual cases and exercises employed in educations. Many universities are based on project-work and students are thus required to do projects anyway. Affording spaces usually require a higher investment, for equipment and space, but offer new learning potential otherwise unavailable and require less staff. Affording spaces are also more bottom-up as there is no facilitation, translation, or other types of steering mechanisms, for good and bad. Figure 4 illustrate how three ScS cases lie in the property space, through a qualitative evaluation. It is here clear that ScSs share characteristics of the last two ideal-types. ScS VB cover a larger segment of the property space, as it was a large initiative and operated two distinct organizational spaces that were citizen-informed and academically-oriented respectively. ScS DIT operated as a sub-unit part of a more conventional community engagement centre and is thus a bit more academically-oriented and less co-working. This also illustrates that the dimensions are not opposites and exclusive, its a question of resources how wide an area can be encompassed.

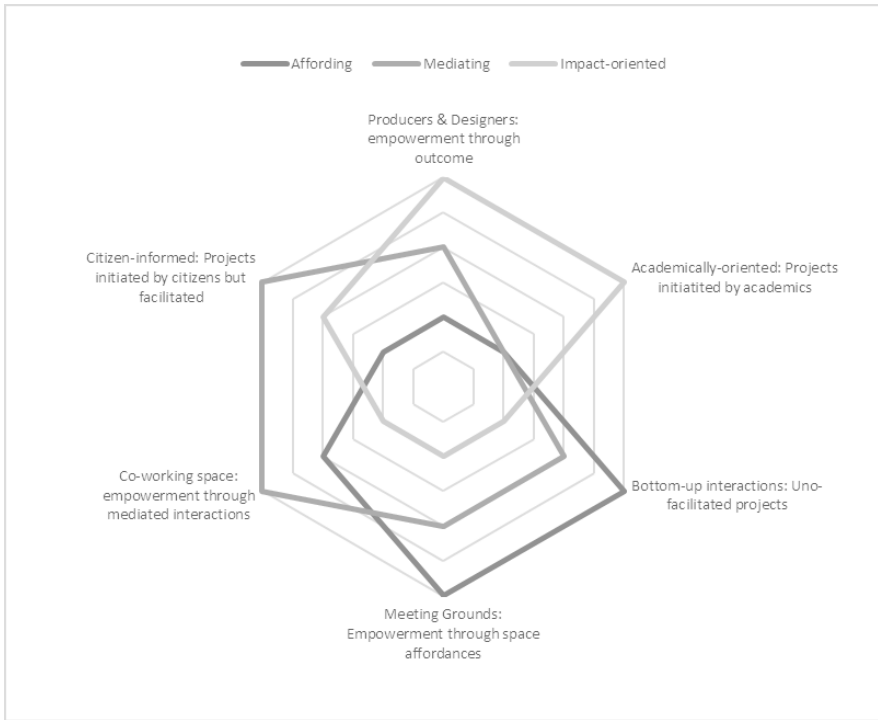


Figure 10.3 – Property space spanned by the ideal-types

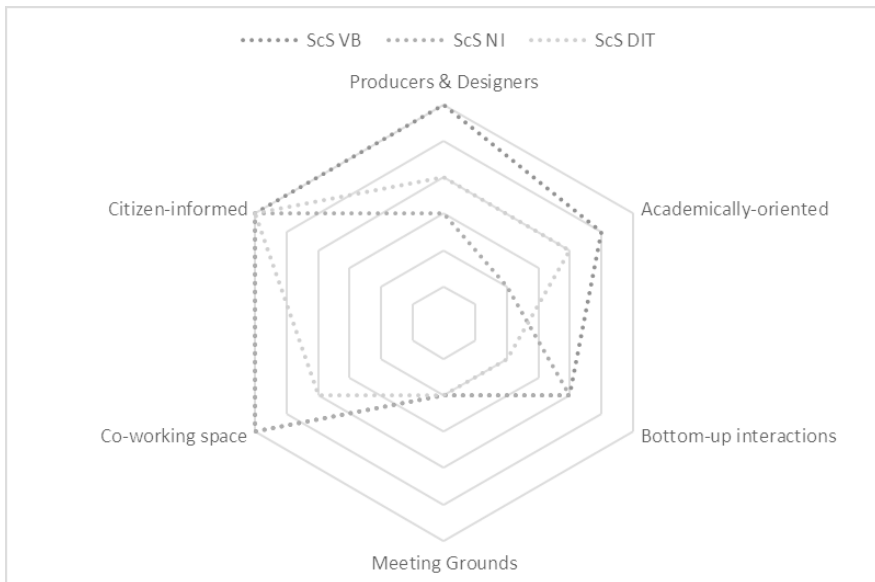


Figure 10.4 –Relation between the Science Shop cases and the property space

Staging University-Community interactions

While we have analytically separated the material, relational, and place specific aspects above, this provides little insight into how the spaces are staged, as sociomateriality is inherently inseparable. This section is taking a more action-oriented perspective on how such spaces can be staged and configured. The actors performing staging are typically individuals or small groups of academics. It is thus a bottom-up process that hinges both on individual characteristics and place particularities.

Staging new relational spaces

Spaces need to be designed according to the relational space(s) they are meant to contain, their social and material elements, and connect these. Materiality and the relational are helplessly intertwined (Law & Hetherington 2000). Relational spaces thus are materially brought into being, and we term the first challenge designing visibility. This is crucial especially for affording and mediating spaces that rely on potential partners to approach actively. An example from FL3 illustrates the challenge (B. Pel et al. 2017): “anyone north of Cambridge wouldn’t go to a site in the south, anyone in the south wouldn’t go north, and the same all over”. And there was no appropriate space in the centre, “Cambridge hasn’t got any space that isn’t an office. We looked at shops which were mostly expensive and sub-optimal”. In the end, this FabLab partnered with the local university at the cost of conforming to university needs, policy, and infrastructure.

The material design can overcome this challenge through visibility by geographic placement or specific design, like scripts (Akrich 1992). Giving an affording space a well-known label like FabLab or Makerspace can also attract members, but still only if the placement is accessible. People familiar with the concept also intuitively knows how the spaces is set up and how to interact. The ScS label is not well-known however and many find the term unintuitive, requiring more work to frame it and advertise. Names and labels are powerful objects, and by enacting a label a space can be attached to well-known network and/or concept and instantly gain some visibility.

Staging interactions and empowerment

Linking, facilitation and translation is the core activity of mediation and self-contained spaces. The innovation lies in how actors get linked across the university boundary, how knowledge is translated, the interaction facilitated, and how the outcome is given an impact. For mediation spaces that rely on external researchers and students at the university, it is essential to analyse the knowledge need inherent in a request to determine which researchers and students would be relevant, and then to translate it into applicable research questions appropriate for semester projects, master theses, courses etc. For self-contained spaces that are supply-based, the question is, how the knowledge and competences they have can solve challenges for communities, i.e. how

their knowledge can be given an impact locally.

Empowerment often comes from project outcomes, be that products, systems, or knowledge objects. For all types the materiality is crucial. Scientific documentation, prototypes, packaging, visualisations, service-systems, new urban spaces, are all potential outcomes. It is crucial to evaluate the outcome towards the need. For instance, did the new packaging enable the rural community in Brazil to get their local food product into the retail-system, or did scientific documentation on water pollution successfully engage local authorities in the issue? These are examples of questions posed from Desis Labs and ScS. Sometimes ScS would determine that a project did not solve the problem, or a new challenge emerged from the insight gained, and thus development of subsequent project proposals would be facilitated by the ScS together with the civil society actor and university researchers. It is thus often an iteration of outcome and new interactions.

Staging interactions in affording spaces is altogether different. While activities are envisaged there is little conscious analysis and identification work going on. Key staging activities are about the framework conditions, configuring the equipment, rules of access and use, hiring of technicians or enrolling communities as volunteers etc., in the hope that a relational space enabling innovation and learning emerges. Here, empowerment predominantly emerges from the interactions with equipment and the other actors present; although we have little empirical evidence of exactly who are empowered and how. Based on our observations, it seems seldom that an end-product, the material objects produced in FabLabs, solve a social problem. Several other relational spaces may emerge over time, some turning into companies like in FL3, others into events, courses, or new initiatives that help unemployed people like FL4, which is another type of empowerment outcome. In all cases, the details are sparse though on what these companies achieved, or if any unemployed moved on to (self)employment or not. It is also very clear from the empirics that the FabLabs trying to ally with a university are deliberately conservative in their framing to gain support as illustrated by FL4 (B. Pel et al. 2017):

I talked about the space in terms of safety first. I described it as a 'community workshop', I never used words like 'hackspace'. I told people how it would allow people to develop new skills. We presented very conservatively, and I think that helped us'.

So FL4 created a discourse around STEM learning. However, this in turn also creates expectations of what they do and deliver, which might be why university FL have such a large focus on learning rather than making.

Summary

It is important to note we talk about the predominant modes of empowerment in relation to our space typology, meaning that they are all present in all spaces just to a much lesser degree, and the different ideal-types are best at specific modes of empowerment. The types of empowerment modes discussed above can be summarized into three types:

- **Objects as carriers:** Knowledge objects, products, or the multitude of objects supporting services and systems. These objects are the outcome of projects, and the communities that get them might gain agency from enacting them, for example enabling them to engage social systems where they were earlier excluded, raise awareness about social problems, or filling a material need etc.
- **Objects & spaces affording interactions:** In contrast to objects used as carriers of agency, these objects afford interactions that empower during the process, often a form of learning and innovation as exemplified by FabLabs.
- **Mediated learning & knowledge generation:** Increasing the knowledge of specific topics in communities through project participation like action-research, increasing their competences and abilities to solve problems independently in the future. Learning scientific methods, project management, communication are examples.

Conclusion

The paper has sought to answer the question of how university-community interactions can involve and empower communities through specific configurations of spaces. To answer this question, we have suggested a framework for analysing university third-mission activities concerned with community engagement, democracy and empowerment. The framework is developed through an analysis of three different concepts of creating university–community interactions: Science shops, Desis Labs and FabLabs. It contributes to third mission literature by adding a situational and sociomaterial perspective on how such concepts are being configured and staged, thus enabling a discussion and reflection of how local communities may become empowered as part of university activities. The analytical framework points at how materiality and social relations can be combined and provide novel insights into the staging process of complex spaces, and how the material, relational and place-specific aspects must be equally considered to reach specific configurations. It contributes to a number of discussions, on how one size does not fit all (Benneworth et al. 2016) by offering practical suggestions and mental models that can span the country-specific characteristics that make global best practices impossible (Göransson et al. 2009), the significance of university-level characteristics focusing more on the potential community empowerment than internal governance that has been the focus of earlier research (Thune et al. 2016), and on the role, potentials and problems in knowledge intermediation in non-commercial interactions with (Meyer & Kearnes 2013; Schlierf & Meyer 2013), where most research focus on knowledge transfer, technology, and business activities like (Kalar & Antoncic 2016).

The typology illustrates the principle configurational elements observed across the cases and point out three different types: affording spaces, mediating spaces, and self-contained spaces. These elements taken together embrace the complexity inherent

in the staging of university-community interactions and enable us to understand the heterogeneity that can produce community empowerment. Shedding light in more detail on the specific elements pertaining to each space type has unfortunately been beyond the scope here, but crucial for future research.

These three ideal-type spaces differ widely concerning their founding and operating cost, as well as their capacity of interactions with communities. Most importantly, they afford different ways to empower communities. Affording spaces mostly empower communities through the learning and innovation through interactions the space afford internally in the community that emerge around the space, while impact-oriented spaces were observed to focus more on the outcome of projects as carriers of agency, and mediating spaces striking a middle point with citizen-informed projects that were translated and facilitated where emphasis lay on the final co-produced knowledge and its impact. Mediating spaces also provides access to new knowledge, supporting the finding by Benneworth & Cunha (2015) that social innovation processes help create new forms of knowledge and underpin new research. Both impact-oriented and mediating spaces like the SI university activities in Benneworth & Cunha (2015) also illustrate that they generate new resources supporting core teaching & research activities. It is thus critical that the more societal form of the third mission is insufficiently funded (Göransson et al. 2009), which we suspect is even worse now a decade later. Another critical discussion is the three-mission perspective, as we illustrate here although it has not been our focus, the activities in especially mediation and impact-oriented spaces are tightly connected to teaching and researching while empowering communities. In line with G. Trencher et al. (2014) we thus argue that we should move away from seeing community empowerment and solving societal problems as a ‘third’ mission but as an integral part of teaching and research, although unlike G. Trencher et al. (2014) we would argue that not everything needs to be co-creation as that is a more resource-intensive. The empowerment related to each of our ideal-types:

- Affording spaces were found to facilitate empowerment by providing a space for experimentation and interactions that enable learning. The type of empowerment is structured by the affordances, the action-possibilities that are inherent in the relations between actors and objects, although the potential outcomes of this empowerment is underexposed both in our cases and in the literature, itself a finding. The empowerment might be new types of knowledge emerging by offering a space for multi-disciplinarity at a university; new skills and competences of students and/or communities; helping unemployed gain new competences etc. Some serious thought should be put to what they are meant to achieve. These spaces also have greater capacity for interactions but are expensive to establish. Lastly, these space are more flexible, and the communities are responsible for their own empowerment through a bottom-up process, which can be seen as a more democratic type of innovation & empowerment than traditional third mission activities as argued by (Smith 2017)
- Mediating spaces are good at co-producing and mobilising knowledge so gets an impact and affects societal relations at the micro-level. The staff over time

build up knowledge specifically on identifying and translating knowledge needs, as well as evaluating and giving outcome a relevant form. Two-way interactions are emphasised through concepts like participatory research, community-based research, co-production etc., and the knowledge of communities are equal to that of the researchers. It is here the specific configuration of actors, researchers, students, communities, spaces, infrastructure, and facilitators that enables the translation & co-production of knowledge that leads to empowerment.

- Impact-oriented spaces were found to be good at giving material objects a relational impact that empowers communities by changing and structuring social relations. This space-type is less good at producing and mobilising knowledge, as there are no dedicated staff for this function. The spaces are self-contained and operate by redirecting existing resources like students and research projects to focus on empowering communities, but staff still must carry out all their daily duties at the university simultaneously. This type of space potentially cheaper to both create and operate, although there is then less resources dedicated to community interactions, which makes a demand-based model impossible. This type of space may be imagined as part of a transition, as existing spaces are often co-opted directing their resources to empower communities.

While FabLabs are most strongly characterised by affording spaces, ScS by mediating spaces, and DL by impact-oriented spaces, the ideal-types do not fit into a one-to-one relation with the cases. It was especially surprising that the material outcomes themselves were not crucial for FabLabs, and that what FabLabs achieve is vague despite the huge popularity and rapid expansion. However, as mentioned initiatives from all networks are found within each category, and some initiatives operate as more than one type of space simultaneously, which just require substantially more resources. Often universities operate several of these spaces. These ideal-types gives insight into specific configurations that can empower communities in different ways and should be chosen depending on the local context and available resources.

One of the essential arguments of this article is that materiality matters, and in all three cases materiality was crucial. Materiality and place of their spaces had an impact on the relations and interactions that could be established. The findings support Law's assertion that relational spaces are materially enacted and vice versa (Law & Hetherington 2000), and places are where the relational and material aspects interact and manifest. The findings contribute to an understanding of materiality and spaces both practically and theoretically in university-interactions with communities, a perspective that is underexposed in the literature and can thus bring new insights.

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Chapter 11

Building local agency for social innovation through formation of transnational networks

Abstract: In this paper I show the significance of transnational networks for social innovation initiatives by analyzing: **1)** how networks can increase the agency of local initiatives, and **2)** how the formation of networks that focus the dispersed agency of its members – thus enabling interactions with and impact on dominant institutions and international organizations – can be facilitated. I examine a database and 20 case studies on social innovation networks, encompassing 300-500 interviews carried out in the EU project TRANSIT from 2014-2017. This is done through a material-semiotic perspective based on a flat relational ontology inspired by actor-network theory and organizations theory. I find that networks enable agency by on one hand constructing different types of macro-actors that are powerful enough to interact with other macro-actors, and on the other, providing 4 types of resources: legitimacy, visibility, funding, and knowledge & peer-support, which local initiatives can enact to gain agency locally.

Keywords – Social innovation, local agency, globalization, transnational networks, empowerment, actor-network theory

The developed world is facing numerous challenges to the modern welfare state. Social innovation research often, but not always, focuses on such problems as justice, fairness, poverty, environmental preservation, improved health, social exclusion, the aging demographic, and gentrification, among other issues (Lawrence, Dover, & Gallagher, 2014; Lehtola & Stähle, 2014; F Moulaert, MacCallum, Mehmood, & Hamdouch, 2014; Mulgan, Tucker, Ali, & Sanders, 2007). There are many different social movements or networks working to solve some of the problems, like Transition Towns, Eco-villages, the Seed Movement, and Living Knowledge, to name a few. These are some of the cases that are part of a larger study of 20 social innovation networks in the TRANSIT project (www.transitsocialinnovation.eu), which closely resemble transnational social movement organizations (TSMOs), as will be discussed later (Davies, 2016). The comparative analysis of the cases observed widely different patterns of organization, expansion, and scaling and travelling of ideas (Jørgensen, Avelino, Dorland, Rach, & Wittmayer, 2016; Jørgensen, Dorland, Pel, & Wittmayer, 2015), which led to the focus in this article on the significance of international interactions among local social innovation initiatives (LSIs) and their networks. This is pertinent for the discussion of how social innovations can be facilitated, scaled up, or diffused. As will be shown, international or trans-local interactions involve several types of resources and interactions that facilitate the agency of LSIs.

TRANSIT encompassed a wide variety of networks with foci ranging from social entrepreneurs to co-housing initiatives or alternatives to capitalism, and during the project I especially focused on the development of the networks over time. From earlier studies, we know that the number of TSMOs have grown exponentially in previous decades (Smith, Chatfield, & Pagnucco, 1997; Smith, Plummer, & Hughes, 2017). In TRANSIT, I observed a change since the late 1990s, which is that our cases seem to establish or congregate into international networks at a higher pace and in a more formalized way (Jørgensen et al., 2015). Early analyses indicated that it is often pre-existing local initiatives that increasingly join up in global networks (Jørgensen et al., 2016, 2015), what other scholars have called coalitions of organizations (Smith, Chatfield, et al., 1997). The development of globalization and technologies like ICT are clearly related, as seen in recent literature (Castells, 2010b, 2015; Moghadam, 2012; Smith, Chatefield, & Pagnucco, 1997), but it is unclear what kinds of affordances or empowerment are present for the local social innovation initiatives (LSI) of these networks. While international social movements are not a new phenomenon, we have illustrated that “globalization” has had an impact, whatever that may be, and a change that has resulted in more international networking among local social innovations initiatives (Haxeltine et al., 2017). However, why are they joining? What are they getting out of it? Which resources are they able to draw on? These are some of the questions that surfaced for me when writing the comparative analysis (Jørgensen et al., 2016; Bonno Pel, Dumitru, et al., 2017), especially as we in TRANSIT aim to give stakeholders, like policy makers or funding agencies, enough insight to facilitate social innovation locally. The research question in this paper is thus:

How can we increase agency locally for social innovation initiatives by enabling them to draw on resources that were not available earlier considering the increased access to global and trans-local networks?

The two sub-questions are:

- What is the significance of international networks for LSIs?
- How can such international networks be staged for the benefit of LSIs?

However, an issue that is often pointed out is that social innovation research is underdeveloped and remains where the natural sciences were a century ago, i.e. there are no standard practices or definitions, etc. (Cajaiba-Santana, 2014; Howaldt & Schwarz, 2010; Lehtola & Stähle, 2014; Frank Moulaert, Martinelli, Swyngedouw, & González, 2005). The very definition of what a social problem is and who has the right to define it is very political as well (Lawrence et al., 2014). In either case, we are here not focusing on the social innovation itself and its potential impact, but mostly on the internal processes of the LSIs and the networks they interact with, as we want to gain insight into how to empower them in their activities. Empowerment and increased agency will of course translate into bigger impact, but how much and in what ways is beyond our scope. This of course is built on an assumption that what they achieve is social innovation and generally beneficial for society, but there is other research that has already established that (Bock, 2016; Diana MacCallum, 2009; Grimm, Fox, Baines, & Albertson, 2013).

Another issue is that the existing literature has a predominantly top-down view on social innovation, like the work of Smith, Chatfield, and colleagues (1997) that mostly discusses how transnational organizations through coordination can enhance local and national movements, and goes on to discuss global political processes. However, we see local agency as the critical aspect to understand emergence and impact of social innovation, as everything is necessarily locally and materially anchored (Law, 2002; Law & Hetherington, 2000). While interactions between various international organizations might be interesting, our focus lies on the local: how it is constructed, what it means to create a space where you can act, and how possibilities that arise can be enacted (Weick, 1988).

Paper structure

The paper is divided into 6 sections. 1) This introduction. 2) The following section reviews the research on globalization, empowerment, spatiality & materiality. 3) The next section reviews more theoretical literature within STS and organization studies discussing the micro-macro dialectic to construct a framework based on a flat relational ontology that can bring agency and empowerment of transnational networks and local initiatives into focus. 4) Our methodology is presented in the fourth section. This briefly discusses our considerations on Unit of Analysis (UoA) in social innovation research and continues into a discussion of the methodology used in TRANSIT. 5) Section 5

seeks to answer the first sub-question based on a basic coding, ordering, and analysis of our data, identifying the main resources and interactions taking place between LSIs and networks that contributes to local agency. 6) Lastly, this section answers the second sub-question by delving into the construction of macro-actors and why this is crucial for building agency for local social innovation initiatives (LSIs), and the implications this could have for policy makers and academics interested in facilitating SI. 7) The conclusion wraps up this paper by summarizing the main findings and considerations of how this can supplement research on TSI and future work.

Exemplary cases and overview

To be able to better understand the relevance of the review on globalization and the analytical framework, I start with a quick case overview seen in Table 1, and two longer exemplary case descriptions. See appendix 1 for structured empirical data based on a database produced in TRANSIT (B. Pel et al., 2017).

Living Knowledge Network – Initially, new science shops heard about the concept through word-of-mouth and articles, which, combined with societal discourses at the universities in northern Europe at the time, led to many new science shops. In the late 1990s, science shops came together in an EU project and founded Living Knowledge in 2001. The science shop in Bonn was also designated as the international contact point and conducted many activities to expand the network on its behalf. Here, there is a clear change in how new LSIs emerge after 2001 and what role the network plays, even though it is still a comparatively loose network. The network is not a formal organization, and there are no offices, employees, or financial resources.

Impact Hub – The network started from the first SI initiative in London and initially spread from locality to locality. However, the founding of the network and establishment of governance structure moved very quickly (2-3 years from the first SI initiative; older networks took decades). The initial founder retained formal ownership and tried to directly open hubs in other countries. The early years were tumultuous, however, and the founder lost control, and the network evolved to be an association owned by the members and is now a semi-centralized democratic organization. Impact Hub is a brand owned by the association.

Table 11.1 - overview of networks researched in TRANSIT

Name	Description
Ashoka	Network for financial support to social entrepreneurs. This is done by selecting entrepreneurs to support financially and giving them access to their network of sponsors and other entrepreneurs.
Basic income	Connects people committed to basic income and fosters informed discussion. The LSI's here are mostly national associations.

Desis Network	Network for design for social innovation and sustainability. Members are independent and there is no fee.
Living Labs	Co-creative, human-centric and user-driven research, development, and innovation. Members are independent but pay membership fees.
FabLabs	Digital fabrication workshops open to local communities.
FEBEA	Different types of credit cooperatives mostly focused on ethical banking, this network is based in the EU.
Ecovillages	Network of eco-villages and other intentional communities.
Hackerspaces	User driven digital fabrication workshops. This network lacks any kind of formalization, not even having a homepage or member-list.
Impact Hubs	Global network of co-working spaces for social entrepreneurs.
INFORSE	International network of sustainable energy NGOs
International Co-operative Alliance	Associations that co-work in the production of sustainable inclusive habitats
La Via Campesina	Aiming for family farming to promote social justice and dignity emerging from an opposition to neo-liberalism
Living Knowledge Network	Network of science shops and community-based research entities
International Observatory of Participatory Democracy	Network of communities and municipalities reinventing how public money is spent and prioritized
RIPES	Network for the promotion of the social solidarity economy
Seed Exchange	Protects biodiversity by defending seed freedom for integrity, self-organization, and diversity
Shareable	Connecting and empowering urban sharing initiatives aiming for a sharing transformation
Slow Food	Linking food to a commitment to sustainable local and global development
Time Banks	Networks facilitating reciprocal service exchange
Transition Towns	Grassroots communities working on 'local resilience'

A new context for social movements – the impact of globalization

The purpose of this chapter is to discuss the concepts of and research on materiality and globalization with a focus on how it relates to the local. Globalization, as we will show, has changed the context for social movements and innovation by breaking up the conventional spatial delimitation of context. However, globalization, like social innovation, has been a contentious subject due to a multiplicity of definitions and academic disciplines involved (Jameson & Miyoshi, 1998; Steger, 2002), spouting definitions like:

“increasing global interconnectedness,” “the rapid intensification of worldwide social relations,” “the compression of time and space,” “a complex range of processes, driven by a mixture of political and economic influences,” and “the swift and relatively unimpeded flow of capital, people, and ideas across national borders” (Steger, 2002, p. 19).

There are different critics saying that the concept is too imprecise – that the world is not actually globalized, or that there is nothing novel about globalization (Steger, 2002). The second argument has an underlying economic perspective, and there certainly are parts of the world that are not part of the globalized economy, or, more precisely, they do not get any benefit while still seeing or feeling the change (Castells, 2010a). Looking back at ancient empires or even just the Vikings gives credence to the third argument: there has been no lack of political or cultural interactions earlier. However, there undoubtedly is a change compared to the past, if nothing else then in the speed of various flows. One of the developments linked to globalization is neo-liberalism (Castells, 2010a; Sassen, 2007; Sparke, 2013; Steger, 2002). Mayer (2013) has an especially interesting overview of how neo-liberalism has developed from the austerity politics of the 1980s and the global shift toward a neoliberal paradigm that in the late 1990s and early 2000s resulted in anti-globalization movements like “Reclaim the Streets” (Mayer, 2013), Mexico’s Zapatistas (Castells, 2010a), and the Global Justice movement (Moghadam, 2012).

The phenomenons of globalization and neo-liberalism are thus linked and related to social changes of the last 3-5 decades or more. This is what makes it interesting, as it has markedly changed the context for social movements and innovation by changing how international organizations interact and introducing new social problems. This relates directly to how globalization has affected the notion of context:

The multiscalar versions of the local [...] have the effect of destabilizing the notion of context (Sassen, 2007, p. 43)

The affordances ICT is the aspect that has received the most attention in research, especially in relation to financial markets (Sassen, 2002, 2007) and other economic aspects, which we have little interest in as the relevance for social innovation research

is limited. A better example is in relation to rural marginalization, where Bock (2016) comments on the effect of globalization:

Globalisation affects rural areas. Rural areas are part of the globalising world, in which distances in time and space become less inhibiting in terms of social relations and the economy (p. 6)

Actors in different and even very remote parts of the planet can now establish direct relationships, eliminating some of the significance of distance (Wilding, 2006). Several of the newer social movements among our cases would not even be possible without ICT, such as FabLabs, which are an embodiment of digital production technologies.

Many scholars cite the relevance of ICT in different forms, especially in relation to how and why the speed or nature of globalization has changed. Castells (2010a) explain how the Zapatistas, a peasant and indigenous movement in Mexico, as one of the first social movements succeeded in using ICT and media to pressure the government. The worldwide spread of information and the accompanying media attention prevented the government from oppressing them through military means. He also sheds light on the global justice movement that, according to him, has a very different structure from earlier social movements, such as labor movements (Castells, 2010a), in that they have no structure, hierarchy, or organization. It is a coalition, as pointed out earlier (Smith, Chatfield, et al., 1997). It is anarchistic and self-organizing through the affordances that ICT has given it, i.e. chats, forums, email-lists, and social media (Mercea, 2017).

Many other types of organizations have likewise gained agency from ICT, some of them problematic. ICT have afforded a pooling of agency into international super-bodies like the IMF, World Trade Organization, and various agencies of the UN, among others. The problem here is the lack of democratic representation at the global level (Norman, 2017) in relation to these organizations (Sparke, 2012), because of the sheer distance between voters and decision makers, which is a democratic problem. Some social movements, like the occupy movement, are reacting against this lack of representation. As is apparent in this discussion, globalization is a very political term (Sparke, 2012), but in this paper it is mostly used to refer to the destabilized context and increased or changed interactions between geographically dispersed actors that we will refer to as trans-local interactions. We also work on the democratic dilemma by focusing on the construction of macro-actors as a solution, as discussed later. However, despite the discussion of ICT reducing relevance of distance, as pointed out by Czarniawska-Joerges & Sevón (2005) ideas and knowledge need a material form to travel:

...only a thing can be moved from one place to another and from one time to another. Ideas must materialize, at least in somebody's head; symbols must be inscribed. (p 8-9)

Social relations themselves are ephemeral, a theory supported by Latour (Latour & Strum, 1987) that points out that ideas need to manifest materially to gain any stability and for society to develop. This is the relevance of ICT. It has enabled new forms

in which knowledge can materialize and new ways to travel; these characteristics are what we term affordance and will be discussed in our analytical framework. Exactly which knowledge travels is unclear and is one of the aspects we need to uncover to get closer to the relevance of international networks for local LSIs. In any case, this acting at a distance or projection of agency that ICT afford is critical for any organization or coalition spanning multiple localities. Law and Hetherington (2000) discuss acting at a distance at depth, pointing out that actions are strictly limited to the affordance of the medium, i.e. Skype affords facial emotion while email affords diagrams and statistics.

Our view on globalization thus builds on a semiotic of materiality based on the argument that globalization is materially enacted and necessarily a spatial phenomenon (Law, 2002) and so has to be anchored in local and specific places. Other research also shows how social movements are materially constituted “by the way people, practices and resources circulate and interact through multi-spatial networks” (Hendrikx, Dormans, Lagendijk, & Thelwall, 2017, p. 49). Materials also have spatial effects, as material arrangement, for instance, facilitates near instantaneous communication connecting London more tightly to Wall Street than to Calais, which is just across the channel. ICT is a perfect example of how globalization materializes locally. Email, forums, chats, Facebook are material artefacts.

So, if globalization is too imprecise to be an analytical concept, the challenge is then to break the concept of globalization into manageable parts that contain a higher analytical value (Steger, 2002). The part of globalization we focus on it, as mentioned, is the local and material:

Thus for all the talk about globalisation, this is a phenomenon that also takes material form and does so in particular locations. And these are worthy of study. Indeed, if we want to understand how globalisation is achieved we have no choice: we have to look at the ways in which it is materially produced (Law & Hetherington, 2000, p. 36).

Analytical framework

In this chapter, we construct a framework based on a flat-relational ontology and a semiotics of materiality in the tradition of authors in STS like Latour, Law, Akrich and Callon (Akrich, 1992; Callon, 1986; Latour, 2005; Law, 2009). We are thus inspired by ANT (actor-network theory) that is a disparate family of material-semiotic tools, sensibilities, and methods of analysis, a diaspora that overlaps with many other intellectual traditions (Law, 2009). Many not embroiled in the tradition relate it to a distinct form of ANT, as it was seen around 1990 (Law, 2009), which we here try to avoid. So to avoid confusion, we here term our approach as material-semiotic. We also draw on authors from management and organization studies (Czarniawska-Joerges et al., 2005) that are inspired by the same tradition and have studied the phenomenon of globalization more specifically. This framework enables us to study the interactions that facilitate empowerment as well as the various processes in trans-local interactions

that are discussed under the label of globalization.

Materiality

Part of the work of Law (Law, 1999, 2002; Law & Hetherington, 2000; Law & Moser, 2012) has been to challenge the neglect of materiality in the relational networks that are the foci of ANT, raising the issue that non-human actors in ANT seem detached from the structuring effect of the material. In this paper, we term this structuring affect affordances (Gibson, 1977), which we have already used a couple of times.

Affordances is a concept that focuses on the actions possibilities given by objects (Gibson, 2014; McGrenere & Ho, 2000), especially the natural environment, but also man-made objects like emails and ICT (Bülow, Lee, & Panteli, 2016; Cardon, 2016). Affordances does not discuss intentionality, agency, or the networks behind objects – rather, it is the possibilities or limitations inherent in their material form that structures or sets the boundaries for agency, as discussed in the next sub-chapter.

Returning to the definition of materiality, “materiality is not some prefabricated stuff waiting out there” (Mathiasen & Koch, 2015, p. 618), and materiality is furthermore not a neutral notion (Carlile, Nicolini, Langley, & Tsoukas, 2013). Objects and actors are a mix of material and immaterial aspects, going from the very material natural environment in which we move to the purely symbolic concepts of our spiritual world and the signs we ascribe to the material. A relational aspect is the scripts designers can embed in objects (Akrich, 1992), an attempt to manipulate materiality to control its range of affordances.

The location of agency and who exercises agency are pertinent questions for material-semiotic approaches. Agency can be seen as something that makes a difference in the course of another agent’s action (Latour, 2007). Objects of course do not have a will of their own (Sayes, 2014) despite how ANT frames it, but objects/non-human actors are often the intermediaries through which actors translate their intentions onto other actors. Behind every object stands a network: A report, for instance, is constructed by numerous actors lending it legitimacy and power, as the famous ANT adage goes that every actor is a network and every network is an actor (Latour, 2005). However, a report will also “act” in unexpected ways – it might be used for arguments never envisioned by the authors and it will undergo translations as it travels, i.e. it is not an immutable mobile (Latour, 1986). In this way, material objects get a life of their own, and it is this unpredictability that necessitates an unbiased approach to their role. The ascription of “agency” to objects is thus a methodological framework for putting emphasis on objects and materiality and giving us the tools to better understand the minute displacements, translations, interactions, and processes and not an actual belief in their ontological status (Sayes, 2014). Our material-semiotic approach is in this way an open methodology that allows various interpretations, where objects gain agency through the networks they represent without those networks necessarily being in control.

Empowerment, enactment, and affordances in a relational ontology

Moving on to the focus of the paper – how LSIs can be empowered by international networks or enact resources available from “globalization,” we use a triangle of three concepts. We use empowerment as an effect one actor has upon another, often a “powerful” actor delegating power to a passive recipient. Enactment is something actors do on their own. It is a thin line, as some resources are made available intentionally for enactment, i.e. a process of co-production. The notion of enactment refers to the fact that actors produce their environment (Weick, 1995), at least in part. Affordance, discussed above, is the middleman, i.e. resources have certain enactment possibilities inherent to their materiality. This – in line with other constructivist perspectives within material-semiotics – denotes that there is “not some kind of monolithic, singular, fixed environment” (Weick, 1995, p. 31). We are not the master of the environment, although it is an ongoing process of co-determination that Weick (1995) calls “enacted sensemaking.”

This argument also means that processes are not timelines with a start and end, but are instead continuous. Yet all is not socially constructed. Enacted environments contain real objects like seeds, printers, and bicycles. The existence of these objects is not questioned, but their significance, meaning, and content is (Weick, 1988), i.e. they can be enacted in different ways. Enactment is thus an active choice of an actor to use specific structures and objects, like a constitution, infrastructure, rulebooks, etc. to co-determine their environment, just like a constitution that gives you certain rights that need to be enacted to obtain the right.

Having settled the questions of materiality and agency, the last problem is the dichotomy of the local and global, i.e. how can the global be studied with an approach focused on the local and material and built on a flat relational ontology?

Micro-macro actors

Macro-actors are pertinent to the discussion because that is the only way for LM's to interact with other macro-actors, like dominant institutions. An individual Science Shop is not a legitimate partner in the research programs of the EU commission, while the Living Knowledge network is. Likewise, the individual Eco-village or Transition Town does not have the “power” to influence our consumption practice as a society.

The first issue is that in a flat relational ontology, the divisions between global and local, as mentioned by Law and Hetherington (2000), is a relational effect. These relations presuppose a certain ‘flatness’ to the world – what can enter into a relation are only elements in their concreteness and specificity (Michael, 2017). More actors might be drawn into these relations, which can then take on different forms – “but what is analytically resisted is recourse to ‘broader’ or ‘higher’ or ‘deeper’ social processes such as class or gender or market dynamics as a way of accounting for these relations” (Michael, 2017, p5). This is important to understanding the interaction between LSIs and their global networks and other macro-actors. To handle levels in a flat relational ontology, macro-actors are seen as punctualizations. In the process called punctualization

several actors, a network, are grouped into a single actor that can be an international organization, like Ashoka (Latour, 1999). A macro-actor is thus a network, an association between actors, with a spokesperson equipped with a “voice” to speak and act on their behalf (Czarniawska & Hernes, 2005). The difference between micro- and macro-actors is not in any ontological difference, but rather is due to negotiations and associations, and the macro-actor still exists on equal terms with any other actor, be it an individual or another organization. Such punctualizations only hold if the behavior, the input and output of the actor, remains stable and predictable. Organizations or networks negotiate internally on their aims, activities, and organization, etc. to reach a degree of stability to be seen as an actor, sometimes referred to as strategic essentialism (Ashcroft, Griffiths, & Tiffin, 2013, p. 96). The question in our analysis is if any of the entities in our cases are stable and predictable enough to hold a punctualization. Punctualized networks and macro-actors are then how our flat ontology approach represents global organizations.

Summary

We thus have a framework of actors and objects with affordances, enactment, empowerment, punctualisation and macro-actors. Objects represent the global through the punctualized networks that made them and this is how relations are brought into being materially.

Methodology & data

Unit of analysis

Pel and colleagues (2017) lay out our considerations and discuss the consequences of the Unit of Analysis (UoA) in TRANSIT. Here, we will merely outline the discussion and relate it to our focus on how international interactions help to build local agency. We have worked with embedded, fluid, and provisional UoA to allow the diversity in the cases to dictate the most relevant UoA, to follow in the footsteps of the actors as Latour (2005) would say.

Following these principles, three choices were made in the research design: 1) Focusing on the dyad of LSI – social innovation phenomenon; 2) studying the LSIs as part of Social Innovation networks; and 3) treating the contexts as open-ended (Bonno Pel, Dorland, Jørgensen, & Wittmayer, 2017). ‘SI networks’ is a more encompassing term than TSMOs, as it includes social entrepreneurs like Impact Hubs and public authorities in participatory budgeting (OIDP), which Smith and colleagues (2017) refer to as hybrid TSMOs. To avoid confusion, we will thus generally refer to SI networks, which is any transnational group of initiatives with transformative ambitions.

In our research, we struggled with conceptual confusions over ‘the SI’ as a UoA and theoretical category. We formulated empirical questions on SI initiatives, but also on the ever-accompanying but not entirely overlapping ‘SI phenomenon.’ The latter UoA

was clearly a provisional, sensitizing construct, and typically a very fluid unit, like the UoA choices suggested by Czarniawska & Sevón (1996). The dyad was fruitful and gave empirical insights that brought significant nuance to the basic concept of ‘the SI’ – which cannot be simply taken to refer to either SI initiatives or the ideas, objects, and actions that they promote (Bonno Pel, Dorland, et al., 2017).

The second element relates to our focal actors, the LSIs as parts of international SI networks. In line with our embedded UoA approach, we studied the interactions, mechanisms of empowerment, and circulation of resources involved in transnational networking processes. Our distinction between ‘local manifestations’ and ‘transnational networks’ thus helped to elicit the typically distributed SI agency, but as a simple dichotomy, it also obscured some aspects of it (Bonno Pel, Dorland, et al., 2017).

Lastly, the open-ended approach allowed exploration of the empirical variety of transformation contexts and concretely confirmed how various more specific accounts of context introduced unwarranted assumptions. The open-ended approach of our cases of course displays some inherent disadvantages as well. A pragmatic consideration is that it has led to a certain dispersal of empirical focus between cases and a certain inward focus on the LSIs.

The data

This paper is based on three distinct sources of data from TRANSIT: two batches of case studies (Jørgensen et al., 2016, 2015) and a meta-analysis (Bonno Pel, Dumitru, et al., 2017). There were 20 cases studies in total, each comprised of two local cases and the international network. In total, the cases involved 160-300 interviews, 400-800 documents, and 240-1840 hours of observations, assuming all case studies adhered to the minimum requirements (Jørgensen et al., 2014). We know that most cases involved more interviews than required, however, but we are unaware of how many hours of observation were done in general. The lead author conducted one of the cases personally, while his colleagues were involved in the fieldwork for 3 cases. The first 12 cases were conducted and analyzed comparatively in D4.2 (Jørgensen et al., 2015), which fed into the planning and research design of the subsequent 8 cases. All 20 cases were comparatively analyzed through coding and topologizing as presented in chapter 4 in D4.4 (Jørgensen et al., 2016).

This fed into the meta-analysis that covered 480 data entries from 80 different LSIs within the 20 networks based on 160-240 interviews, of which I covered 4 LSIs (24 data entries). However, not all 80 cases were finished or deemed adequate at the time of the analysis, which was then based on 67 LSIs covering around 400 data entries. Each data entry is 1,600-2,400 words, composed of raw interview data and analytic text by the researchers, which makes the total amount an estimated 2000 pages of text at the time of extraction. The entries in the database were ordered by tags, networks, and geographic location. The coding this paper draws upon is based on an extraction using the tag “international networks,” as well as full-text searches on “international” and “network”. A total of 50 data entries were extracted, 5 of which turned out to be irrelevant or incorrect. The extraction was checked for quality by various full-text and tag searches, which mostly only turned up limited results, but did add an additional 6

entries. A total of 16 networks were represented in the extraction. The extraction was coded along three main aspects of empowerment between networks and LSI based on these questions:

- What kind of empowerment is afforded or provided between networks and LSIs?
 - What kind of interactions are taking place between social innovation initiatives and the international network?
 - Can the types of empowerment be divided into different types, categories, patterns, and directions of flow?
 - How are the exchanges taking place?

This coding resulted in 382 references distributed over 52 categories as presented in deliverable D5.4 chapter 5 (Bonno Pel, Dumitru, et al., 2017, pp. 69–88), and was the basis of the theoretical development done in chapter 4 in deliverable D3.4 (Haxeltine et al., 2017, pp. 58–70). A surprising insight from the extraction and coding is that relatively few international interactions are named explicitly. This is a paradox, as the research guidelines and selection of cases built on the assumption that the international networks are important, which I will take up during the discussion in the next two chapters.

This paper is mostly based on the coding done for D5.4, while also drawing on the comparative analysis in D4.4 and D4.2 and the individual case reports for more in-depth insight when relevant. All case reports, deliverables, and the CTP are publicly available.

Identifying the relevance of international networks

The empirical data is presented in a structured manner around the main types of interactions and resources identified during the coding. The data in the appendix is presented through quotes from the meta-analysis. From our analytic framework, it follows that any “international” actor is a punctualization of locally distributed parts, i.e. trans-local. I will focus on three distinct aspects of trans-local interactions, 1) how the interactions relate to empowerment and resources. This is an iterative process as empowerment and resources enable further staging and interactions. 2) The types of interactions. 3) How interactions are carried out.

Types of resources and empowerment from interactions

This typology presents the most prevalent types of empowerment and resources identified, see appendix 1 section 2. Just like globalization, empowerment is necessarily

material either because the transfer of power is facilitated by travelling objects, or by actors travelling to carry out the interaction leading to face-to-face empowerment, as discussed in the next two sub-sections. Resources thus have affordances that can be enacted, and the recipient needs to actively do so in order to gain agency.

Funding might refer to financial resources, man-hours, provision of infrastructure, etc. Funding can be given directly, or actors can be empowered to obtain funding from third parties, which is the most common practice. However, the exchange of financial resources can alter the power dynamic, leading to disempowerment as well as empowerment. Changes may be imposed through funding requirements that structure or limit the SI activities, or the internal relations in the networks might change from co-production to client/service-provider.

Visibility: Visibility, which is somewhat connected to legitimacy (see below), is a very basic resource. Basic income, for instance, needs wide public support to be successful; they need to disseminate their ideas and they need to be visible. Slow food activists also need visibility as they want to help local food products commercially, and so need to spread awareness. Sometimes prominent actors visiting is enough to cause widespread media coverage locally, resulting in increased visibility. A side effect is often increased legitimacy and funding.

Legitimacy: Legitimacy is a crucial aspect for starting a LCI and is often transferred through objects like a brand signifying association with a network. The structuring and limitations comes through the conditions to be fulfilled to become a member. Often it relates to funding, as many actors would be reluctant to donate money to an unknown LCI, but it can also relate to many other types of resources or to processes of identity, ambitions, visions of change, etc. D4.4 analyzed this aspect in more depth than the CTP-analysis, with three additional sub-categories (Jørgensen et al., 2016, p. 37).

Knowledge and peer support: This category covers many aspects of intangible processes related to agency, like knowledge, support, and identity, which are all hard to quantify. The most prevalent process empirically is the sharing of knowledge and support from peers, usually taking place during meetings and conferences, but occasionally also via ICT. Another process is the sharing of knowledge objects that can be enacted to gain agency in various interactions like scientific documentation. This is supported in other research by Andia and Chorev (Andia & Chorev, 2017) that found that “scientific” knowledge was crucial for advocacy groups to be effective, i.e. they can enact this knowledge as an object to gain legitimacy.

The next question is then how these resources travel and how agency emerge.

How resources travel

Interactions can essentially be carried out in three ways: face-to-face, digitally, and through intermediary objects, which are often types of texts or other knowledge objects, but can also be prototypes, mock-ups, blueprints, etc. These basic ways to interact are often combined in diverse ways; publications are distributed digitally, face-to-face interactions are facilitated by software like PowerPoint, and tools like Skype simulate face-to-face interactions. LSIs would mostly always use all interaction types to some

degree.

Face-to-face interactions: This often relates to the event category, comprising around 70-80% of the interactions identified from coding (Bonno Pel, Dumitru, et al., 2017, p. 76), which means this is the interaction type the LSIs found most significant. It involves different types of interactions:

- Often groups representing the network meet and conduct internal decision-making processes, strategies, governance, etc.
- Exchanging knowledge, experience, practices, etc. at events is also common.
- Some interactions are for raising awareness, visibility, and/or legitimacy, which can happen through visits by prominent persons, or the hosting of events locally.
- Sometimes these are serendipitous encounters at events that put actors together and then lead to new relations, or maybe founding of a new LCI.

Face-to-face interactions during events are important. Slow Food has the biannual Terra Madre, Science Shops have the biannual Living Knowledge, the Seed Movement have seed swapping events, Basic Income have the BIEN International Congress, and the same is true for most of our other cases. What can be concluded is that materiality matters: Regular physical co-location seems to be a requirement especially in the beginning phase.

ICT facilitated interactions (Pel et al. 2017 p. 77): One basic characteristic is the diffusion speed and reach ICT affords for objects like a video or texts. ICT affords omni-directional dissemination with no specific goal, like establishing a blog or portal for an LSI, a type of interaction that is harder to carry out face-to-face. ICT also affords communication in a more conventional sense, like sending out a newsletter or establishing an IRC channel (Internet Relay Chat). These interactions have specific targets and are often two-way interactions, as opposed to omni-directional diffusion, and can help arrange logistics or just maintain existing relations.

Interactions through intermediaries: Most of the remaining 20-30% interactions are around objects like texts or brands that facilitate many different types of interactions (Pel et al. 2017 p. 78):

- Articles, videos, illustrations, or handbooks that serve to disseminate ideas and knowledge, which is a way to create visibility and legitimacy.
- Publications, newsletters, and web portals can be part of the infrastructure of a network, like a monthly newsletter that serves as a member-list and keeps everyone updated.
- Brands, logos, trademarks, certificates, letters of recommendation, and scientific documentation are objects that can show affiliation and thus afford legitimacy and/or visibility.
- Publications can be part of constituting a network or stabilizing relations. An

example is the Ark of Taste from Slow Food, which is an online catalogue of endangered food products.

In general, digital communication has extended the reach of conventional text objects and made face-to-face interactions easier to plan and achieve. The situations presented in the quotations in chapter 5 in D5.4 (Bonno Pel, Dumitru, et al., 2017) are very representative for our cases and are excellent illustrations of how ICT is facilitating both dissemination of traditional media, like setting up conventional meetings, and novel ways of interactions, like video chatting. Traditional media, like newspapers, continue to be relevant, however. While objects are an extremely wide category, the vast majority of objects in interactions in our cases are knowledge objects. A select few of the cases, like FabLabs, the Seed Movement, and Hackerspaces, work actively with material objects like seeds, tools, and the objects they produce. This distribution might be due to the nature of our specific cases.

Staging interactions

From the previous section we illustrated that there are essentially two types of interactions – the exchange of objects and meeting of people – often in combination. It might seem trivial: That people interact by exchanging things or talking hardly seems novel. However, it is interesting that the face-to-face interactions remain significant despite development of ICT. The last question is then how the staging of these interactions can be done. There are four broad interaction types that represent 80% of the data on trans-local interactions across the cases presented in order of prevalence (Bonno Pel, Dumitru, et al., 2017, pp. 73–76):

- **Events:** Conferences, workshops, fairs, exhibitions, and other events are identical in the way that they are limited to a specific time and place. Such events are often one of the primary trans-local interactions within SI networks and with external partners and play a part in diffusion and scaling up (Bonno Pel, Dumitru, et al., 2017, p. 73). This relates to the face-to-face interactions mentioned above, like exchanging practices or creating visibility.
- **Projects:** Projects and campaigns are temporary relational spaces (not tied to a physical location) with a longer time-frame and often not tied to a specific place (Bonno Pel, Dumitru, et al., 2017, p. 75). EU projects with many partners from several countries are a good example. Events from the previous category often take place within projects. The longer time frame is crucial, as it allows a more planned and deliberate staging process to take place, where macro-actors or objects that can transfer resources can be constructed, as discussed in the next chapter.
- **International exchanges with external actors:** The case-studies had an internal focus, but this category illustrates that they do not develop in an institutional vacuum (Bonno Pel, Dumitru, et al., 2017, p. 74): a broad category detailing how networks interrelate, like Transition Towns and Eco-Villages that, together with other actors, founded ECOLISE, which is space where several networks

can meet and facilitate staging together. Such staging can be used to construct discourses, brands, media, or to interact with other trans-local actors, like the EU. Networks might also interact directly with the EU or other macro-actors, if they have sufficient influence alone.

- **Miscellaneous:** Other categories that are representing one or a few case references are information campaigns run by networks, the writing and publication of documents, promotional trips by prominent individuals stitching relations between LSIs. The data on these might be scarce due to the focus in the cases and of the informants (Bonno Pel, Dumitru, et al., 2017, p. 76).

As illustrated by the two most prevalent interactions, the first step in staging is about creating temporary or permanent spaces where interactions can take place, like a conference or project. The staging is then about enrolling actors, setting an agenda, and constructing objects cementing the relations. The staging discussed here is done either by the LSIs or whomever is operating and/or representing the network. In a few instances, staging is done by outsiders, or there is no staging done at all and interactions are serendipitous encounters. In either case, the point here is to provide insight into how and which interactions can be staged.

The relevance of international networks

The answer to the first sub-question on the relevance of international networks is through the 4 resources they enable access to in various ways. As illustrated, visibility, legitimacy, and funding often interrelate. Knowledge is the most mentioned by informants, with visibility and legitimacy coming close behind. The visibility that affiliation with “international” actors of renown can have also enables acquisition of resources locally, like in the case of Slow Food, where visits by prominent members of the network raised local media attention and led to funding from the local authorities (Bonno Pel, Dumitru, et al., 2017). When founding a new LSI, it is often important to be able to argue in your local context that you are part of a larger organization that backs you, as this lends legitimacy. In Living Knowledge, letters of recommendation have been used to give legitimacy to LSIs toward their university management. Impact Hub had a challenge that they were not distinct enough from other similarly-named initiatives and so rebranded to get a distinct and visible brand. Alternatively, the documented number of members in a network might lend the network influence toward other actors, like policy makers.

Lastly, the seeming lack of “importance” of these trans-local interactions mentioned earlier stems from the fact that there are few direct interactions. The processes of constructing and transferring some of these resources often doesn’t involve many LCIs, i.e. a lot of the legitimacy, visibility, and even possibilities for funding are indirect as the network organization is working in the context of the LSIs without interacting with them explicitly. So, while only a minority of LSIs mentioned these resources explicitly, it was possible to identify them analytically across a wider selection of LSIs subsequently.

Constructing macro-actors and building local agency

The previous chapter delved into the process by which LSIs could gain agency from trans-local interactions. This resulted in a 5-category typology on the most relevant resources for agency and a discussion on how they travel. This chapter will expand upon the first stage of our analysis and discuss how macro-actors that can facilitate the interaction and construction of resources can be built, thus enabling the agency and impact of LSIs.

The nature of international interactions and networks - the macro-actor perspective

As mentioned, there are few trans-local interactions for many LSIs in daily life: a paradox considering the prevalence of network formation. However, the few trans-local interactions they have can be pivotal, and resources often travel indirectly. Especially for facilitating agency indirectly, macro-actors are relevant as they explain how trans-local interactions can construct actors that either act on the context for all members of the networks, or can be enacted locally to obtain legitimacy, funding, or other resources without a direct trans-local interaction. Several of the LSIs have explicitly said they constructed their networks for such purposes. There are potentially unlimited types of macro-actors depending on focus, but in our cases, I have identified 5: Powerful Spokespersons, Symbolic Objects, The Global Discourse, The Societal Institution, and The External Organization.

The Global Discourse: Global warming, sustainability, and food diversity, i.e. concepts and ideas that are macro-actors with no one in control. This type of macro-actor has affordances that enable their enactment by LSIs to gain legitimacy for their actions and purpose, and the LSIs work to generally strengthen and develop these macro-actors. This is closely related to the idea of vocabularies of motive (Mills, 1940), where inherent in language are the legitimate reasons for specific actions, which was later picked up by Goffman (1986) in his frame of meaning and Weick (1995) as a part of sensemaking. Thus, LSIs enact macro-actors to enable collective sensemaking in their interactions with external actors. All networks draw on global discourses to some extent, however some more explicitly build on specific discourses, like democracy and equality or climate change, etc.

Societal Institutions & External Organization: Societal Institutions are beyond the control of any single actor and live lives of their own to some degree. They are often the target of transformative ambition and not foundations for networks, like capitalism, the fossil fuel industry, or the educational system. The External Organization is directly tied to specific punctualized networks that are in control, like the EU commission. The networks are also External Organizations to each other.

Powerful Spokespersons: Individual LSIs cannot easily interact with external organizations and so construct punctualized networks that can act as partners for funding

and lobbyists for their interests, or other interactions of relevance. Living Knowledge made the science shops an eligible partner in the research frameworks of the EU. Living Knowledge also lobbied to legitimize civil society research and get the EU to include it in their research frameworks (Dorland & Jørgensen, 2016), i.e. working on the context for the benefit of all members by making civil society research part of the vocabulary in that context (Mills, 1940). In Living Knowledge, it is various LSIs that at various times enact the network and act as spokespersons, as there is no formal structure in the organization.

Ashoka, on the other end of the scale, is akin to a conventional organization, i.e. they are legally registered as a non-profit organization and own all local branches. It is also a strong brand with thousands of volunteers and big commercial sponsors. A potential trade-off of the professionalization of social movements into formalized networks and organizations is reduced participatory decision making and a loss of democratic legitimacy (Norman, 2017). A good example is Impact Hubs, which entered an identity and management crisis from 2008-2011 as they tried to balance being local and global and discussed becoming commercial or non-profit (Wittmayer, Avelino, & Afonso, 2016), which almost killed the network.

Most of our cases have established macro-actors of sufficient validity to interact with other macro-actors, with the notable exception of Hackerspaces. Some networks have several competing macro-actors, like the Seed Movement or Time Banks, weakening or at least complicating matters. It differs if there is a specific spokesperson, like a secretariat with employees, an elected president, or local members that in turn enact the network and act as spokespersons.

Symbolic Objects: Some networks successfully give life to an independent macro-actor, a Symbolic Object: similar to global discourses, but less widespread. This can facilitate wide and fast diffusion, but at the cost of coordinated action and coherency. The idea of what a FabLab is is widely distributed without anyone being in control of the concept, but with wide affordances for local enactment. The visibility, awareness, and legitimacy this has generated has been a boon to actors establishing new FabLabs, as both the process of explaining the idea and arguing for its legitimacy to gain funding is easier, and attracting members and/or clients requires fewer resources. The downside is that FabLabs is a very diffuse idea that works in many directions with widely different ideologies and ambitions for change. This seems to be a general tendency: speed of diffusion versus control. FabLabs does not have a coherent enough network to facilitate coordinated activities: It is what we would term a movement and not an organization. Up to half the cases have successfully, or involuntarily, given birth to macro-actors beyond their control.

There are thus two types of macro-actors in play here: either 1) macro-actors corresponding to organizations, or 2) concepts, symbols, or discourses that have gained an agency of their own and are beyond the control of any specific organization. The first type of macro-actors are essentially democratic spaces, which allow local initiatives and individuals to interact with the “global.” It is important to note that the landscape of macro-actors depends on vantage point, i.e. if a specific macro-actor is recognized as a macro-actor will depend on the situation. Building on a discourse of democracy

and human rights will not provide the same legitimacy and space in a North Korean context as a European one.

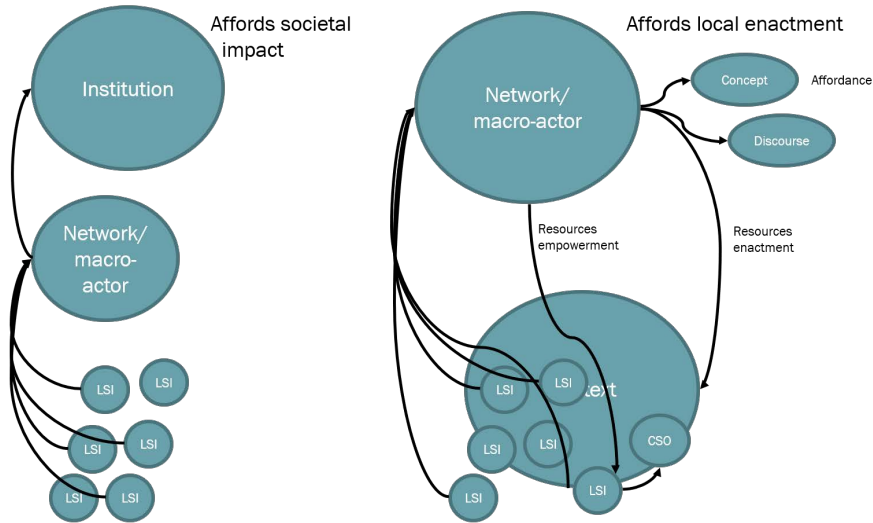


Figure 11.1 - two functions of macro-actors

Travelling and facilitating objects - the construction and agency of macro-actors

As mentioned briefly above, exchange of publications and other objects comprises 20-30% of the interactions uncovered, but even beyond that, meetings and conferences are often also facilitated by software like PowerPoint. Looking at the four resources mentioned by the informants most of them are very distinctly material.

Knowledge objects like texts and media facilitate interactions, and they are how organizations are negotiated and constituted, like the gradual emergence and development of Living Knowledge through a succession of projects producing various objects. This is supported by scholars within communication theory (Brummans, Cooren, Robichaud, & Taylor, 2014; Cooren, 2004; Robichaud & Cooren, 2013; Schoeneborn et al., 2014). So, while the networks might not all be organizations in the traditional sense, they are still organizing or coordinating action. One of the reasons is that text has permanence that human memory lacks (Cooren, 2004, p. 378), and objects thus are the foundation of civilization as this is how social relations and knowledge become anything more than temporary and ephemeral social relations that only exist in the moment (Latour & Strum, 1987). Constructing objects is thus one of the first crucial steps in staging when constructing a macro-actor. As pointed out earlier, face-to-face interactions are crucial for this.

Webpages are a common example of an object and are almost omnipresent among the cases (except hackerspaces). However, some networks do not have a unified network

or organization, and there are therefore a multitude of webpages. This strengthens the speed of diffusion at the cost of strength of the brand and coordination of their actions. FabLabs is an exemplary case here. They have one of the largest numbers of LSIs among our cases, but no macro-actor is recognized to speak for the movement as a whole. This results in an altogether different macro-actor, a symbolic object in the form of the FabLab idea, than the previous approach that constructs a macro-actor controlled by the LSIs.

Other objects, like statutes if the network is a legal entity, or publications like books, reports, articles, etc., also help constituting the network. Statues are not very different from a webpage, but they have more stability and permanence than a webpage, as there is a legal process to change them. Another option is a trademarked brand that effectively limits enactment possibilities to members. Books, reports, articles, etc. are a bit different in that their affordance is to be enacted to gain legitimacy and/or visibility in specific interactions by affecting the available vocabulary and the sensemaking in a specific context. For instance, Living Knowledge produced a report on the impact of science shops in universities on teaching and research (Hende & Jørgensen, 2001), and this report can be enacted in negotiations by an emerging LSI with their university management.

Then what is travelling in these examples? Even though we are focusing on texts and media, it is not knowledge that travels, but visible manifestations of associations, which might be associations to “science” and prestigious researchers. Science is an influential macro-actor in modern society. These objects afford LSIs the ability to prove that they are part of a larger network and that they are associated with other trans-local places, which might endow them with legitimacy and other resources in specific interactions. They also afford visibility as the media ends up in new places. Knowledge in the form of practices can also travel, but in our cases, it mostly always does so along with human actors for conferences, workshops, courses, etc.

Constructing macro-actors for building local agency

It is clear that LSIs construct and endow macro-actors with agency to make them recognized and powerful spokespersons or symbolic objects they can enact – usually through a longer staging process by LSIs. Such a process requires a space for face-to-face interaction, like a project and construction of objects that can constitute the macro-actor. Which objects are used depends on the situation: which type of macro-actor to construct, whom it should enable interaction with, in which interactions it should afford enactment, etc. This also enables impact on other macro-actors, like dominant institutions or organizations.

While a lot of negotiations can take place through ICT, the final network “contract” is signed face-to-face. It is more complicated than it seems, however, as the face-to-face interaction requires extensive staging over a longer period. In Living Knowledge, the networking started in the late 1990s, but required the space of an EU project before the network was finally founded in 2001. Even the objects being produced often need to be accompanied and take part in face-to-face interactions in order to be effective. Once relations have been established, objects can maintain the network without

face-to-face interactions. Objects enable the interactions that took place during the founding to act through time and space (Belliger & Krieger, 2016; Latour & Strum, 1987). However, other researchers have shown that face-to-face interaction is still necessary at regular intervals (Urry, 2004):

...a network only functions if it is intermittently 'activated' through occasioned co-presence. Ceteris paribus 'network activation' occurs if there are periodic events each week, or each month or year when meetingness is more or less obligatory. (p. 117)

Once a macro-actor has been constituted, it enables distribution of agency from the macro-actor to the LSIs, which have been the focus in our empowerment typology, and relates to three processes:

- Changing the context – Building legitimacy, awareness, visibility, discourses, etc. by constructing symbolic objects or co-opting global discourses that afford local enactment
- Making resources available – Brands, knowledge-objects, and other resources that come about through simultaneous processes of empowerment and enactment
- Resources transferred in direct interactions – empowerment through funding, mentor visits, relationship brokering, etc.

Observations from the cases indicate that the three ways to enable local agency all have pros and cons. Changing the context by creating Symbolic Macro-actors is the most efficient way to facilitate local agency that enables rapid diffusion and scaling of a network. Direct interactions, however, create tighter or more homogenous networks and afford more control, at the cost of scaling. FabLabs, with 700 LSIs but no recognized spokespersons or dominant macro-actors, compared with Ashoka, which has only 32 LSIs but direct control of each, are good examples of the two extremes. Many other factors play in, like the public interest in the specific areas of SI, which affects the available resources. Ashoka, for instance, targets social entrepreneurship and have many commercial sponsors, while Living Knowledge works mostly with disadvantaged communities and non-commercial academic projects, an area with less resources. Resource situation notwithstanding, our findings provide insights that can help networks prioritize their resources for building local agency, i.e. if they have a very specific aim or just want to propagate a practice would entail one or the other type of macro-actor and way to build agency. This paper also provides insight for LSIs on how they can enact available resources.

Conclusion

We have, in this paper, introduced a typology of interaction types, of resources types,

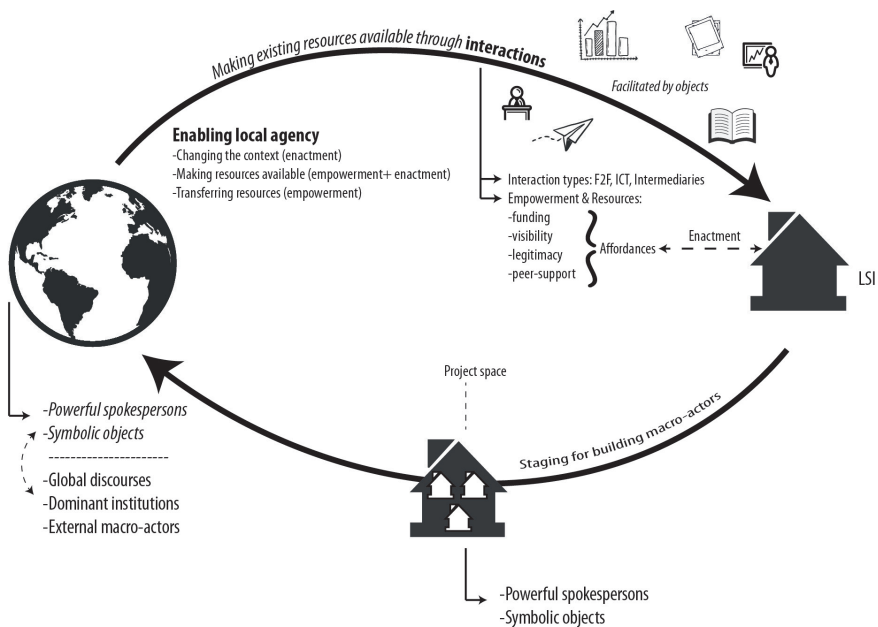
of macro-actor types, and a discussion of how resources travel, and empowerment is facilitated. It might seem overly complicated, but I will weave the complexity together here in the conclusion. There are two main discussions in the answer to the research question, constructing macro-actors and building local agency.

Staging construction of macro-actors

Macro-actors are built to interact with societal discussions and discourses – to create a democratic space – and LSIs should be able to enact them locally. The purpose of the macro-actors is the coupling to the local agency of the LSIs, which happens through the resources presented in the analysis.

A finding is that face-to-face interactions remain crucial for many trans-local interactions, despite globalization and ICT; this is supported by similar findings in other research on international networks (Panitz & Glückler, 2017; Urry, 2004; Wickham & Vecchi, 2009). Older research shows that while ICT certainly eliminates some of the significance of distance, it mostly enables and supplements the continuation and maintenance of existing social relations (Wilding, 2006). Mercea (2017) did, however, also show that social media can be used to negotiate and form catnets, so further work should be done on the limits of ICT's affordances.

Figure 11.2 - the process of staging macro-actors



Another finding is that constructing Powerful Spokespersons, Symbolic Objects, or co-opting Global Discourses is crucial for LSIs and networks to interact meaningfully, i.e. to make use of resources or interact with other macro-actors. How and which macro-actors to stage the construction of depends on the situation, i.e. prioritizing control versus speed and reach. This was a background discussion for understanding and answering how trans-local interactions can build local agency. Further research should focus on how macro-actors emerge and are constructed in specific cases, as the focus here been a broad analysis and generalization that has not allowed for many in-depth illustrations and discussion of case particularities.

Building local agency

The agency of LSIs is their ability to influence other actors, and empowerment is the process where other actors can endow LSIs with agency, and affordance the characteristics of objects & actors that LSIs can enact to gain agency.

The 4 resources that facilitate agency are funding, visibility, legitimacy, and knowledge sharing and peer support. Our research uncovered 3 basic ways that networks can help to build agency locally: 1) Changing the context, which does not necessitate any direct interaction with LSIs that benefit, but can be enacted; 2) Making resources available like Symbolic Objects or knowledge objects that require a combination of empowerment and enactment; and 3) Resources from direct interactions like funding, visibility and legitimacy through empowerment.

Agency then emerges either from outside actors empowering the LSI or from the LSI actively enacting available resources, which in practice is often a process of co-production: macro-actors providing objects and resources with the intention for LSIs to enact them.

One of the findings has been that many interactions are indirect – only the last category entails direct interactions. As mentioned, face-to-face interactions are still crucial. ICT, however, is useful for visibility, awareness, and legitimacy, as it facilitates travel of objects coming out of face-to-face interactions. While legitimacy does not come through ICT itself, the reach of media that can afford enactment of legitimacy have a wider reach than before.

The short answer to the research question is then that networks need to stage construction of macro-actors to channel the distributed power of trans-local actors into a macro-actor that can engage other macro-actors, and that in turn can construct or make existing resources accessible to LSIs.

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CHAPTER 11. BUILDING LOCAL AGENCY FOR SOCIAL INNOVATION THROUGH THE FORMATION
OF TRANSNATIONAL NETWORKS

SECTION 5

Conclusion and Discussion

Chapter 12

Discussion and Conclusion: foundation
for an action-oriented framework

This dissertation has taken many twists and turns as it was developed, starting with a pragmatic intention to study cases of social innovation and spread the knowledge on how they were facilitating a sustainable transition by changing society and solving societal problems. I thus expected a heavy empirical focus and a largely ethnographic dissertation.

As the project developed, I only did one case study on the Living Knowledge network and instead became more and more heavily involved in the cross-comparative analysis and theory development. The findings are thus based on all 20 social innovation networks we studied in Transit, and the dissertation is indeed heavily empirically based but not an ethnography, and I have been forced to work with empirical data generated by partners in Transit rather than my own. The empirical data is not directly included in this dissertation as a result, but all data is open access and linked through references.

As I became one of the main authors on parts of the theoretical development, I increasingly started questioning the framing of social innovation in Transit and more generally, as well as the way our theory developed. As discussed in chapter 2 I find the lack of materiality in SI research as well as Transit problematic. The theory in Transit became abstract and vague, focusing on (dis)empowerment, agency, societal institutions, social relations and other ‘invisible’ entities, as stated in the methodological guidelines ‘our focus is not so much on the actual ‘entities’, but rather on changing relations, processes and dynamics’ (Wittmayer *et al.*, 2015, p. 13). This text accompanies a diagram of boxes and arrows, which does not enlighten the uninitiated to what is going on, how the processes and dynamics of change are carried out in practice. So, I set out to provide the foundation stone of framework of practical relevance, asking the research question **“how can foundations or spaces for social innovation processes be facilitated that enable the agency of practitioners in solving social problems?”**. Moreover, following the discussion above, I choose a material-semiotic approach inspired by actor-network theory. I will shortly cite Latour that I read during my masters, which stroke me again when I read it during Transit:

S: But what about invisible entities acting in some hidden ways?

P: If they act, they leave some trace. And then you will have some information, and then you can talk about them. If not, just shut up.

S: But what if they are repressed, denied, silenced?

P: Nothing on earth allows you to say they are there without bringing in the proof of their presence. That proof might be indirect, farfetched, complicated, but you need it. Invisible things are invisible. Period. If they make other things move, and you can document those moves, then they are visible. (Latour, 2005, p. 150)

As Latour points out nothing is invisible. If some abstract entity, like a societal institution, influence the actors we study, then we identify it. As I continued down this

track, I drew on Law (Law and Hetherington, 2000; Law, 2002), that speaks more specifically on how abstract entities like globalization are local and material. An STS approach can thus make processes of change visible and tangible. Not that the way others in Transit proceeded with their analysis and theory generation is incorrect. In the academic discussion between like-minded colleagues within the professions of relevance, there is little doubt about the entities discussed, but it brings little practical input for practitioners and policy makers in my perspective as it for many of them is very intangible and hard to convert to the world they move around in, which was the goal of Transit from the start.

By forcing a material focus, the analysis and framework start out from the objects they interact with daily. I have in the final discussion treated the three areas I have found most relevant from the various articles and other publications I have developed. The discussion starts from the tangible and material aspect, goes into the strategic and political in staging actor-networks, and lastly to the more abstract discussing types of societal change about specific network configurations. This discussion is illustrated in figure 12.1. I thus try to draw the line from the material objects of daily interaction to the macro-actors that enable impact and empowerment of local SI initiatives in four sub-chapters. I intend to lay the foundation for a framework to understand and facilitate the type of organizing and social innovation I have studied.

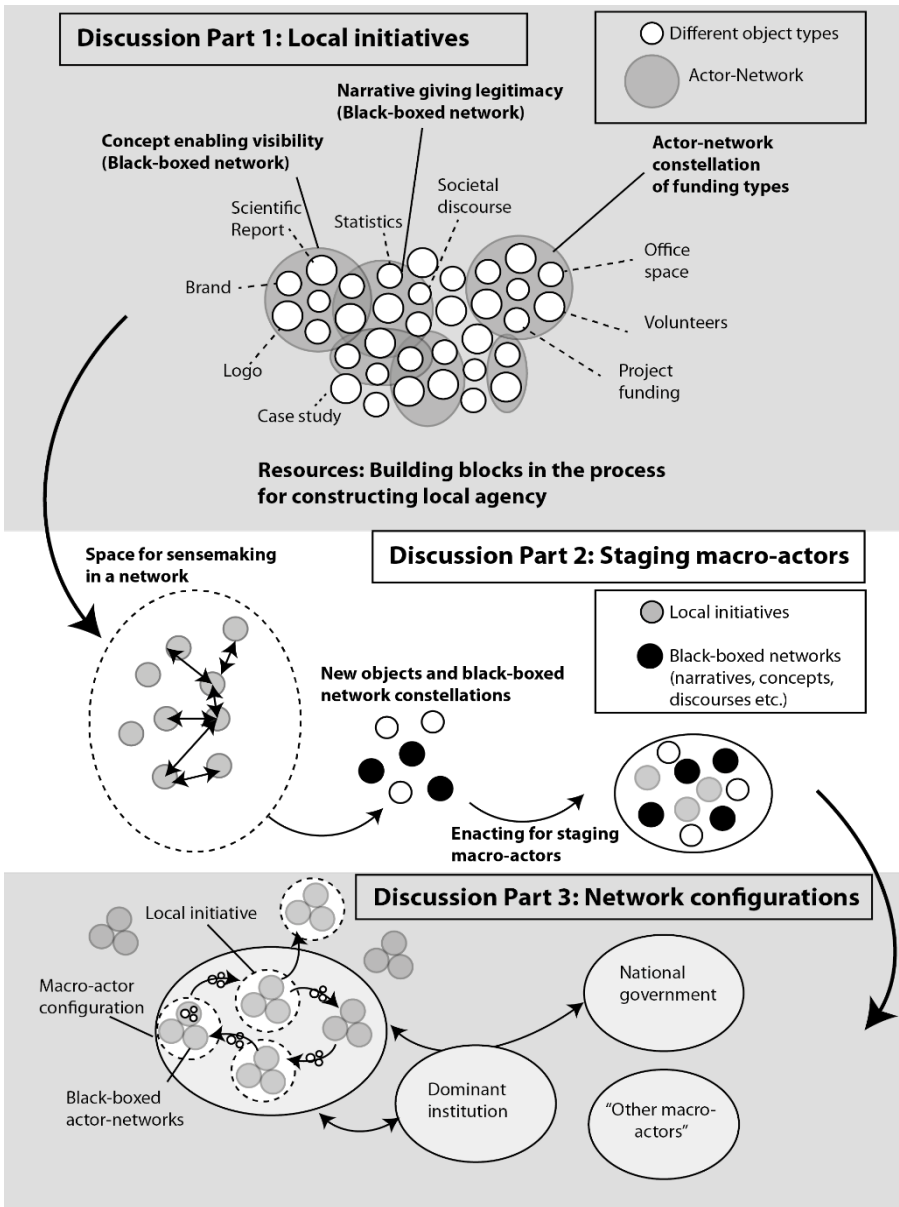


Figure 12.1 – Complex illustration of discussion structure. Figure will be elaborated throughout the discussion, and here only indicate relation between the sub-chapters.

The discussion structure, where the figure above illustrates the last three points:

- A summarizing overview of the main finding from each of the four articles in section 4.
- Part 1: A discussion of resources, objects and materiality in relation to empowerment and agency. The diagram picture different objects, the white dots, that as building blocks in combination with other objects & actors form actor-networks that enable local agency in different ways.
- Part 2: A discussion of macro-actors and staging, how networks can construct and enact macro-actors. The diagram illustrates the essential space for sense-making that a network provides that allow the actor-networks of the members to interact, and over timer build new objects, establish or enact black-boxed networks, and start staging macro-actors from the building blocks described in part 1.
- Part 3: A short discussion on network configurations and types of organization I have identified. The macro-actors are here elements in the network configurations, and vital for the SI networks to scale up or out, and have a societal impact.

The articles have with different frameworks and units of analysis focused on the local social innovation initiatives and their associated international networks; how they emerge, constitutes themselves, and organize; how they empower each other; the potential impact they can have, and various fruitful strategies in different contexts.

The four articles – an overview

The dissertation contains four research articles that each had its own findings, theoretical framework, and focus. I have here given them roman numerals, as I refer to them during the discussion. I will start this chapter by shortly summarizing the findings of relevance from each, in relation to the overall research question, before going into a discussion integrating the findings.

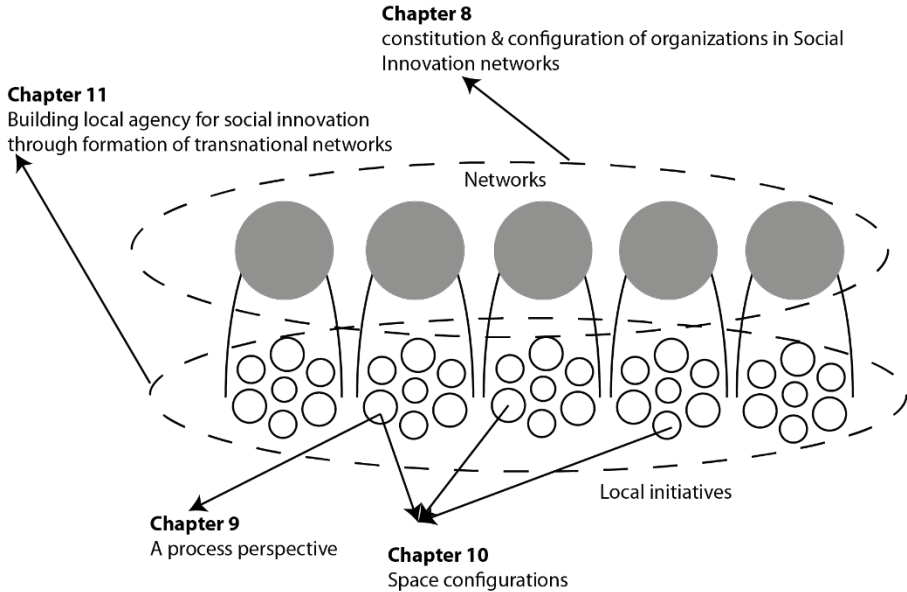


Table 12.1 - diagram of relations between the articles

Table 12.1 pictures the relationship between the four articles. Two of them, II and III, focus on specific local initiatives, and the two other articles analyze across the entirety of all the cases. Article I is based on the comparative analysis in Transit (Jørgensen *et al.*, 2015, 2016), where each network was coded and analyzed one by one. I put this article in front, both here and in the dissertation, to give an overview and insight on the nature of all the social innovation network case studies that I draw upon. The excerpt from a Transit delivery included in chapter 7, which article I is partly based on, is a collaborative work with the case researchers, and thus also lends validity to the further analysis. Article II and III give specific insight into an individual local initiative, and the interplays with its SI network, and across specific local initiatives from three networks respectively. Lastly, article IV like article I analyses across all the cases studies, but here irrespective of the specific networks the local initiatives belong to. It is thus a bottom-up analysis, where article I was a top-down analysis where some categorization and structure were imposed from the outset.

I. Synthesis of typologies on the constitution of SI networks.

Chapter 8 analyzed the different ways SI networks are constituted across the typologies generated in Transit to construct a theoretical typology giving insight into the material and relational constitution of SI networks. The research questions were: **How are social innovation networks constituted as organizations to enable the**

transformative ambitions of their members? The analysis resulted in seven types of SI networks that was further divided into three categories: All-encompassing networks, secondary networks, and auxiliary networks.

The value of the typology is the mental model it provides for practitioners and policymakers on network building and configuration that can empower the members and enable SI relating to the three main questions:

- 1) how to empower the local initiatives,
- 2) how to construct macro-actors enabling a societal impact,
- 3) how to facilitate the process of organizing that constitutes and develops the network.

One of the findings was that SI networks need to be understood as composed of local initiatives and a network organization that may be a distinct independent entity or manifested through the collective agency of the members. Some networks are essentially very heterogeneous in the actors they are composed of, with network entities that have specific functions like a service organization facilitating events and conferences for the members, or a lobbying office in Brussels, or an HQ that legally owns the brand. Other networks are homogenous in that they are only composed of local initiatives that collectively handle various functions or activities of the network, by like taking turns arranging conferences and acting as the spokespersons and contact point for the network. This also relates to how formalized and organized a network is, how cemented the roles and relationships are, where for the loosely-organized networks the roles or ability to act as spokespersons pass around, where for very formal and organized networks it is permanently assigned to a specific actor like an HQ office or president.

This has implications for how the networks are constituted, their materiality, and how they can be enacted. The constitution is best understood through physical, digital, and temporary spaces, objects, and practices. Each ideal-type corresponds to specific configurations of these elements that empower the members in certain ways, and as mentioned can act as mental model guiding practitioners and policymakers.

II. A process perspective on the creation of an organizational space serving as a foundation for social innovation at universities

Chapter 9 present an in-depth analysis of a local Science Shop and the Living Knowledge network as an example of a local social innovation initiative through an organizational process perspective building on the concepts of sensemaking, staging, and action-nets. The research question was: **How have the Living Knowledge network and the local Science Shop initiatives created an organizational space and developed activities that serve as a foundation for social innovation at universities?**

The contribution expands Goffman's staging concept with inspiration from STS informed design studies (Clausen and Yoshinaka, 2007; Clausen and Gunn, 2015) to encompass staging by and in organizations. Staging is thus an obvious organizing effort while sensemaking is related to the process taking place under the conditions created through staging. The contribution arrived at four fruitful strategies for creating and

maintaining spaces for SI at universities: 1) Organizing a space for sensemaking, 2) Constructing allies, 3) Enacting objects to gain agency, and 4) Facilitating sensegiving or collective sensemaking.

The chapter also contributed an analysis of an SI network (LKN) that turned out to have two specific characteristics, a transversal organization, and a secondary organization. A transversal organization intersects other organizations at the same time and place, creating the potential for conflicting sensemaking processes. As LKN is a secondary organization, all members of LKN derive their physical location and most of their resources from their primary organization, here host universities. The finding here is that at least in loosely-coupled organizations like universities contradictions can exist as actors have multiple affiliations, i.e., organizations are multiple and overlapping.

III. Empowering university-community interactions through specific space configurations

The contribution in chapter 10 sheds light on how universities can help empower communities and solve societal challenges locally. It is based on three multi-site case studies on Desis Labs, Fab Labs, and Science Shops that were also seen as alternatives to conventional third-mission activities. The research question was: **How can university-community interactions involve and empower communities through specific configurations of spaces?**

This paper contributes to third mission literature by adding a situational and sociomaterial perspective on how such concepts are being configured and staged, thus enabling a discussion and reflection of how local communities may become empowered as part of university activities. The typology illustrates the principle configurational elements observed across the cases, and I developed a typology of three different types: affording spaces, mediating spaces, and self-contained spaces. These elements taken together embrace the complexity inherent in the staging of university-community interactions and enable us to understand the heterogeneity that can produce community empowerment.

One of the essential arguments of this article is that materiality matters, and in all three cases, materiality was crucial. Materiality and place of their spaces had an impact on the relations and interactions that could be established. The findings support Law's assertion that relational spaces are materially enacted and vice versa (Law and Hetherington, 2000), and places are where the relational and material aspects interact and manifest.

IV. Building local agency for social innovation through the formation of transnational networks

In chapter 11 I show the significance of transnational networks for social innovation initiatives by analyzing: **1)** how networks can increase the agency of local initiatives, and **2)** how the formation of networks that focus the dispersed agency of its members – thus enabling interactions with and impact on dominant institutions and international organizations – can be facilitated. The research question was:

How can we increase agency locally for social innovation initiatives by enabling them to draw on resources that were not available earlier considering the increased access to global and trans-local networks?

Networks enable agency by on the one hand constructing different types of macro-actors that are powerful enough to interact with other macro-actors, and on the other, providing four types of resources: legitimacy, visibility, funding, and knowledge & peer-support, which local initiatives can enact to gain agency. This is explained through a range of elements that span from interactions types to objects necessary in staging that I introduced through a range of typologies on interaction types (from direct to indirect), of resources types, of macro-actor types (Powerful Spokespersons and Symbolic Objects especially), and a discussion of how resources travel, and empowerment is facilitated.

Interestingly it was found that many interactions between local initiatives and networks are indirect. Especially ICT has enabled indirect interactions, as various objects that impact the context broadly across the contexts of relevance has gained much broader reach through social media for instance. Another finding was that face-to-face interactions remain crucial for trans-local interactions. While ICT certainly eliminates some of the significance of distance, it here mostly enables and supplements the continuation and maintenance of existing social relations (Wilding, 2006).

Summary

These article summaries have pointed out the core findings from each chapter, and the next section will discuss the overall implications and how the findings add together. There are essentially three main findings; the resources and macro-actors that empower and enable impact; the staging and political navigation necessary to configure spaces; and the network configurations and organizational forms.

Resources & Objects

Funding, visibility, etc. are fundamental resources that are necessary no matter if an initiative is part of a network or not, but a network can increase access to these base resources. The focus on materiality throughout the thesis resulted in a typology of resources types and their material object form in chapter 11. This analysis forms the foundation of how the staging of macro-actors and configurations of networks that are the focus of the two next sub-section can be understood and made tangible.

First, I will discuss and explain the ontological nature of resources, to clear up the meaning of the vocabulary of objects, resources, and materiality. Resources is the way I framed the different ways the SI networks empower local SI initiatives. Resources is here a very generic and abstract term for any element that helps establish and stabilize the networks of the local SI initiatives. Resources do not on their own give agency, they have affordances and so they can be enacted, which is a way for actors to draw on the influence and power of other actors through the resources that act as intermediaries (Latour, 2007). I will expand upon intermediaries & mediators further down

and the discussion of (un)predictability. Resources are then a way to perform relations and movements, as it is the way the influence of one local initiative or a configuration of initiatives can be used by someone else. The problem lies in the traveling, in the transfer, of such resources, like Law & Hetherington (2000) that shows acting at a distance is not possible without objects.

Objects are then of utmost importance in translocal interactions, as the carriers of resources, as the intermediaries. Any object is inherently sociomaterial, its a mesh of the material and relational, where the resources are the relational aspect of objects that allow the sender to “act at a distance” (Law and Hetherington, 2000), and the recipient to wield the agency of the sender. Different types of influence and relations, however, require different types of materiality to travel, which is what I will discuss in this sub-chapter. Objects are the sociomaterial mesh of the relational and material can only be separated analytically, and so objects are the different ways’ resources are materialized. This will become clearer through the examples in the following text. It should also be kept in mind that not all objects are intermediaries for resources, there are many other types, but resources are dependent on intermediary objects.

Objects and materiality

The five most important types of resources identified in translocal interactions in article IV are: funding, visibility, legitimacy, knowledge, and peer-support. One of the findings here is which resources the local initiatives found most important among all potential resources, and even more importantly how a translocal network can help construct, transfer, or attain such resources. A key argument throughout the dissertation has been that all types of resources, also knowledge, need a material form to travel between places. The question here to make the insight of practical relevance is what these forms are and how they enable traveling.

Many of the ‘objects’ mentioned in Article IV may be puzzling to some, like symbolic objects and human bodies. The point is that all resources, including knowledge and the agency objects can enable, cannot travel without becoming material. As commented by Czarniawska-Joerges & Sevón (2005) knowledge needs a material form to travel, even if that is just in the mind of a person. This is how knowledge travels through conferences and seminar, academics travelling to present and discuss, although aided by papers and PowerPoints. Law & Hetherington (2000) likewise point out that even phenomena like globalization is materially produced. Law & Hetherington (2000) divide materiality into three categories: *objects* like tools, houses, buildings, infrastructure, water, cities, technologies etc.; our *bodies* are material, and objects in relation to fashion, work environment, medicine, space design etc.; and *information and media* like texts, movies, TV, maps, statistics, music, drawings, etc.

While I support this list, I find it too simplified and lacking some aspects. Combining these two streams of research, Scandinavian neo-institutionalism and material-semiotics, with communications theory focusing on knowledge and organizing (Brummans *et al.*, 2014; Belliger and Krieger, 2016), as well as the symbolic interactionists they both draw upon (Goffman, 1959; Weick, 1995), gives deeper insight into the *sociomateriality*. Based on my analysis in article IV I propose symbolic objects as a fourth type of

materiality. Inspired by the intermediary objects of Vinck (2012, p. 90) stemming from actor-network theory that can be considered a “form of representation (the inscription of intentions, working habits, power relations or agreements in the very matter of an object), but also as a form of translation (uncontrolled shifts), mediation and framework”. This is set up against the idea of boundary objects from symbolic interactionism (Star and Griesemer, 1989), which in contrast to intermediary objects seek to synchronize distinct social worlds and not describe the relations and complex dynamic of changing and merging social worlds, the translation and sensemaking.

The intermediary objects conceptualized by Vinck (2012) are more “active” than the intermediaries of Latour (2007). For Latour (2007) intermediaries are predictable, and are mere carriers or containers, without having any influence on what they carry. Latour (2007) in contrast see mediators as unpredictable and prone to translation. I find the idea of Latour’s intermediaries to be unrealistic. As soon as an object is moved from one context to another, there will be a translation. When an object facilitates interactions, it limits and structures just as it affords. There are no neutral and predictable objects. Even the most straightforward of resources, financial resources, are interpreted in different ways. For several of our case studies, the involvement of financial resources in interactions between local initiatives and the network changed their relationship. When you start paying membership fees or get funding, you also create responsibilities and expectations. The international coordinator of the Desis Network refused memberships payments, as she would not be reduced to a service provider for the members. As it is now, with free membership, she sees the relationship as one among equals. So, even cash cannot be given without being unexpected outcomes. I thus build on Vinck (2012)’s conception of intermediary objects.

Taking the findings from article IV, I thus develop the typology in table 12.2. I base my typology of object-types on Law & Hetherington (2000) but rename the information category into textual, visual, and audio objects to encompass all types of communication and knowledge, without simplifying it to information. I also subdivide the object category into tools & equipment and spatial objects, which Law & Hetherington (2000) to use in their explanation but without pointing out the distinction. Lastly, I divide *bodies* into the perspective by Law & Hetherington (2000) and the one of Czarniawska (Czarniawska-Joerges and Sevón, 2005) that in relation to knowledge see bodies as carriers. I will discuss how the object types relate to agency and empowerment in the rest of the sub-chapter.

Table 12.2 - object typology

Materiality	Object type	Agency & empowerment
Objects	Tools & equipment	Affordances for activities and interactions ranging from manufacturing equipment to software
	Space objects	From digital spaces to place specific and spatial spaces that allow interactions

Bodies	Bodies as objects	Little to no insight on the role of bodies as objects in the empirics.
	Bodies as carriers	Bodies as carriers of knowledge and legitimacy, mentoring visits, prominent persons creating visibility, bestowing legitimacy.
Textual, visual & audio	Information & learning objects	Operation guidelines, tutorials, how-to books, tool-boxes, contact information etc.
	Symbolic objects	Objects documenting an association with a macro-actor enabling a local initiative to act as spokesperson or at least wield some of the macro-actors resources.
	Legitimacy objects	Objects drawing on the legitimacy of other macro-actors to gain influence and power, thus creating frameworks for interaction and impact perspectives.

My notion of symbolic objects focusses on the representation and represent associations to a recognized network (a macro-actor) and the power that is the influence of that macro-actor as well as the ability of the local initiative enacting the symbolic object to wield that power and act as a spokesperson. Examples of symbolic objects in our cases are brands, trademarks, labels, certificates, names, concepts, discourses, etc. as represented by various visual and text-based objects. Law & Hetherington (2000) categorize these as information, but I argue that the information aspect is negligible, it is the representation that is crucial. It is a class of objects that do not communicate any information, it communicates an association to a relational entity, a macro-actor, and potentially bestows the role of spokesperson locally. While I do not think that Law & Hetherington (2000) would disagree, as Law (2002) later points out that the material and the social are crucial in enacting each other, the inherent social and symbolic nature of a brand in contrast to its visual appearance makes it problematic and ill-communicated to categorize them as information objects. Other objects do play a role mainly as carriers of *information*, like a spreadsheet with contact information. In my perspective, as is hopefully clear by now, symbolic objects are inherently material, as that logo or other visual or text-based manifestation is a necessity.

Lastly, another subset of the *information objects* category that I carved out into a distinct object type is knowledge objects for legitimacy. While Vinck (2012) see intermediary objects as an ethnography-enriching tool, I see the objects I discuss here as organizational tools or objects. The other aspect, akin to the symbolic objects above, are knowledge objects as carriers of legitimacy. These aspects are tightly related, as the ability of these objects to create a framework and control views, is through the legitimacy and power it carries. Legitimacy and power stem from the author's network. A scientific report or documentation from experiments as communicated in text carries the legitimacy of 'science' as a macro-actor, the legitimacy of the university, potentially the legitimacy of a peer-reviewed scientific journal and so on.

Unlike symbolic objects, a local initiative enacting a knowledge object does not act as

a spokesperson for a network they are part of but enact an array of macro-actors external to their network (like the abstract entity *science*). Again, the aspect that is important here is not the traveling of knowledge, and facilitation of learning, as what these texts specifically contain seems to be of little relevance. In many of the empirical examples, we have from science shops in relation to pollution, especially water, the same argument is made by a community before and after a science shop project. The change was that the argument was backed up by a scientific reference that carries weight in interactions with the public system, and potentially the legal system, or interactions with other actors in society. A community does not on its own have the legitimacy to claim the extent and source of water pollution or might not even have the power to create attention and visibility around the issue.

Table 12.2 above draws together the insight from the various chapters and define a contribution to the STS-fields and actor-network theory inspired by symbolic interactionism (especially sensemaking), and Scandinavian neo-institutionalism as represented by Czarniawska. Thus, connecting the essential materiality with different object-types defined based on their function, and relating to the specific types of agency and empowerment they enable. This object typology has an analytical approach, and the question is how these objects are practically connected to the different types of resources, which I have shown in table 12.3. The resource typology is more practical in nature, i.e., it can serve as a mental model for practitioners that can ask themselves which resources they lack, look at the material forms it can take, and then proceed to the object typology to gain more insight on the materiality of relevant objects types.

Table 12.3 - Table with examples of resource, their function, and material form.

Resource & function	Material form	Examples
Visibility: Important for establishing relations to potential members, beneficiaries, and partners. Acting as the material component of legitimacy.	Human bodies & symbolic objects	Visits by prominent (the symbolic aspect) people creating attention locally
	Temporary spaces	Events: conferences, workshops, festivals, etc. Physically present and generating media attention.
	Permanent spaces	Offices, labs, and other permanent spaces having a presence locally.
	Symbolic objects representing macro-actors (logos, certificates, labels, etc.)	Brands and associated objects like a logo that communicates and catches attention.
	Knowledge objects	Articles, books, videos, documentaries, and other traveling texts and media.

<p>Legitimacy: Legitimacy is used in the general understanding of the term, as reliability, trust, and general agreement that the social innovation in question aim at something positive for society.</p> <p>Necessary pre-condition for many interactions.</p> <p>Important for capitalizing on visibility, i.e. visibility without legitimacy is of limited value. Legitimacy thus increases the <i>efficiency</i> of visibility.</p> <p>Enables funding from third-parties.</p>	Symbolic objects	ISO-certifications, use of trade-marked brands like Impact Hub, using a free but known label like maker-space or FabLab.
	Documentation	Letter of approval & recommendation by recognized spokespersons. Scientific reports of impact. Documentaries.
	Governance and regulatory documents establishing memberships and/or association	Roles that can be enacted, by documentation specific association to a network. Positions of authority in the network, like designation a member of a local initiative as part of the board of the network, confers legitimacy locally. Enrolling members of local communities in network events, like Salone del Gusto (slow food), also give increases legitimacy locally.
	Media and Text objects	Legitimacy through association, for instance by being recognized by other networks, like if receiving funding from the EU, documented by contracts, reports, press releases, articles, and other media and texts.
<p>Funding: A base resource necessary for operating.</p> <p>How much is needed differs widely depending on space, infrastructure & equipment requirements, degree of volunteer-work, etc. Funding thus involves all material resources and not just financial resources.</p> <p>Access to funding is facilitated by legitimacy.</p>	Financial resources	Sponsors, donations, project grants are common ways to get funding for new initiatives. Sometimes base funding is provided by a host organization.
	Alternative resources of exchange	Institutional embedded initiatives like Science Shops and Desis Labs can pay students with ECTS-points.
	Infrastructure access	Spaces like offices and workshops, access to equipment, ICT, and other facilities is another type of indirect funding common for FabLabs for instance.

<p>Knowledge: Knowledge is a carrier of agency is as bestowing legitimacy or providing practical or technical knowledge.</p>	<p>Knowledge objects: texts, media, documentation, proto-types, etc.</p>	<p>Scientific documentation can be enacted by communities to engage public authorities or the legal system, drawing on the legitimacy of the authors and their institution, and the scientific system in general.</p>
	<p>Human bodies</p>	<p>Through actors traveling and disseminating knowledge, like mentoring visits, lectures, etc. Both the Seed Movement and Living Knowledge have held seminar and workshops explaining the working of their networks.</p>
	<p>Digital spaces, ICT</p>	<p>Online courses and seminars are especially common among FabLabs and facilitate learning around using digital production technologies.</p>
	<p>Archives</p>	<p>Archives, depositories, databases and other types of infrastructure where knowledge objects are stored.</p>
<p>Peer-support: The role the networks play for motivation, sensemaking, and identity among local initiatives.</p>	<p>Temporary spaces</p>	<p>Another type of empowerment through events and projects is that these spaces allow interactions and relations between like-minded individuals, crucial for their motivation and identity. For initiatives like Science Shops that are often small and are embedded in larger organization that may not share their sensemaking, this can be crucial.</p>
	<p>Permanent spaces</p>	<p>Offices, headquarters, digital platforms, and forums, that for more formal and established networks have the same function as the temporary spaces above.</p>
	<p>Digital spaces</p>	<p>Intranets, forums, groups chat, IRC, and VoIP, are all digital spaces that facilitate peer-support. Sometimes motivation is facilitated just by seeing and knowing of the activity in the network without directly interacting.</p>

To be more action-oriented and less analytically-minded the table above could have been reversed, with the agency & empowerment in the first row, and then which object types and their materiality in the second and third rows. However, if my framework has a practical relevance as a guide is still a hypothesis as it has not been tested in workshops, interventions, or other interactions with policymakers and practitioners. However, it did receive quite positive feedback during conferences, and attendees that were both academics, policy makers and practitioners recognized the basic resources and found the idea of macro-actors that I will discuss now of practical relevance in their work. Macro-actor related tightly to the efficiency of these resources and their ability to travel. Moreover, the last none about intermediary objects. I did not use the concept in my analyses in section 4, but it would have been fruitful, as one aspect of these knowledge objects is to set the framework for interaction and focus views in a certain way, framing. This is tightly connected to what I have referred to as sensegiving in article II. The idea of intermediary objects is, therefore, a useful concept to draw together some of the insights from the different articles.

Macro-actors and staging

The last sub-chapter discussed the material nature of the empowerment that SI networks facilitate for local members, through the idea of resources and objects. These actors, human actors and non-human objects, are arranged into various configurations to establish macro-actors through processes of staging. Macro-actors is an analytical concept that helps us close the micro-macro divide in sociology in our flat-relation perspective that I will recap shortly.

On macro-actors - a short recap

While I have drawn upon the concept of macro-actor in several articles, its use is most prominent in article IV. The concept stems from Callon & Latour (2015), originally published in 1981, and defines macro-actors to consist of

macro-actors who have successfully ‘translated other actors’ wills into a single will for which they speak. This enrolment of other actors allows them to act like a single will which is, however, extremely powerful because of the forces on which it can rely (Callon and Latour, 2015)

Constructing a macro-actor and its power in relation to other macro-actors is then about “associating the largest number of irreversibly linked elements” (Callon and Latour, 2015). I have equally drawn on later additions like Czarniawska & Hernes (2005) that take up the macro-actor idea in relation to organizational studies, and use it to show what organizations consist of. In chapter 9 I went further and drew on CCO (communication constitutes organizations) from communication studies (Taylor and Van Every, 2000; Blaschke, Schoeneborn and Seidl, 2012; Belliger and Krieger, 2016) that show how communication episodes condense into objects that enable these

interaction episodes to span across time and space, slowly constructing action-nets. Action-nets is a different perspective on networks focusing on the actions and events above the actors, seeing the *event* as the actor itself. The event is only an actor though if it results in an object as argued by CCO, often a form of a textual, visual & audio object, that can give the event permanence.

A crucial process in constructing macro-actors, the way that they grow in size and influence, is by constructing *black-boxes* (Callon and Latour, 2015), what I previously also referred to as punctualizations. Black-boxing reduces networks, systems, concepts, theories, to single actors. The inner complexity needs no longer be considered, and the output is assumed to be true. These characteristics are mostly the same for a macro-actor that is merely a black-box of a large influential network. Latour (1987) label scientific theories as black-boxes that are used as a foundation for new theories. In reference to my introduction above, many of the political scientists that were partners in Transit saw terms like dominant institutions, empowerment, and agency as black-boxed concepts, i.e., they were known and established, and there was no reason to open the box and try to understand how they were constituted (I assume). A macro-actor then grows in influence by building on black-boxes like social entrepreneurship & innovation, global warming, human rights, democracy and so on, all recognized concepts and discourses that can be used as building blocks, as I will discuss in the next section. As commented by Callon & Latour (2015, p285) “The more elements one can place in black boxes - modes of thoughts, habits, forces, and objects — the broader the construction one can raise” and “a macro-actor can be understood as a micro actor ‘seated on top of many (leaky) black boxes (Callon and Latour, 2015, p. 286).

On building macro-actors

Establishing a network as a macro-actor with influence is an important step in constructing infrastructure and resources, as it potentially endows local initiatives with legitimacy that enables access to third party funding or embedding into other organizations, which then enable them to contribute to the network in turn. The development and construction of macro-actors, infrastructure, and resources is thus an iterative process.

The question then is how macro-actors can be constructed, and the potentially different types of macro-actors. Take the macro-actor of Greenpeace for instance, while their agenda of environmental protection has gained legitimacy in recent year, their legitimacy is arguably lower than the Red Cross that is fighting to preserve human life, a cause that is less contentious. While these are large established NGOs the same applies to our empirical cases. The social innovations of FabLabs and Impact Hubs that both relate to social entrepreneurship are less contentious than an environmental network like Transition Towns, or networks working towards more radical ideas like Basic Income.

So, there, of course, is a difference in how generally accepted the basic idea behind a social innovation is, i.e., the degree of agreement across social groups if something is a societal problem or not and what the potential solution is, the normativity of SI (Lawrence, Dover and Gallagher, 2014). In the perspective of Callon & Latour (2015)

what makes an actor into a macro-actor and thereby less controversial or generally more accepted, is the stabilization of the network of a macro-actor and the number and strength of its relations. A completely stabilized actor-network is what we would call black-boxed or punctualized network as discussed above. These black-boxed networks can be anything from a concept, a discourse, an organization, a narrative, a piece of legislation, or an SI network, etc. Without enough black-boxed networks to establish a macro-actor upon, it would not be stable enough and remain contentions and not generally accepted.

Establishing a black-boxed concept as a foundation

This is essentially a *sensegiving* challenge on the one hand and a task of building *black boxes*, following the short recap above. First, there is the challenge of sensemaking internally in a network, what is the core purpose, which requires a high degree of co-shaping and strategic essentialism. This is especially challenging for SI networks I found, as they are both locally and trans-locally rooted. Most networks are locally oriented, but the macro-actor by nature must be general. This means that networks negotiate internally, suppressing heterogeneity to some degree, to be able to present a common front outwardly. What this common front should be, is also the subject of external negotiation as the network goes through a collective sensemaking process with actors in society that are potential funders, partners, beneficiaries, etc. As shown by (Mouritsen and Flagstad, 2005) trying to black-box an entity that is not stabilized, or where the meaning at least is not clear, is doomed to failure. A couple of empirical examples of black-boxes can be seen in table 12.4.

Table 12.4 - black-box examples

Network	Black-box examples
FabLab	FabLab Concept: Very stable but flexible concept. Its widely known, people understand the general idea and purpose, while allowing a wide range of different types of spaces being called FabLabs. No one in the network is in control of the concept or can act as spokesperson. Builds on a range of other black-boxed concepts like the inherent value of innovation and technology.
Impact Hub	Impact Hub brand: It is a distinct and trademarked brand legally owned by the association. It is part of an ecology of co-working spaces and hubs related to social entrepreneurship (another black-box), where their brand marks them as distinct.
	The art of hosting: a distinct concept within the Impact Hub network of how managers and staff of Impact Hubs should act.

Living Knowledge	Science Shop concept: partly failed black-box as there is no general understanding of the name more broadly, and locally a great diversity of other names is used as the meaning of ‘science’ differs between countries, and sometimes entail confusion. Only in academic circles, in literature, is there a consensus of the name and what it entails. Some national concepts have been more successful, like the German Wissenschaftsladen.
	Opening the ivory tower: an established phrase about opening the ‘closed tower’ that is the university for society. The ivory tower is already an established concept (black-box), and even often related to universities, making it easy for the network to adopt and build upon it.
RIPESS	The solidarity economy: RIPESS is a network of networks trying to black-box the whole sector of social solidarity initiatives and networks, installing itself as the spokesperson towards other international actors.
Basic Income	The concept of Basic Income itself that the network tries to strengthen, is a recognized idea with a long history. It builds upon other black-boxes like justice, democracy, equality, transparency, freedom, etc. Basic income has an impressive amount of concepts and theories in its foundation, although it has never gained quite enough strength to become implemented.

These are just a few examples from five networks, and there are many more black-boxes within each. A network's name is usually tightly connected to its vision and core concept and is the first black-box a network tries to construct on the path to establish itself as a macro-actor.

The way to black-box such a concept is to establish a narrative that enacts other black-boxes, other actors, in a way that gives legitimacy to the concept and facilitates sensemaking with potential partners. Established concepts and discourses in society, like the innovation concept that is seen as inherently positive (Godin and Vinck, 2017), the by now accepted problem of global warming, recognized societal challenges like a growing elderly demographic, increasing urbanization, gentrification, etc. are potential building blocks to enact during staging. Staging is the perspective I have used to understand the political navigation necessary to build these configurations of black-boxes.

Staging and political navigation

Following the discussion in article II, staging is a conscious effort where actors are enacted, and action-nets configured for specific purposes through an obvious strategy. Sensemaking, in contrast, is the collective effort to find and construct meaning in a chaotic world by stitching together experiences of the past with happenings in the now. So, staging unlike sensemaking is a very conscious and strategic activity. I have found that staging in this context (SI networks) is essentially about identifying black-boxes that can be enacted and configured into a foundation for a network and

spaces for social innovation.

I explored the space metaphor in article III, drawing on geography (Harvey, 2004), organizational studies (Taylor and Spicer, 2007; Carlile et al., 2013), material-semiotics (Law, 1999), as well as STS-inspired design studies (Clausen and Gunn, 2015) that drew me to the metaphor. In article III I conceptualized my own tripartite space concept composed of material, relational, and place aspects that I also explain in chapter 4, so I will not include the full framework here. However, I will shortly explain space, as it turned out to be crucial for staging in article II.

Space is here a concept a configuration of actors and objects, an actor-network, that allow interactions and continued relations. It is a way to connect and establish relations between actors, and therefore a precondition for founding and developing an SI network. A space has a boundary, some actors are inside, and some are not. Its a protected space, a backstage, where a network can interact in peace. In the product and design setting of Clausen & Yoshinaka (2007) this relates to controlling which actors are present and have access to the space, here often a project in a company. In the setting of SI networks, which are geographically distributed, the challenge is very different. Here actors do not share co-location or even necessarily belong to the same organization, so establishing the essential infrastructure and physical occasions and frames that allow interactions and relations are crucial. Relating to the previous sub-chapter, conferences, workshops, seminars, and other events offer the physical frames that allow actors to meet and interact. Forums, emails-lists, Skype, IRC, and other digital software also allow interactions, but are mostly useful for maintaining relations and not creating them cf. article IV and (Wilding, 2006). A space and a network are thus not the same. A network is a group of actors interacting and organizing, and a space is the frame where their interactions take place. Many of the spaces referred in table 12.3 are temporary spaces, but the relations created during the life of these spaces keep alive, for some time at least.

Drawing on Goffman (1959) as well as Clausen & Yoshinaka (2007), I in article II arrived at four strategies for creating a foundation for social innovation: 1) Organizing a space for sensemaking, where it is important to be aware of how, where, and which spaces to create and for which purpose, 2) constructing allies, 3) enacting objects to gain agency, mostly legitimacy, 4) facilitating sensegiving or collective sensemaking.

Generalizing these findings to networks and not just local initiatives and applying the concepts of macro-actors and black-boxing, the first strategy encapsulates the process described above where a network defines their core concept through a process of sensemaking and strategic essentialism. A space, and a degree of face-to-face interaction is necessary to facilitate such a process. The second strategy is a process of formulating a staging strategy as well as constructing new objects enacting and framing existing black-boxed concepts, theories, and networks in a specific configuration. The third strategy is the activation phase where the staging strategy is carried out, where objects are enacted. Lastly, the fourth strategy is during the play where sensegiving is facilitated, or collective sensemaking takes place. These four strategies are phases in building a macro-actor. I will give three empirical examples.

Staging and black-boxing in Living Knowledge

Living Knowledge is notable in that the network is called something entirely different from the local initiatives (science shops), a symptom of the wide divergence of actual names in use locally, and maybe also part of the reason the Science Shop concept has never become more established. One of the reasons for this discrepancy is because the initiatives that founded the network existed for 1-2 decades or more previously before ICT and globalization enabled easy translocal interactions, and they thus never had a space where a process of collective sensemaking and strategic essentialism could take place. I imagine if the concept and network had been founded in the recent decade, they would have arrived at a more generally accepted name and concept.

The Living Knowledge case is interesting none-the-less. It was established as part of an EU project, which was encouraged by an officer in the commission at the time, and thus the founding of the network was part of a collective sensemaking process with the EU commission. This sensemaking process continues, and the science shops concept has been embedded in the research programs and project calls from the commission, which in turn steer the network to focus in new directions like Responsible Research and Innovation (RRI) that is one of the latest Living Knowledge projects funded by the EU.

Looking at the case study from chapter 9, there was a wide range of black-boxes built and enacted over 25 years. Initially, they based the foundation on a couple of societal discourses like helping communities suffering from unemployment, on helping labor unions, on the societal role of the university, and they reached out and found the science shop concept in the Netherlands that was already established. Some of these black-boxed actors disintegrated over time, but the Living Knowledge network was founded and helped enact a range of new black-boxed actors. What the network enabled was a space where the members could interact, where sensemaking could take place, where staging strategies could be developed, and black-boxed concepts enacted as encapsulated in various objects. Living Knowledge did this through producing texts, scientific reports, articles, and other documentation, that took black-boxed concepts like RRI and encapsulated it in a text that tried to frame and enact it in a usable form for the network. The very first EU project that established the network also produced scientific reports documenting the positive impact of science shops on research and education. Black-boxes are thus also *resources* or building blocks for resources as visible from this explanation, many of them legitimacy objects.

Staging and black-boxing in Impact Hubs

The Impact Hub is another interesting story. It was initially just called the Hub, but as more and more 'Hubs' emerged unrelated to the network, they slowly lost control of the concept, i.e., the black-box was breaking apart as the network was unstable. At the same time, there was a lot of chaos internally in the network in relation to how they should organize and formalize the network, as the founder initially wanted to stay in control. In the end, they branded themselves the Impact Hub and formalized as an association owned by the members, which owns the Impact Hub trademark. They still face problems in collective sensemaking internally, as exemplified by a quote from one

of the managers “That has been my main challenge in last years: when recognizing that something is [should] not be part of the network, but still having this family feeling of not being able to punish a brother or sister. We are evolving the idea of protocols for incentives and sanctions for behaviours that should be in our network.” (Personal communication, <http://www.transitsocialinnovation.eu/sii/ctp/change-in-global-governance>). The Impact Hub macro-actor builds on a range of black-boxed discourses and concepts like entrepreneurship, social innovation, co-working, knowledge sharing, etc., combined with an organizational structure, statutes and other types of internal governance, as well as reliance on societal structures like the juridical system protecting their trademark.

Staging and black-boxing in FabLabs

The story of Impact Hubs is interesting in contrast to the FabLabs network or movement, because it seems they faced the same situation but had the opposite outcome. The FabLabs network is not a macro-actor, no one can speak for the network as a whole, which is why I tend to refer to it as a movement. The FabLabs concept itself is a black-boxed concept, and various actors in the movement can enact it to gain legitimacy, visibility, and other resources. However, no one can control how the concept develops, who enacts it or focus the dispersed agency of the movement. There are various organizations within the movement that can wield some of its agency, but not a unified entity. The finding here is that control limits scaling up, while lack of control enables rapid diffusion and scaling, as evident by the hundreds of FabLabs across the world.

In terms of black-boxing and macro-actors, what the FabLab movement did was constructing a macro-actor, the FabLab concept, and then letting it go wild. Flexibly conceptualized as it was, and with no one preventing re-conceptualizations and translate, it was able to adapt into many different contexts. Its a beautiful example of scaling. However, what positive impact FabLabs have had is hard to say precisely because no one is in control, no one is focusing the agency on any one thing, and no one is evaluating and collecting the evidence with a mind to strengthen the network by constructing new objects like documentation like Coordinator did in VB (Article II). Contrast this to my first story of the science shops. The concept is not trademarked, the Living Knowledge network is not a legal entity, so the concept should be just as flexible and able to expand rapidly, but it did not?

It did spread rapidly in the 70'ties and 80'ties, comparatively speaking. Before ICT scaling and diffusion just took place at a different pace, from what I identified in my analysis already in the first comparative analysis in Transit (Jørgensen *et al.*, 2015) and confirmed in (Jørgensen *et al.*, 2016). The flexibility however just like with FabLabs resulted in a great variety across local initiatives, and a quite weak macro-actor. The network has other types of resources though, besides a strong macro-actor, as discussed in the different types of network configurations.

Concluding comments

The strategies I developed in article II based on an in-depth case study of a science shop and the founding of Living Knowledge, when related to the discussion and

theoretical concepts of black-boxing and macro-actor construction, gives more concise insight on the process and what is happening. Staging is in this context about identifying black-boxes that can be configured into a foundation for a network and spaces for social innovation.

The four strategies are somewhat generic in nature and might not seem novel, but the crucial point of the strategy lies in creating the space for interaction and sensemaking. Our SI networks are composed of geographically dispersed initiatives, creating and maintaining spaces is a necessity due to the nature of SI networks. A commercial organization would already have available space, and as shown by Clausen (Clausen and Yoshinaka, 2007; Clausen and Gunn, 2015) the staging challenge here relates more to controlling which actors are on the scene through strategically enacting actors and boundaries.

Staging in relation to SI networks is first and foremost creating a context where the process can take place, on building the stage, on enabling actors & objects of relevance to travel so they can be enacted on the stage. There is thus a process preceding the strategic staging discussed by Clausen (ibid.) particular to SI networks. This relates to the types of network configurations and the infrastructure they try to establish discussed in the next sub-chapter.

Network configurations

This section gives insight into the different types of network configurations among SI networks. Network configurations are about establishing actor-networks or action-nets depending on perspective, on establishing the configuration of actors and objects that enable the staging process and the travel of the objects discussed above. The role of the configuration is focusing on the distributed agency of local initiatives spread across the world. Geographically distributed organizations are not novel, but in contrast to commercial and governmental organizations, SI networks lack many of the structures, like a formal organization and legal obligations between actors, which necessitates the development of alternative ways to constitute organizations and develop macro-actors. The advent of ICT and social media as discussed by Castells (2010, 2015) have provided entirely new ways to organize and develop macro-actors for social movements, as illustrated by several case studies (Moghadam, 2012; Smith, Plummer and Hughes, 2017). Reading BBC news this morning, the correspondent comments on demonstrations and riots in France by the *gilets jaunes* (yellow vests) movement that it “does not have an identifiable leadership or a coherent demand. What it does have, he says, is a lot of coordination via Facebook” (Schofield, 2018). This is a perfect illustration of the new ways of organizing, and how social media like Facebook provides a space for sensemaking, staging, and organizing.

After working with the SI network term for several years, I propose to treat it as a “quasi-concept” as discussed by Anheier, Krlev, and Mildenberger (2019) about social innovation. A quasi-concept is characterized by its approximating character and

inherent definitional looseness, which is beneficial in explorative research where the subject of study is still unknown. As illustrated by our Unit of Analysis article in chapter 6 (Pel *et al.*, 2017), capturing social innovation empirically is challenging, and we thus see the SI initiatives & networks as separate empirical phenomena from the social innovations we aimed to study. SI networks are as a result a broad group of actors organizing with the aim of solving different societal problems. These different ways to organize, configurations as I call them, range from conventional organizations, to federations, and loose social movements. I have treated different aspects of their nature in the four articles.

Article I identified seven ideal-types of network configurations divided into three categories based on how they were constituted and their ability to empower their members. There were solid global organizations like Ashoka and Impact Hub that have organizational structures, internal governance, symbolic objects, digital infrastructure, and tangible material spaces locally. Together with institutionally embedded federations like Living Knowledge, these ideal-types were classified as all-encompassing networks, as they serve as a foundation for the members. Configurations in this category encompass traditional hierarchical organizations as well as both centralized and decentralized federations. In all cases where the networks are recognizable macro-actors that the local initiatives can enact, which is how members gain agency. In the two other categories of network configurations, the networks play a smaller role in the life of the local initiatives, serving specific functions or providing specific services for the members. Some of the networks are also cross-cutting constellations of several networks banding together in alliances to constitute macro-actors with enough influence to negotiate with other macro-actors like the UN, EU, or national governments. RIPESS is a good example of an alliance of social solidarity economy networks.

Article II expanded upon these insights by delving into the depth of one specific local initiative, a science shop, and its relation to the Living Knowledge network. Beyond the strategies discussed in the previous sub-chapter, this article identified the transversal and secondary characteristics of Living Knowledge as a network, which means that the members do not derive their base funding and physical location from the network, and the network is intersecting other organizations resulting in potentially conflicting sensemaking processes. These two characteristics from article II broadly relates to the categories of network configurations in article I. I will in this sub-chapter expand the analysis to see how the characteristics of secondary and transversal apply across all the cases, and what patterns appear. And I find that it relates to the way SI network try to facilitate societal change. I especially relate to the types of interactions taking place, and the directions resources travel in, that I term horizontal denoting local-to-local interactions and vertical denoting interactions involving macro-actors. These findings are substantiated and solidified with the insight from article IV that identified three processes of empowerment: changing the context, making resources available, and resources from direct interactions. These processes explain in more detail how horizontal and vertical interactions take place and the empowerment processes involved. Article III add insight on the co-production with the local context of the SI initiatives, and there is a weak link between the types of local spaces identified in

article III and the approach to societal change that the merging of the findings from article II and IV resulted in.

Drawing the findings from these articles together it is thus possible to say something more profound about the types of configurations in play, and how they relate to the development and construction of macro-actors and resources, as well as societal change.

Secondary and transversal networks

Analyzing across all the 20 SI networks leads to a couple of insights. The first observation is that almost all our SI networks are secondary, which means that SI networks seldom fund local initiatives or have a business model that directly earns money, and thus depend on funding from other sources like commercial sponsors, charities, foundations, project funding, etc. There are four exceptions, like Impact Hub. Impact Hub is funded by the members/customers of the local Impact Hubs, which I see as internal to the network. The members thus have a business model and locally fund themselves and contribute with funding to the network. Credit Unions, Slow Food, and Time Banks likewise fund themselves through business models depending on membership fees. Ashoka as another example directly establish and pay for local offices, although the organization depends on sponsors. There is thus only one single example of a network that funds local initiatives from the direction of the international network. Secondary and solid global organizations are mutually exclusive, which makes logical sense. The local initiatives in the remaining networks depend on sponsors, donations, or embedding into other organizations like universities or municipalities. This shows the importance of establishing legitimacy and macro-actors to enable this third-party funding.

The last finding from this analysis, is that secondary and transversal often go together with some exceptions like the Seed Movement, Eco-villages, and FabLabs. Normally when a network is secondary, resource-wise, it means that other organizations or networks are so tightly related to the local initiatives that they fund that the networks transverse each other. This can result in conflicts and contradictory sensemaking processes as illustrated in article II. However, for this last type of configuration the network is secondary because the local initiatives are so locally rooted and focused that the network loses importance, and the network like in FabLabs is so loosely organized that there is little to no organization though could transverse potential host institutions.

Holding this up against the comparative analysis, I contributed to in Transit (Jørgensen *et al.*, 2016), on how these networks try to facilitate a transformative change leads to two basic processes of societal change pictured in figure 12.2. The first type is of SI networks relying on horizontal interactions and are composed of local initiatives that try to facilitate societal change by example, like eco-villages. Many of the actors involved in eco-villages try to reduce consumption, eat more organic and locally grown, focus more on community, build renewable energy sources, etc. The transformation of society is thus through the changed practices that they develop, and through the examples that they give to others. Expansion and diffusion happen from local-to-local, as local actors in other places are inspired and start their own eco-villages. This relates to the ideal-type I called Sustainable Lifestyle Movement described as “These movements are characterized by having, to some degree, an internal focus on developing

themselves, their practices, and their ideas” (Jørgensen *et al.*, 2016, p. 38). Horizontal interactions are then the way I describe local-to-local co-production and is different from the co-production the local initiatives all have with their local context.

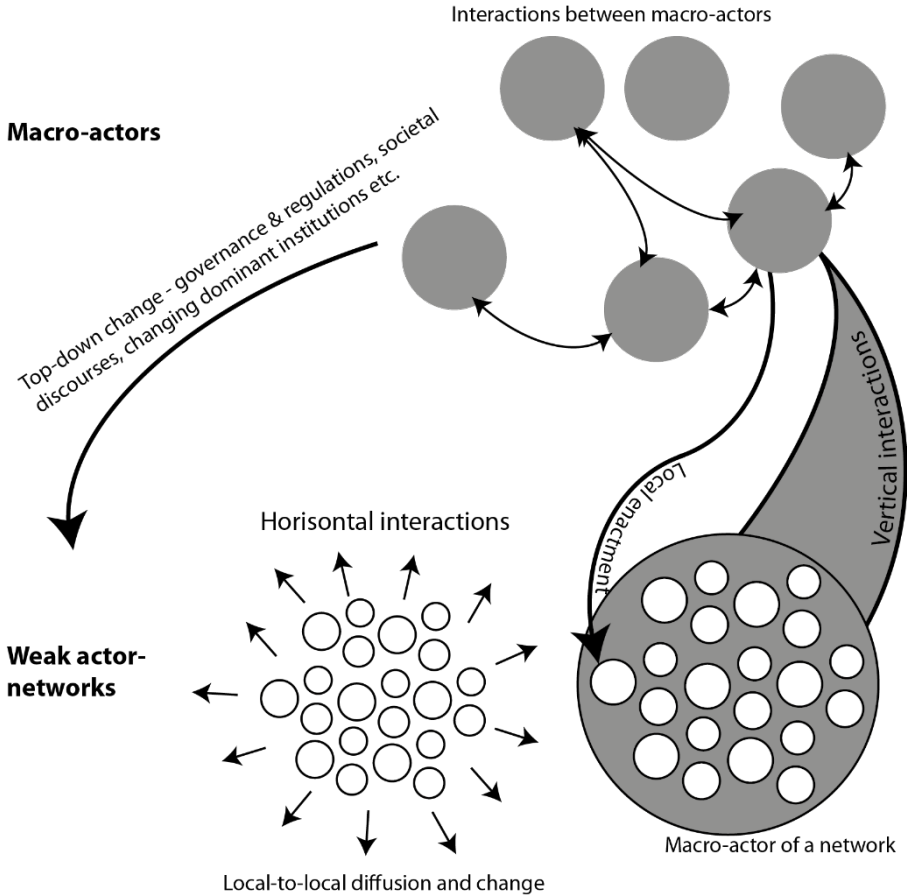


Figure 12.2 – approaches to societal change and transformation

The second mode of societal change, relying on vertical interactions, attempt to interact with directly and have an impact on macro-actors. Like Time Banks that argue they are an alternative to capitalism, Via Campesina that work against modern agriculture to improve conditions for farmers. These networks focus on developing macro-actors that have enough power to interact directly with other macro-actors and thus have an influence on the framework conditions of the local initiatives as explained in article III or implement more extensive changes in society through governance as Basic Income attempts to do. Time Banks for instance successfully negotiated with

the British national tax authorities (a macro-actor) to make service exchange among Time Bank members tax exempt, if certain conditions were met. Living Knowledge have continuously worked with the European Commission (a macro-actor) to establish community-based research and other concepts as black-boxes. So, we have the two basic processes of scaling out horizontally, local-to-local, or scaling up vertically by establishing a macro-actor. Then what does this imply for staging and the process of building actor-networks and macro-actors? The first mode of societal change depends less on macro-actors.

A second pattern emerging from analyzing on the secondary and transversal characteristics across the 20 networks, is when networks are either secondary or transversal but not both. Comparing with the analysis I did in article I, reveal that these networks all themselves comparatively weak macro-actors, like Eco-villages and FabLabs. However, FabLab is a good illustration of a network constructing or contributing to black-boxed concepts that become independent macro-actors. These macro-actors travel around as immutable mobiles (Latour, 1986), resulting in local translations and various manifestations of FabLabs around the world. The idea of an eco-village is also a macro-actor, and like the FabLabs concept with no one really in control. There are as defined by the eco-village network tens of thousands of eco-villages, and only a small minority is related to the network. Eco-villages also actively contribute to other black-boxed concepts like organic food, sustainable consumption, renewable energy, zero-energy housing, etc. These macro-actors then spread horizontally, through local-to-local interactions, unlike when a network successfully constitute itself as a macro-actor giving it enough influence to interact with other macro-actors. This second type of macro-actors that I focus on are constructed through the means discussed in the sub-chapter on resources and objects. Documentation, research, case studies, stories, narratives, given various forms configured into an actor-network can over time become black-boxed and constitute a macro-actor. In practice all our SI networks depend on both types of macro-actors, some network just predominantly builds or contributes to one type over the other. The last aspect I will discuss is the co-productive nature of building independent macro-actors and/or constituting a network as a macro-actor.

The co-productive nature of SI networks

The organizing efforts in our SI networks and the network structures it results in are inherently co-productive in nature. I have throughout this dissertation talked about translocal interactions, because we are talking of local initiatives interacting with other local initiatives without some central organization, or an international HQ, controlling and mediating these interactions, with one or two exceptions. This is what I would call horizontal interactions, as the actor-networks of the local initiatives that are at the same level of power and complexity interact with each other. The founding of Living Knowledge described in article II is a good example, it was local initiatives that in unison created the network, with some vertical interactions with the EU. The BBC story referred in the start of the sub-chapter (Schofield, 2018), and the research by especially Castells (2010), illustrates these co-productive ways to organize horizontally without any clear leadership or structure.

There are two types of vertical organizing. The first type is when and if the networks constitute a macro-actor and a local initiative or network organization act as a spokesperson, enabling interaction with other macro-actors as illustrated in figure 12.2. The second type is if a local initiative enacts macro-actors locally, which is what happens when using brands, logos, labels as described in the resource discussion and in article III. These objects carry the agency and influence of the network. The local initiatives co-produce the infrastructure and the network configuration that enable vertical interactions, which is the topic of this section.

Starting with an example, what is the network configuration of Living Knowledge? Their digital platform and process and practice of writing newsletters and publishing a magazine that keeps everyone in the loop on projects, activities, and potential funding opportunities and maintains relations. The email-subscriber list also acts as an informal member list. Moreover, there is the vast archive of textual, visual & audio objects. These objects act as intermediary objects by setting a framework for a specific activity and focusing views in a certain way when enacted. The objects are thus resources for staging. The archive is then a library of black-boxed actor-networks (like the example of a scientific report above, where the report represents the whole network behind it) suitable for different types of interactions. Then there are the bi-annual conferences that give a physical space that enable sensemaking and maintain relations. Also, the projects that give a more long-term space for configuration work, i.e., developing the network by constructing new objects and relations.

There is no one in control, no one deciding which consortium of science shops apply for which projects, and what the topics should be. The local science shops also continuously conduct projects with local communities, contributing to the agency of the network with the objects that come out of them. Every single Living Knowledge project, and every single local project as well tweaks the framework, focus views in a slightly different way. One of the recent projects on responsible research and innovation brought a significant focus on the students and the impact science shop projects have on them, and by extension on society. Not that students have not always been part of the science shop idea, but the focus has traditionally been on community impact. Living Knowledge is thus continuously co-produced, in an entrepreneurial sense as discussed in article II (Gherardi and Nicolini, 2005), as there is no protagonist to follow here, it is the complex interactions in of ecology of local science shops and community-based research initiatives.

The projects and the rest of the configurations create spaces for a backstage where staging can take place, where the project consortiums form, strategies develop, etc. This process is akin to what has been termed participatory infrastructuring that is “characterized by a continuous process of building relations with diverse actors and by a flexible allotment of time and resources” (Hillgren, Seravalli and Emilson, 2011, p. 180). In these perspective activities and agency are dispersed both horizontally among the involved actors and vertically through layers of what I would call increasingly powerful actor-networks (Bødker, Dindler and Iversen, 2017, p. 266), and as commented by Bødker et al. (2017, p. 268),

These participatory infrastructuring activities often encompass backstage activities such as meetings, phone calls, knowledge dissemination, matchmaking, and networking at various vertical levels of authority.

The relations between local science shops and other interested initiatives criss-cross Europe in a complex tangle of relations, but without the configuration of objects & actors that is the Living Knowledge network, the relations could not be maintained and developed. It is so complex that it cannot be managed, and so vast that no one knows all that is going on. It seems the degree of local autonomy and co-production relates strongly to the type of societal change an SI network practices.

Taking four networks as illustrative examples: Ashoka, Impact Hubs, Living Knowledge, and FabLabs. They illustrate a continuum of organizational formalization and local autonomy. Ashoka is a traditional organizational hierarchy with little local autonomy. The organization owns the local offices and employs the staff. The Ashoka network scales out very slowly, the local rootedness is limited (Pel, Wittmayer and Dorland, 2018), but has a strong macro-actor. Impact Hubs is a member-owned federation with internal governance structures that limits some local autonomy, but with no single actor or local initiative in control. This has limited the potential expansion although it is growing steadily, yet the network and its concept are more stabilized, resulting in a stronger macro-actor. Living Knowledge has no formal governance, or organizational structure, a very informal network, with local autonomy only kept in place through the collective sensemaking process. Initially, it expanded quickly, although in recent decades the movement has faced growing opposition in universities. The Living Knowledge network as a macro-actor is comparatively weak compared to what I called the solid organization in article I (which includes Impact Hubs and Ashoka, among others). Lastly, FabLabs does not even have an unformalized organization encompassing the network; it is instead a movement with several distinct organizations inside it. There is full autonomy for any local FabLabs only limited by potential host institutions and local funders, and unlike the Living Knowledge network, there is no collective sensemaking process. The network is not a macro-actor, but the FabLab concept itself is an independent macro-actor that travels and translates into local contexts, enabling a rapid diffusion of the concept. As illustrated in figure 12.3, there is thus a dimension relating to the degree of formalization of the organizing in SI networks and macro-actor strength in opposition to local autonomy and co-production. These two dimensions of network configurations relate directly to the type of change the networks' practice. As shown in Ruijsink *et al.*, (2017) Impact Hubs, for instance, have shallow local interaction and embedding.

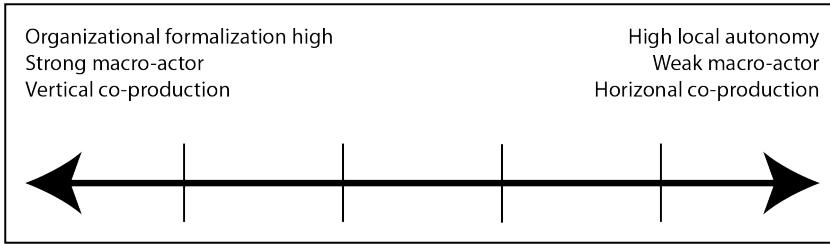


Figure 12.3 – types of co-production depending on configuration types

Horizontal co-production can thus be contrary to the strength of an SI network as a macro-actor, as the black-boxed actor-networks that a macro-actor builds upon depends on stability and high formalization of a network while the local autonomy & conceptual flexibility that horizontal co-production depends on is contrary to high formalization and conceptual stability. Horizontal co-production as seen here keep developing and changing the framing of the concept and network. This flexibility, on the other hand, enables rapid diffusion, as the concept and network can translate to local conditions and take any form. The quote from an impact hub spokesperson in the previous sub-chapter illustrates the dilemma that the spokesperson wants conceptual stability and considers what kind of internal governance can ensure that, while contemplating the potential cost.

Concluding comments on network configurations and modes of societal impact

As already visible from the strategies I identified in article II and discussed in the previous sub-chapter, one of the core features of infrastructure is spaces. Spaces are the context for interactions, without a digital or physical space, no sensemaking and staging can take place. The next core feature is objects. Object that act as carriers for the resources discussed above. However, also, as intermediary objects that help structure interactions by creating frameworks and framing perspectives. The application for founding a science shop analyzed in article II was an intermediary object, it facilitated interactions between the various actors the university. The various symbolic and legitimacy objects helped give the intermediary object enough power. These intermediary objects thus help facilitate a collective sensemaking process with potential partners as well as internally in the network.

So, spaces and objects, and the last core feature is the network configuration and the potential macro-actor it may enable the constitution or construction of. This last aspect is very complex and highly abstract. I often thought of network configurations as infrastructure that see a network configuration as the “as ongoing and open-ended processes grounded around an ecology of cognitive, material, and symbolic resources” (Crabu and Mongili, 2016, p. 18) set in specific configurations to potentially constitute a macro-actor, if a network succeeds in stabilizing the configuration and uses enough black-boxes as a foundation to give it influence. Constituting a network as

a macro-actor can facilitate vertical interactions and impact on other macro-actors, while constructing an independent macro-actor and letting it travel uncontrolled facilitate horizontal interactions, as visualized in figure 12.2. Relating to the discussion of infrastructure is a fruitful future research avenue to further expand upon the nature of network configurations and empowerment (Bødker, Dindler and Iversen, 2017). My concept of network configurations embraces both the idea of participatory infrastructuring that focus on creating organizational structures and like me focus on the horizontal and vertical interactions, and the idea of intermediary devices that help understand interconnected places through materiality (Vinck, 2012).

The macro-actor of Living Knowledge is not strong in either of these aspects, horizontal or vertical co-production, lying in the middle of the dimension in figure 12.3, but it works in the interactions that matter. It is configured to enable interactions with an impact on the research frameworks of the European Commission. It also enables the concept to travel horizontally by giving legitimacy to academics interested in starting science shops locally. However, it does not travel easily, compared to Desis Labs or Fab Labs, and require more active translation work. Saying something more general about our sample of SI networks, they generally have a low degree of formalization & organizing and a high degree of local autonomy.

Conclusion: Foundations and spaces for social innovation

This dissertation has worked in an interesting cross-section between Science and Technology studies, Design studies, Organizational studies, and Social Innovation theory. Most of all it has been a study of organizing and processes among groups of activists, grassroots movements, NGOs, social entrepreneurs, and public institutions. I have seen social innovation as a new paradigm of innovation that focuses on solving social problems or meeting unmet needs as it is often framed, in contrast to the more traditional for-profit innovation paradigm. However, as the definition of social problems and potential solutions is a very normative endeavor (Lawrence, Dover and Gallagher, 2014), I decided to focus on how to empower the networks and local initiatives that work to solve social problems. Thus, I set out to answer **“how can foundations or spaces for social innovation processes be facilitated that enable the agency of practitioners in solving social problems?”**

First evaluating the social innovation working definition I adopted, and my potential contribution to social innovation theory. Despite having worked with and studied innovation for more than a decade, I choose only peripherally to involve innovation studies in my research. As commented by Godin and Vinck (2017) the innovation literature is despite its size surprisingly consistent, and have a bias as seeing innovation as inherently positive, mostly related to economic gain, and a additives process. I thus instead opted to see social innovation as a new paradigm in contrast to the old

innovation-for-profit paradigm, which is an idea mentioned in the literature (Howaldt and Schwarz, 2010; van der Have and Rubalcaba, 2016; Smith, 2017) this field has become characterized by conceptual ambiguity and a diversity of definitions and research settings. This present situation inhibits the integration of findings. This paper traces the content, scope and relatively short history of modern social innovation research across disciplines by applying network and bibliometric analyses, and explores their relevance to innovation studies. Based on data from 172 publications, we analyze scholarly works that directly address the social innovation topic, allowing us to identify the precedence, dynamics and the current map of social innovation research as an emerging field of study. Our analysis suggests that the SI field is grounded in four distinct intellectual communities arising through a somewhat organized diffusion process: 1, but it is not very well developed. This implies not only a focus on solving social problems but also seeing transformative social innovation as a destructive process (Goulet and Vinck, 2017), where how to facilitate the destruction of dysfunctional societal institutions in itself might be innovative. In the end, I did not study these processes of destruction, the societal systems that are partly destroyed to be built anew because I focused on the internal organizing in SI networks and how the local initiatives can be empowered. The destructive activities of social innovation take place beyond this unit of analysis.

My contribution to social innovation theory and the new paradigm is thus strictly on the nature of actors and networks working for social innovation and how to empower them. My contribution, as discussed in this whole chapter, focuses on the three areas of 1) materiality & objects as carriers of empowerment based on my resource metaphor, 2) on how to stage the construction of macro-actors, and 3) the types and potential of different network configurations. I will shortly summarize each, before discussing how the research question was answered, and how my findings contribute to different bodies of research.

1. **The materiality of translocal interactions & empowerment.** Objects are carriers of resources that enable transfer of agency within the networks and thus empower the local initiatives. I constructed an object typology that illustrated how different types of resources and empowerment depends on specific objects and material forms. I combined this with my typology of resources from article IV and illustrated through empirical examples what material and object form the resources take and how local initiatives were empowered. This is the first part of my framework and can as discussed be used as a mental model by practitioners and policymaker. These objects are the building blocks for black-boxed actor-networks and macro-actors.
2. **Macro-actors and staging.** I expanded the macro-concept by going more in-depth with the idea of black-boxing than I did in the articles. The discussion takes outset in the fruitful strategies I developed in article II, that when related to the discussion and theoretical concepts of black-boxing and macro-actor construction, illustrates that **staging is in the context of SI networks essentially about identifying black-boxes that can be enacted and configured into a foundation for a network and spaces for social innovation.** Staging in relation

to SI networks is first and foremost creating a context where the process can take place, on building the stage, on enabling actors & objects of relevance to travel so they can be enacted on the stage. There is thus a process preceding the strategic staging discussed by Clausen in relation to product development in companies (Clausen and Gunn, 2015) that is particular to SI networks.

3. **Network configurations.** This sub-chapter discussed organizational types, the relevance, and impact of co-production and local autonomy, as well as the very nature of SI networks. I argue SI network is a quasi-object, or rather a category of very different organization types interested in SI. **There are mainly two ways SI networks try to have an impact;** it is through **horizontal scaling out by spreading from local-to-local initiative without any central organizing or control**, which could be termed a bottom-up movement. Alternatively, through **a vertical scaling up where SI networks try to impact other macro-actors, like public authorities and societal institutions, and thereby changing the framework condition and facilitate a top-down change.** These modes of societal change of SI networks relate to the dimensions of organizational formalization and the degree of local autonomy & co-production. These dimensions correlate directly with how strong the SI networks are as macro-actors, of if they alternatively construct independent macro-actors beyond their control that in an entrepreneurial way can facilitate a rapid diffusion.

Returning to the research question and the focus on the practitioners. Practitioners are empowered by the resources I have discussed above and in article IV. To enable the travel of these resources a network is needed, which can take many different configurations. Macro-actors of a network are essentially linked to the efficiency of several of the resources, like legitimacy, and for safeguarding a space. Macro-actors also enable impact on society, on other macro-actors. Foundations for SI is thus facilitated by establishing a network, and my framework provides a mental model to reflect on how it can best be configured, which spaces to construct or adopt, which resources are crucial, how to enable their travel through objects, and the nature of macro-actors and how to construct them.

Alpha and omega here is spaces. Spaces are necessary for internal sensemaking and staging, which is also the first step in establishing infrastructure. Spaces and networks are not the same, spaces afford somewhere for a network to meet and interact, although spaces often also depend on a network of actors. Being practical, the first task after finding a space, like a conference or a project, is in developing a core concept for a network and black-boxing it. It is an open question of much control should be kept of the concept, as it can either get its own life and rapidly scale out enabling horizontal interactions, or it can function as the foundation for the SI network as a macro-actor and thus enable vertical interactions. Practically each SI network establishes a range of activities, spaces, and objects, that I have described in my various typologies and discussed above. The straightforward answer to the research question is spaces and staging.

Academic contributions

I have studied the phenomena of SI networks, SI initiatives, and SI from different perspectives, all looking at the same field but from different research traditions. I have tried to retain the complexity of the phenomena through these various approaches, while still building the foundation for a framework that is generally applicable.

The first perspective is materiality and objects from Science and Technology studies. I built upon the object typology of Law & Hetherington (2000), but amended and expanded it to include a more nuanced distinction of the function the different objects have, and that relates to the empowerment of local initiatives. I thus distinguished between three basic types of materiality and inspired by Vinck (2012) the kind of representation and relational aspects each type can denote. Its slightly ironic that Law & Hetherington (2000) accuses ANT of waging war on materiality (I.e., neglecting the material aspects), and I, in the end, adapt their typology in a more relational direction. This typology is well suited to study the trans-local interactions and to organize if social movements, activists, grassroots etc. A group of actors that has seen scant attention in STS-journals that do not have any research on social innovation either.

Another contribution is to macro-actor theory, also related to STS. I would categorize macro-actor theory as a type of ANT or ANT-inspired organizational theory. While the macro-actor literature spans several decades, the amount of research and publications is sparse with Czarniawska-Joerges and Hernes (2005) being one of the only comprehensive sources. Macro-actors, as discussed in several publications, represent the many and traces of how they are formed are wiped out over time (Feldman, 2016). However, I have focused on the early formation of macro-actors and adapted the concept to a more action-oriented approach, giving practitioners and policymakers a mental model to understand and build macro-actors, hopefully enabling them to understand their significance. I identified different types of macro actors, as seen in figure 12.2, notably networks as macro-actors that local initiatives can enact as spokespersons or independent macro-actor that can travel and diffuse the concept and idea behind a social innovation. I also made a direct relation between macro-actors and materiality and object types, making the framework more actionable.

In relation to social innovation literature, this is the first major, and maybe the only, publication that takes a direct material focus on social innovation processes. I have only peripherally looked at the social innovation process related to societal change and instead focused on the organizing and empowerment of networks dedicated to social innovations. Some of these networks are in themselves social innovation, like Living Knowledge. In either case, my dissertation shows that a materiality is a relevant approach to studying SI, which hopefully can have practical significance as the foundation of a framework that can be used for reflection and understanding.

I also contributed to organizational theory. Few if any have taken an organizational process perspective on geographically dispersed networks without formal organizational structures. Here the affordances of the materiality of objects that carry resources are essential in stitching together these networks. Earlier approaches in studies of social movements have been based more within political science and traditional sociology

(McAdam, Snow and McAdam, 2010), although some of these streams also take up the distributed nature of modern social movements (Moghadam, 2012; Smith, Plummer and Hughes, 2017), none of them takes an STS perspective. I found Castells (2010, 2015) to be the most relevant of the researchers related to social movements, and his work on the implications of new media and communication technologies on social movements inspiring, but in the end, I took out my discussion of Castells work from article IV due to length constraints. My contribution as an extension on Castells work show the new types of network configurations that new communication technologies and media affords.

Lastly, I have contributed to staging theory (Clausen and Yoshinaka, 2005, 2007; Clausen and Gunn, 2015). Staging theory is an interesting intersection of design studies, STS, and a political process perspective. It takes inspiration from many areas and turns it into an actionable framework for political navigation in the area of design and innovation. I took inspiration from staging theory due to this focus on action, and further enhanced it with inspiration from symbolic interactionism, notably sense-making, that bring more focus to the collective social processes of finding meaning and creating action-nets.

There are many other perspectives and research areas I have touched upon in one of the articles or the project deliverables, like action-nets, but the five areas above is where my main contributions lie.

Perspectives on further research

This thesis took a particular approach to study social innovation, focusing on the organizing and empowerment of the networks that try to develop social innovation, and not studying the impact of social innovation networks. I thus do not advise how to solve specific social problems. This choice was partly made due to the gap I perceived in the social innovation literature, and the restrictions the type of empirical data I had access to placed on me.

A further path of inquiry would be to study the types of impact, of societal transformation, that the different network configurations and macro-actors I have identified can have. Currently, it is based on a range of assumptions that the networks we studied do have an impact on societal transformation, and I think the assumptions are quite well-founded, but there is no structured inquiry into what kind of transformations and how they take place. Especially the destructive aspect of social innovation is interesting, taken the current challenges in the world in relation to a sustainable transition, we need to understand how dysfunctional systems can be partly and gradually dismantled.

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ISSN (online): 2446-1628
ISBN (online): 978-87-7210-362-4

AALBORG UNIVERSITY PRESS