



AALBORG UNIVERSITY
DENMARK

Aalborg Universitet

Social innovation as spaces for co-creation

Jørgensen, Michael Søgaard

Creative Commons License
Unspecified

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):
Jørgensen, M. S. (2018). *Social innovation as spaces for co-creation*. Center for Design, Innovation og Bæredygtig Omstilling.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- ? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- ? You may not further distribute the material or use it for any profit-making activity or commercial gain
- ? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Social innovation as spaces for co-creation

Michael Sjøgaard Jørgensen, Department of Planning, Aalborg University, A.C. Meyers Vænge 15, 2450
Copenhagen SV, Denmark
E-mail: msjo@plan.aau.dk

Content:

1	Introduction.....	1
2	Agency and dynamics in transformative social innovation.....	2
3	Observations from the TRANSIT case studies	4
4	University-based science shops as spaces for co-creation.....	6
4.1	Impact of science shops on research	7
5	Contribution to theory development about transformative social innovation	8
5.1	The role of translation and co-production processes	9
5.2	The role of intermediary organisations within different domains	9
5.3	The role of co-design of new knowledge and practices	10
6	Further development of the co-creation space as perspective on social innovation	10
7	References	11

1 Introduction

The following is based on analyses done in the TRANSIT project (Transformative Social Innovation Theory) about the role of co-creation in social innovation as part of the theory development in the TRANSIT project (Haxeltine et al, 2017). It was observed in the project that several social innovation (SI) initiatives can be characterised as ‘co-creation spaces’ that facilitate the development of new knowledge and practices, both within and across the boundaries of state, market and civil society. The spaces are co-produced over time in interaction with existing institutions and contribute to empowerment through creation of shadow provision systems, enhanced knowledge resources, and civil society participation in new governance structures. The paper gives an overview of spaces for co-creation as social innovation and presents university-based science shop as a specific example.

2 Agency and dynamics in transformative social innovation

The inspiration for this analysis comes from the observation that several of the SI initiatives analysed in the TRANSIT project are based on creation of spaces for cooperation between actors; i.e. a science shop and a DESIS Lab is a space, which organises university researchers' and students' cooperation with civil society. The knowledge developed within such spaces can sometimes be characterised as developed together by university actors and civil society actors. It is not just university researchers disseminating their research findings to civil society actors. Furthermore, the cooperation can empower both the civil society actors and the university actors. The university actors can argue for new fields of research and education with reference to civil society's knowledge needs, and civil society actors can influence societal development based on documentation of problems or new ideas developed through the cooperation. These observations led to a more thorough analysis of different types of social innovations organised as spaces for development of new knowledge and practices with respect to the purposes of the spaces, the involved actors and the roles of the spaces in empowerment processes. We call these spaces 'co-creation spaces' in order to emphasize the networking among actors within the space. This networking can include both development of **new** knowledge and practices, like the design of a new facility in an eco-village, and joint activities as part of the day-to-day activity of the 'co-creation space', like the daily food production in an eco-village. These co-creation spaces can be seen as creation of a co-creation capacity.

The term "co-creation" is often referred to as developed by Ostrom (1996), who understood co-creation as a process "...where inputs used to produce a good or service are contributed to individuals who are not 'in the same organisation'". Ostrom (1996) used the term "co-production" about such relations across organisations or between different types of actors, when she analysed the interactions between state actors and civil society actors in public services and wanted to emphasise that public services should not be seen as service provision but as a co-produced service building on cooperation between a public institution and citizens. The terms "co-creation" and "co-production" are often used in interchangeable ways about the same processes by different scholars (Voorberg et al, 2015). Ostrom's understanding of co-production is different from the understanding of co-production developed by Jasanoff et al (2004), who more focuses on the on-going, long-term dynamics of co-shaping of scientific ideas and beliefs and associated technological artefacts in interaction with the representations, identities, discourses, and institutions that give impact and meaning to the ideas and objects. Often the two strands of literature are not referring to each other.

Since the term co-production in TRANSIT mostly was used about the on-going interactions between social innovation actors and dominant institutions, the term 'co-creation spaces' is used about the processes **within** the identified spaces and co-production is used about the dynamics over time, which give impact and meaning to these 'co-creation spaces'.

A number of types of co-creation spaces, with different objectives and different organisational characteristics and involving networking among different actors, were identified through the analyses of the TRANSIT case studies. Six types of co-creation spaces are in the following characterised by the **actors** who are involved, the **activities** the actors carry out within the space and the **resources** the actors get access to or develop together through the space. This typology is inspired by (Håkansson & Snehota, 1995) and their concept for analysis of networking between organisations:

- Spaces organised as **housing facilities** with cooperative ownership: eco-villages and co-housing

- Spaces organised as **physical and virtual facilities which can be shared**, like Fab Labs, Hacker Spaces and Impact Hubs, and organised around different schemes of users and members and facilitated by professional managers and staff. Sometimes co-design activities are part of these spaces.
- Spaces organised as **co-creation of service**: time banks facilitating exchange of time as a resource and credit unions facilitating exchange of money (capital) as a resource.
- Spaces organised as an **intermediary actor** beyond the triad of producer, user and regulator (Guy et al, 2011) and sometimes co-designing production and consumption. These spaces are often organised within areas of sustainable resource management, including food and energy, and organised around secretariats with staff and/or volunteers providing services for members and/or for the general public.
- Spaces organised around **co-design of knowledge and practices**, like science shops and DESIS Labs, which often have universities or other higher education institutions - and their teachers and students - as the organiser of the space and targeting civil society or local communities. Also living labs are spaces for co-design of knowledge and practices.
- Spaces organised as a **public governance structure** spanning the boundaries of civil society and the state (local government): Participatory Budgeting and also in some other types of social innovation where local government participates.

Several of the identified spaces have a local focus and are developed by and targeting local or regional actors, e.g. eco-villages, and the local branches of the international Transition Network and of the international Shareable network. The concept of 'co-creation space' is not just referring to the daily sharing of a physical facility like in the secretariat of an agro-ecology initiative. The focus in the concept 'co-creation space' is on the creation of a physical and/or virtual space where actors interact, like when farmers and agricultural advisers together develop knowledge about how to do agro-ecology farming. However, sharing of physical facilities might enable formation of a co-creation space, like in the so-called Impact Hubs (see for example <https://impacthub.net/>).

The analyses of the co-creation spaces have identified processes of empowerment on the collective level of civil society actors. Three mechanisms of empowerment across the different types of co-creation spaces were identified:

- **Creation of shadow (alternative) provision systems**, where SI initiatives provide services parallel to existing public or market-based systems whereby civil society actors can shape provision systems according to their values and needs. E.g. through eco-villages, co-housing, time banks, and the seed movement.
- **Enhanced knowledge resources enabling civil society actors to utilise existing governance structures for influence on societal development**, e.g. enabled by using knowledge developed through cooperation between science shops or DESIS Labs and civil society in negotiations with other actors, like local government or local businesses, about mitigation of problems.
- **Improved civil society influence through new governance structures** within participatory budgeting and sometimes also based on local government's cooperation with or participation in spaces like living labs, Shareable, Transition Network, and DESIS Labs

3 Observations from the TRANSIT case studies

The table underneath is organised in accordance with the six types of co-creation spaces described in the previous section and gives an overview of the case studies carried out in the TRANSIT project within each type of co-creation space (see <http://www.transitsocialinnovation.eu/discover-our-cases-2> for case study reports). Furthermore, the table provides an overview of the activities and the type of empowerment processes within each case. Within 17 of the 20 TRANSIT case studies a type of co-creation space has been identified as core to the type of social innovation, which ease of the case study focuses on. Within the cases of Basic Income, Ashoka and RIPESS a co-creation space does not seem to be part of the social innovation they analyse.

Table: Social innovation initiatives with formation and use of spaces

Type of space	TRANSIT case	Characteristics of activities within the space	Aspects of empowerment
Housing facilities	Global Ecovillage Network	Local spaces and physical places for creation of facilities and services among residents	Building shadow systems for local social and economic development
	International Co-operative Alliance (Co-housing)	Local places and spaces providing and enabling facilities and services in housing communities	Empowerment through development of local affordable housing
Physical and virtual spaces for sharing	Hackerspaces	Spaces for exchange of experiences and knowledge development among peers	Development of shadow systems for knowledge development and exchange
	FabLabs	Public or private places with facility sharing among users	Empowerment of individuals through access to equipment that is be too expensive and too complex to buy for an individual
	The Impact Hub	Local spaces for facility sharing and local and virtual platforms for knowledge sharing which in some cases include co-design of knowledge among individual entrepreneurs	Empowerment depends on the focus of the activities enabled through use of a hub as a co-design place and space
Spaces for co-creation of service	Time Banks	Spaces for development and exchange of resources among the involved actors through the specific local interactions	Improving social conditions of actors involved in this kind of shadow exchange system
	Credit Unions	Spaces for exchange of capital between actors with deposits and actors in need of loans	Credit union financing might enable financing of civil society activities that might not otherwise

			have been able to obtain economic support
Intermediary actors co-designing production and consumption	Transition Network	Local spaces for creation of plans and new practices among citizens, civil society organisations and sometimes local government	Enabling local sustainable development through collective plans and changes
	INFORSE	Local and national spaces for cooperation among citizens and sometimes with local government about sustainable energy transition	Enabling development of sustainable energy provision and consumption systems
	Slow Food	Spaces for creation of changes in local food provision and knowledge hereabout	Influencing local food provision systems through creation of linkages among practitioners or between practitioners and citizens
	Via Campesina	Spaces for creation of strategies and knowledge for small-scale agro-ecology farming	Empowerment of small farmers through formation of social movement
	Seed movement	Spaces for cooperation about seed sharing among citizens	Protection of traditional sharing practice through formation of social movement
	Shareable Network	Local spaces and platforms for development of plans for new local practices among citizens, civil society organisations and sometimes local government	Some initiatives influence local development through cooperation with local authorities. Some initiatives influence local development through development of shadow systems
Spaces for co-design of knowledge and practices	Living Knowledge Network	Spaces for knowledge production in cooperation between researchers, students and civil society	Development of scientific knowledge about civil society problems and possible solutions. Building on empowerment through scientific knowledge
	DESI-network	Spaces for cooperation between university and local community about local development projects	Development of knowledge about problems and solutions. Building on empowerment through development of local capability
	Living Labs	Spaces and places for cooperation among different actors about development and test of solutions	Might include element of governance innovation, depending on the connection to different systems of public and private decision-making. Empowerment of civil society unclear.

Spaces for public governance	Int. Obs. for Part. Democracy	Spaces for dialogue among citizens and between citizens and local government about local public budgeting	Governance innovation enabling citizen participation in local public budgeting
-------------------------------------	-------------------------------	---	--

4 University-based science shops as spaces for co-creation

This section gives an overview of science shops as a space for co-creation between university and civil society. The science shop concept was developed in the 1970s at Dutch universities as a way to democratize science and technology. The science shop concept was a response to a growing demand at that time from citizens and CSOs, as well as left-wing student activists and university researchers, to give citizens and civil society organisations (CSOs) a voice as well as access to and impact on scientific and technological knowledge (Brodersen, 2010). The science shop model challenges the traditional orientation of science and knowledge development (Wachelder, 2003; Dickson, 1984; Farkas, 2002). Since the 1970s, science shops have been developed in several European and non-European countries, aiming at democratizing science by providing a space for interactive dialogue between citizens and/or CSOs and scientific institutions, most often universities. The principle behind the concept is to offer free or low-cost access to scientific and technological knowledge and research resources to citizens or CSOs in order to develop capacity within their organizations to tackle social and environmental challenges or other types of problems experienced by CSOs (Jørgensen et al., 2004).

Science shop users can be of various types, from local citizen groups to larger NGOs. Some science shops even accept requests from SMEs (Small and Medium-sized Enterprises) and local authorities – although this differs from the original idea behind science shops when they were developed in the 1970s in the Netherlands.

The conditions of the involved actors and their understanding of research and scientific knowledge shape the knowledge production in science shop. In some cases, existing knowledge is transferred to a CSO by the science shop as *knowledge transfer*; in other situations, which can be characterized as *knowledge supply*, scientists and/or students produce new knowledge, which is then transferred to the CSOs. Knowledge production can also take place as participatory knowledge production or *knowledge co-production*, i.e. knowledge is produced through a mutual process between the CSO, scientists and/or students and science shops. This form of knowledge production implies that lay people’s knowledge is considered just as important as scientific knowledge (Jørgensen et al., 2004).

Science shops can have many benefits for higher education curricula and university research, which can be seen as co-creation of education and research between civil society and university researchers.

The benefits for higher education curricula are (Mulder et al, 2006):

- Providing case-examples in established courses
- Projects in established courses
- Projects as part of curriculum
- Theoretical and/or methodological courses
- Restructuring curricula

4.1 Impact of science shops on research

The different ways that science shops can influence university research are:

- An antenna or even as an incubator for a new research theme
- An incubator for a new research theme
- Impact on research from funding of science shop research
- Impact on research through researchers' interest in new fields

They can change or add to the focus of the research agenda and they can create dialogues in research. Science shops introduce participatory research methods and some even develop into a participatory research centre (Hende and Jørgensen, 2001). We will highlight some of these processes.

The science shop as antenna for new research fields

An example from the science shop for pharmaceuticals in Groningen illustrates the antenna function of the science shop, in which emerging themes led to a new research field. Several small questions on medicine use in the tropics, posed by an NGO, led to two larger PhD projects. Many individual questions on medicine use during pregnancy led to an entire new research field at the Pharmacy Department, including the appointment of a full professor. In the Chemistry Shop Groningen, various questions on comparison of "green" production routes to chemical production routes led to a research program on sustainable agricultural routes to chemical compounds, organised by the Chemistry Shop Groningen with the Ministry of Agriculture, NGOs and Industry. This type of impact was reported by about one quarter of the science shops responding the survey in the SCIPAS project (Hende and Jørgensen, 2001).

The science shop as incubator for new research fields

If a science shop has scientific staff employed, the science shop has the possibility to develop new research areas, although there might not be interest among the scientists at the university departments. Experience from the former Danish science shop at The Technical University of Denmark (DTU) has shown that science shop projects can lead to the establishment of new research and teaching areas, like in a case about organic food. Several requests from NGOs through the Science Shop at DTU led to the development of organic food as a research and teaching area at DTU. This development was a co-shaping over time among different stakeholder groups, the societal development in organic food, the science shop and its researchers and the food science researchers at the university (Hende and Jørgensen, 2001).

At the Centre for Urban Research and Learning at Loyola University (CURL) in the US, a grant from the U.S. Department of Education allowed CURL to establish a participatory evaluation research collaborative in response to needs identified by CURL's community-based partners (Hende and Jørgensen, 2001). The collaborative initiative was based on CURL's team-based model of participatory evaluation research. Faculty, graduate students, undergraduates, community fellows and community organisation staff are involved in shaping and completing all stages of research from conceptualisation of the issues to be studied to the writing of the final report.

Impact on research from funding of science shop research

One way of getting impact on the research agenda is through access to funding for science shop based research. One of the schemes that existed for quite a long time is at Tilburg University in The Netherlands (Hende and Jørgensen, 2001). In May 1984 it was decided that the university would make funds available for the Science Shop of Tilburg University, which would enable the Science Shop to finance long-term research projects. These projects should make scientific research at Tilburg University more committed to the needs of society. In the first years after 1984 the Science Shop allocated most money to projects, which had a duration of one or two years. From the end of the 1980'ies most of the money was spent on co-funding with university departments in Ph.D. projects. Furthermore, some money were used for 6-month preliminary investigations that should lead to proposals for Ph.D. projects (Hende and Jørgensen, 2001)

Impact on research through researchers' interest in new fields

Researchers at scientific departments can also be actors – without funding – in embedding science shop topics in research (Mulder et al, 2006). An investigation from the mid 1980's of the spin-off from 10 years of 162 science shop projects in the Amsterdam science shops analysed the impact from science shop projects on the research agenda and showed that this impact was bigger than from conventional research activities (Zaal and Leydesdorff, 1987). For those not pursuing follow-up activities the reasons found were:

- The problem did not match with the focus of the researcher;
- The problem was too narrow;
- The problem was too familiar and did not give new scientific challenges;
- Lack of time for doing follow-up activities;
- The problem was not a more basic research question

Among researchers taking up projects for scientific reasons, the motivation was in some cases the possibility to get access to data that normally would not be accessible, like studying personal dossiers or doing participant observation. In a few cases the researchers had reformulated the question as part of taking up the science shop project.

The development of research on so-called green water management (local waste-water treatment and on use of rain water) at the Technical University of Denmark is an example of a researcher and teacher within an established field of research and teaching, who developed a new field of research and teaching in co-operation with a science shop. This researcher's involvement was based on a combination of scientific and social interest.

5 Contribution to theory development about transformative social innovation

The analyses of co-creation spaces contribute to theory about transformative social innovation with identification of six different types of co-creation spaces, which themselves are social innovations, as described in the previous section. By understanding and describing these different initiatives as co-creation spaces these analyses contribute to theory development about transformative social innovation. The contribution to theory development about transformative social innovation can be summarised as described in the following paragraphs.

5.1 The role of translation and co-production processes

From a relational perspective, the shaping of different types of co-creation spaces can be characterised by translation processes with different obligatory passage points (Callon, 1986) and different boundary objects (Star & Griesemer, 1989), which shape each type of space and facilitate interactions within the space. The case study about science shops in Denmark shows how this type of space for university – civil society cooperation is based on translation of civil society’s knowledge needs into knowledge needs, which are suitable for research and education and how this kind of space can contribute to reciprocal empowerment of university researchers and civil society. The case study about eco-villages shows how the specific eco-village is shaped in interaction with the local municipality and other local actors (Jørgensen et al, 2016).

Ostrom’s perspective on co-creation of public services was an effectiveness perspective on co-creation, but within the literature about co-creation Ostrom’s perspective has been added a democracy perspective, sometimes referred to as New Public Governance (Pestoff, Brandsen, & Verschuere, 2012), which could be seen as the type of perspective related to a social innovation like participatory budgeting.

The analyses of the case studies show that a co-creation space not necessarily get stabilised, understood within an actor-network theory perspective (Callon, 1986). The objectives of a co-creation space and the roles of the involved actors should be seen as co-produced over time in interaction with other actor and institutions. The case study about science shops show how a Danish science shop was co-produced overtime in interaction with changes in the societal roles of the university and of different types of civil society organisations (Jørgensen et al, 2016). Similarly, the case study about the Danish branch of the sustainable energy organisation INFORSE shows how an intermediary organisation has been able to - but also was forced to - co-produce its roles and activities in interaction with sustainable energy transition in Denmark where renewable energy and energy savings have been mainstreamed as elements in the national energy system and as profitable investment areas. Also the Participatory budgeting case study shows examples of such co-production over time of a co-creation space (Jørgensen et al, 2016).

5.2 The role of intermediary organisations within different domains

As indicated in the table the TRANSIT case studies include two different types of intermediary actors:

- Local branches of a social movement, like INFORSE and its local energy offices, Via Campesina and its agro-ecology family farming organisations, Slow Food and its local and regional chapters, and organisations within the seed movement like the Seedy Sunday events
- Local branches of the Transition Network and the Shareable Network focused on sustainable urban development

Intermediary organisations within sustainable urban development are well described in the literature (see for example Guy et al, 2011). However, the TRANSIT case studies contribute with examples of intermediary organisations within other fields of sustainable natural resource management, like renewable energy, Slow Food and seed exchange, which could contribute to further development of the theory about intermediary organisations. The role of co-creation spaces based on intermediary actors are characterised by Smith & Stirling (2016) as contributions of grassroots to innovation democracy based on more democratic innovation practices and based on innovations that support citizens and activities, which contribute to wider democracy.

5.3 The role of co-design of new knowledge and practices

One aspect of the middle-range theory concerns the role of co-design of knowledge between different types of actors involved in a co-creation space, where co-design of knowledge is different from knowledge transfer or knowledge provision, like dissemination of knowledge from a university to civil society (Jørgensen et al, 2016). The case study about science shops in Denmark shows the importance of awareness about co-design of knowledge in cooperation between academic actors and civil society actors within this type of space (Jørgensen et al, 2016). This type of co-design processes characterises several of the co-creation spaces (besides science shops also DESIS Labs, living labs and it might also be part of the development of guidelines and advice about agriculture practice in Via Campesina). The knowledge developed in TRANSIT about such co-creation spaces contributes to the field of participatory action research and its concept of “collaborative forms of action inquiry” (Heron & Reason, 1997). The co-design of knowledge in co-creation spaces like Fabs Labs and Hacker Spaces contributes more to the development of knowledge about some new types of communities of practice (Wenger, 1998).

6 Further development of the co-creation space as perspective on social innovation

Further analyses could include an analysis of the co-creation of the activities within shared facilities like Fab Labs and Hacker Spaces and to what extent knowledge is co-created within these spaces, to what extent the services are co-designed through interactions between users of the spaces and to what extent and how they are empowering involved actors (Smith, 2017).

A part of the co-creation literature focuses on co-creation of value propositions in cooperation between suppliers and customers in business value chains (Voorberg et al, 2015). Further analyses of time banks and credit unions might benefit from theories about value co-creation in customer-supplier interactions. In a Jasanoffian perspective on co-production, national similarities and differences within the same type of co-creation space could contribute to further development of this aspect of the middle-range theory. In Jørgensen et al (2016) similarities and differences within a number of social innovation initiatives are identified, including the differences in time banks in the UK and Spain, science shops in Denmark and Romania and the energy movement in Denmark and Flanders. In a further development of the perspective on social innovation these national similarities and differences could be analysed in depth.

Bovaird and Toeffler (2012) mention that a barrier to a co-creation space that involves boundary work across the boundaries of civil society and government might be civil servants’ “political and professional reluctance to lose status and ‘control’”. Further research of co-creation spaces involving governmental actors like participatory budgeting and living labs could develop this dimension of such co-creation spaces further, including whether and how this reluctance influences empowerment of civil society actors participating in the co-creation spaces.

7 References

- Bovaird, T. & Leoffler, E. (2012). From Engagement to Co-production: The Contribution of Users and Communities to Outcomes and Public Value, *Voluntas*, International Society for Third-Sector Research and The Johns Hopkins University, DOI: 10.1007/s11266-012-9309-6
- Brodersen, S. (2010). *The Making of Citizen Science – Network Alliances between Science Shops and CSOs Engaging in Science and Air Pollution*. Department of Management Engineering. DTU. June 2010. PhD. Dissertation. ISBN: 978-87-90855-99-4.
- Callon, M. (1986). Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay. In John Law (ed.), *Power, Action and Belief: A New Sociology of Knowledge*, London: Routledge & Kegan Paul
- Dickson, D. (1984). Science Shops Flourish in Europe. *Science, New Series*, Vol. 223, No. 4641. Pp. 1158-1160. American Association for the Advancement of Science.
- Farkas, N. (2002). *Bread, cheese and expertise: Dutch science shops and democratic institutions*, PhD thesis, Rensselaer Polytechnic Institute, Troy, NY.
- Guy, S., Marvin, S., Medd, W. and Moss, T. (2011). *Shaping urban infrastructures: intermediaries and the governance of socio-technical networks*, Routledge
- Haxeltine, A., Pel, B., Dumitru, A., Kemp, R., Avelino, F., Jørgensen, M.S., Wittmayer, J., Kunze, I., Dorland, J., and Bauler, T.. (2017). TRANSIT WP3 deliverable D3.4 – consolidated version of TSI theory Deliverable no. D3.4 (online at <http://www.transitsocialinnovation.eu/content/original/Book%20covers/Local%20PDFs/272%20TRANSIT%20D3.4%20Consolidated%20version%20of%20TSI%20theory.pdf>)
- Hende, M. and Jørgensen, M.S. (2001). The impact of science shops on university curricula and research. Study financed by the EC-DG Research, SCIPAS report no. 6
- Heron, J and Reason, P. (1997). A Participatory Inquiry Paradigm, *Qualitative Inquiry* 1997 3: 274
- Håkansson, H. and Snehota, I. (1995). *Developing relationships in business networks*. London: Routledge.
- Jasanoff, S. (2004). Ordering Knowledge, Ordering Society in Jasanoff, S. (ed.), *States of Knowledge*, pp. 13-45.
- Jørgensen, M.S.; Hall, I.; Hall, D.; Gnaiger, A.; Schroffenegger, G.; Brodersen, S.; von der Heiden, K.; Reimer, R.; Strähle, M.; Urban, C.; Endler, W.; Teodosiu, C.; Rojo, T. and Leydesdorff, L. (2004). *Democratic Governance through Interaction between NGOs, Universities and Science Shops*. The Final Report of INTERACTS. Contract No. HPV1-CT-2001-60039, 309 pp.
- Jørgensen, M.S., Avelino, F., Dorland, J., Rach, S. and Wittmayer, J. (2016). Synthesis across social innovation case studies, TRANSIT deliverable 4.4, Part 1
- Mulder, H.; Jørgensen, M.S.; Pricope, L.; Steinhaus, N. and Valentin, A.: *Science Shops as Science-Society Interfaces*. In: Pereira, Â. G.; Vaz, S.G. & Tognetti, S. (eds.). *Interfaces between Science and Society*, Greenleaf Publishing, Sheffield; UK, 2006, pp. 278-296
- Ostrom, E. 1996. Crossing the Great Divide: Co-Production, Synergy, and Development, *World Development* 24 (6): 1073–1087, DOI:10.1016/0305-750X(96)00023-X
- Pestoff, V. (2012). No Title. In V. Pestoff, T. Brandsen, & B. Verschuere (Eds.), *New Public governance, the third sector and co-production*. London: Routledge (pp. 13–34). London and New York: Routledge, part of the Taylor & Francis Group.
- Smith, A. and Stirling, A. (2016). *Grassroots Innovation and Innovation Democracy*, STEPS Working Paper 89, Brighton: STEPS Centre
- Smith, A. (2017). *Social innovation, democracy and makerspaces*, SPRU Working Paper Series· June 2017 (SWPS 2017-10)

- Star, S.L. and Griesemer, J. (1989) Institutional ecology, "translations," and boundary objects: Amateurs and professionals on Berkeley's museum of vertebrate zoology. *Social Studies of Science* 19(3), 387–420.
- Voorberg, W. H., Bekkers, V. J. J. M. and Tummers, L. G. (2015) A Systematic Review of Creation and Co-Production: Embarking on the social innovation journey, *Public Management Review*, 17(9), 1333-1357
- Wachelder, J. (2003). Democratizing Science: Various Routes and Visions of Dutch Science Shops. *Science, Technology & Human Values*, Vol. 28, No. 2. Sage Publication, pp. 244-273.
- Wenger, E. (1998). *Communities of practice: learning, meaning, and identity*, Cambridge University Press
- Zaal, R. and Leydesdorff, L. (1987). Amsterdam Science Shop and Its Influence on University Research: The Effects of Ten Years of Dealing with Non-Academic Questions. *Science and Public Policy*, 14, no. 6, 1987, p. 310-16.