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EMERGING PLACES OF SOCIAL INNOVATION (POSI):

A CONCEPTUAL FRAMEWORK FOR SOCIAL INNOVATION IN CITIES

Nicholas Ardill[a], Fabiano Lemes de Oliveira[b]

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Abstract

Social innovation is recurrently positioned as an important collaborative element in helping cities to transition and address human needs and societal challenges to enhance the health, wellbeing, and welfare of citizens. To address a call for more sector-specific research on the spatiality of social innovation, and also further understanding of the process dimension of social innovation, this article presents a conceptual framework of the process of social innovation. By combining social innovation insight from process theories and urban spaces discourse the article indicates that of social innovation in the co-production of space can be grouped into four major processes: 1) Identification of human needs or societal challenges to sustainable development; 2) Development of social relations in systems or structures; 3) Provision of opportunity for social empowerment; 4) Reflection of socio-spatial development practice. Applying this framework, the article examines how productive green infrastructure emerges in the urban landscape as a Place of Social Innovation (POSI).

Keywords

Social innovation, co-production of space, places of social innovation, productive green infrastructure, healthy cities

a (Corresponding author) School of Architecture, University of Portsmouth, Eldon Building, Winston Churchill Avenue, Portsmouth, PO1 2DJ, UK. E-mail: nicholas.ardill@port.ac.uk

b Dipartimento di Architettura e Studi Urbani (DAStU), Politecnico di Milano, Via Bonardi 3, Milan, 20133, Italy. E-mail: fabiano.lemes@polimi.it

1. Introduction

Contemporary cities need to find more effective and efficient solutions to the societal challenges of climate change, immigration and demographic changes, inclusive public spaces, inequality, and healthcare (BEPA, 2011; European Commission, 2013; Frank, 2017). The field of innovation studies is well-placed to contribute to debates on urban transitions to tackle such challenges, but only when it considers the role of human agency in transforming built environments towards sustainable development (Geels and Schot, 2016). Presently, there is renewed attention on the role of social innovation in sustainable development, especially around how cooperation and participatory approaches to spatial development can build capacity for change (Ardill and Lemes de Oliveira, 2018).

There exist multiple meanings of the term 'social innovation' though it is broadly understood to encompass 'innovative activities and services that are motivated by the goal of meeting a social need' (Mulgan, 2006, p.146). In terms of collaborative approaches to addressing needs, participatory forms of urban growing have been emphasised in the search for socially innovative solutions to the social, economic, and environmental challenges of changing cities, whilst civil society and institution instigated growing projects have multiplied in recent times (Cunk et al., 2017). This socio-spatial process is reshaping urban landscapes, experimenting with alternatives to capitalist formations of urban environment (Harvey, 2012), and co-producing public spaces as sites of productive green infrastructure (Rosol, 2012). As a consequence, Places of Social Innovation are emerging in the urban landscape as a result of the co-production of space between multilevel stakeholders. The term 'Place of Social Innovation (POSI)' is defined here as the place-based process of urban change that takes place in the collaborative planning, design and delivery of public infrastructure that is both physical and social.

It has been argued that the process of social innovation performs a significant role in helping to integrate participatory mechanisms into urban decision-making processes, thereby increasing the social inclusion of disadvantaged groups, whilst also enhancing the resilience of urban areas and communities (Moulaert et al., 2005, 2010; Mehmood, 2016). Nevertheless, there have been few studies on the process dimension of social innovation that have investigated common patterns or aggregated learning (Mulgan, 2006), especially how it is 'designed, diffused and supported' (Caulier-Grice et al., 2012, p.33). Further research on social innovation spatiality is required to comprehend dynamics in social and urban change (Moulaert and Mehmood, 2011). This article contributes to the understanding of the social innovation process in the co-production of urban spaces. The article considers the topic of social innovation, and how participatory and collaborative processes may support the development of planning principles linked to healthier, more equitable built environments.

The article is based on a recently completed research project on 'Emerging Places of Social Innovation (POSI)' in which social innovation processes were analysed in the co-production of spaces across two cities in the United Kingdom. The six empirical case studies, three in each city, focused on different organisational levels of urban agency, innovation patterns, and the influence of contextual forces from micro to macro spatial scales. Through a cross-case comparison of the six cases, the conceptual framework proposed was tested and advanced by distinguishing and accounting for patterns of key processes. An openness to multi-directional movement was found to be important for social innovation processes, while shifting contexts suggested that key processes are potentially irregular and fluid depending upon circumstance. A case study from the project is presented in depth within this article in order to illustrate the primary characteristics of the proposed framework.

The structure of the article is as follows: Section 2 reviews current knowledge on the process of social innovation. In Section 3, a process framework is constructed for understanding social innovation in the co-production of space, which considers the various cooperative inputs that are necessary or possible from innovation participants. The research methodology based on multiple-case studies and process analysis with narrative explanation is outlined in Section 4, while an overview of a case of emerging POSI is presented in Section 5 using the proposed framework. Section 6 concludes the article with a summary and some final remarks.

2. The Process of Social Innovation

In this section a framework to investigate the process of social innovation in the co-production of urban space is proposed after reviewing three social innovation models put forward by Mulgan (2006); Moulaert et al. (2005, 2010); and Ayob et al. (2016). That is not to say, however, that these studies are the only processual models that are to be found across the broader field. For instance, Neumeier (2012) considers the process of social innovation from a rural development perspective, and distinguishes three stages: problematisation; expression of interest; and delineation and co-ordination to explain how capacity develops in addressing social problems. In turn, Benneworth and Cunha (2015) examine universities' contributions to social innovation, and propose a six-step model with two loops: first, the 'creating loop' where ideas are generated and demonstrated; and second, the 'up-scaling loop' of expansion and codification which drives social change. In contrast, Westley et al. (2007) explore social innovation as systems-changing and by applying complexity theory, identified seven stages from an innovators' perspective; from recognising social problems and injustices to seeing solutions succeed at the systemic level. For the purposes of this study, however, the selected models support an understanding of the social innovation process in the co-production of space by focussing on the ways in which innovation develops, socio-spatial dynamics, and collaborative approaches.

In the first model reviewed, Mulgan (2006) proposed a framework for the process of social innovation that was advanced by Murray et al. (2010) and other collaborators from the Young Foundation and NESTA UK (e.g. Mulgan et al., 2007; Bacon et al., 2008; SIX, 2010; Caulier-Grice et al., 2012), and identified six stages:

- Prompts, inspirations and diagnoses (which involves identifying and defining a need to be met)
- Proposals and ideas (the stage of idea generation and designing ways to deal with the identified need)
- Prototyping and pilots (where ideas get tested in practice through pilot projects with feedback from users and experts)
- Sustaining (when the idea becomes everyday practice)
- Scaling and diffusion (which involves developing a range of strategies for growing and spreading an innovation to a larger group or to other communities)
- Systemic change (so that it works on a broader scale by introducing entire systems)

Sustainable systemic changes in redesigning society through changes in the relationships that exist between institutions and stakeholders are positioned by policy advisors as being the principal focus of social innovation (Murray et al., 2010; SIX, 2010; BEPA, 2011; Baturina and Bežovan, 2015). Commenting further, Caulier-Grice et al. (2012) highlight that the innovation process proposed is iterative rather than linear, and that the model should be considered to be more like multiple spirals than straight lines. Therefore, it should not be assumed that initiatives will transcend all six stages as many will jump between or skip entire stages altogether. Some cases of social innovation 'remain small in scale and locally based, rather than attempting growth and scale, and very few social innovations effect or reach the stage of systemic change' (Caulier-Grice et al., 2012, p.34). It follows, that social innovation is understood broadly as the production of societal value in meeting social needs and creating new social relationships or collaborations to enhance society's capacity to act (Mulgan, 2006; Mulgan et al., 2007; Murray et al., 2010).

Another framework is the Alternative Model of Local Innovation advocated by Moulaert et al. (2005, 2010) to counter the social exclusion dynamics experienced at various socio-spatial scales. The model conceptualises social innovation dynamics which occur in interaction with each other over time, beginning with the deprivation of human needs across four areas: economic and/or material basic needs, such as food, clothing, shelter and employment; social needs of health and education; cultural needs of self-expression, identity and recognition; and political needs of equal opportunity and active citizenship (Moulaert et al., 2005, 2010). The deprivation of needs causes a reaction and the mobilisation of resources; recognised as human, social and institutional, organisational, and financial with mediation between stakeholders (e.g. civil society and state) in order to develop social initiatives which satisfy those human needs not currently being satisfied. This agency fosters processes of social changes in existing social and power relations towards inclusive and democratic urban governance systems to 'increase the level of participation of all but especially deprived groups in society' (Moulaert et al., 2005, p.1976). Consequently, previously excluded social groups are empowered through increasing the socio-political capability and access to the resources needed to improve rights to satisfaction of human needs and participation (Moulaert et al., 2005, 2010). Thus, social innovation is understood from

a radical perspective as the social and urban changes that achieve conditions of empowerment, and favour bottom-linked governance initiatives and inclusive infrastructure development, and 'explicitly refers to an ethical position of social justice' (Moulaert et al., 2005, p.1978).

The third model reviewed in this article is that drawn by Ayob et al. (2016). Examining how the concept has developed over time they argue that the social innovation process has 'five plausible routes through some or all of this process, all of which can be conceived of as social innovation' (Ayob et al., 2016, p.648). The five identified routes are:

- New forms of social relations lead to innovation
- Innovation leads to a restructuring of social and or power relations
- Innovation leads to utilitarian social value
- New forms of social relations lead to innovation which results in the restructuring of power relations (and thus societal impact)
- New forms of social relations lead to innovation, which creates utilitarian social value (and thus societal impact)

In doing so, the authors distinguish between two social innovation traditions and outcomes in social change. The first, seen as utilitarian, emphasises changes in aggregate individual utility. The second, considered more radical, 'sees social (and political) change occurring as a consequence of innovations in social relations' (Ayob et al., 2016, p.648). The authors proceed to draw similarities between co-production and the five social innovation pathways outlined through the common themes of:

- Collaboration (new forms of social relations)
- The generation of new ideas (innovation)
- Empowerment (utilitarian social value and/ or new forms of power relations)
- Societal change (societal impact)

The radical approach, termed 'strong social innovation', is suggested in this model to be strongly linked to co-production due to their shared emphasis on shifting power influences and dynamics between citizens and public institutions as a key component of this approach, notably through the engagement and empowerment of previously disadvantaged individuals and groups (Ayob et al., 2016).

The models outlined attempt to address different questions and develop their own viewpoints on social innovation process. Murray et al. (2010), building on the work of Mulgan (2006) and fellow collaborators, are interested by how innovations in the social field progress, and identified six stages 'that take ideas from inception to impact' (Murray et al., 2010, p.12). Whereas, Moulaert et al. (2005, 2010) examined what structural changes in social relations are happening, and make connections between urban governance, empowerment, and socio-spatial justice. Finally, Ayob et al. (2016) explored how social innovation has evolved, and in so doing linked pathways to co-production and shared actions in developing collaborative forms of social relations, leading to changes and societal impact. This article integrates these three models into a social innovation framework that encompasses the following three components: the development of the innovation, changes in socio-spatial relations, and collaborative agency. The article does so by defining a model of the social innovation process in the co-production of space involving four cyclical stages. Table 1 indicates how the stages of this model relate to the elements in the Murray et al. (2010), Moulaert et al. (2005, 2010), and Ayob et al. (2016) models.

Table 1: Relationship Between Different Stages of the Social Innovation Process in Models

Murray et al. (2010) How the innovation develops?	**Moulaert et al. (2005, 2010) What changes in socio-spatial relations are transpiring?**	**Ayob et al. (2016) How do collaborative actions cause change?**	**Ardill and Lemes de Oliveira, What is the stage of the social innovation process?**
Prompts, inspirations and diagnoses	Deprivation of human needs	New forms of social relations	Identification of human needs or societal challenges to sustainable development
Proposals and ideas	Mobilisation of resources	Innovation	Development of social relations in systems or structures
	Changes in social relations (and political relations)		
Prototyping and pilots	Empowerment	Utilitarian social value	Provision of opportunity for social empowerment
Sustaining		New forms of power relations	Reflection of socio-spatial development practice
Scaling and diffusion	Satisfaction of human needs and participation	Societal impact	
Systemic change			

Source: After Ardill and Lemes de Oliveira (2019)

3. Social Innovation Framework

The traditional linear process of technological innovation postulated that innovation always starts with research, is then followed by development, and ends with production and diffusion (Godin, 2006; Balconi et al., 2010). This model has been much criticised and fails to recognise that 'knowledge does not flow smoothly among different stages of the innovative process and among different organizations and institutions. Nor does it flow freely among geographical areas' (Balconi et al., 2010, p.7). Following Murray et al. (2010), this article proposes a framework for social innovation process based on iterative innovation processes, which allows for overlap, interaction and nonlinearity, as 'change needs to be understood through the iterative action of the processes and dynamics' (Van de Ven and Poole, 2004, p.317). While the individual stages are not necessarily linear or sequential, this article identifies four key stages in providing an analytical framework by which to think through all the activities taking place, the various agents involved, and the patterns which occur in the context of such innovation journeys (Rip, 2012). The proposed framework is visualised in Figure 1 as a circular process; the implication being that socio-spatial change is a constant activity. The following paragraphs in this section will describe key innovation stages and process dynamics.

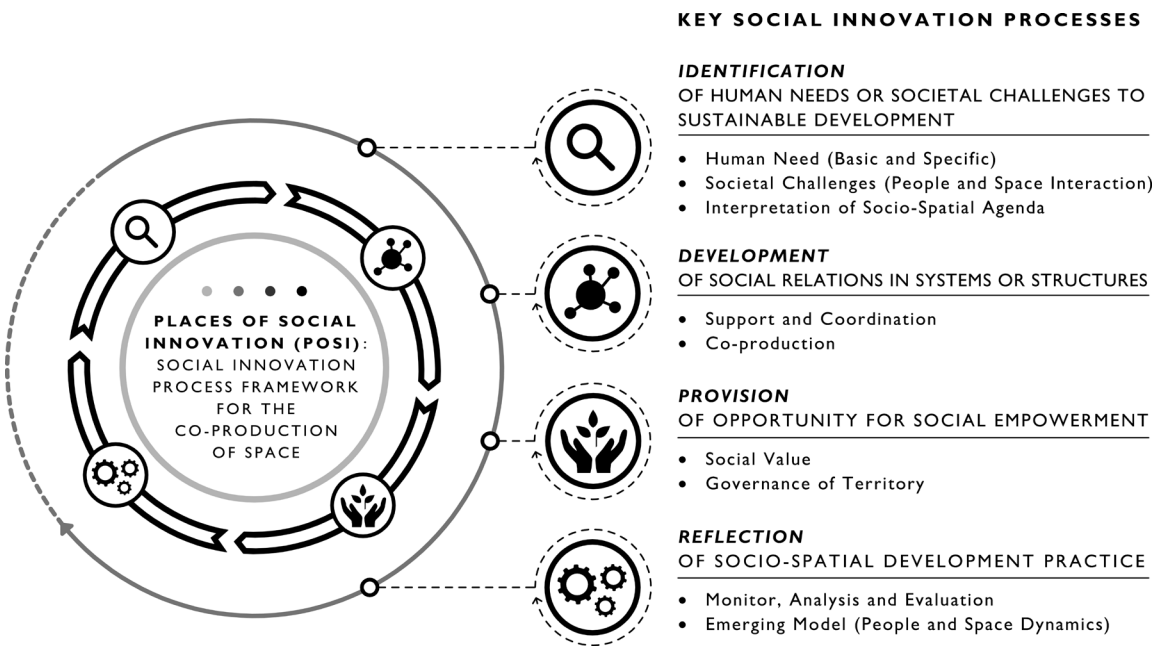

Figure 1 - Proposed Social Innovation Process Framework. (Source: Author)

The first stage: *Identification of human needs or societal challenges to sustainable development* involves prompts that highlight the need for innovation to address human needs or societal challenges (Murray et al., 2010; SIX, 2010). Human needs may include the basic or specific needs of individuals and groups. Maslow (1954) characterised the basic needs of physiological needs (e.g. food, clothing, and shelter), and safety needs as those pertaining to health and wellbeing, employment, and security. In contrast, societal challenges viewed from a sustainable development perspective are directed towards society as a whole and are recognised as major concerns that are shared by all citizens (BEPA, 2011; Baturina and Bežovan, 2015); especially uneven development, health, and climate action (Grimm et al., 2013). These challenges are highlighted by people and space interactions. Long-standing and emerging urban problems are brought into focus by an experience or event, or through the research and interpretation of a socio-spatial agenda by initiators of the innovation (Murray et al., 2010). This process involves diagnosing unmet needs or challenges by understanding the contextual dynamics which affect a given situation in order to frame opportunities and constraints (SIX, 2010). From the identification of needs, an idea for a solution is generated. Data gathered is synthesised as findings, and made into a persuasive argument to stakeholders affected by the innovation that the solution proposed can be effective, and a defined brief with strategic objectives and directions is set out (Torresa, 2017).

The second stage is the *Development of social relations in systems or structures*. A multitude of stakeholders will typically be engaged in this stage (e.g. the stakeholder that has identified the need or challenge, and other stakeholders that are interested in, or might directly benefit from, addressing the specific socio-spatial agenda). Generating cross-sector support and coordination is valuable here to mobilise the resources needed to work on the social innovation solution, and the co-production approach presents a way of collaborative working (Boyle and Harris, 2009; Voorberg et al., 2014; Ayob et al., 2016). The setup of a coalition and supportive structures to further develop the innovative solution (Murray et al., 2010) and the creation of a protected space for experiment is a significant feature of this process (Rip, 2012). This stage is aided by innovation intermediaries, such as agents and organisations which create opportunities and spaces (e.g. social, economic, and physical) through facilitation, configuring, and brokering activities to create relationships to support the innovation (Stewart and Hyysalo, 2008). Furthermore, the contribution of civil society through social entrepreneurship and social enterprise (Mulgan et al., 2007; Phills et al., 2008; Howaldt et al., 2018) aligned with state steering to coordinate processes of social innovation) creates the conditions required for hybrid partnerships to emerge (Baker and Mehmood, 2015; Nicholls et al., 2015). New coalitions comprised of public, private, and social participants in the organisation of development (Noworól, 2013) contribute to the rearrangement and restructuring of existing social relationships (Mumford, 2002; Moulaert et al., 2005). As such, the use of embedded resources and assets is a way of engaging a range of stakeholders in the co-design and development of solutions (SIX, 2010; Caulier-Grice et al., 2012; Manzini, 2014), whilst design-based approaches fusing design-thinking can progress and shape the idea (Brown and Wyatt, 2010; Manzini, 2015). To help ensure that needs are met, collaboration amongst the stakeholders contributing to the development of the social innovation solution is significant (Voorberg et al., 2014).

The third stage: *Provision of opportunity for social empowerment* is where a socio-spatial initiative is implemented, and seeks to create openings to enhance society's capacity to act in a changing environment (Murray et al., 2010; BEPA, 2011; Grimm et al., 2013). This involves generating social value, both to disadvantaged groups and society as a whole (Phills et al., 2008; Ayob et al., 2016), and through increasing participation in multilevel urban governance structures increases access to resources (Gerometta et al., 2005; Moulaert et al., 2005; Evers et al., 2014; Ayob et al., 2016; Brandsen et al., 2016). In this stage, opportunities for community development are enabled through inclusive practices and social engagement which encourage active citizenship to help meet needs (Davies and Simon, 2013; Mehmood and Parra, 2013; García et al., 2015). In this regard, social learning activities, where people can learn from each other collectively rather than through isolated individual activities (Reed et al., 2010) increase community capacity through the development of new skills and help to construct more resilient communities (Pol and Ville, 2009; Manzini, 2015). This capacity-building is important to contribute to sustainable place making and the promotion of sustainable development (Mehmood and Parra, 2013; Baker and Mehmood, 2015). In this process, improving access to urban resources helps to build capacities (TEPSIE, 2014), whilst changes in group-decision making and power relations create new socio-political capabilities, and enhance people's control over their own lives to support socio-spatial inclusion and justice (Moulaert et al., 2005, 2010; MacCallum et al., 2009).

The fourth stage connecting the process cycle is *Reflection of socio-spatial development practice*. This stage involves considering the measures of the success of the initiative (SIX, 2010; Bund et al., 2015), as well as the processes of selecting, developing, and prescribing a model of standardisation. The activities of demonstrating, refining, and testing ideas to obtain feedback from users and specialists in order to evolve solutions and maximise impact are important to learning (SIX, 2010; Torresa, 2017). Through iteration, conflicts can be resolved, and coalitions gather strength (Murray et al., 2010). This, in turn, supports ongoing 'infrastructuring' processes in enabling participation in spatial development and embeds stakeholder relations, networks, and resources (Hillgren et al., 2011; Björgvinsson et al., 2012). Here, the adaption of the idea and sustaining the initiative through use of evidence and identifying further resources is necessary if the innovation is to be carried forward (Murray et al., 2010; SIX, 2010). In this stage, the spreading and sharing of the solution through diffusion and emulation occurs (Murray et al., 2010; SIX, 2010; Caulier-Grice et al., 2012). It follows, that the provision of support and know-how from one organisation or place to another is significant to open knowledge advancement (Murray et al. 2010; Chesbrough et al., 2014; TEPSIE, 2014). This is necesary to move innovation from a community level to a widespread solution. It is important here to identify how an initiative can be imitated in other contexts so that it can provide solutions in in new situations and places (Windrum et al., 2016; Torresa, 2017).

4. Research Design and Methodology

A processual approach is employed as the study investigates how innovation processes transpire and evolve in the production of Places of Social Innovation (POSI) between multilevel stakeholders in urban environments. The strategy of a longitudinal and comparative case study complements the research focus. It enables the tracking of innovation processes across several scales and chronologies, enhances pattern recognition, and facilitates the identification of relationships (Van de Ven and Poole, 2004, 2005). Moreover, the multiple case study design supports cross-case comparison and the triangulation of results (Yin, 2009).

Six cases of green infrastructure as emerging POSI were examined across two UK cities: Brighton & Hove, and Portsmouth. Three cases were selected from each city with one case for each urban stakeholder level: bottom-up residents; intermediate non-governmental organisations; and top-down local government institutions. This strategy builds upon the recommendations of Pettigrew (1990) to use 'polar types' and 'extremes' (e.g. conditions within cities), and Flyvbjerg's (2006) suggestion of 'maximum variation' (e.g. type of stakeholder) to obtain information about the significance of various circumstances for case process and outcomes. Furthermore, two-pairs of three cases provides a practicable method to support basing wider conclusions in relation to the requirement for depth of process data and external validity (Van de Ven and Poole, 2004; Langley et al., 2013). The cases under study transpired between 2008 and 2018 and are summarised as follows:

> *Racehill Community Orchard:* A Brighton & Hove-based food advocacy organisation partnered with permaculture specialists to develop the largest community orchard within the city at 1.30 hectares. As an exemplar project, it served as a template for 'Harvest Brighton & Hove', a development programme that produced over 50 growing spaces citywide.
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> *The Bevy Edible Garden:* A residents' co-operative in Brighton & Hove transformed the site of a former public house into a community owned hub and social enterprise; comprising several productive green spaces interlinked with a community cafe and training kitchen.
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> *The Keep Community Orchard:* This Brighton & Hove City Council development was integrated with an archive centre for East Sussex. As a precedent for urban planning, the aim was to test innovative approaches in helping the city find ways to transition towards sustainable development. The development influenced the adoption of planning policy to support urban growing.
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> *Southsea Greenhouse:* This resident led development in Portsmouth started at a seafront concession before transforming wasteland within a park into a community run social enterprise comprising productive green spaces. Residents formed a co-operative and sold shares in the community owned venture.

Charles Dickens Orchard Trail: A Portsmouth-based environmental organisation developed a productive landscape and heritage walking trail to connect deprived neighbourhoods within a highly urbanised centre. Co-design with the local authority assisted its spatial planning and configuration.

Stacey Community Orchard: This Portsmouth City Council initiative transformed an area surrounding a community centre into a demonstration space for food growing in small urban spaces. Central Government funding from a 'Healthy Towns' programme was used to trial innovative ways of tackling obesity by changing resident behaviour to live healthier lives, leading to the development of 11 community growing spaces across Portsmouth.

In order to seek triangulation of data through analytical stages and support theory-building (Yin, 2009; Creswell, 2014), the data collected in this study was based on multiple information sources. A selective 'information-oriented' approach to gathering data was employed (Flyvbjerg, 2006). Data sources comprised: semi-structured interviews with key informants within each case; content analysis of archival documents; and participant observation of innovation activities and environments.

The approach to qualitative data analysis used process-based methods that were complemented by a thematic mode of enquiry. This engaged a conceptual framework developed through a literature review with processual measures and narrative explanation derived from Pentland (1999), in combination with a data-driven inductive approach to identify emerging themes from Braun and Clarke (2006). An iterative sequence of interpreting and translating empirical data is summarised as follows:

Case narratives: rich text narratives are constructed by outlining chronological sequences of events and use of plot structures to handle data in an accessible manner with each case sequence produced from data gathering;

Data coding: coding integrates preconceived theory driven codes directed by the conceptual framework with emerging data driven codes (Fereday and Muir-Cochrane, 2006);

Within case analysis of key social innovation process: A study protocol of common questions derived from the conceptual framework is examined within each case narrative. This structured procedure enables a concentrated assessment and comparison of key innovation processes (Yin, 2009);

Visual narrative mapping of individual cases: positions case events and activities across space and time. Mapping offers concise conclusions to individual case narratives whilst preparing the ground for cross-case analysis and pattern searching in innovation activities across the cases;

Pattern recognition across cases: distinguishes and explains patterns of key social innovation processes in the co-production of POSI across the cases by comparing case sequences to advance the conceptual framework; and

Analysis of multiscalar contextual forces: classifies multiscalar influences on innovation processes at three contextual scales: neighbourhood, urban system, and national system, and incorporates themes within the case studies and insights from the literature to position and separate information into different groupings.

5. Towards Emerging Places of Social Innovation (POSI)

This section presents an overview of a case of emerging POSI, the Racehill Community Orchard in Brighton & Hove, UK, in order to illustrate the principle characteristics of the proposed framework. The section starts by introducing the organisation involved in the development of social innovation presented. Then, key processes are distinguished through employing the analytical framework outlined in this article. Thereafter, and to conclude, a graphic visualisation of the analytical framework as applied to the case is presented at the end of the section in Figure 2.

5.1. Case Background

The Brighton & Hove Food Partnership (henceforth the Food Partnership) was formed in 2003 due to the identified need for a partnership approach to integrate sustainable urban policy, agency, and change. It emerged as an umbrella non-governmental organisation within Brighton & Hove connecting cross-sector stakeholders to form a participatory and strategic approach to developing a holistic food system. The organisation is embedded in the city with over 4,000 members and links food policy with initiatives within public health, education, community development, land use, urban planning, and sustainable development.

'Harvest Brighton & Hove' was an innovative citywide programme instigated by the Food Partnership from 2009-2013 to develop local food projects. Altogether, Harvest supported the development of 54 new growing projects across the city, and transformed 1.19 hectares of urban land into productive green infrastructure. As a Harvest exemplar, the Racehill Community Orchard (henceforth Racehill Orchard) was the most significant community growing space to be developed with permission to grow to 1.30 hectares and is the largest orchard in the city. Contextually, the Whitehawk estate which borders the Racehill Orchard was, in 2015, the most deprived area in the city and the 332nd most deprived area in the United Kingdom, placing it just outside the bottom one percent (Brighton & Hove City Council, 2015).

5.2. Identification of Human Needs or Societal Challenges to Sustainable Development

At a national level, the Cabinet Office Strategy Unit (2008) review into the United Kingdom's food policies, emphasised societal challenges to meeting needs concerning economics, equity, and the health and safety of citizens. Previously, the Department of Health 'Choosing Health' (2004) report had identified local community food initiatives as an instrument to support behavioural changes and reduce health inequalities. The Food Partnership likewise recognised the social utility of community food initiatives to meet specific local needs whilst also helping to address wider societal challenges. Within Brighton & Hove, there was a contextual need to reduce inequalities to help realise a more 'just city', especially in relation to health. This approach to urban planning supports the moral and theoretical arguments made by Fainstein (2010) with regards to identifying the need for greater social justice and equity in urban spaces. For instance, the Annual Report of the city's Director of Public Health (2006) highlighted the challenges of growing health inequalities, and deprived wards having a life expectancy of up to five years below more affluent wards in the city (Brighton and Hove City Primary Care Trust, 2006). Furthermore, geospatial data exposed a social equity divide between rich and poor within Brighton & Hove (OCSI, 2007); bringing to light a socio-spatial injustice and prompting social innovation.

The Food Partnership interpreted the opportunity presented by the Local Food Fund (2007-2013) to develop an integrated citywide approach to make locally grown food more accessible and build material, personal, and cultural capacity to develop the overall capacity and resilience of communities involved (Local Food, 2012). In preparing their bid document, the Food Partnership organised meetings with members and partners, including Brighton and Hove City Council (henceforth the City Council) and Brighton and Hove Primary Care Trust, to jointly develop the proposal's aims, and outcomes, as well as the delivery of initiatives. The specific need for community growing spaces was demonstrated by a strong interest in local food, and its impact on the environment and health. The collaborative project development, between the Food Partnership and Harvest partners within the local system representing the identified beneficiaries, demonstrated a strategic approach to addressing needs and consultations with those potentially affected by development were significant to identifying a cohesive strategy. Harvest aimed to benefit residents citywide whilst also ensuring that areas of socio economic disadvantage would especially gain from interventions to address poor access to fresh food, high incidence of poor health, and lack of access to urban resources. As such, the Racehill Orchard Harvest exemplar was developed within the deprived Whitehawk neighbourhood of East Brighton because the high-density estate was identified as a location experiencing social need and it would enable more residents to participate in urban growing.

5.3. Development of Social Relations in Systems or Structures

Collaboration with other Brighton & Hove stakeholders through partnership working was central to the case, helped to strengthen and develop new or existing relationships within the local system, and was aided by

multilevel intermediation between network groups and people across issues and communities. For instance, a cross-sector advisory committee for the Racehill Orchard aided project partners in organising the co-production of space and ensured that interested parties were democratically represented. The participatory framework enabled a co-design process to promote a sense of community ownership and helped to collectively develop a spatial and programmatic brief. To undertake linking, the Food Partnership operated across multiple levels. They brokered top-down support from the City Council to access resources and develop strategies to ensure long-term support for Harvest's aims. In addition, they configured and multiplied their practitioner agency with other non-profit organisations through sharing resources and expertise in developing green infrastructure to realise more effective production than that which would have occurred by working independently, whilst also engaging bottom-up residents with neighbourhood growing projects to embed social practices and behavioural changes.

As a Harvest partner, the City Council provided organisational support by facilitating public land access and recognising the social value of citywide development, especially to deprived areas whilst also adhering to its strategic urban policy as part of its commitment to food growing and sustainable development. For example, the Sustainable Community Strategy (2006) aimed to increase land available for food growing, the City Food Strategy (2006) sought to increase growing opportunities, while the updated Food Strategy Spade to Spoon: Digging Deeper (2012) had the objective that 'more food consumed in the city is grown, produced and processed locally using methods that protect biodiversity and respect environmental limits' (Brighton & Hove Food Partnership, 2012, p.14). A 15-year land agreement for Racehill Orchard was also significant to the case. The implications of this secured agreement meant that it helped to sustain the initiative whilst also serving as a model for shared governance between the City Council and community groups for other Harvest growing spaces on public land which were later developed. As such, learning generated by Harvest enabled the Food Partnership to create a template for future community agreements with the City Council that outlines roles and responsibilities for each partner, maintenance arrangements, and conditions for governing areas of public green spaces.

5.4. Provision of Opportunity for Social Empowerment

Harvest increased the amount of food grown in the city by developing more community growing spaces and increasing the number of people involved. Through so doing, the programme supported community development as a means by which to meet urban needs and address inequalities. Material capacity was increased by developing physical infrastructure and improving public access to green space; these facets were complemented by educational opportunities that built personal capacity. Here, Harvest facilitated community development through training workshops, skills-sharing and open days which were delivered citywide to residents, often in community growing spaces; thereby supporting engagement. Consequently, confidence was built in food growing and developing abilities in running growing projects to help embed productive green infrastructure.

The Racehill Orchard demonstrates how opportunities were provided to residents within deprived East Brighton to contribute to their own personal development and social empowerment. For example, through Brighton Permaculture Trust, an organisation which promotes sustainable development through design, and training residents in traditional agricultural techniques including scything, tree and hedgerow planting, pruning, and caring for fruit trees. The social value of these opportunities enhances communities' capabilities and volunteers can be trained in leadership skills through a session leaders' course; helping to devolve organisation and diffuse knowledge. This approach to social behavioural change supports community empowerment through enhancing neighbourhood capacity to act, improves resident access to skills and resources, and helps growing projects to become self-sustaining.

The importance of increasing urban participation, especially amongst groups excluded from the built environment was, in some form, central to meeting Harvest's aims. At Racehill Orchard, free activities and events target people living on the deprived estate. Regular 'Healthy Activity Days' involve health walks, foraging events, pick and cook sessions, and other activities which promote healthy lifestyles and behaviour. The production of green infrastructure in bringing new land into food production, providing community events to build capacity, and improving the access to resources of specific target groups is reinforced by enabling public

access and rights to urban space. As such, the observed 'right to the city' being supported in this case connects to the arguments made by Lefebvre (1991) and Harvey (2012) for spatial justice and increased citizens' rights over urban spaces. Moreover, cultural capacity was developed here through public engagement and territorial appropriation to give residents a sense of connection with their urban landscape. Accordingly, it is significant to the 'social production of space', where space operates as both a product and a producer of changes in the urban environment (see, for example, Lefebvre, 1991; Soja, 2010).

5.5. Reflection of Socio-Spatial Development Practice

The citywide development was an architype for practitioner based social innovation. Harvest's integrated approach across multiple levels helped diffuse social innovation and generated a territorial infrastructure in relations, networks, and resources. The measure of social innovation success in terms of developing capacity in Brighton & Hove was evidenced by community growing spaces tripling from 25 to 79; thereby helping to diffuse ideas and behaviours whilst also amplifying the visibility of social practices. By undertaking Harvest, the Food Partnership helped to improve distributional justice by accessing new land for urban community growing, with many projects located in housing estates, public parks, church yards, and railway stations; increasing the public visibility of growing practices.

Central objectives of the Harvest experiment for the Local Food programme were to share experience and knowledge of the project's approaches to increasing food production, and to disseminate learning that could be replicated in other cities, both within the United Kingdom and internationally. This was undertaken in several ways: establishing a Reference Group to enable parties to learn from the experiences of nationwide projects; visits from other Local Food Fund Beacon Projects to demonstrate Harvest activities; attending international conferences on planning and food systems to exchange thinking; the Local Food 'Share and Learn' networking events and the national evaluation event 'More than just the veg' in 2012; and distributing reports on Harvest to influence policymakers by demonstrating outputs.

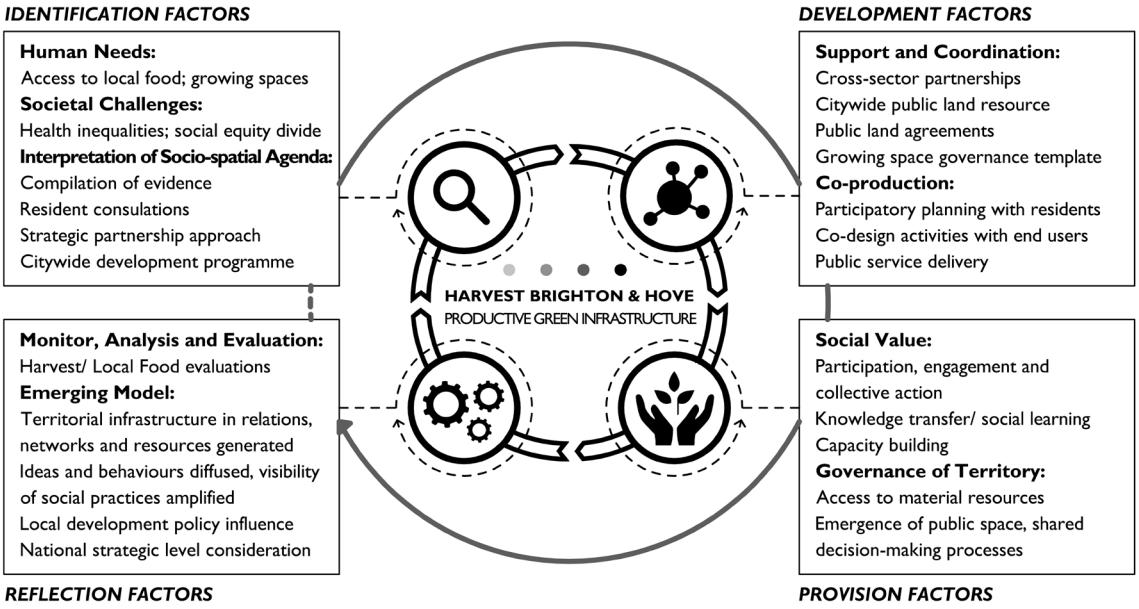
Locally, dissemination was supported by the innovativeness of the Food Partnership's intermediation between bottom-up and top-down levels of urban stakeholders. Grassroots working helped to mobilise an urban social movement of community growers and develop a network of growing spaces, whilst engaging local decision-makers helped to influence planning and development policy in addition to attracting the attention of national policy makers. To embed good practice into local planning, Harvest supported the successful lobbying to include references to food growing within several policies of the Brighton & Hove City Plan Part One (2016) and the City Sustainability Action Plan (2015). This set key actions for Brighton & Hove to develop productive green infrastructure as part of its commitment to sustainable development.

IDENTIFICATION
OF HUMAN NEEDS OR SOCIETAL CHALLENGES TO SUSTAINABLE DEVELOPMENT

- *Department of Health 'Choosing Health' (2004) report*
- *Cabinet Office Strategy Unit (2008) review into UK food policy*
- *Big Lottery Local Food Fund launched to increase communities access to local food and develop capacities (material, personal, cultural)*
- *Brighton & Hove Food Partnership formed 2003*
- *City Food Strategy (2006) adopted by Brighton and Hove City Council*
- *2006 Annual Report of the Brighton & Hove Director of Public Health highlights growing health inequalities*
- *Harvest bid evidence compilation. Need for community growing spaces and social equity divide exposed in Brighton & Hove*
- *Harvest citywide stakeholder consultation, project development*
- *Big Lottery Local Food Fund Beacon grant bid*
- *Harvest Exemplar Racehill Orchard development community consultations in Whitehawk deprived neighbourhood*

DEVELOPMENT
OF SOCIAL RELATIONS IN SYSTEMS OR STRUCTURES

- *Harvest Brighton & Hove cross-sector project partners formation*
- *Public land made available in the city for citywide food growing spaces development*
- *Proforma community food growing space governance template for Brighton and Hove City Council land use created*
- *Harvest Exemplar Racehill Orchard delivery partnership with Brighton Permaculture Trust*
- *Harvest Exemplar Racehill Orchard cross-sector advisory committee formed to organise development*
- *Racehill Orchard co-design activities with residents*
- *Racehill Orchard 15-year land agreement with Brighton and Hove City Council*



REFLECTION
OF SOCIO-SPATIAL DEVELOPMENT PRACTICE

- *Reference Group established by Food Partnership to share Harvest learning of urban food growing projects, visits to and from other cities involved in urban growing*
- *Local Food 'More than just the veg' evaluation event*
- *Harvest evaluation report produced by Food Partnership*
- *House of Commons Oral evidence by Food Partnership on Harvest and local food systems*
- *Brighton and Hove City Plan Part One (2016) includes references to space for food growing in Brighton & Hove*
- *City Sustainability Action Plan (2015) sets key actions to develop productive green infrastructure in Brighton & Hove*
- *Sustainable Food Cities UK Network formed*
- *Food growing and planning learning exchange with Sustain to develop local authority guidance on food growing spaces*
- *'Orchards without Borders' transborder programme collaboration in France to share learning and develop community orchards*

PROVISION
OF OPPORTUNITY FOR SOCIAL EMPOWERMENT

- *Over 50 community food growing spaces developed citywide*
- *Improved public access to urban green space and governance opportunities*
- *1.19 hectares of urban land transformed into productive green infrastructure, new land accessed for food growing*
- *Increased number of residents involved in urban food growing projects to approximately 4,000 residents annually*
- *Harvest citywide community development training programme workshops, skills sharing and open days*
- *Racehill Orchard horticultural training events*
- *Racehill Orchard Healthy Activity Days to promote lifestyle and behavioural changes*
- *Racehill Orchard session leader training opportunities to diffuse knowledge to residents to deliver community activities*

Figure 2 - Application of Social Innovation Framework. Populated with Harvest Brighton & Hove urban growing programme. Key innovation process factors highlighted in boxes and case dynamics bulleted. (Source: Author)

6. Conclusion

This article was interested in the agency of social innovation in supporting a health orientated built environment and has taken the perspective of how social innovation can contribute to the process of creating capacity to meet human needs and respond to societal challenges. Social innovation has gained attention in the promotion of active citizenship in sustainable development policy and practice, especially around collaborative service delivery and novel approaches to welfare (BEPA, 2011). The socially innovative development of productive green infrastructure is of interest as a participatory concept that can meet needs, create social relationships, and form new collaborations. However, as a process this innovative approach does not end with the development of a growing space. Like cities, it needs to continuously evolve in order to meet the challenges of affecting changes in social structures and systems with regard to participation in decision-making processes, social inclusion, and sustainable urban development (Cunk et al., 2017).

To comprehend social innovation dynamics in the co-production of urban space, a conceptual framework of social innovation was presented in this article. An advantage of this framework is that it has provided a basis for understanding how processes of social and urban change have occurred. Especially, in analysing how urban space is collaboratively produced by social interactions between multilevel participants throughout the social innovation process in a more just way to promote health and reduce built environment inequities.

In order to contribute some insights on the roles of social innovation in the process of an emerging POSI an overview of a case study of productive green infrastructure was presented: Harvest Brighton & Hove. The case comprised the collaborative planning, design, and delivery of a socially innovative development programme in the city of Brighton & Hove, United Kingdom, which sought to deal with challenges of health inequalities and equity divisions. The problems identified were; a lack of urban growing projects to meet needs, a need to increase training to build capacities, and a lack of coordination between community projects to function as networked infrastructure. The innovation solution put forward was a citywide food growing project that could be co-produced through an approach linking stakeholders. This developed new community growing initiatives to improve access to local food, especially within deprived areas. Harvest Brighton & Hove supported communities to grow and eat more local food, by developing skills and confidence, and helping to find more land for food growing. As such, the integrated development model presented an approach that improved access to local food, as well as increasing the land available and the number of people involved in urban growing.

Lastly, this article has contributed to enhancing understanding of processes of social innovation, by presenting the development of a conceptual framework from a cross-case comparison of six case studies. Further application of the model to other case studies would help advance the debates on 'Emerging Places of Social Innovation' (POSI). This could involve additional exploration of patterns in stakeholders' innovation agency within a multiscalar and structured environment. In addition to documenting the actions of urban stakeholders through case narratives and visual mapping to ascribe key innovation processes, there is a need to focus on the influence of various contextual forces at micro to macro scales catalysing and inhibiting this agency across space and time.

References

Ardill, Nicholas and Fabiano Lemes de Oliveira (2018) Social innovation in urban spaces. *International Journal of Urban Sustainable Development*, 10 (3), pp.207-221.

Ardill, Nicholas and Fabiano Lemes de Oliveira (2019) Emerging places of social innovation (POSI). The co-production of space between multilevel stakeholders. *Planning for Transition, Annual Congress for the Association of European Schools of Planning (AESOP), Venice, 9-13 July*, pp.2303-2319.

Ayob, Noorshea, Simon Teasdale and Kyle Fagan (2016) How social innovation 'came to be': Tracing the evolution of a contested concept. *Journal of Social Policy*, 45 (4), pp.1-19.

Bacon, Nicola, Nusrat Faizullah, Geoff Mulgan and Saffron Woodcraft (2008) *Transformers. How local areas innovate to address changing social needs*. London: NESTA.

Baker, Susan and Abid Mehmood (2015) Social innovation and the governance of sustainable places. *Local Environment: The International Journal of Justice and Sustainability*, 20 (3), pp.321-334.

Balconi, Margherita, Stefano Brusoni and Luigi Orsenigo (2010) In defence of the linear model: An essay. *Research Policy,* 39, pp.1-13.

Baturina, Danijel and Gojko Bežovan (2015) *(Social) Innovation impact - review of research*. Brussels: Third Sector Impact.

Benneworth, Paul and Jorge Cunha (2015) Universities contributions to social innovation: Reflections in theory & practice. *European Journal of Innovation Management,* 18 (4), pp.508-527.

BEPA (2011) *Empowering people, driving change: Social innovation in the European Union*. Brussels: European Commission.

Björgvinsson, Erling, Pelle Ehn and Per-Anders Hillgren (2012) Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues*, 28 (3), pp.101-116.

Boyle, David and Michael Harris (2009) *The Challenge of Co-production*. London: NESTA.

Brandsen, Taco, Sandro Cattacin, Adalbert Evers and Annette Zimmer (eds) (2016) *Social innovations in the urban context*. London: Springer.

Braun, Virginia, and Victoria Clarke (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2), pp.77-101.

Brighton & Hove City Council (2015) *Annual Report of the Director of Public Health Brighton & Hove 2014-15*. Brighton & Hove: NHS Brighton & Hove.

Brighton & Hove City Council (2016) *Brighton & Hove City Plan Part One*. Brighton & Hove: Brighton & Hove City Council.

Brighton and Hove City Primary Care Trust (2006) *Annual report of the Director of Public Health Brighton and Hove 2006*. Brighton and Hove: Brighton and Hove City Council.

Brighton & Hove Food Partnership (2006) *SPADE TO SPOON: Making the Connections*. Brighton & Hove: Brighton & Hove Food Partnership.

Brighton & Hove Food Partnership (2012) *Spade to Spoon: Digging Deeper*. Brighton & Hove: Brighton & Hove Food Partnership.

Brown, Tim and Jocelyn Wyatt (2010) Design thinking for social innovation. *SSIR*, pp.31-35.

Bund, Eva, Ulrike Gerhard, Michael Hoelscher and Georg Mildenberger (2015) A methodological framework for measuring social innovation. *Historical Social Research*, 40 (3), pp.48-78.

Cabinet Office Strategy Unit (2008) *Food matters: Towards a strategy for the 21st Century*. London: Cabinet Office.

Caulier-Grice, Julie, Anna Davies, Robert Patrick and Will Norman (2012) *Defining social innovation*. Brussels: European Commission, DG Research.

Chesbrough, Henry, Wim Vanhaverbeke and Joel West (2014) *New frontiers in open innovation*. Abingdon: Oxford University Press.

Creswell, John (2014) *Research design: Qualitative, quantitative, and mixed methods approaches*. 4th ed. London: Sage Publications.

Cunk, Kaja, Matevž Straus and Răzvan Zamfira (2017) *Approaching urban agriculture as a social innovation Guidelines for the development and implementation of an action plan*. Koper: AgriGo4Cities.

Davies, Anna and Julie Simo, (2013) *The value and role of citizen engagement in social innovation*. Brussels: European Commission, DG Research.

Department of Health (2004) *Choosing Health: Making Healthy Choices Easier.* London: The Stationary Office

European Commission (2013) *Guide to social innovation*. Brussels: European Commission.

Evers, Adalbert, Benjamin Ewert and Taco Brandsen (eds) (2014) *Social innovations for social cohesion*. Liege: WILCO.

Fainstein, Susan S. (2010) *The just city*. New York: Cornell University Press.

Fereday, Jennifer, and Eimear Muir-Cochrane (2006) Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5 (1), pp.80-92.

Flyvbjerg, Bent (2006) Five misunderstandings about case-study research. *Qualitative Inquiry*, 12 (2), pp.219-245.

Frank, Andrea I. (2017) Key planning issues for Europe for the next decades? Comparing perspectives from 1997 and 2017. *disP - The Planning Review*, 53 (2), pp.62-63.

García, Marisol, Santiago Eizaguirre and Marc Pradel (2015) Social innovation and creativity in cities: A socially inclusive governance approach in two peripheral spaces of Barcelona. *City, Culture and Society,* 6 (4), pp.93-100.

Geels, Frank W. and Johan Schot (2016) Towards a new innovation theory for grand societal challenges. *SPRU Anniversary Conference, Brighton & Hove, 7-9 September*, pp.1-37.

Gerometta, Julia, Hartmut Haussermann and Giulia Longo (2005) Social innovation and civil society in urban governance: Strategies for an inclusive city. *Urban Studies*, 42 (11), pp.2007-2021.

Godin, Benoit (2006) The linear model of innovation: The historical construction of an analytical framework. *Science, Technology, & Human Values*, 31 (6), pp.639-667.

Grimm, Robert, Christopher Fox, Susan Baines and Kevin Albertson (2013) Social innovation, an answer to contemporary societal challenges? Locating the concept in theory and practice. *Innovation: The European Journal of Social Science Research*, 26 (4), pp.436-455.

Harvey, David (2012) *Rebel cities: From the right to the city to the urban revolution*. London: Verso Books.

Hillgren, Per A., Anna Seravalli and Anders Emilson (2011) Prototyping and infrastructuring in design for social innovation. *CoDesign*, 7 (3-4), pp.169-183.

Howaldt, Jürgen, Christoph Kaletka, Antonius Schröder and Marthe Zirngiebl (eds) (2018) *Atlas of social innovation*. Dortmund: TU Dortmund University.

Langley, Ann, Clive Smallman, Haridimos Tsoukas and Andrew H. Van de Ven (2013) Process studies of change in organization and management: Unveiling temporality, activity, and flow. *Academy of Management Journal,* 56 (1), pp.1-13.

Lefebvre, Henri (1991) *The production of space*. Oxford: Blackwell Publishing.

Local Food (2012) *More than just the veg – Growing community capacity through Local Food projects*. Gloucester: Countryside and Community Research Institute.

MacCallum, Diana, Frank Moulaert, Jean Hillier and Serena Vicari (eds) (2009) *Social innovation and territorial development*. Farnham: Ashgate.

Manzini, Ezio (2014) Making things happen: Social innovation and design. *MIT Design Issues*, 30 (1), pp.1-12.

Manzini, Ezio (2015) *Design, when everybody designs an introduction to design for social innovation*. Cambridge, Massachusetts: MIT Press.

Maslow, Abraham (1954) *Motivation and personality*. New York: Harper.

Mehmood, Abid (2016) Of resilient places: Planning for urban resilience. *European Planning Studies*, 24 (2), pp.407-419.

Mehmood, Abid, and Constanza Parra (2013) Social innovation in an unsustainable world. *In*: Moulaert, Frank, Dianna MacCallum, Abid Mehmood and Abdelilah Hamdouch (eds) *The international handbook on social innovation: Collective action, social learning and transdisciplinary research*. Cheltenham: Edward Elgar, pp.53-66.

Moulaert, Frank, Flavia Martinelli, Erik Swyngedouw and Sara Gonzales (2005) Towards alternative model(s) of local innovation. *Urban Studies*, 42 (11), pp.1969-1990.

Moulaert, Frank, Erik Swyngedouw, Flavia Martinelli and Sara Gonzales (eds) (2010) *Can neighbourhoods save the city? Community development and social innovation*. Abingdon: Routledge.

Moulaert, Frank and Abid Mehmood (2011) Spaces of social innovation. *In* Pike, Andy, Andrés Rodriguez-Pose and John Tomaney (eds) *Handbook of local and regional development*. Abingdon: Routledge, pp.212-225.

Mulgan, Geoff (2006) The process of social innovation. *Innovations: Technology, Governance, Globalization*, 1 (2), pp.145-162.

Mulgan, Geoff, Simon Tucker, Rushanara Ali and Ben Sanders (2007) *Social Innovation: What it is, why it matters, how it can be accelerated*. Oxford: Skoll Centre for social entrepreneurship.

Mumford, Michael D. (2002) Social innovation: Ten cases from Benjamin Franklin. *Creativity Research Journal*, 14 (2), pp.253-266.

Murray, Robin, Julie Caulier-Grice and Geoff Mulgan (2010) *The open book of social innovation.* London: NESTA.

Neumeier, Stefan (2012) Why do social innovations in rural development matter and should they be considered more seriously in rural development research? Proposal for a stronger focus on social innovations in rural development research. *Sociologia Ruralis,* 52 (1), pp.48-69.

Nicholls, Alex, Julie Simon and Madeleine Gabriel (eds) (2015) *New frontiers in social innovation research*. Basingstoke: Palgrave Macmillan.

Noworól, Aleksander (2013) The role of hybrid partnerships in the management of development. *NispaCEE Conference*, Belgrade, pp.1-10.

OCSI (2007) *Developing appropriate strategies for reducing inequality in Brighton and Hove*. Oxford: OCSI.

Pentland, Brian T. (1999) Building process theory with narrative: From description to explanation. *Academy of Management Review*, 24 (4), pp.711-724.

Pettigrew, Andrew M. (1990) Longitudinal field research on change: Theory and practice. *Organisation sciences*, 1 (3), pp.267-292.

Phills, James, Kriss Deiglmeier and Dale Miller (2008) Rediscovering social innovation. *SSIR*, (Fall), pp.34-43.

Pol, Eduardo and Simon P. Ville (2009) Social innovation: Buzz word or enduring term? *Journal of Socio-Economics*, 38 (6), pp.878-885.

Reed, Mark. et al. (2010) What is Social Learning? *Ecology and Society*, 15 (4), pp.r1.

Rip, Arie (2012) The context of innovation journeys. *Creativity and Innovation Management*, 21 (2), pp.158-170.

Rosol, Marit (2012) Community volunteering as neoliberal strategy? Green space production in Berlin. *Antipode*, 44 (1), pp.239-257.

SIX (2010) *Study on social innovation*. London: The Young Foundation.

Soja, Edward (2010) *Seeking spatial justice*. Minneapolis: University of Minnesota Press.

Stewart, James and Sampsa Hyysalo (2008) Intermediaries, users and social learning in technological innovation. *International Journal of Innovation Management*, 12 (3), pp.295-325.

TEPSIE (2014) *Social innovation theory and research: A summary of the findings from TEPSIE*. Brussels: European Commission, DG Research.

Torresa, Pablo M. (2017) Design for socio-technical Innovation: A proposed model to design the change. *The Design Journal*, 20 (sup1), S3035-S3046.

Van de Ven, Andrew H. and Marshall S. Poole (eds) (2004) *Handbook of organizational change and innovation*. New York: Oxford University Press.

Van de Ven, Andrew H. and Marshall S. Poole (2005) Alternative approaches for studying organizational change. *Organization Studies*, 26 (9), pp.1377-1404.

Voorberg, William H., Victor J. Bekkers and Lars G. Tummers (2014) A systematic review of co-creation and co-production: Embarking on the social innovation journey. *Public Management Review*, 17 (9), pp.1333-1357.

Westley, Francis, Brenda Zimmerman and Michael Patton (2007) *Getting to maybe: How the world is changed*. Toronto: Vintage Books Canada.

Windrum, Paul, Doris Schartinger, Luis Rubalcaba, Faïz Gallouj and Marja Toivonen (2016) The co-creation of multi-agent social innovations. *European Journal of Innovation Management*, 19 (2), pp.150-166.

Yin, Robert K. (2009) *Case study research: Design and methods (4th ed.).* Thousand Oaks, CA: Sage Publications.