Methodologies for Collective Future Explorations in Actor and Action-Oriented Territorial Development

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1 ABSTRACT

Future explorations are an essential component of spatial planning. In this, the complexity of issues often requires a collective learning process. We find this future-orientation for instance in scenario analysis and research-by-design, which are developed and used by distinct research or professional groups. Being part of different (paradigmatic) frameworks can hinder a combined use. In this paper, we explore how integrating - or at least interrelating- concept-driven and design-driven future explorations can contribute to imagining complex man-environment relations. In this, we study how a widened understanding of 'boundary objects', based on the initial definition from Star & Griesemer (1989) can help to integrate these approaches in planning practices. Thus, this paper aims to focus on the roles of different kinds of boundary objects, from shared concepts and shared problematisation to shared methodologies.

The study is developed for the government-funded Policy Research Centre for Spatial Planning in Flanders that accepted the challenge to scientifically support the development of co-evolutionary and cyclical planning approaches. Closely related to this ambition, we initiated several experimental Living Labs as a test bed for innovative tools and implementation strategies. The paper discusses the preliminary outcomes and relevance of a collaborative research project and collective learning experience that is intended to be continued until December 2015.

2 INTRODUCTION: COMMITMENTS IN FUTURE EXPLORATIONS

Imagining the future of cities and regions involves a complex set of actors, disciplines, fields of expertise, interests and voices. Even with only two disciplines involved – e.g. concept-driven approaches and design-driven future explorations being developed respectively in scenario analyses and research-by-design – one can still feel the need to create a shared understanding and a shared methodology to support or to enable the joint construction of socio-spatial imaginaries. The exploration of probable, possible or desirable futures is a challenge to all participants: imagining a different here and now urges actors to leave known comfort zones, yet at the same time to bring in their knowledge and experiences in order to assessing the plausibility and feasibility of proposals on future development. Then also, imagining plausible alternative futures is no non-committal exercise: it presupposes engagement of professional and social knowledge, as well as taking responsibility within a planning process. Combining explorative and committed aspects is similar to 'rehearsing the future'. It is an attempt of paving the way for novel discourses, developing alternative routes in decision-making and innovative practices, imagining new set-ups, at the same time playing for real and realizing playful situations.

Current contribution reflects on the construction of 'boundary objects' to find a middle ground between different types of actors. The reflection is based on the experiences from two experimental living labs. Even if they are experimental, the living labs are developed in a real-world setting, which implies that the proposed innovations are always contingent upon historic paths dependencies, situated in actual manifestations of spatial development and considering 'ranges' in future variations. In such prospective exercises, actors are committed to forward their particular experiences, knowledge and interests.

The paper starts with a brief positioning of the Flemish living lab experience in contemporary challenges in Flanders (i.e. pressures and potentials in peri-urban areas, polycentric development in cross-border settings, the governance challenges that come along these, etc.). A second section then intends to clarify central notions for the development of a methodological reflection on future explorations and collective learning experiences on spatial issues. We then turn to two particular challenges in building a common ground between actors, which are the development of shared methodologies and shared problematisation. The concluding reflection focusses on the role and challenges in using future explorations and living labs in spatial policies.

3 LOCALISED LIVING LABORATORIES: FUTURE PROSPECTS FOR PERI-URBANITY IN FLANDERS

The Flemish Policy Research Centre for Spatial Planning is currently developing two experimental Living Labs, in order to test and to further explore innovative coalitions and practices through a collective learning experience. The living labs focus on two particular peri-urban areas, which are a suburban strip along the N16 regional road (i.e. connecting Temse to Willebroek, with vast industrial areas as well as polynucleated, spread residential fabrics and fragmented green, open spaces), and on the relatively dense Dender-valley at the West of Brussels (i.e. a river that flows into the river Scheld).

Figure 1: Schematic positioning of two living lab areas, in relation to the central axis between Antverp and Brussels and Charleroi, (source of the basic map is the green paper for spatial planning Flanders, RV, 2012).

3.1 Spatial Living Labs

Generally speaking, a living lab is "a user-centric innovation milieu built on every-day practice and research, with an approach that facilitates user influence in open and distributed innovation processes engaging all relevant partners in real-life contexts, aiming to create sustainable values." (Bergvall-Kåreborn e.a., 2009:3). The concept of "user-centred environments for open innovation" (Schaffers e.a., 2010:1) originates from R&D environments, i.e. to develop innovative technologies using rapid prototypes cycles. The main focus there is on "confronting the user with technology" (Veeckman e.a. 2013). Basic features of living labs can be summarised as follows:

- Different kinds of users are involved in an early stage, and on a continuous base, with the aim to result in a sustainable stakeholder partnership and agreements between partners.

- Living labs aim at open innovation (Chesbrough, 2006): there is a basic openness towards various possible solutions forwarded by different partners, innovation can come from external resources as well.

- A 'lab' is not merely a test bed for innovations that have been developed in a closed expert laboratory and desktop research setting, it rather is an incubator for innovation in collaboration with (end-)users.

- Innovation is expected to be the result of collaboration and co-creation, it can also be widened towards 'democratic innovation' (Von Hippel, 2005) with a larger audience participating.

- Innovations from living labs start from a real-world setting, and intend to alter a relatively local setting. However, it can also lead to changes on a more systemic level, which mostly require then accompanying policy innovations in order to transfer novel practices.

The notion of living labs has meanwhile been translated to other domains such as rural or urban development (cf. Schaffers et al., 2010; Gopnik et al., 2012), and the meaning of the concept has been stretched into many different directions: "The concept of Living Labs has also been defined as an environment (Ballon et al., 2005; Schaffers et al., 2007), a methodology or innovation approach (Bergvall-Kareborn, Holst &Stahlbröst, 2009; Eriksson et al., 2005), and organisation, an innovation intermediary (Schuurman, Lievens, De Marez

&Ballon, 2012), a network (Leminen &Westerlund, 2012) or a system (EnoLL, 2007)." (Veeckman e.a., 2013, p. 5). We further develop this observation in the discussion on 'shared methodologies' in section 5.1.

3.2 The wider research context

The 'Living Labs' are a short term assignment for two years, developed in a cooperation with different actors in the Policy Research Centre for Spatial Planning in Flanders (i.e. 'Steunpunt Ruimte'). The research in this consortium is organized into different tracks of inquiry: while the research on 'polycentrism' (WP1) and 'resilience' (WP2) mainly investigate properties of existing urban and regional (physical as well as social) networks and their capacity to resist strain, the research on 'future explorations' (WP3) meets the challenge of embedding this understanding into possible transformation strategies. Future explorations can be developed together with monitoring and evaluation (WP4) as an integrated part of (cyclical) strategic spatial planning. The main challenge in the policy centres research is to explore latent possibilities in existing spatial configurations, matching the exploration of possible futures to real social, spatial and policy constraints.

The 'Living Labs' are developed in a cooperation of different actors in the Policy Research Centre, and particularly in overlap with WP3, i.e. the investigation of methodological issues with the development of future explorations in spatial planning. The Living Labs and WP3 share a focus on studying and/or developing localizing agenda's, and an interest to develop future explorations with a complex variety of stakeholders. Whereas the primary focus in WP3 is on methods, and particularly on scenario's and research-by design, the study also analyses future explorations in relation to a wider planning context, as well as to underlying scientific paradigms. The study intends to develop methods through case-based learning for tangible, complex spatial problems. The Living Labs are both an incubator for novel spatial approaches in specific real-world settings, as well as a test bed (and/or incubator) for methodological issues such as the use and development of boundary objects in complex, multi-actor settings.

4 CENTRAL NOTIONS FOR A METHODOLOGICAL REFLECTION ON COLLECTIVE LEARNING EXPERIENCES

The main objective of a methodological reflection is to clarify guiding principles for research practices. Its ambition reaches further than a description of methods, i.e. tools, techniques or processes. This is particularly relevant in inter- and transdisciplinary settings with actors that draw on different theoretical and methodological perspectives and experiences. Typically, the development of future explorations in spatial planning requires an involvement of a multiplicity of actors with different backgrounds, interests and voices. The orchestration of processes to accompany an exchange, negotiation or even collaboration deserves being critically assessed. Before we turn to the case study, we briefly would like to clarify two central notions in this methodological reflection, i.e. on the setting of collective (and situated) learning initiatives and on the ambition to create boundary objects in these multi-actors settings.

4.1 The setting: collective (and situated) learning initiatives

The awareness over the wickedness of spatial development has profoundly questioned approaches in which plans, models and visions are developed at a desktop of individual experts. Instead, the complexity of issues at stake legitimates investing in multiple sources of expertise, and/or in a joint production of knowledge. Another legitimation lies in a pedagogical reasoning, which emphasises the social nature of learning (cf. Vygotsky). A less rationalistic argument for collaboration lies in the observation that spatial planning decisions are fundamentally political, i.e. leading to the (re-)distribution of resources and an intervening in the allocation of rights and responsibilities (cf. insights on collaborative planning, Healey, 1997).

Ideally, the joint production of knowledge over a complex spatial planning issue would lead to a form of collective learning, in which each of the participants can capitalise on the resources of others. The Flemish administration has organised a series of initiatives, which qualify to various degrees as collective learning experiences. We here think of 'partner dialogues' and 'working groups' in the run-up to a white paper and Spatial Policy Plan, or the efforts to collaborate over so-called 'Territorial Development Projects' or 'Strategic projects'. Other examples of collective learning experiences are the 'Labo XX'-collaboration with the Flemish 'bouwmeester'- or the unique project of the 'Metropolitaan Kustlandschap 2100'. In a collective learning setting, openness precedes reciprocity: only with a fundamental openness towards a heterogeneous group of participants, there is a chance to learn from one another's experiences and expertise. With this

condition fulfilled, there is an expectation that the creation of knowledge in a collective setting could transcend the mere sum of knowledge available in a given group. Collective learning breaks with the expert-audience, teacher-student, professional-laymen dichotomies, and appreciates the relative value of contributions from different participants, e.g. the fresh look from the outsider, the uninhibited question of a laymen, the localised concern of an inhabitant, the theoretically grounded insight from an academic or the prospective imagination of a child. It hereby essentially also questions the power relations at play in spatial planning practices (cf. Healey, 1997).

Area-based living labs create another particularity: the collective learning experience departs from a real-world, localised setting. The gatherings therefor often take place in particular and 'situated' spaces, i.e. including a field trip to relevant locations, organising a gathering at a meeting room of a local business or the city hall, searching combinations between 'representing spaces' and 'experiencing spaces' and/or being involved in actual practices (e.g. discussing issues in a real setting of a local commission for spatial development). The particular location adds in itself a layer of knowledge: the setting for learning is located IN the subject of concern, i.e. in the region that is studied. The possibility to organise collective learning processes as a 'situated learning' experience (cf. Lave, Wenger, 1991) enriches the production of knowledge with the location being an 'actor' in the process of shared problematisation. Place (i.e. the explicit presence of a specific location) matters in the building of localised capacities. According to Lave and Wenger, learning in a community of practice needs to be situated in an authentic context, i.e. the context in which the knowledge is to be applied. Whereas the location in area-based living labs creates a common context, the discourses, languages, interests and expertise of different participants can still largely vary. The ambition to mediate in this heterogeneity through the creation of boundary objects is discussed in the following section.

4.2 The ambition: creating boundary objects

The concept of 'boundary objects' was defined by Susan Leigh Star as a model to describe and to explain how it is possible that many different actors and viewpoints can cooperate, despite the tension due to the extreme heterogeneity of the group (Star, 2010). 'Boundary objects' are an analytical concept to explain how different actors manage to cope with both diversity and cooperation (cf. Schreurs, Kuhk, 2014). They are as "objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and becomes strongly structured in individual-site use. These objects may be abstract or concrete. They have different meanings in different social worlds, but their structure is common enough to more than one world to make them recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds" (Star & Griesemer, 1989, p. 393).

Since our primary concern is to factually bridge barriers, we have to ask questions about the nature of the concept. How broad is the scope of boundary objects? What kind of 'boundaries' are we dealing with? And what can play the role of 'object'? "'Boundary' is seen as "shared space where exactly that sense of here and there are confounded. These common objects form the boundaries between groups through flexibility and shared structure – they are the stuff of action" (Star, 2010, pp. 602-603). Clearly, commonness and sharing are more important than delineating and dividing. 'Object' also has a meaning beyond common parlance. "An object is something people (or, in computer science, other objects and programs) act toward and with. Its materiality derives from action, not from a sense of prefabricated stuff or "thing"-ness. So a theory may be a powerful object." (ibid., p. 603)

Boundary objects can thus be used, interpreted and elaborated in different ways. They typically do not perfectly fit, but do allow individuals and (sub-)groups to elaborate on their own authority. Then also, boundary objects are repeated and re-interpreted, and therefore often gain an almost 'iconic' status. Boundary objects are flexible and robust at the same time. The objects induce a discussion that acknowledges different perspectives and understandings, which in itself is a precondition to create shared understandings. Boundary objects allow discussing (1) understandings on differentiations and classifications, or (2) on the identity of single units in such classification. They can also be used to instate (3) a shared understanding between different groups of actors (relating to different aims) and consequently also function as a (4) 'method of common communication'. Star & Griesemer describe these four types of boundary

objects as 'repositories', 'ideal types', 'coincident boundaries' and 'standardised forms' (Star & Griesemer, 1989, pp. 410-411).

While this list of types of boundary objects was not meant to be exhaustive (Star, 2010: 603), it shows the broad understanding of the concept. Wenger builds on the typology of Star & Griesemer, to describe how boundary objects can serve as connectors (Wenger, 2001, p. 107), which closely follows Star's description: "boundary objects are a sort of arrangement that allow different groups to work together without consensus" (Star, 2010, p. 602). In one or another way, such boundary objects have the capacity to bridge group imaginaries and sociocultural schemata. A particular characteristic is that of 'modularity', which stresses that different perspectives that are linked to one boundary object are complementary. Star stresses that the 'form' of boundary objects should be seen as 'organic infrastructures' that emerge out of 'information and work requirements' for doing things together in a local group (Star, 2010, p. 602). Also, boundary objects are marked by 'abstraction', which enables 'accommodating' different interpretations. Last but not least, boundary objects are also marked by certain standardization. In a later article, Star emphasizes the intrinsic dynamic character of situations in which boundary objects play a crucial role, notwithstanding a gradual standardization. She "began to think of standards and boundary objects as inextricably related, especially over time" (Star, 2010, p. 607). An explanation was looked for in a non-linear course of interrelated processes of group-formation, de- and reconstruction, while defining and redefining what should be fixed and what can be kept flexible: "Over time, all standardized systems throw off or generate residual categories. […] As these categories become inhabited by outsiders or others, those within may begin to start other boundary objects … and a cycle is born" (Star, 2010, p. 614).

In conclusion, it can be said that boundary objects are coexistent and malleable, i.e. changing over time, yet also with a potential to gradually become an accepted standard. Co-production is essential in the making of boundary objects and method standardization (cf. Schreurs, Kuhk, 2014).

5 BOUNDARY OBJECTS IN LOCALISED LIVING LABS

There are different instances with the development of area-based living labs in which the development of boundary objects can be productive for collaborative and collective learning. The need to develop boundary objects can be motivated as follows:

- There is no standardized, generic methodology for living labs in spatial planning. The architecture of a living lab requires a process or selection and articulation, and possibly also negotiation. A first connector therefore is needed with the design of living labs, in order to develop a joint methodology for living labs, i.e. through the positioning and/or integration of scenario-analysis, research-by-design, experiences with transdisciplinary or actor-relational-approaches, perspectives from transition thinking, evolutionary planning or social innovation.

- Then also, the living labs enable links between different research tracks in the Policy Research Centre (i.e. on water management, migration policies, ecosystem services, mobility, housing, etc.), towards an interdisciplinary, and more 'collaborative' production of knowledge. Also here, the building of a shared understanding is essential for collective learning.

- Last but not least, the heterogeneity of living labs is largely defined by the participants. Boundary objects are essential to facilitate communication between researchers and different stakeholders in such living Labs.

5.1 Towards shared methodologies

5.1.1 The need to make the implicit explicit

Living Labs do not follow one standardized, generic methodology. The notion refers to a range of possible approaches, such as a more business-oriented logic, a 'lead user' concept (cf. von Hippel, 2005) unto wide participatory approaches for 'crowdsourcing' (cf. Howe, 2008). Then also, the introduction of the living lab concept to spatial planning can alter the concept. Equally, planning could be altered with the introduction of living labs: "Planning work is not just about the substance or specific context of issues…It is also about how issues are discussed, and how problems are defined and strategies to address them articulated. Questions of process as a result are as important to local environmental planning as questions of substantive content" (Healey, 1997, p.85).

Based on a closer analysis of scientific journal databases, the Finnish researcher Sirkku Wallin identified three types of urban living labs (cf. Wallin, 2015, p.2). The first type is a series of technology-driven living labs, for instance leading to city-wide experiments or pilots to enhance local mobility services. Wallin notices that the role of the users remains very limited in this constellation. The second type of living labs produces urban artefacts, e.g. through the co-creation of public spaces. The third type of initiatives that were described as an 'urban living lab' focuses on vision-making, mutual learning, deliberation and new models of local governance. The different approaches in area-based living labs are mirrored in different planning styles, ranging from technocratic approaches that focus on solving particular, limited problems to socio-cratic approaches with an aim to mediate in a complex actor setting.

For the two experimental living labs on peri-urban development in Flanders, there was only a limited set of agreed guiding methodological principles at the start of the initiative. Quite a large part of principles in the building of a shared methodology are the result of negotiations, e.g. at the 'curatorium'.[1] This gathering of four professors and two senior assistants, recently also joint by an expert from the Flemish administration of spatial planning, was organised more or less every two months. The 'logbook', in which the process of building living labs is documented and reflected upon, has provoked discussions on specific methodological issues, e.g. about the level of ambition of the living labs, on the openness and/or the level of inclusion of particular actors, the valorisation objectives of the living labs, and so on.[2] Each member of the 'curatorium' contributes to the building of a shared methodology based on own experiences, knowledge, backgrounds and interests. The following paragraphs attempt to illustrate how this collective learning and co-construction of knowledge on the functioning of living labs in spatial planning developed. It illustrates the process of developing a shared, yet tailormade methodology.

The development of localised living labs for spatial planning in Flanders joins a wider array of experiences and methodologies, amongst which knowledge on actor-relational approaches (Boelens, 2009), experiences with future explorations and scenario-analysis (Kuhk e.a., 2011), reflections on evolutionary, cyclical or adaptive planning (cf. Bertolini, 2010), a view on transition management, systemic approaches and the need to build strategic territorial alliances (Coppens, Allaert, eds., 2014), knowledge on social innovation (Moulaert e.a., 2013) or on participant design- scenario workshops (Cox e.a., 2014).

The link with actor-relational approaches and strategic territorial alliances have been explicit references as of the start of the area-based living labs, already in early negotiations with the commissioning authorities (i.e. the department of spatial planning in Flanders). The other frames of reference have been included only gradually and/or often more implicitly. It has been a process of progressively growing insights to develop a shared methodology for the two experimental area-based living labs.

5.1.2   User-orientation and iterations

The logbook served as a reminder to also situate the particular experiments in Flanders in a wider range of living lab experiences. In this, Chesbroughs description of 'open innovation' has been an important point of departure for the Living Lab concept. 'Open innovation' assumes non-linear, cyclical innovation processes (cf. Chesbrough, 2003; Veeckman e.a., 2013) with iterations, feedback loops and hands-on, formative evaluations. This can for instance be realised through 'open innovation platforms' (Feldman, 2007). The complexity of planning issues, the uncertainty over contextual factors or the multiplicity of actors involved urges the development of similar processes, which translate into a series of actor- and action-oriented approaches, stressing the importance of collective learning. This is equally emphasized in the publication "The Urban Connection, An actor-relational approach to urban planning" (Boelens, 2009), in which the author advocates for planning approaches that explicitly consider a multiplicity and diversity of actor perspectives. The reasoning and legitimation for such efforts is based in the observation that contemporary planning practices often experience path dependencies and lock-ins, whereas at the same time, alternative practices emerge as a response to a significantly revised social context. However, these novel practices often stand little chance to be implemented, valorised or transferred to a greater scale (cf. Boelens, 2009, p. 8-9).

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[1] Participants to the curatorium are: Luuk Boelens, Jan Schreurs, Michiel Dehaene, Tom Coppens, Marleen Goethals and Annette Kuhk, more recently also Liesl Vanautgaerden.

[2] The process, design and architecture of the logbook is based on earlier experiences that were developed in integrative design trajectories for the Master Programme in urban planning at the Sint Lucas School of Architecture (In this, A. Kuhk was lecturer for the theoretical component).

Another argument to promote investing in multi-actor collective learning initiatives is the observation that scientific theories on spatial planning seem to develop at a large distance from daily practices (ibid., pp. 183-189). A series of case studies in the publication illustrates the relevance of the actor-relational approach (ARA): "Space is always relational (...), it is constantly co-structured by the reciprocal interaction between (leading) actors and their networks, e.g. strategies and (institutional) settings" (ibid., p. 11). The author concludes that the examples from practice are promising in order to develop a novel and more robust form of urban planning with flexibility and a strong practice orientation (Boelens, 2009, p. 197). Such an 'outside-in' approach that starts from stakeholders (as opposed to an 'inside-out' approach that starts from governments) could be developed in different stages (ibid., pp 193-197), e.g. starting from a first inventory of actors and values, development of potentiality maps, bilateral talks and round tables, development of business cases or pilots, according coalitions and possibly also the widening of new practices. The use of maps is essential here since it enables to represent territories related to interpretations of different spatial uses, i.e. shaped (and shaping) actor relations to physical spaces. Mapping is one of four ways to navigate through the complexity of spatial planning issues (ibid., p. 172-177, based on Deleuze and Guattari, 1980). The process of mapping is preceded, yet often also accompanied by an unravelling and a reconstruction of the existing, which is a process of 'tracing'. Then again, potentials cannot be realised unless matching partners can be found. The relevant structure to navigate through complexity here is a 'diagram', e.g. to represent relationships and transformations thereof. Last but not least, the realising of novel practices equally requires knowledge about a wide field of 'agencements' such as laws, regulations or institutions (and the potential to change these) to be able to estimate the likelihood of potential developments in spatial planning. The fourfold Deleuzian cartography –traces, (potentiality) maps, (actor) diagrams and 'agencements'- has become a shared fundament in the methodology for the experimental living labs.

Other references in the methodology of the experimental living labs have been experiences in research-by-design and particularly also the 'synoikos scenario workshops', e.g. in the European 'Thought for food'-project (T4F) with a case in Roeselare Hoogleden (cf. SPINDUS-project, Segers e.a., 2013). The aim here was to test 'participatory urban design' in a real-world setting, as a method for social innovation (i.e. approaches to enhance social interactions and basis needs for specific social groups). A significant resemblance to the actor-relational approaches is the starting point, which are, in both approaches, local actors. Then again, the SPINDUS project has an explicit focus on social innovation, which seems to be no sine qua non condition for the ARA approach. The observation of this difference with regard to taking an explicit normative position has equally been discussed in the 'curatorium'.

The 'architecture' for the T4F project is based on synoikos processes and on the 'Netzstadt' approach (cf. Oswald Baccini at ETH Zürich; Oswald, Baccini, 2003). The aim is to create strategies for development and to launch project ideas based on the contribution of a multiplicity of actors, similar to the ARA. The project started from a morphological and physiological research, which is partly comparable to a process of 'tracing'. The results of this were presented in a first workshop, which lead to 'scenarios' (comparable to the stage of 'mapping'). These are hypotheses about possible pathways for more sustainable spatial development over a period of 50 years, with an indication of the 'change agents' (similar to a process of 'Diagramming'). The experience from this participatory urban design approach as well as from a variety of research-by-design projects has been valuable in developing potentiality maps for the living labs. The multi-valence of such design-scenario hybrid, which integrates images and narratives, is expected to also contribute positively to a more continuous, dynamic, strategic and inclusive planning process (cfr. Schreurs & Kuhk, 2011, p. 346). Vandenbroeck agreed with the expectation of added value, but stresses the need to use strong boundary objects to integrate approaches from planners and designers, in order to also operationalize the use of both scenario analysis and designerly research in planning practices.

The T4F experience equally sharpened the focus on the importance of iterative and cyclical developments: building a shared understanding requires a methodology that structurally builds on reiterations. Neither the Deleuzian ways to navigate complexity (i.e. tracing-mapping-diagramming-agencying) nor the architecture of synoikos workshops (i.e. inventarising- scenarios and scanning directions for development – indicating change agents) should be read as linear processes: it requires many iterations with local and regional actors to sail across the complexity of spatial planning issues (cf. evolutionary planning, Bertolini, 2010).

The experiences from actor-relational approaches, participatory and designerly approaches (with their emphasis on future-orientation and on experiment), which are at times combined to scenario-thinking, are

moulded into a methodology for two experimental area-based living labs on spatial planning in Flanders. This has lead to following guiding principles:

- To (pro-)actively and continuously reflect on the building of a shared methodology, which is supported by systematic documentation in a logbook as well as a by the frequently organised feedback on the subject of concern as well as on methodologies in a 'curatorium' (cf. designerly approaches),

- To consider a multiplicity and diversity of actor perspectives as of the beginning of the living labs (cf. actor-relational approaches, synoikos-workshops as well as essentials of living labs itself): not only is innovation expected to emerge from co-creation, the development of novel coalitions can itself be an innovation in complex (spatial planning) issues,

- To develop the living labs as non-linear, cyclical innovation processes (cf. evolutionary planning), with explicit attention for reiterations and moments of consolidation: in this, it is important to also identify gaps in the knowledge production, and to use progressive insights and/or the participation of other actors for a next iteration (cf. also literature on uncertainties and on wicked problems, which are defined and redefined instead of being 'solved'),

- To navigate through the complexity of spatial issues by means of tracing, mapping, diagramming and agencying (cf. actor-relational approaches, based on Deleuze and Guattari, 1980),

- To foster a reflection on more continuous, dynamic, strategic and inclusive planning processes (cf. also hybrid combinations of images and narratives as can be found in scenarios and designerly approaches).

5.1.3   Systemic approaches and strategic development

Prior to the living labs, there has been another ad hoc, short term assignment at the Policy research Centre for Spatial Planning, i.e. the 'expertforum'. The group of experts accompanied the writing of the white paper on spatial policies during two years. In this, Coppens and Allaert pointed at a central dilemma in spatial planning: whereas several aspects in the business-as-usual are fiercely criticised for their negative impact on for instance traffic congestion, water management, bio diversity, food- and energy facilities or effects on health and environment (Coppens e.a., 2014, p. 40), it seems to be increasingly difficult to actively steer societal systems and as such also the development and the use of spaces. The members of the expertforum expected that transition management could potentially offer a way out of this impasse. The starting point is an analysis of broader socio-technical regimes which focus on (1) tangible and intangible structures (e.g. network infrastructures or systems of regulation), (2) on the dominant images, values, paradigms and discourses (e.g. the importance of juridical stability, or the strong individualization in spatial development in Flanders), and (3) on routinely system behaviours (e.g. discrepancies between permits and enforcement). With a certain number of similarities to this approach, the analysis of dominant images or worldviews has also been the subject to explorative scenarios (cf. Kuhk e.a., 2011), as well as to the 'theories des cités' (Boltanski, Thevenot, 1991) or to subsystem approaches in public policies (cf. Kuhk, 2013, pp. 42-44).

A common assumption in the literature on transition management is that the measures to resolve systemic conflicts are generally conformist and only rarely innovative on a systemic level. Measures may temporarily appear to be functional, whereas they essentially reinforce an existing lock-in (which is, from a systems perspective, essentially a dysfunctional evolution, e.g. using breakdown lanes as a measure against congestion and/or other symptom control). Another example is the exuberant regulatory framework in spatial planning, which attempts to summarize even complex conflicts in high density areas in an encompassing regulatory context. In an attempt to adjust regulations for every combination and variation, the regulatory systems becomes rather dysfunctional than facilitating (e.g. creating 'exception decrees' and 'repair laws', ibid., p. 47). Transition management argues that socio-technical regimes have a persistent stability, with little possibility to actively steer the regime. In future explorations and scenario analysis, a closer analysis of thresholds and path-dependencies is expected to shed a light on these kind of syrupy processes (cf. Hendriks, Toonen, 1991).

At the same time, there have been also numerous examples of socio-technical regimes that change quite radically, often at relatively short notice and starting from small-scale innovations. Niche changes can, under

certain conditions or so-called 'windows of opportunity', be applied on a larger scale.[3] Transition management does not aim at steering towards one specific 'optimum', but it is primarily striving to accelerate the process of change in the direction that is more sustainable.[4] Solutions are a priori not determined, but found in the course of the process (cf. Coppens e.a., 2014, p. 45).

The living labs depart from a similar logic: the issue setting (or 'problematisation') and the possible approaches (or 'solutions') are both defined by all relevant actors involved, from the beginning of the process. The expertforum expected innovations to develop in new and unexpected connections of actors, including actors from niche networks. The novelty then would be a result of unexpected linkages between actors who previously were in relatively separate worlds, e.g. social organizations with private operators, energy suppliers and food producers, hobby farmers with water companies, etc. If these innovative coalitions evolve into a system level, they can turn into 'strategic alliances' (ibid., p. 49). Innovative practices in space can then also result in a system-wide transition. There is an important flipside to this coin though: even if novel practices function well in particular niches and particular locations, the effect on a larger scale needs to be considered carefully. The reassessment of systemic levels both considers potentials as well as possible negative externalities with a generalised application of novel practices. The debate over systemic and strategic implications can complement the series of guiding principles for area-based living labs:

- To reassess proposals for change with regard to effects in broader, dynamic socio-technical regimes and wide contextual changes, in order to avoid myopia on the local real-world setting (cf. transition management as well as explorative scenarios), which also includes an assessment of the potential to innovate on a systemic level.

- To particularly also consider actors from niches (cf. strategic alliances and transition management),

- To consider the potential of turning novel coalitions into strategic alliances (cf. strategic alliances),

- To study thresholds and path-dependencies for the development of novel practices (cf. scenario-analysis and wider future explorations).

5.2 Towards shared understanding and problematisation

As can be understood already in the road towards a shared methodology, the Policy Research Centre is a nexus of inter- and transdisciplinary interactions and endeavours. The scientific consortium is composed of several research groups from three different universities and their faculties. In its functional and research relationships with Flanders' administration and the cabinet, many more different disciplines are involved. By deciding to explore two experimental living labs (and as such also the living lab methodologies), the focus is extended well beyond traditional socio-spatial issues and concerns. All these different loci of governance, science and daily practice are embedded in complex 'backgrounds'. A shorthand notation for this complexity is: those are constellations of attitudes, knowledge, and practices. The Policy Research Center would therefore be a rich locus for (experimenting) inter- and transdisciplinary research. There are drawbacks however: interdisciplinary research is not evident. Paradigms and theory-constitutive concepts are both formative of and resulting from disciplinary practices, but they are structurally different for every discipline. Differences in knowledge, methodologies and attitudes can easily hamper cooperation, mutual understanding and even communication. From the set-up onwards, the proposal anticipated to this multiplicity. Trying to construct a 'foundation' for a common understanding, a coherent body of underlying metaphors, theories and images was foregrounded.

With little signals of an effective absorption by researchers, alternative routes towards common understanding were searched for in setting up two experimental living labs. The following paragraphs briefly present main elements in the original 'foundation' for a common understanding as well as later steps towards shared understanding and problematisation through setting up living labs.

5.2.1   Towards a common conceptual framework for Policy Research on Spatial Planning

When the program of the Policy Research Centre for Spatial Planning was set up, a system-perspective - with the 'ecosystem' as an associated metaphorical concept - was meant to operate as part of a common

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[3] These conditions have been extensively studied in so-called 'subsystem approaches' in public policy studies (cf. overview in Kuhk, 2013, pp. 42-44.
[4] Cf. earlier: discussion on explicit normative framing for living labs.

conceptual framework. It was hoped this could generate a minimal 'logic', at least a minimum of coherence between different research tracks. Taking specific care for coherence was an obvious measure because, from the start of this research program, the practice of interdisciplinary approaches is said to be one of its strongholds. Interdisciplinary collaboration requires more than shared concepts though, which points at a rather limited understanding of boundary objects. We believe there is a considerable potential in constructing shared 'lenses' to help inter- and transdisciplinary work. Within the research-proposal, they were elaborated in terms of a combination of a common conceptual framework, a shared methodological framework (i.e. all work packages will develop and apply similar concepts, related to a 'systems'-lens), a shared procedural framework (i.e. a similar research logic, bi-annual dialogues, a charrette halfway etc.), and active integration management. This structural given would allow combining a broad array of different domains (e.g. systems theory, morphology, mobility, climatology, sociology, planning or governance), kinds of knowledge (i.e. concepts and methods) and experiences. In this way, interdisciplinary work could become a fruitful ground for innovation and critical assessment. Thus it was hoped.

Being aware of the rather abstract nature of the notion 'ecosystem', two metaphors were also foregrounded in order to clarify and to mobilize the concept. It was hoped that an experiment in mobilising 'ecology' as a metaphor would contribute to planning theory. In recent years, the use of the term 'ecology' has boomed in planning and design literature (e.g. Mostafavi & Gareth, 2010; Palazzo & Steiner, 2011). While 'ecology' has been a leading metaphor in many analytical endeavours, examples of its use in planning practice are rather sparse. Investigating potentials, thresholds and challenges of its use as core of a common research 'language' is therefore relevant. To be clear: mobilizing this metaphor does not imply that all issues and methods have had to belong to be seen as part of the domain of natural or biological 'ecology'. The descriptions of a city as an 'artificial ecology' (Allen, 1999) or the statement that one should take care of 'physical as well as social and mental ecologies' (Guattari, 1989) exemplify the profound as well as broad meaning of the concept. The associated metaphorical concept of 'metabolism' was also considered as a promising choice for spatial planning to more effectively describe challenges such as climate change, water problems or energy flows (cf. Beatley, 2000). Then again, references to landscape ecology would allow developing an ecological perspective for the study of spatial developments in operational terms. For instance, this can lead to identifying interrelations between spatial structures such as matrixes, patches, corridors (cf. Dramstad, Olson and Forman, 1996) and spatial strategies such as interweaving, bundling, (de)concentrating, (de)fragmenting, flows, rescaling, which are then also linked with concepts such as 'stocks' and 'flows' of people, water, space, material, capital, information, energy (cf. Angélil & Hebel, 2010).

5.2.2 Local laboratories: Boundary objects in local laboratories and Living Labs

As described in previous sections, the Policy Research Centre became aware that boundary objects (i.e. shared concepts and metaphors) and standardized methods (cf. Star &Griesemer, 1989) have to be actively looked for or created. They can help to construct flexible but strong ties, which can provide a substantial base, as well as a reflexive (and communicative) turn to research.

Until now, several thematic, territorial and methodical boundary objects have been developed, e.g. a shared interest for 'resilience', a common focus on a 'reference' case area, and a wider use of 'what if'-approaches for hypothetical and evaluative thinking in variants. The metaphor of 'ecosystem' was not picked up easily and is only recently and gradually becoming an important conceptual boundary object. It intended expressing a flexible systems view on ecology and referring to abstractly delineated territories, which act as a vague reference to a possible field of application for the different work-packages. But it cannot be stated that the conceptual, methodological and procedural set-up was explored up to its ultimate coherence. Therefore different boundary objects are to be more actively constructed to facilitate even more the collaboration and integration between different research tracks, as well as within work packages. In the meantime, a growing need for boundary objects emerged throughout multiple collaborations for within case-based 'living laboratories'.

Within the context of the Policy Research Centre, we plea for a more intensive analysis of deeper understandings that can explain the value-propositions of different actors, e.g. based on images that focus on specific concepts or metaphors over others. Sustaining this ambition, the process of the living labs is documented – and as such also discussed and further developed- in the 'logbook' as well as in a 'state-of-the-art' capturing of the issue setting. As already mentioned earlier, the logbook report of the process

forwards questions regarding methods and the standardisation thereof, as well as questions and proposals with regard to concepts and metaphors as boundary objects. By doing so, the process of developing a living lab becomes in itself a result transferable to other professionals and stakeholders.

The preliminary definition in the focus of current living labs is inspired by the contemporary policy context (i.e. thematic focus in different policy frames) as well as by the research context (i.e. thematic and territorial focus in different research tracks). In the area of the regional road N16, there are issues of for instance spatial efficiency, development of urban regions and collaboration on the level of public facilities. Along the other case – the Dender-valley at the West of Brussels- we expect to find issues of ecological, social and economic resilience, but also, and again, issues of spatial efficiency and collaboration between different centres, related to mobility issues. Concepts such as 'resilience', 'spatial efficiency', 'urban regions' or for instance the metaphor of 'metropolitan appeal' are central in the development of the regional Spatial Policy Plan. Whereas the thematic focus of these policy frames was inspirational to define a first zoom-in on specific areas, the development of living labs in a real-world setting allows to also capture the needs and restrictions, the values, uncertainties and path dependencies as experienced and articulated on a local level. The framing, images, metaphors, methods and boundary objects are different for various disciplines, scales of intervention and professional backgrounds that are represented in the living labs. The de- and reconstruction of local narratives is developed as a continuously evolving 'state-of-the-art'-text (SoA). These writings contribute to the development of a shared problematisation, based on observations from site visits, findings from document analysis, insights based on interviews, focus groups, lectures and studio's as well as discussions in the 'curatorium'. The state-of-the-art description of the issue setting in both living labs are presented to local actors (for a methodological triangulation, i.e. to receive feedback on conclusions drawn from observation and surveys). The SoA is not merely a description of results from a process of tracing (i.e. reconstructing the existing) though, it also introduces a discussion on future possibilities, which closely relates to the representations in potentiality maps. Doing so, the SoA paves the way for a 'diagram' of actors and an identification of 'lead partners' necessary to realise these potentials.

Similar to developing a shared methodology, also the introduction of novel concepts in the living labs requires several iterations before being common and equally understood. The representation in potentiality maps, negotiations with local actors, the consolidation through written text such as the SoA, the logbook or the assignments, intermediaries up to conclusions from studio work as well as discussions in the 'curatorium' or in meetings with the commissioning authorities all add to building, questioning and re-assembling boundary objects. Some concepts are taken up easier than others: the naming for different 'experiments' in the living labs for instance became common references, whereas other notions were only picked up after 'repetitive offering'. For instance the referring to the experiments in the Dender-valley as being a 'plantation' within which 'seeds' are being planted for what could become a more generalised transformation, proved to be an appealing image. Then also, the notion of 'living ribbons' is taken up: it refers to the high number of vacant ground-floor units in relatively abandoned shopping streets, yet adds a prospective element to it. The suggestion to turn these into lively places acknowledges the future potential of the sites.

A conceptual twist from a different domain is the introduction of a 'why not?' perspective, being complementary to 'what if' questions. Also here, the notion introduces novelty: whereas a 'what if' proposal subscribes to a logic of being 'different than a business-as-usual' (retrospective), a 'why not' idea stresses the potential of what can come (prospective). These are but few examples of boundary concepts 'under construction' to (re-)assemble a shared understanding and/or to open space towards novel appreciations for the areas along the N16 and the valley of the Dender.

6 CONCLUDING REFLECTION

The two experimental living labs demonstrate qualities and challenges in collective learning processes that focus on highly complex issues in a multi-actor setting. Living labs are expected to be incubators for novel cooperation, novel insights and practices that are based in real-world local settings. In order to live up to these expectations, it is quintessential to actively search for boundary objects as a shared space between different actors. With little handles to develop living labs as area-based innovation platforms for spatial issues, we experienced the need to reflect on shared methodologies as well as a shared concepts and problematisation. In current paper, we attempted to document this process of reflection and joint

construction. As such, the living labs can become both an incubator for novel spatial approaches in specific real-world settings, as well as a test bed (and/or incubator) for methodological issues.

The reflection on building a shared methodology principally intended to trace the different inputs that were considered in the shared, yet tailor-made approach for the area-based, research-driven living labs. Important inputs are for instance the actor-relational approach, research-by-design experiences and/or the combination with scenario-analysis, transition management approaches and evolutionary perspectives on planning. The methodological reflection results in a set of explicit guiding principles, e.g. on the building of novel coalitions, on knowledge production, on the navigation through complexity, the embedding in planning approaches, the relation of innovations to a broad, systemic level as well as the focus on identification of path-dependencies.

The area-based living labs are developed as a hybrid methodology that incorporates both narrative and design-driven approaches. In order to develop these, Vandenbroeck proposed to rely "on the notion of metabolism as a basis for building spatially-oriented scenarios" (Vandenbroeck, 2011, p. 83). Constructing scenarios on characteristics of metabolic flows in the city (e.g. material vs. immaterial flows, infinite vs. infinitesimal) can help the designers to accept the scenario-framework as a rich source of ideas: "Whilst the result of a conceptual analysis, the suggestive and spatially relevant nature of the defining uncertainties did connect with the designers' imagination. Hence, the scenario framework was able to insert itself as a potent 'boundary object' between two spheres" (Vandenbroeck, 2011, p. 78). When Vandenbroeck builds his plea to use strong boundary objects to mediate between different groups of professionals, he refers in the first place to a shared understanding that builds on the metaphor of metabolism. Whereas we agree that this kind of metaphor, which acknowledges complexity by its nature (i.e. fostering creative imaginaries, adding to a multi-dimensional understanding, etc.), has the potential to bridge between different actors (i.e. planners and designers) and their methods (here scenarios and designerly research), we would argue that inter- and transdisciplinary settings also require the shared building of strict methods. Likewise, Star & Griesemer's typology of boundary objects seems to suggest that the link between different groups of actors (i.e. 'social worlds') can be realized through a shared understanding on the subject of concern, represented by 'boundary objects' (i.e. concepts to describe single units, classifications and relations), as a well as through a shared method, which requires a degree of 'methods standardization' (Start & Griesemer, 1989, p. 392). With the example and plea from Vandenbrouck, the development of shared methodologies and shared problematisation - as documented in the logbook and the state-of-the-art text for the living labs - cannot be seen separately. The construction of boundary objects will possibly be a critical element in the success of living labs. Boundary objects are constantly being reinvented, they are developing as the actors and the context are changing. As such, also this reflection on the methodologies and concepts in two living labs is a discussion text, to be altered with the next future experiences.

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