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ID 1730 | REGIONAL RESILIENCY: EXPLORING THE EMERGENCE AND RESILIENCY OF TWO REGIONAL INITIATIVES IN THE NETHERLANDS

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ABSTRACT: In the past few decades we have observed a proliferation of regional initiatives labelled in various ways. Some refer to city-regions, appealing to some kind of territorial coherence of adjacent cities, others to learning -, creative -, or competitive regions, ascribing to the region human abilities to learn and create. Even though such regional initiatives are very distinct from each other in their appearance and process of development, most of these initiatives are results of actor networks with some kind of common interest crossing the administrative boundaries of cities. As such, from an actor-network perspective, it can be argued that regions emerge through network activities between various actors who in first place prioritise meaningful (economic) relations above spatial scale and fixed demarcations. In the same line, regions are thought as a landscape of perpetual overlapping processes of becoming. Such regional processes develop at a certain grade of complexity and uncertainty of how relations (re)assemble and how do they become resilient. Consequently the dynamic context of changing relations also implies a different role for planners in regional initiatives. Even though it seems impossible to plan for such complex and volatile regional processes, planning activities occur and regional concepts emerge in co-evolution with other socioeconomic processes. In this paper we will explore the emergence of two regional initiatives in the Netherlands and their resiliency. More specific we want to address the meaning of the regional concepts in relation to the resiliency of regional initiatives. One, Brabantstad, is a governmental initiative concerning five middlesized cities in the province of Brabant. The other, Eindhoven-Leuven-Aachen-Triangle, is a cross-border regional network including Flemish and German cities Leuven and Aachen. With the help of Assemblage Theory and Actor Network Theory we will investigate which conditions lead to more (or less) resilient and robust regional initiatives and their capacity to transform their context.

1 INTRODUCTION

Contemporary regionalization processes, which involve various stakeholders with different economical interests, political differences, and cultural challenges, encompass much more complexity than the mere material and administrative construction of clearly defined regional territories. Such intertwined territorial and social formations influencing each other leads us to the debates about post-structural space conceptions and linkages between the social and the material constellations (Amin & Thrift, 2002; Massey, 2005; Murdoch, 2006; Urry, 2002). The post-structural conceptualization of space is based on the idea that space is produced within heterogeneous networks and that different conceptualizations and meanings of space can exist next to each in a constant process of becoming (Boelens, 2009; Murdoch, 2006; Rydin & Tate, 2016). This means that the post-structural concept of space prefers agency and the act of constant (re)assembly of networked space above predefined structures (Boelens & de Roo, 2014; Farias & Bender, 2010; Van Wezemael & Silberberger, 2016).

From the perspective of post-structural concept of space and organization, resilience is linked to the agency of the actors, which is the main instrument to increase the resiliency of an emerging regional initiative (Brown & Westaway, 2011).

In this paper we want to address the conditions of regional resilience by investigating two case studies in the Netherlands; a cross-border regional initiative Eindhoven-Leuven-Aachen-Triangle (ELAT) and a governmental collaboration of representatives of the province and five middle-sized cities in the province of North-Brabant (Eindhoven, 's Hertogenbosch, Tilburg, Breda, and Helmond). Using the translation process from Actor Network Theory we can describe and analyze the process of emergence of the two regions. We will then relate the case studies to the theories of resilience in order to research the real meaning of the regional concepts and conceptualizations emerging during the process itself.

2 RESILIENCE OF REGIONAL ASSEMBLAGES

In resilience thinking there is a difference made between equilibrist (engineering) (Holling, 1973), ecological and evolutionary interpretations (Boschma, 2015) of the term. According to the equilibrist approach, resilience is defined as the ability of a system to quickly return to its original state after a shock or disaster (Peterson, Allen, & Holling, 1998). The main focus of such approach is to define the desired functional equilibrium and to develop a mechanism, which allows the parts of the system to find their way back to the original state after unforeseen event(s).

From this perspective and in relation to regions, the focus mainly lies on economic resilience and the capacity of regions to address problems generating longterm success and how regions recover from external shocks reestablishing former states of equilibrium (Christopherson, Michie, & Tyler, 2010). The ecological interpretation of resilience emphasizes the existence of multiple equilibriums and a system moving from one to another (Holling, 1973, 1996). Even though different from each other, both engineering and ecological concepts of resilience acknowledge the existence of equilibriums to which systems bounce back or forward. Contrary to such linear processes regional initiatives develop in seemingly chaotic and volatile trajectories with characteristics such as emergence, self-organization, co-evolution, and uncertainty (Van Wezemael & Silberberger, 2016). Due to its linear and normative approach, both engeneering and ecological approach are insufficient to describe resilience in heterogeneous and highly dynamic processes such as emerging regions. Such regions are in the continuous complex processes of becoming, transforming, and confronted with highly uncertain outcomes (Allen, 2011; Anderson & McFarlane, 2011; Farías, 2011; Farias & Bender; McFarlane, 2009; Van Wezemael, 2008). From the perspective of perceiving regions as complex, relational and heterogeneous, its resilience cannot be conceptualized as the ability to return to the 'normal' state of affairs. Resilience should rather be conceptualized as the capacity of the region "as the ability (…) to change, adapt, and, crucially, transform in response to stresses and strains" 302 (Carpenter, Walker, Anderies, & Abel, 2001; Davoudi et al., 2012, p.: 302) without slipping into a new regime or identity (Walker, Salt, & Reid, 2006). From that perspective regional resilience is not a static and fixed quality but 'a dynamic capacity to move between a range of adaptive states without crossing a threshold of no return' (Dovey, 2017; p. 486). However governmental policy and therefore also spatial planning, as one of the main instruments to put political concepts into practice, emphasize the equilibrist resilience and the absorption of shocks and maintaining functions of the system and less on the ability to transform and adapt (Davoudi, 2016; Davoudi et al., 2012).

From the perspective of co-evolving regional processes, resilience thinking is related to various aspects of social organization and in particular the role of humans as integral elements that give shape to processes through which social and spatial structures are transformed, adapted or maintained (Dwiartama & Rosin, 2014). Hence ideas of regional resilience can be linked to the concepts of learning-, creative-, selforganizing regions in which the need for partnerships, alliances, collaboration and shared concerns are perceived as crucial in order to achieve resilience through combined actions (Cole & Marzell, 2010; Ross & Berkes, 2013). Here Actor Network Theory Theory (ANT) offers a distinctive approach to the study of regional processes aimed at achieving resilience (Dwiartama & Rosin, 2014). ANT goes beyond the dichotomy of social natural actors and proposes that both human and non-human actors are capable to influence the development of regional systems represented as actor-networks by forming relations and enrolling other actors (Dwiartama & Rosin, 2014). According to ANT, agency is not only attributed to humans but also to non-human actors such as objects (buildings, vehicles), nature (animals, rivers, or weather). As such, the concept of agency, extended beyond the human intentionality, in ANT offers several advantages in to studying resilience in regional initiatives (Dwiartama & Rosin, 2014).

Instead of focusing on demarcated sites of action (e.g., neighborhood, city, region, state) or specific aspects of social interaction (e.g., legislation, spatial planning), ANT focuses on the relationships between actors and the way these relationships shape, transform, and/or influence the network of related actornetworks. As such it allows us to think the region as a 'global entity -a highly connected one- which remains nevertheless continuously local' (Latour, 1990; p.6).

ANT proposes that agency only exists when actors are related to each other not in the mere sense of its existence, per se, but that there is an evident amount of energy and time poured into the relationship. Additionally an actor is distinguished as "any thing that does modify a state of affairs by making a difference" (Latour, 2005, p. 71).

Resilience from the point of view from ANT is seen as an ongoing process, generated by associations between actors within actor-networks and their efforts to remain indispensable, change or transform the actor-network according to their interests. Hence when we talk about a region with resilience and its capacity to act and respond rapidly to the unexpected (Innes & Booher, 2003), in reality we are talking about actor-networks with capacity to connect, act, and respond to the unexpected events. We propose to research the adaptive capacities within regional processes making use of the translation process from ANT.

Additionally, and based on existing research, adaptive regional resilience can be defined on the characteristics of: 'stability', 'self- organization', and 'innovation' (Peng, Yuan, Gu, Peng, & Ming, 2016), 'robustness', 'redundancy', 'rapidity' (Tempels, 2016), 'diversity' and 'redundancy' (Dovey, 2017). In the following we discuss the characteristics of resilience through the translation process of ANT. To be more specific, in the translation process and as part of the problematisation phase (Callon, 1986), the capacities of actors are described as the capacity of the lead actor to recognize and precisely describe an emerging controversy as well as to propose an innovative solution (Venturini, 2009). In addition, such actors could also be capable of mobilizing existing in order to convince them to accept the proposed solution and forming new (regional) external relations in order to solve the problem (self-organization). External relations are crucial because the emergence of a controversy (problem) is actually proof that existing actor-network relations have not prevented its emergence and that a solution must be searched elsewhere (Boonstra & Boelens, 2011; DeLanda, 2006). In the emerging regional process an Obligatory Passage Point (OPP) can emerge (Rydin, 2013). During the interesement phase negotiation and consultation with other actors occurs whose identities and roles are translated and enrolled through the OPP (Callon, 1986). Translations of identities is crucial in order to make sure that all actors pursue the same regional idea and behave accordingly to the terms of enrolment in order to achieve stability. An OPP is an important mechanism to direct self-organization corresponding with reproduction, confirmation, creation, re-creation of self, and self-maintenance (Boonstra, 2015). During the enrolment phase the amount of actors increases while the relations are further stabilized. To successfully enroll actors beyond the initial problem definition and solution, the lead actors must be capable of adapting and transforming the regional idea and concept in order to align interests of not only increasing amount of actors but also diverse set of actors (A. A. Alagic, L. Boelens, & M. Glaudemans, 2017). Through enrolment of as much as possible actors thinking and behaving in accordance with, by the lead actors, proposed concept of the region, the region in fact gains robustness. However, the characteristics that can increase regional resilience are also linked to diversity and redundancy (Dovey, 2017). The diversity of enrolling actors increases the capacity of the regional network to adapt because its parts are able to react to stress in various ways. As such diversity is linked to redundancy as the capacity of the actors to 'perform in different ways by moving forms and functions around so that actors can perform a multiplicity of functions' (Dovey, 2017). In fact this would mean that not only the region gains resiliency by heterogeneous set of actors but also that the process of enrolment must allow for actors' identities and roles to stay or become heterogeneous in order to increase their modes and radius of agency (A. Alagic, L. Boelens, & M. Glaudemans, 2017; Van Wezemael & Silberberger, 2016). In other words hybrid identities of the actors in which they can perform different roles in different setting are desired condition for achieving resilience. For spatial planning in relation to resilience, the existence of heterogeneous identities and interests is in fact a stumble block for its insufficient ability to include and accommodate different sets of knowledge (Innes & Booher, 2010; Rydin & Tate, 2016) due to the tendency of formal planning to develop methods and models in order to optimize the efficiency of the systems (Dovey, 2017). According to ANT and during the enrolement phase, the lead actors are rendered invisible through spokespersons speaking on behalf of the whole regional network and a set of inscriptions (Rydin, 2013). The inscriptions in the form of statistical data, contracts, policy and strategy documents, or laws 'allow the lead actors to execute power through space and time without their

continuous effort and labour' (Rydin, 2013), in order to maintain achieved and further induce stability and robustness of the region. Maximal robustness is achieved during the mobilization phase the regional relations become institutionalized and taken for granted, while focal actors govern from a distance.

3 INTRODUCTION CASE STUDIES AND METHODOLOGY

For this research and for two case studies we have conducted a total of twenty six (26) in-depth interviews. Both cases include actors from Eindhoven and some of them were aware of both regional initiatives and were asked to reflect on both. We have focused on emerging controversies, research questions and solution propositions conceptualized by the lead actors (Venturini, 2009). Additionally we have looked at developed strategies on how and which actors are enrolled during the process and what effect they provoke within the regional actor-networks and further regionalization. Our goal was to find what kind of conditions contribute to the regional resilience and how these conditions emerged or how the participating actors created these particular conditions. During the interviews the actors were asked to reflect on their role and activities within the actor-network and how the relations between them and other actors started, evolved, and which materials/objects played a role in the assembly process. This way we were able to retrospectively 'follow the actors' (Latour, 2005, p. 12) as the actors revealed the traces "in their weaving through things they have added to social skills so as to render more durable the constantly shifting interactions" (Latour, 2005, p. 68).

4 CASE STUDIES ANALYSIS

4.1 EINDHOVEN – LEUVEN – AACHEN – TRIANGLE (ELAT)

During the 1980's Philips, based in Eindhoven, encountered a major controversy. It was loosing its leading global position in microelectronics due to a changing context in which technological innovations were generated more in open actor-networks of inter-firm alliances (Chesbrough, 2003). Due to Philips' dispersal in the previous years it has set up factories and laboratories in among others also Louvain (BE) and Aachen (GER). Philips' external relations in these two cities would proof to be crucial for the emergence of ELAt, a cross-border high-tech region including actors from three cities and three different countries. The solution for Philips' controversy of 'how to implement open innovation' included consultation and enrolment of representatives from Interuniversity Microelectronics Centre (IMEC) from Louvain. IMEC already accomplished to set up and implement an open innovation environment in its laboratory and Philips' representatives saw the opportunity for learning and exchanging identities.

However Philips during the knowledge exchange process with IMEC, Philips also learned that in order to achieve an open innovation environment a broader set of divers actors and tacit knowledge was needed. At the same time leading actors from the region of Eindhoven were confronted with controversies of declining local economy due to declining power of Philips and shifting central government's policy to focus on the its major cities in stead of equal distribution funding (Ministry of Economic Affairs, 2004). As solution for these issues regional reorganizations was proposed and resulted into the set up of a regional development agency Brainport Development. Lead actor the mayor of Eindhoven consulted the local educational institutes (Fontys Hogeschool and Technical University Eindhoven) resulting into an advisory board (for the municipality) advocating the Triple Helix idea in which is proposed to set up networks between academia, government, and business actors to foster technological innovation. To facilitate the emergence of such networks, Brainport Development organized round tables around the idea of Business and Technology Communities (BTC). The BTC meetings became the Obligatory Passage Point of a divers actor-network pursuing relational intensification among technological firms and between local government and technological firms in order to achieve technological innovation and thus first step towards an open innovation environment (A. A. Alagic et al., 2017). During these meetings the representatives of Philips advocated and promoted the idea of an open innovation environment to other participants[1] through their successful collaboration with IMEC in Leuven and thus an already existing regional axis of technological innovation between the two cities (R. Harwig, 2012). Additionally during these BTC meetings Philips

[1] (technological firms, academia, municipality, SRE, Brainport development)

representatives also achieved to convince others of the importance to enroll actors from Aachen where Philips had facilities. Specifically this idea was presented as a regional concept of regionally interconnected high tech campuses in the three cities. During the negotiation process of such ideas, roles were discussed and developed resulting into a set of actors intensively travelling to the other two cities (Louvain and Aachen) in order to convince eligible actors of the value of an open innovation environment through intensification of relations between the three campuses (R. Harwig, 2012). The regional concept and goal transformed once again portraying a regional triangle between the three cities. With this newly translated regional idea the lead actors applied for Interreg IIIB funding allowing further assembly of the regional concept (T. v. Lier, 2012). During this phase, the role of focal actors transferred to the three mayors of each city who appointed spokespersons and strategies were developed to further intensify the relations (R. Harwig, 2012). This resulted into an array of divers effects, newly emerging actor-networks, influencing the existing relations and reassembling existing relations into new actornetworks.

For example, two KIC locations were assigned to consortia formed as part of ELAt regionalization process (T. d. Bruijn, 2012). Spatial effects include the emergence of high-tech campuses in the three cities with aligned developmental strategies. On the high-tech campus in Eindhoven, a jointventure action between various actors resulted into Holst Centre, in which the identity of IMEC was translated into an open innovation environment for the development of sensor technologies (R. Cuyvers, 2012). Eventually, cross-border regional network ELAt merged with the governmental cross-border initiative Top Technology Region (TTR)[1] (T. v. Lier, 2012). The main reasons were that the Interreg IIIB funding for ELAt stopped and that the Dutch central government saw the opportunity to implement the success of ELAt into the more bureaucratic provincial initiative TTR (T. Hommels, 2012). Dutch central government supported the peripheral Dutch province of Limburg to initiate the TTR network with its direct cross-border neighbors in first place to reverse its economic decline (D. Plees, 2012; T. Hommels, 2012). Left without (European) funding, focal actors of ELAt, the mayor of Eindhoven supported by other two mayors, merged ELAt with TTR against strong resistance of the spokespersons (P. Scholmeesters, 2012).

4.2 BRABANTSTAD

Around the same period (1990's) on the territory of the Dutch province North Brabant a new governmental network emerged including the representatives (mayors) of the five middle-sized cities[2] and the province of North Brabant. As such this regional network functions as some kind of a middle layer between the official administrative entities (province and municipalities). However the regional network Brabantstad does not strive to judicially institutionalize the relations, meaning that the network does not have any juridical powers over certain territories as the focal actors have over the province or the cities. The main controversy that triggered this kind of regional thinking and reorganization of existing actors into a newly formed regional initiative was a combined set of issues raised in that particular period.

The first one was the policy shift of the national government from equal distribution of central government's funds to one supporting the big cities (Janssen-Jansen, 2004). With the central government's intention to focus on support of the country's major cities the middle-sized cities began to fear to be left out of funding and support (P. v. Ree, 2014).

Secondly, this change of context in which the emphasis of national policy is directed towards the main urban nodes and their performance, perceiving the cities as the central places of socio-economic dynamic, also challenged the relation between the province and its main five cities. Unlike the provinces of North-, South Holland, and Utrecht, the province of Brabant is traditionally seen as the province of the farmers (Janssen-Jansen, 2004). At that point the Province of North-Brabant faced a reality of lacking strong and reliable relations with its major cities and therefore a lack of effective alignment and coordination of interests (J. Janssen, 2013).

1 Cross-border initiative of six adjacent provinces with their deputies as representatives: Limburg (NL), North-Brabant (NL), Limburg (BE), Flemish-Brabant (BE), Liege (BE), Northrhine Westfalia (GER)

2 3 Brabantstad: an alliance between the mayors of Tilburg, Eindhoven, 's Hertogenbosch, Breda, and Helmond and the Deputy of the province North Brabant

Thirdly, the formation of a parallel regional initiative City Region Eindhoven (SRE) in 1993, as technological core of the province and the country, formed a serious candidate to become an official province (Haran, 2010). From that perspective, SRE formed a challenging threat to the institutional power and territory of the province of North Brabant in line of the ongoing discussion about the role of the provinces. Every now and then, it is proposed to reassemble the provinces into greater territories or to decentralize their power to smaller regional units (Haran, 2010; Janssen-Jansen, 2004). Additionally, the Ministry of the Economic Affairs adopted a view that North Brabant consists of two different socioeconomic urban networks, namely the west and the east wing (Haran, 2010). According to this conception, the east wing of Brabant with the city of Breda is perceived as an economic entity oriented towards economic activity around the harbors of Rotterdam and Antwerp, while east wing's forces tend to concentrate around the technological innovation hub of Eindhoven supported by a strong manufacturing industry in the surrounding (Haran, 2010).

Concluding, the Province of North Brabant faced a possibility that it could loose its magnitude of influence on its whole territory, especially the cities.

Faced with the challenges and the threats outlined, the Royal Commissioner Frank Houben consulted scientists, urban planners, architects, and policy experts who he commissioned to write a manifesto on the future of North-Brabant. Various interviewees mention this manifesto as a turning point for the set up of the regional network Brabantstad. The main conclusion of "Manifesto North-Brabant" was that "the future is knowledge and the cities; not just agriculture" (Broess & Grijzen, 1997) having in mind that the province of Brabant has a centuries old farmers identity. To act in line of an urban future, Brabant and its people, therefore, must first deal with their traditional conception of romantic countryside as basis of their identity.

The manifest further notes that the policy of EU is focused on regions while at the same time large parts of the Dutch sovereignty are transferred to the EU-agencies, that it is inevitable that the future socioeconomic developments will mostly benefit city-regions (Broess & Grijzen, 1997). It is pointed out that form this European perspective on cities and city-regions, that the future of Brabant depends on the relations between the Brabant cities. Armed with such arguments to rethink 'Brabant's rural areas as a mold of the big city' (p.32) and combined with claims that an alliance between the cities would prevent unnecessary competition towards third parties such as the central government and the European Union the Royal Commissioner Frank Houben started to regularly meet with the mayors of the five cities.

From various inter-consultation between the chairman of the province and the five mayors, the idea was born to create a city-network (A. v. d. Broek, 2013). It was assumed that this network could solve the controversies of provincial territorial instability of the province, lack of funding for the individual cities and prevent unnecessary competition between the cities by aligning their strategies towards third parties. On one hand the province was building a relation with the cities and gaining their trust and loyalty in order to prevent possible assembly of new regions on its territory and therefore keeping Brabant whole. On the other hand the main motive of the actors to collaborate seems to be an opportunity to form a strong lobby towards the central government and European Union, which would increase their chances for more financial means. As part of the translation process (interesement), the focal actor delegated its role to a spokesperson establishing a Programme Bureau Brabantstad at the province of Brabant. Additionally, through the work of the Programme Bureau representatives, lower layers of the municipal and provincial lead actors (administrative officers, planners, strategic advisors, etc.) got enrolled and take part in formalized consultations and meetings. The consultation between the participating actors is formalized through a fixed annual agenda of multilateral meetings called Brabantstad Tuesdays. These meetings function as OPP through which the enrolled administrative officers are informed immediately of the ideas and agenda of the lead actors for which they possess the tools to implement in the individual cities. Also Brabantstad is represented by a lobby delegate at the headquarters of the EU in Brussels.

Regional conceptualization of Brabantstad is based on the metaphor in which the territory of the province is represented as a tapestry mosaic in the shape of green landscape patches in-between a patchwork of dense five urban cores and smaller patches of villages with their own sociospatial characteristics. This metaphor is also part of the spatial development strategy in which is stated that the existing patchwork of separate zones should me maintained and further reinforced meaning that the cities should become more densified and the green patches should keep and develop their green, agricultural and leisure characteristics. Regional patchwork concept is emphasized, reinforced and maintained through various strategic documents and regional studies and designs commissioned by the Programme Bureau. Another

regional concept and developmental model of Brabantstad focuses on the three corridors: Rotterdam - Antwerp axis, Amsterdam - Den Bosch - Eindhoven axis and Rotterdam - Breda - Tilburg – Venlo corridor. Further the spatial strategy involves improving connections to the three corridors and the cities in order to improve Brabantstad as a daily urban system (Noordanus, 2014).

Even though Brabantstad was acknowledged as strategic urban network in the Fifth National Policy Document on Spatial Planning, still one of the controversies was not yet settled and not all ministries perceived it as a whole urban network resulting into contrasting policy and funding towards the participating cities (Haran, 2010). In ANT term it can also be stated that the network insufficiently developed enrolling strategies in order to convince the external relations of its existence and relevance. However, it can be argued that Brabantstad achieved the mobilization phase in ANT terms based on two initiatives undertaken by the actor-network. In 2007, the actants managed to formulate and execute a concerted agenda of projects in Brabantstad. The agenda was backed up with financial means put together by the cities and the province resulting into an investment plan named Meerjaren Programma (1 billion euros). Secondly, in 2008 and part of the same concerted agenda, the regional network of five cities decided to apply for the title of European Capital of Culture in 2018. Even though, the jury decided to award Leeuwaarden with the title and subsidy to represent the EU in 2018, the application alone is seen as an achievement for Brabantstad. The process of application is conceived by its actants as a positive development of the network mainly due to the fact that the divers actants showed the ability and will to align various interests of the different cities into one common strategy and plan, presented in the bid book Brabantstad 2018.

5 ANALYSIS RESILIENCE STABILITY

"Formation of Brabantstad is seen as a solution to the emerging controversies (territorial, power and funding at stake) of the lead actor Province of North Brabant. The solution for the controversy is sought in ways to return to the previous state: coherency and integrity at provincial level. From that perspective the actor-network Brabantstad is focusing on the equilibrist resilience. Internal stability is further enforced through exclusion of other actors (smaller municipalities and non-governmental actors). Main mechanism for this exclusion is the formation of a strong OPP (Programme Bureau + formalised meeting structure) where identities of the actors are constructed and controlled.

Also by focusing on the development on physical infrastructure, Brabantstad is in fact striving to increase its internal stability. Spatial planning is playing a crucial role in this element of self-organisation and consultation among planners from different cities increases the knowledge and interest alignment in the plans. However the planners stay within their traditional professional boundaries following the ideas and policies from above by executing the central state, provincial and municipal agendas. Consultation among the planners has not resulted into new regional concepts or enrolment of other than by the OPP selected actors.

Formation of ELAt occurred in a much more rhizomatic way. The solution for the controversy on how to create an environment of open innovation did not start with a pre-defined regional concept but developed through building relation with eligible actors.

5.1 SELF-ORGANISATION

Self-organization is best understood as a relational process in which the actors search for more order. In relation to adaptability in a changing context self-organization must be dynamic to handle the change. Changing context provokes action in organized systems as we observe that provincial lead actors are forced to transform their relation to the actors from the cities.

From the perspective of the characteristics of self-organization (reproduction, confirmation, creation, recreation of self, and self-maintenance) the idea of Brabantstad is reproduced in the governmental networks through meetings of lead actors. Created regional concepts are further reproduced through concerted agenda and execution of local building projects. However these building projects are result of local agenda's, which were bundled under the name of Brabantstad. As such the projects served local leading actors and not specifically regional concept Brabantstad. Recreation and self-maintenance are

achieved through publication of regional concepts, commissions of design projects as well as a fixed annual agenda of meetings and consultation with each other.

ELAt actors on the other hand show capability to involve different and distant actors through creation of enrolment strategies, which include alternating regional concepts. As the actor-network grows, the actors learn from each other and recreate each other's identities in their own environment. As example, Philips resettled a whole research department to IMEC in order for their employees to collaborate and learn.

IMEC's (Louvain) open innovation identity is recreated in Eindhoven by the set up of Holst Centre on the high tech campus. DSP Valley, a networking platform originated in Louvain, is recreated in Eindhoven as well. This all has contributed in the intensification of the relations and creation of a distinctive region on the axis of the two cities.

5.2 INNOVATION

Brabantstad actors focus on predefined regional strategies and developmental models (daily urban system, corridors, zoning). Such models prioritize certain actors above others and do not allow different knowledge to enter the network, which in fact is crucial for innovation. The political landscape of the region is not transformed. The distribution hierarchy of administrative power stays the same in which the roles of participating actors and their distribution of power is locked in the centuries old model and procedures. The leading actors can translate the ideas of Brabantstad through the usual provincial and municipal procedures but do not develop strategies to involve the inhabitants, the ones that in fact evaluate them through democratic voting, into the decision making process of Brabantstad. The conceptualization of Brabantstad as a patchwork of divided green and red zones is bounded by administrative borders and as such serves as a representation (from above) of the territory of the province of Brabant. In other words it is as a spatial metaphor used to seduce actors in certain direction of spatial development without addressing their functional relations and interests.

Focal actors of ELAt show capabilities to develop innovative strategies in order to enroll other actors. Innovative and alternating regional conceptualizations are crucial part of such strategies. It is evident that for successful enrolement process regional concepts must co-evolve with the transforming actor-network. In addition, entering actors (through OPP) with their specific knowledge alternate the context and in relation to other actors generate innovation (technological, policy, spatial concepts, etc.) further stabilizing the network. However the leading actors fail to develop innovative strategies to enroll financial means after the Interreg funding stopped.

5.3 ROBUSTNESS

A complex actor-network is robust if it keeps its basic functionality under failure of some components. In Callon's words robustness is accomplished through successful translation or when as many actors are enrolled as possible.

One of the main controversies to be solved by the province of Brabant could in fact be interpreted as to increase the robustness and coherence of relations on its own administrative territory. The translation strategy to enroll the leading actors (mayors) of its subordinate cities involved the concept of a region (the province) perceived not by its administrative borders but various regional concepts such as a patchwork of green and red zones, daily urban system, metropole, and corridors. It could be argued that such regional planning concepts were presented as proof of an existing common shared region as strategy in order to seduce the mayors to align their interests and begin to act as a unified and coherent region. Additionally this would increase the magnitude of influence of the province as well as prevent the possible break-up of the province into a west - and east flank or the formation of a new administrative region surrounding Eindhoven. This has worked as so far as the lead actors have aligned their lobby strategies towards the central government. It has been argued that the alliance has not achieved anything substantial for the region as a whole except an effective network of city representatives who successively lobbied for each other's individual projects subtracting financial means from the national state and the European Union ((Janssen-Jansen, 2004) ELAt achieved a certain level of robustness through translation phases, which enrolled more and more diverse and spatially dispersed actors. The main condition for increasing its

robustness was the successful enrolment of Interreg IIIB subsidy. The financial support allowed the leading actors to further assemble the external actors, contract a full time project leader, increase the mobility of spokespersons, develop common strategies, documents, and a website. However, once the funding stopped after four years ELAt was merged with another initiative, which in fact meant the end of ELAt. This means that the lead actors failed to develop strategies to increase robustness by enrolling eligible actors to continue the funding in some way.

6 CONCLUSIONS

In this paper we aimed to research how resilience is built in emerging regional initiatives by researching the conditions which contribute or obstruct resiliency. More specifically our goal was investigate what role the spatial planning plays or could play in this process. From our analysis we observe that resiliency is not only a matter of sum of all parts but that it includes a form of collective agency which becomes from "... interactive, co-ordinative and synergistic dynamics of their transactions" (Bandura 2001:75–76, Ross and Berkes 2013:26).

This collective agency is an actor-network property and emerges through the relations between its members. With ANT we were able not only to research the relations between the human participants but also their relations to emerging technology, regional concepts, administrative borders, built environment, policy documents, etc.

By analyzing the process of becoming of the two regional initiatives we have discovered that the leading actors focus on different interpretation of resilience and that spatial planning plays a crucial role in both. Challenged by a controversy including the competition of a newly formed city-region Eindhoven and the central government perceiving the province as consisting of two separate economic zones, the province of Brabant initiated Brabantstad in order to increase its internal stability and coherence. As such the main goal of the lead actor seems to be to return to the original state of a unified province. From that perspective, Brabantstad is building on the equilibrist resiliency, which is aimed at developing strategies to maintain and/or return to the 'desired' equilibrium. In that process lead actors use the already existing regional concepts (daily urban system, corridor development) and conceptualizations coming forth out of the process (Brabantstad Mosaic Metropole) to underpin and reinforce the territorial unity of the province and its borders. The type of strategies that are developed and the fact that only governmental actors are enrolled reveals that the eventual goal of Brabantstad is to keep things together and prevent new regional actor-networks to affect the existence of the province. The translation process develops in a strict and linear process directed through the Program Bureau Brabantstad. Identities and roles are defined by the six leading actors and translated to the lower levels of administration.

In the case of ELAt, we observe a much more rhizomatic and heterogeneous regionalization process in which regional concepts co-evolve within the assembly process and serve as a strategy to bring regionalization further, induce emergent actor-networks, and enroll distant actors. Here we observe that roles and identities also emerge as result of the regionalization process and that they are not predefined and imposed by the lead actors. During the assembly process certain borders emerge such as the triangle of the three cities revealing the desired spatial location of the actors and the enrolment of actors connected to the technological innovation. After ELAt merged with the provincial TTR regional initiative, we observe similar regionalization process as Brabantstad. The leading actors of the provinces emphasize their territorial administrative borders and focus on reproduction and reinforcement of these borders through internal organization of relations.

From this perspective, the pursuance of resiliency in regional planning depends upon how resilience is conceptualized and promoted by the leading actors. However in the case of ELAt we see that the regional concepts contribute to the pursuance of different interpretations of resilience and could perhaps be more studied and applied as instruments in achieving regional resilience.

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