THE INFLUENCE OF SELF-ORGANIZATION ON RESILIENCE

- A case study of resilience in Bospolder-Tussendijken

MASTERTHESIS CHARLOTTE KOPPEN
Faculty of Social Sciences
Erasmus University Rotterdam
Department of Public Administration
M.Sc. Management of Governance Networks
Student number: 439914
Supervisor/first reader: Dr.ir. J. Eshuis
Second reader: Prof. dr. M.W. van Buuren
Date: August 17, 2017
Word count: 28.474

Gemeente Rotterdam

Summary

This research deals with the influence of self-organizing processes on the resilience of a (local) governance system. The research is based on a single case study of Park 1943 located in Bospolder-Tussendijken in Rotterdam. Data have been collected by means of sixteen interviews with stakeholders around the park. Also several meetings were attended. Three self-organizing initiatives that operate in or around the park are central to this research.

Taking into account that present policy problems are often so-called “wicked problems” (Rittel and Weber, 1973), a complexity-embracing approach is required to tackle these problems. In doing this, the creation of resilience is put forward as a strategy to deal with these problems since a resilient governance system is able to restore itself after disruption (Gerrits, 2012: 94). Therefore, resilience is swiftly being adopted as an urban policy discourse. Moreover, public administrators increasingly use resilience as a framework for their policies (Wagenaar and Wilkinson, 2013: 1279). However, empirical and scientific knowledge about resilience from a governance perspective, is limited. This research aims to diminish this knowledge gap.

Complex societal problems and trends imply that governments cannot govern society alone (Torfing, 2012: 100). In other words, the role of governments is changing: from a hierarchical and vertical government to a more horizontal government (Héritier and Lehmkuhl, 2011: 49). Self-organization is an example of a new societal arrangement with which governments have to deal. On the one hand, self-organizing initiatives fill in a gap that is a result of the retraction of government from many areas, on the other hand citizens increasingly like to challenge governments by starting their own initiatives that deal with societal issues (Nederhand et al., 2016: 1064). This begs the question what the influence of these self-organizing entities is on the resilience of the governance system.

In this research, resilience is operationalized by means of three features, namely cooperation, bricolage and adaptability. It was found that the three central self-organizations positively influence the (features of) resilience of the governance system. Moreover, this research demonstrates that dissipative elements in self-organizations positively influence resilience, but this influence is negative for autopoietic self-organization. Also an interplay between autopoietic and dissipative elements influences resilience positively. In addition, it was found that self-organization is a multi-level phenomenon. Therefore, different self-organizing entities mutually influence each other. Finally, this research found that bureaucratic structures are an mediating variable on the relationship between self-organization and resilience. They limit the creation of resilience in a system, because the main features of the bureaucracy are fundamentally different from the main features of self-organization.

Acknowledgements

After two years of study at the Erasmus University Rotterdam I can finally present my Master thesis, which marks the end of my study period. I did my bachelors in political science at the University of Amsterdam. During my third year I studied in Berlin for six months at the Humboldt University and in my fourth year I returned to this fascinating city for an internship at an NGO. After four years in Amsterdam I went on to do a Masters at the Erasmus University given its focus on the practice of politics and governance, which I like very much. I had a great year and I got to know a lot of nice and interesting people from all over the world.

In February 2016, I decided to combine my master thesis with an internship. I would like to thank Mr. Eshuis and Mr. Van Buuren for assisting me in finding this internship. Again, their connection with the practice has proven to be very valuable. My internship at the Municipality of Rotterdam was so interesting that I decided to dedicate all my time to the internship and learn a lot from practice instead of working on my thesis during my office hours. I do not regret this decision and I would like to thank my supervisor at the municipality, Wynand Dassen, for being a great mentor and for taking me along to many interesting meetings. Thanks to him I have learned a lot about the work of the municipality and I got to know a lot of interesting people.

During my internship I was introduced to the concept of resilience, because I was involved in the "100 Resilient Cities" project of the Rockefeller Foundation. I became very interested in this topic, which is why I chose to write my thesis on resilience from a governance perspective. My internship at the municipality allowed me to find a suitable case study and to collect the data for this research. I would like to thank all my former colleagues at the Municipality of Rotterdam and all the people who were willing to be interviewed for this thesis. Without them, I would not have been able to conduct this research.

After my internship at the Municipality of Rotterdam I decided that it was not the right time to finish my Masters because I wanted to fulfil an old wish: to do an internship at a Dutch embassy for the Ministry of Foreign Affairs. This would mean, however, that I would not be able to finish my thesis since you have to be a master student for an internship at the ministry. Finally I got the news that I was accepted at the Dutch Embassy in Addis Ababa, Ethiopia at the political and humanitarian department. I spent half a year in this incredible and interesting country. I have never learned so much in the space of just six months. I am very grateful for having had the opportunity to do two internships during my Master. It was the perfect combination of theory and practice and it already gave me a lot of valuable working experience.

In July 2017 I returned to the Netherlands and I took several weeks to finish my thesis. With an eye to my delay I incurred as a result of my internships, I would very much like to thank my supervisor dr. Jasper Eshuis for his flexibility and his understanding. I also want to thank my second reader, dr. Arwin van Buuren for his flexibility and his quick and valuable feedback on my thesis. I would also like to thank my mother Monica, my brother Lucas and all my friends for their support. And lastly my father, who I know would have been very proud of me.

Now it is time to finish my master. I hope you enjoy reading my thesis.

Charlotte Koppen
Amsterdam, August 2017

Table of contents

List of tables and figures

Tables

Figures

Chapter 1. Introduction

1.1 Motivation for the research

Complex and global developments, such as the digitization of society, climate change and population growth are having an enormous influence on current governance structures and pose serious challenges. Sudden events such as environmental disasters or cyber-attacks have disruptive effects on the functioning of societies. Hitherto, it is uncertain how existing governance structures should deal with these global developments. A concept which is often related to ''uncertainty'' is resilience. The creation of resilience could be considered a strategy to deal with uncertainty (Berkes, 2007: 283), since a resilient governance system is able to restore itself after disruption (Gerrits, 2012: 94). Therefore, resilience is swiftly being adopted as an urban policy discourse. Public administrators increasingly use resilience as a framework for their policies (Wagenaar and Wilkinson, 2013: 1279). However, knowledge on resilience from a governance perspective, its features and factors which have an influence on resilience is limited. This research aims to contribute to scientific theories on resilience in the public administration literature as well as to practical knowledge on how resilience manifests itself in a local governance system.

One example of resilience being applied as a framework for policies is the large-scale program "100 Resilient Cities". 100 Resilient Cities (100 RC) is an initiative from the Rockefeller foundation, which aims at making cities around the world more resilient to the physical, social and economic challenges that are part of the 21st century.[1] Each city in the network appoints a so-called Chief Resilience Officer, who is responsible for the project in his or her city. Since 2013, Rotterdam, the second biggest city of the Netherlands with the biggest port of Europe, is a participant in the 100RC program. In line with the main vision of the project, a way of dealing with the complex problems Rotterdam is facing, is the creation of resilience. Since the project's launch, the Municipality of Rotterdam has worked intensively on the definition of the concept of resilience. In doing so, they have focused on the concept of ''urban resilience'', which they define as "the capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt, and grow no matter what kind of chronic stresses and acute shocks they experience".[2]

1.2 Complexity

One could argue that the underlying approach of the 100 Resilient Cities project is a so-called complexity

[1] http://www.100resilientcities.org/about-us#/-_/
[2] http://www.100resilientcities.org/resilience#/-_/

approach. In the social sciences, there is increasing attention for thinking in terms of complexity (Kickert 1991; Morçöl 2003; Klijn 2008; Gerrits 2012). Complexity scientists argue that there is a need for understanding complexities in order to improve the policy process (Morçöl, 2003: 1). Taking into account that present policy problems are often so-called "wicked problems" (Rittel and Weber, 1973), a complexity-embracing approach is required to tackle these problems. Research shows that when individuals deal with complexity they often simplify things to make them easier to deal with (Gerrits, 2012: 103). Gerrits for example argues that heuristics are a set of simple rules that help people take decisions in complex systems without them having to calculate all the implications of all potential decision outcomes (ibid). For policy makers too, simplification is an important strategy to cope with complexity: they take shortcuts in order to find solutions to policy problems. However, attempts to cope with complexity, such as heuristics, often generate more complexity (ibid: 103). Many studies have shown that sets of simple rules used by individual actors often generate complex and adaptive behavior on a group level when superimposed control is absent (ibid: 123-124). In the scientific literature, the occurrence of these new structures and patterns during the process of self-organization in systems of complexity is called "emergence". The notion of self-organization refers to the fact that there is no superimposed control that leads to the establishment of these new structures. Instead, they emerge from local interactions (ibid: 124). The concept of self-organization is central to this research and will be explained more elaborately in the next chapters.

Hence, simplification often generates unexpected and self-organizing processes on different levels or in different systems. From a governance perspective, the use of simplified rules could generate unexpected and self-organizing processes on different levels or in different systems, such as societal and governmental networks.

1.3 Park1943

Complex societal problems and trends imply that governments cannot govern society alone (Torfing, 2012: 100). In other words, the role of governments is changing: from a hierarchical and vertical government, in which society is governed top-down, governments are becoming more horizontal and networks, co-production and self-organization become more prominent. Nowadays, market parties and citizens contribute to the solution of societal issues through citizen initiatives and social entrepreneurship (Héritier and Lehmkuhl, 2011: 49). This research specifically focuses on self-organization as a new societal arrangement which governments have to deal with. This is often

challenging for them, since the recognition of self-organization implies different ways of working. Instead of bureaucratic modes of governance which are top-down and hierarchical, governments need other modes of governance. The Delfshaven Cooperative (hereafter: DHC) in Rotterdam is a good example of a new societal arrangement in which the aforementioned developments can be seen. The Delfshaven Cooperative is a cooperation between (local) government, private partners and citizens and can be considered an example of societal self-organization. The DHC connects local initiatives with governments and entrepreneurs.[3] One of their projects is concentrated around Park 1943, a park in the Bospolder- Tussendijken (hereafter: BoTu) neighborhood. The aim is to challenge the Municipality of Rotterdam to take over a part of the maintenance and planning of the park together with residents and local entrepreneurs. The stakeholders want to experiment with new forms of planning, maintenance and organization. In order to make this work, residents have established a park board to organize themselves.[4] The municipality also established a coalition with different professionals to make the heart of BoTu a "resilient" area. The municipality expects that these more or less self-organizing arrangements contribute to the resilience of the governance system of the Municipality of Rotterdam. However, what this relationship looks like and which factors play a prominent role in this process, remains unclear. This study aims to shed light on this relationship.

The central question of this research is as follows: *What is the influence of self-organizing processes on the resilience of the (local) governance system in the case of Park 1943?*

1.4 Sub-questions

In order to answer the main question, it is necessary to gain more insight into the concepts of self-organization and resilience from the perspective of governance. Moreover, it is key to know the building blocks of resilience in the context of governance in order to be able to measure it empirically. When these questions have been addressed, it is possible to research the relationship between self-organization and resilience. This research also sheds light on the influence of bureaucratic structures on this relationship, since government is never entirely absent from self-organization.

The sub-questions of this research are the following:

[3] http://delfshavencooperatie.nl/
[4] http://delfshavencooperatie.nl/park-1943/

1. Which theoretical insights does the literature on resilience offer from a governance perspective?
2. Which theoretical insights does the literature on self-organization offer from a governance perspective?
3. How can the resilience of a governance system be characterized theoretically?
4. Is there a relationship between self-organization and resilience in the Park 1943 case?
5. If so, how can this relationship be characterized?
6. Is there an influence of bureaucratic structures on this relationship?
7. If so, how can this influence be characterized?

1.5 Relevance of the research

This research aims to contribute to scientific theories on resilience in the public administration literature as well as to practical knowledge on the influence of self-organization on the resilience of a local governance system.

1.5.1 Scientific relevance

There is an increasing interest in the topic of resilience within academia. Resilience-thinking is on the rise and the concept is at the center of many intellectual debates in for example climate change adaptation and social and economic development (Chandler, 2014: 1-2). However, resilience is often used in climate, psychological and biological studies, and much less in the public administration literature. When it is used in a public administration context, it is usually found in policy documents. This research aims to diminish this knowledge gap in the public administration literature.

Although resilience seems to be ubiquitous, the way the concept is used depends on both the discipline within which it is dealt with and the author. Hence, it is used in different ways and diverse contexts (ibid). The public administration literature does not offer a clear conceptual framework for resilience. This research addresses resilience in the context of governance, which can help to contribute to a coherent framework on this topic. Finally, to my knowledge, the relationship between self-organization and resilience in the context of governance has never been researched before. This research offers more insight into this relationship and in doing so, aims to encourage future research on this topic.

1.5.2 Societal relevance

As mentioned previously, self-organizing processes become more prominent in the context of a changing government. On the one hand, governments encourage these processes, because they often

replace some of their functions and tasks. On the other hand, these processes also challenge governments and they often do not know how to deal with them. Moreover, many local governments, including the city of Rotterdam, want to make their city "resilient" for future developments. However, the influence of these self-organizing processes on the resilience of the governance system remains unclear. It is valuable for the city of Rotterdam to gain more insight into this relationship to gain some prospects for action. Additionally, more knowledge on this relationship could foster research on the design of the governance system of Rotterdam in order to stimulate self-organization and resilience. Finally, knowledge on resilience and its workings is useful in order to deal with wicked problems in the future, since resilience is a way of dealing with unforeseeable and complicated developments.

1.6 Structure of the research

This thesis is composed of a theoretical and an empirical section. The theoretical section in chapter 2 explains the idea of complexity and the concepts of self-organization and resilience. This chapter also discusses the role of "the bureaucracy" and its main characteristics. Chapter 3 introduces the hypotheses and the conceptual model. The fourth chapter elaborates on the methodology of this research and defines and operationalizes its main concepts. The fifth chapter describes the context in which the empirical part of this research was conducted. It also includes a description of the main actors in the case. In chapter 6 the findings of the empirical study are presented. These findings are analyzed in chapter 7. Chapter 8 is the conclusion of this research and provides answers to the sub-questions and the main question. Chapter 9 contains a discussion on the methodological limitations of this research as well as a scientific reflection. Chapter 10 offers some practical recommendations for the Municipality of Rotterdam and scientific recommendations as avenues for further research.

Chapter 2. Theoretical framework

This chapter presents an overview of the existing literature on complexity, self-organization, resilience and bureaucracy. First, the notions of complexity and system-thinking are addressed. Attention is also paid to the concept of self-organization in complexity theory. The next section discusses the concept of resilience from a complexity point of view. Subsequently, the concepts of governance and governance systems are explained. This is necessary for the successive sections, which deal with the features of resilience in governance systems and the concept of self-organization in the governance literature. Then, the role of "the bureaucracy" with regard to self-organization is discussed. This section also highlights the main characteristics of the traditional bureaucracy. The last section of this chapter deals with adaptive governance, a form of governance that is often related to resilience.

2.1 Complexity theory

Complexity has become an important concept in the social sciences and in the public administration literature. The concept is often equated with ''incomprehensibility'' and ''chaos''. However, it is possible to analyze the concept in more detail. This way, it can be dealt with more effectively (Gerrits, 2012: 10). The next section offers an introduction into thinking in terms of complexity, which is necessary for understanding system theory.

2.1.1 System thinking and self-organization

Research on complexity can be categorized into two approaches: general and situated complexity. The former approach could be compared to Plato's theory of Forms, which assumes that there is a universal regime or set of rules by which the world is arranged and which can be applied to all phenomena. In short, this theory assumes that it is ultimately possible to describe and grasp the world as it truly is. That is why this idea of complexity is often used in the computational sciences in the form of mathematical formulas and series (Gerrits, 2012: 19-20). In this research, however, the second complexity approach is taken. Situated complexity assumes that in reality the number and nature of the elements defining an emerging structure or process is not fixed, but changeable. Hence, the world is open, its constituent elements are connected endlessly with other elements and through other elements (Gerrits, 2012: 20). Moreover, a system's borders are defined by the observer's point of view in order to make sense of reality (ibid). An important idea in this approach is that complexity generates more complexity. In other

words, complexity is self-propelling: there is a continuous interaction between different elements and this causes new and unforeseen outcomes (Gerrits, 2012: 17).

Now that the concept of complexity has been discussed, it is important to discuss and address the idea of complexity as being an emergent property of systems. In a system, there exist various relationships between different elements. These elements (actors, molecules, organizations, etc.) are the basic building blocks of a system (Gerrits, 2012: 34). A system emerges through interactions between these various elements. When these elements interact repeatedly, structures and processes emerge which form a complex system (Gerrits, 2012: 56). This process is called emergence and this is often a self-organizing process, which implies that no external interference is needed (Morçöl, 2003: 6). Systems can be maintained and changed through positive or negative feedback loops. A positive feedback loop leads to changes in systems and emerges when the response to a certain input or incentive is reinforcing. In some cases it even reacts disproportionately to the input. Conversely, a negative feedback loop is self-correcting: the response to a particular incentive or input is to return to the state it was previously in (Gerrits, 2012: 78). Luhmann (1970) argues that, when one specifically focuses on social systems, these systems generate ''islands of lesser complexity. These islands are often called ''subsystems''. Subsystems are able to maintain themselves in terms of structure and property through a process which is called ''autopoiesis''. This implies that they try to reproduce and protect themselves by keeping their boundaries intact (Morçöl, 2003: 7). A more general term for autopoiesis is self-organization. A definition of self-organization is provided by Wolf and Holvoet: ''Self-organisation is a dynamical and adaptive process where systems acquire and maintain structure themselves, without external control.'' (2004: 7).

In sum, a system contains an infinite amount of sub-systems. These sub-systems change or stay intact through either positive or negative feedback loops. As mentioned previously, this research will take a situated complexity approach. This implies that it is impossible to understand and grasp the whole social reality. Instead, it should be the researcher's aim to describe and research various sub-systems in order to give meaning to social reality.

2.1.2 Resilience in systems

In this section resilience and adaptability as two important attributes of a system will be discussed. These system features govern the dynamics of the system and in this way are determinants for their future trajectories (Walker et al., 2004). Resilience is a broad concept and has several definitions which can be found in various academic fields. Its definition varies according to the level of analysis: it ranges

from the individual to the global level (Boin and van Eeten, 2013: 431). The idea of resilience did not originate in the social sciences, but in the environmental sciences. It was used to research how ecosystems restore itself after crises (see Holling, 1973). In more general terms, the concept of resilience is used to indicate the extent to which a system can restore itself when it is subject to pressure (Gerrits, 2012: 94). Hence, it focuses on the dynamics of the system when it is disturbed from its original state (Walker et al., 2004). Accordingly, resilience contains two elements: stability and change. There is one element that stays constant while other aspects change (Lundberg and Johansson, 2015: 123). It is often argued that this stable aspect is ''the core identity'' of the system (ibid).

At a systemic level, there are two main views on resilience. The first view holds that resilience is the capacity of a system to return to the state it was originally in (Gerrits, 2012: 95). Holling calls this ''engineering resilience'', specifically referring to the speed by which the system can return to its equilibrium (Holling, 1996: 33). This research will focus upon the second view of resilience, namely the idea that resilience is the capacity of a system to recover through adapting its internal structure and processes (Gerrits, 2012: 95). In this view, which is often referred to as ''ecological resilience'', change is a central element (Holling, 1996: 33). This involves so-called ''regime shifts'' from one state to another. In order for a system to change, it must pass certain thresholds that lead the system to another state (Young and Kim, 2015: 239). The idea of thresholds is closely related to four dimensions of resilience, which are identified by Walker et al. (2004). These dimensions are: latitude, resistance, precariousness and panarchy. Firstly, l*atitude* is the highest threshold at which a system can be changed before it loses its ability to recover. The second aspect, *resistance*, is ''the ease or difficulty of changing the system''. Thirdly, *precariousness* is the proximity of the state of the system to a threshold or limit. When this tipping point is reached through a chronic stress or vulnerability, the original feedback loops in a system change, which causes a ''system crisis" and ultimately a permanent restructuring (Korhonen and Seager, 2008: 413). Finally, *panarchy* is about cross-scale interactions (dynamics from above and below) which influence the resilience at a particular focal point, which may cause regime shifts (Walker et al., 2004). The term is used to describe the dynamics of different adaptive cycles which are coupled to one another across space and time (Berkes et al., 2003: 18). The term "adaptive cycle" will be explained in section 2.3.3.

2.2 Governance systems

The coming sections focus on resilience and self-organization in the context of governance. In so doing, it is important to first explain the notions of governance (2.2.1) and governance systems (2.2.2).

2.2.1 What is governance?

Since the 1990s the concept of governance has gained increasing attention in the social sciences (Levi-Faur, 2012: 5). "Governance" comes from the Greek word *kybernan* and the Latin word *gubernare*, which means to steer or direct (ibid: 5). A rather broad definition of governance is given by Brevir: "[…] all processes of governing, whether undertaken by a government, market, or network, whether over a family, tribe, formal or informal organization, or territory, and whether through laws, norms, power, or language.'' (Bevir, 2012: 1). The academic literature often refers to "a shift from government to governance", which implies a change in the authority of the state: from a hierarchic and top-down state to governance through networks (ibid). This shift could be considered a result of the recognition of complexity by states, because they acknowledge that they are not able to deal with all problems in an increasing complex world (Bevir, 2012: 5).

Different authors have discerned various forms of governance. For instance, one group of scholars focuses on network governance (Klijn and Koppenjan 2016; Torfing 2012; Kickert et al., 1997). According to them, governance is about horizontal ways of steering that takes place in networks with relatively high interdependencies (Klijn and Koppenjan 2016: 110). Others focus on deliberative forms of governance, such as collaborative governance and participatory governance (Ansell 2012; Fischer 2012). Section 2.6 deals with adaptive governance, a governance type that is often related to resilience.

2.2.2 What are governance systems?

The notion of governance can be applied to complex system theory. Teisman et al. (2009) argue that the notion of complexity is often abused in the context of governance. For instance, public managers sometimes state that their project failed because of complexity. However, any governance system is inherently complex (ibid). A governance system could be defined as a complex social system in which the focus lies on the relationships between the various actors in that system. The term "actor" should be interpreted in a broad way: it can refer to individuals, (in)formal groups, and (groups of) organizations. These interacting institutions and actors form the governance system that determines the way society functions and in which decisions are made. In a governance system, actors show adaptive behavior when they have to deal with new situations or when they try to influence their environment (ibid). A

governance systems has two features that discerns it from other social systems. Firstly, a socio-organizational feature, namely the power and authority relations between different actors in the system and their procedures for making decisions. Secondly, a normative-cognitive feature, namely their definition of and view on relevant problems in the governance system (Burns and Stöhr, 2011: 174).

Since governance systems are complex, they must be studied accordingly, because as a system, a governance system has features which cannot be reduced to the sum of its parts. Moreover, it is important to study the relationships and interactions between the different parts (Teisman et al., 2009). However, actors have a different view on what actually constitutes the system at stake and where its boundaries are. Therefore, the boundaries between a system and its context cannot be objectively drawn: the borders of a governance system depend on the actors within that system and on the judgments of the researcher (ibid). Therefore, careful boundary judgments are needed to increase understanding of the system at stake.

2.3 Features of resilience in governance systems

So far barely any research has been carried out on resilience in governance systems. Therefore, the following sections will make use of the literature on ecological and organizational resilience, which provides an extensive theoretical account of the features of resilience. This research discerns three building blocks of resilience that were encountered in the relevant literature, but situates it in the context of governance. The three features of resilience in a governance system that are discerned are bricolage, adaptability and cooperation. In designing this framework for resilience, the researcher made use of the "resilience lens" of the Rockefeller Foundation (see Appendix D) in which six features of resilience are characterized. These features are not theoretically substantiated, but rather practically. In the coming sections, these features are all theoretically substantiated and integrated into the three theoretical concepts of bricolage, adaptability and cooperation.

2.3.1 Bricolage

A resilient system has the capacity to bricolage. According to Van de Walle, bricolage implies ''[…] a nonlinear, nonplanned, nondirect way of thinking'' (2014: 9). In a way, bricolage is the capacity to improvise (Van Buuren and Meulenbeld, 2016: 8). A *bricoleur* is somebody who takes the available materials at hand and in doing this, invents resources in order to tackle unanticipated problems (ibid: 10). These "materials" can refer to a number of things. In this research, knowledge is an important material, since this research focuses on a local governance system in which different actors with diverse

backgrounds and different types of knowledge operate. As Lebel et al. remark, combining different kinds of knowledge, which increases the chance that important thresholds and components of diversity will be recognized, is an important capacity that may enhance resilience (Lebel et al., 2006).

For bricolage not only existing materials can be used but also materials from the past are a source of bricolage. Sometimes, a combination of old materials may create something new. These materials often seem obsolete, but when they are combined with other materials, they become innovative (Van de Walle, 2014: 11). In order to use these "obsolete" materials, the bricoleur needs the ability to look back and use the past experiences or materials to inform decisions in the future. Evaluation may be used to achieve this, since evaluation is a way of looking back and learning in order to create something better and new (Dedeurwaerdere, 2008)

Finally, a certain degree of organizational slack is required in order to do bricolage. Slack can serve as a buffer to absorb shocks (Cyert and March, 1963: 116). Slack is often referred to as ''redundancy''. In this research, redundancy is defined as a spare capacity in the system that may be used to accommodate disruption. A resilient organization has many redundant structures. For instance, Low et al. remark that redundant structures in public organizations can cause improvements in performance of that organization (2003: 84). Structures and resources that had previously been seen as old or unnecessary, can be used or combined to build something new (Van de Walle, 2014: 13). Also Hood remarks that in order to survive crises, organizations need to have a certain amount of slack or redundant structures that can serve as a back-up system (Hood, 1991: 14). Moreover, redundant structures are also useful in natural systems. Water resource systems can be made resilient by creating redundant structures (Gunderson, 2000: 434). In a governance system, redundancy can serve as a buffer to the system in the face of decision errors (Low et al., 2003: 87). Hence, a resilient system has the capacity to bricolage, which is a way of acting in which old, existing and redundant materials are used and often combined.

2.3.2 Adaptability

According to Lebel et al., the capacity to learn and adapt ''[…] implies that a system can get better at pursuing a particular set of management objectives over time and at tackling new objectives when the context changes." Hence, adaptability is a key feature of resilience. It incorporates four important processes: anticipating, monitoring, responding and learning (Lundberg and Johansson, 2015: 23). *Anticipating* is the ability to take in the idea that something might happen, before the actual event takes place and to subsequently act based on this prediction. *Monitoring* is the ability to discover, to

understand, and take action based on the discovery of this event. *Responding* refers to the ability to take action during the event. Finally, *learning* is the ability to be able to adapt the system after the occurrence of the event and learn from its good and bad aspects (ibid). These processes make clear that adaptability is not only a feature of resilience, but also a quality of actors in a system. When actors show adaptive behavior, they can influence or manage the resilience of the system (Walker et al., 2004). They can do this in a way which is closely related to the aforementioned dimensions of resilience (section 2.1.2). For instance, they can change thresholds, or they can make thresholds more difficult or easy to reach (ibid).

Adaptive renewal cycle

Holing's adaptive renewal cycle (figure 1) is a model which describes change in socio-ecological systems and contains four phases: exploitation, conservation, release and reorganization (Berkes et al., 2003: 16-17). When a unit (e.g. forest, region, country) is in the exploitation phase, there is an accumulation of resources and an increase in opportunities, traditional balances transition to new relations and the degree of resilience is high. If this stage is successful and the elements of the system reach an equilibrium, the system enters the conservation phase. The elements in the system are balanced and a period of stability and certainty is initiated. However, less uncertainty implies less resilience, because the system becomes inflexible. This makes the system vulnerable to external shocks. When something happens in the form of a triggering action, the system could go into the release phase. This is a time of creative destruction, crises and uncertainty. Existing relations between elements may sunder. In this phase, resilience is low but has the potential to grow since crises increase the system's awareness of and sensitivity to external variables, which makes the system less vulnerable to shocks. Thus, the system ends up in a reorganization phase: a phase of renewal and innovation. This is the most uncertain phase, because the system has no control over the external environment. Those systems that are able to survive this period because of their capacity to adapt, will return to the first phase of the cycle, namely the exploitation phase (Pendall et al., 2009: 7).

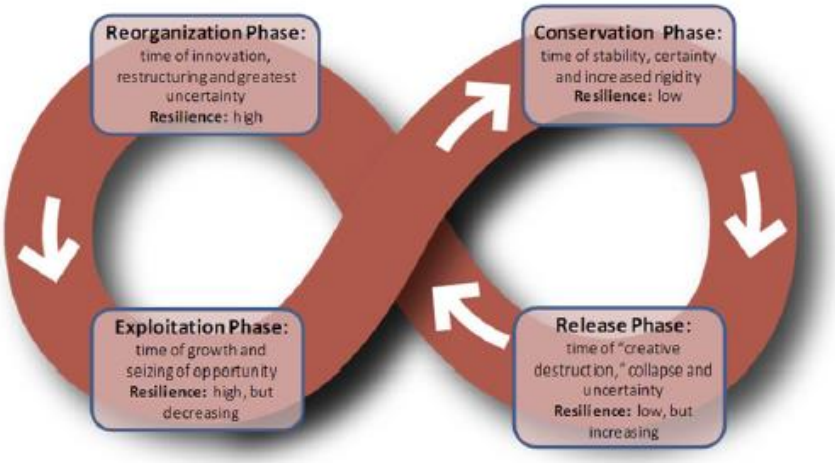


Figure 1: The adaptive cycle. Adopted from Pendall et al., 2009: 6

Flexibility and robustness

The adaptive cycle shows that change is a fundamental aspect of any system (Nelson et al., 2007: 412). Hence, in order to be adaptive, a system needs to be managed such that it remains flexible rather than stable (Sheffi, 2005: 399). In research on ecological systems it is often noted that flexibility is important for resilience to emerge. According to Vayda and McCay, resilience means "[…] remaining flexible enough to change in response to whatever hazards or perturbations come along" (1975: 299). As Lebel et al., argue, governance systems that are flexible have a bigger capacity to manage resilience (Lebel et al., 2006). However, the system not only needs to be flexible to respond to changes, it also needs to show a certain degree of robustness towards uncertainties (Nelson et al., 2007: 412). Robustness implies that the system keeps its basic functions even under sudden events or failure of some of the system's components (Klau and Weiskircher, 2005: 417). Hence, flexibility and robustness are mutually contradicting elements. Systems must be robust to some types of variability, while remaining flexible and open to other types (Janssen et al., 2007: 309). In this research it is assumed that an adaptive system has the right balance between robustness and flexibility, which means that some elements stay intact, while some elements can be changed.

2.3.3 Cooperation

The third and last feature of a resilient system is cooperation. The concept of cooperation is very broad. In the context of resilience, a cooperative system makes connections with other systems and cooperates at different levels and across borders. This implies that a system is rather "inclusive" and operates in an integral and integrated way in order to make resilient connections. As Wyss et al., remark (in the context

of climate change resilience), integration of actors from the public sector and actors in the periphery of a network increases the resilience of a system (Wyss et al., 2015: 908). If this integration is absent, it could hinder the implementation of new rules and regulations and the adaptation of activities, which poses a threat to the overall resilience of the system (ibid: 918-919). Hence, a cooperative system is inclusive when all actors that can contribute or want to have a say, actually have access to the system. Finally, Olsson et al. remark that social networks which facilitate flows of information and connect institutions and organizations across various levels and scales are important for building resilience (Olsson et al., 2004: 75). This relies "[…] on the collaboration of a diverse set of stakeholders operating at different levels, often in networks, from local users, to municipalities, to regional and national organizations, and also to international bodies" (ibid: 75-76). In other words, a cooperative system operates integrally to achieve resilience.

2.4 Self-organization in the governance literature

This section will elaborate on self-organization in the context of governance. First, different definitions and qualities of self-organizing systems are discussed. Then, two different forms of self-organization are discerned. Finally, the text elaborates on six factors that are required for self-organization to emerge in the context of governance.

2.4.1 What is self-organization?

As mentioned previously, self-organization in the literature on systems refers to the emergence of orderly systems in seemingly chaotic processes (Nederhand et al., 2016: 1065). However, whereas self-organization in biology or computer sciences is described as a noiseless concurrence of elements that know their role, self-organization in the public administration literature is about "[…] clashing characters and interests that come together or drift apart tragically" (Uitermark, 2014). Hence, in this branch of literature the social aspect is taken into consideration. In a governance context, it refers to ''[…] non-governmental actors adapting their behavior and to the emergence of collective action without governmental interference" (Nederhand et al., 2016: 1065). Accordingly, self-organization is the sudden or gradual appearance of a governance structure out of a complex system, consisting of interactions between diverse stakeholders and actors with different resources, interdependencies, ideas and interests. This structure deals with a collective challenge, is able to maintain itself and is not imposed by one single actor (ibid). Hence, when one refers to self-organization in a governance context, there is an emergence of collective actions and a non-hierarchical alignment between different actors.

According to Nederhand, self-organization does not automatically imply that government control is entirely absent. Self-organization often takes place in a so-called ''shadow of hierarchy of government", which implies the use of more subtle and complex governance strategies (2016: 1064). The idea is that governments can still use specific resources such as authority, money, information and knowledge. Because other actors are often resource dependent, governments can still influence the process in a hierarchical way. This creates a shadow of hierarchy that may influence self-organizing processes (ibid: 1067).

According to Lebel et al., self-organization is a core capacity of managing resilience. This implies that a system "knows" how to maintain and re-create its core identity. Systems are connected to and impacted by other systems. A self-organizing system is able to "buffer" the impacts of other systems and does not require outside help to exist (Lebel et al., 2006). This implies that a system can control its own boundaries. In other words, it makes its own boundary judgments. In this research, a boundary judgment is a judgment about the borders of the self-organizing system as well as a judgment about the focus of the self-organizing entity. In the context of public administration this implies that a self-organizing *governance* system has the ability to define its own type of institutional arrangement.

The aforementioned indicators of self-organization are not necessarily present in the same composition or to the same extent across different self-organizing entities. Therefore, one can speak of a *degree* of self-organization.

Autopoietic and dissipative self-organization

The public administration literature on self-organization discerns two forms of self-organization. Firstly, autopoietic self-organization is about the reproduction of the system and self-preservation. An autopoietic self-organizing system aims to maintain its structures by stabilizing and sometimes intensifying its boundaries (Van Meerkerk et al., 2013: 1632). Hence, an autopoietic system is rather closed, inwards oriented and stable (ibid: 1634). The second form, dissipative self-organization, aims to "break through" its boundaries, which may lead to the evolution of systems. When a system shows dissipative behavior, it connects with other (sub-)systems. This process is dynamic and leads to far-from-equilibrium situations, which makes the system prone to external influences (ibid: 1632). Hence, dissipative self-organization has to do with the openness of a system to other systems and the exploration for connections with other systems (ibid: 1634).

2.4.2 What is required for self-organization?

Nederhand et al. argue that in a governance system there are six factors required for self-organization

to emerge. Firstly, self-organization requires a trigger to create interaction. People often take action when something unexpected happens. Secondly, trustworthy relationships among actors are needed. When there are strong networks and people trust each other, they have a shared ownership over their neighborhood which increases the likelihood that they will participate collaboratively (Nederhand et al., 2016: 1065). The third factor is the interplay of ideas, information and experiences and the required focus to exchange them. The fourth factor concerns the physical and virtual locus where the self-organization takes place. If knowledge and information are dispersed, it may not be shared between different actors. Therefore, open communication channels and a shared knowledge base are required. The fifth factor is the occurrence of boundary-spanning activities by individuals who are able to connect the internal realm of the self-organization at stake with its environment. Finally, the sixth and last factor is the mutual adaptation of "grown practices" such as roles, routines, rules, legal norms and systems as well as the flexibility and autonomy that these features require (Nederhand et al., 2016: 1066). New structures often put pressure on existing structures (Van Meerkerk et al., 2013: 1649). If a government and other actors are able to mutually adapt and align and thus become more willing to change, a space is created for self-organization to emerge (Nederhand et al., 2016: 1074).

2.5 Bureaucracy

According to Nederhand et al., governments are not entirely absent from self-organizing initiatives, but operate in a so-called "shadow of hierarchy". This implies that self-organization and government interventions co-evolve. Hence, the role of governments regarding self-organizing initiatives has not become obsolete. They maintain influence, though in a latent way. According to Nederhand et al. they make use of more subtle, hidden and indirect governance strategies (Nederhand et al., 2016). Ultimately, the actors in a self-organizing system and government need each other to accomplish their goals. Hence, bureaucratic structures, which are present in any governmental organization, have a certain influence on self-organization. These structures are of great importance in a system of governance. To a greater or lesser extent, every governance system contains some of these structures. Max Weber first coined the term "bureaucracy", which he also called "machine politics". According to Weber, machine politics is the management of politics by professionals (Weber, 1965: 25). Weber's notion of bureaucracy is an ideal-type, a historically abstracted sketch of reality. The first important feature of Weberian bureaucracy is the idea that specialization and task division permit workers to spend more time developing specific skills and forms of expertise, which is key to enhancing efficiency in the organization (Lipsky, 2010: 146). This requires that each office in a bureaucratic organization has a

specific and clearly-delineated sphere of competence. In this model all actors know the areas in which they are expected to work and the areas in which they must abstain from working (Constas, 1958: 403). The second feature is the idea that official rules govern the administrative processes in the organization. These rules are stable and exhaustive. When no rule is provided, the case is referred upwards within the organization. Hence, rules provide stability, continuity, and predictability in the bureaucratic organization and each bureaucrat knows what the outcome of their behavior will be in specific cases (Weber, 2009: 198). The last feature concerns the idea of "impersonality", which implies that relationships between individuals are governed through the system of rules and official authority. Official positions are free from emotions and personal involvement and decisions are governed by rational factors (Weber, 2009: 254).

2.6 Adaptive governance

A specific form of governance which is often related to resilience is adaptive governance. In this form of governance, the constant adaptation of governance and its strategies are central. This research uses the definition of Scholz et al.,: "The evolution of new governance institutions capable of generating long-term, sustainable policy solutions to wicked problems through coordinated efforts involving previously independent systems of users, knowledge, authorities, and organized interests" (Scholz et al., 2010: 5). Furthermore, adaptive governance has to do with social interactions. As Benson and Garmestani remark, adaptive governance ''[…] requires the capacity to learn to manage for resilience'' (Benson and Garmestani, 2013). It connects formal institutions, informal groups and networks, and individuals at various scales (ibid). According to Cosens, adaptive governance is also about cooperation on different government scales and between different layers, sometimes with overlapping authorities (Cosens, 2010: 238). This allows for a response at various levels and scales depending on the problem at stake (ibid: 258). Cooperation on different scales and layers implies that the understanding of local contexts is key. This requires recognizing the value of locals and their context-specific knowledge. Adaptive governance tries to connect the local context with governments and aims to find ways to complement these (Nelson et al., 2008: 590).

Chapter 3. Hypotheses and conceptual framework

3.1 Dependent and independent variables

This research studies the influence of self-organization on the resilience of a governance system. Hence, self-organization and resilience are key variables. Resilience can be divided into three sub-variables or features, namely bricolage, adaptability, and cooperation. In this research, self-organization is an independent variable, because it is expected that this process takes places regardless of the resilience of the system. Resilience, along with its three sub-variables, is considered the dependent variable and is expected to be influenced by self-organization. Moreover, this research discerns a mediating variable, namely "bureaucratic structures". It is expected that these have an influence on the relation between the self-organization of a system and its resilience. The variables are visualized in the conceptual framework in figure 2.

3.2 Relation between independent and dependent variable

The relationship between self-organization and resilience has not been theorized in this paper's theoretical framework. This is because the academic literature does not offer an extensive account on this relationship in the context of governance. This research aims to reduce this knowledge gap.

This research expects a positive relation between the two variables. It is argued that simplification often leads to unexpected and self-organizing processes (Gerrit, 2012: 103). However, the notion of complexity is increasingly recognized when dealing with (wicked) policy problems. In doing so, resilience is increasingly treated as an element in governance, since a resilient governance system is able to restore itself after a disruption (ibid: 94). Governments also realize that they have to use other governance strategies in order to respond to new developments. "Simple" top-down and hierarchical governance strategies seem obsolete. Conversely, governments increasingly recognize the complexity of decision-making and act as actors in a network and make use of more subtle governance strategies (Nederhand et al., 2016: 1064). Additionally, governments often retract from areas that they used to be active in and allow more room for self-organization. However, the question remains if these new self-organizing structures make the governance system in which they operate stronger by making it more resilient. In this research it is expected that there is a positive relation between self-organization and resilience in the context of governance. From a complexity point of view, self-organizing initiatives offer additional governance structures by creating new relationships between the various layers of governments and other stakeholders. It is expected that this "web of relations and systems" increases

the resilience of the governance system as a whole because it somehow serves as a “back-up” for the system. In other words, it makes the system more adaptive.

3.3 Hypotheses

Based on the motivation for this research and the theoretical framework presented in the previous chapters, two hypotheses are derived.

Hypothesis 1: Self-organization in Park 1943 positively influences the resilience of the governance system of the park

Hypothesis 2: The positive influence of self-organization on resilience is weakened by the presence of the bureaucracy

3.4 Conceptual model

The conceptual model below (see figure 2) is used as a framework for the analysis in this research and incorporates the hypotheses formulated above. In order to measure the variables in this framework, they have to be operationalized. The operationalization of the variables will be presented in the next chapter in section 4.4.

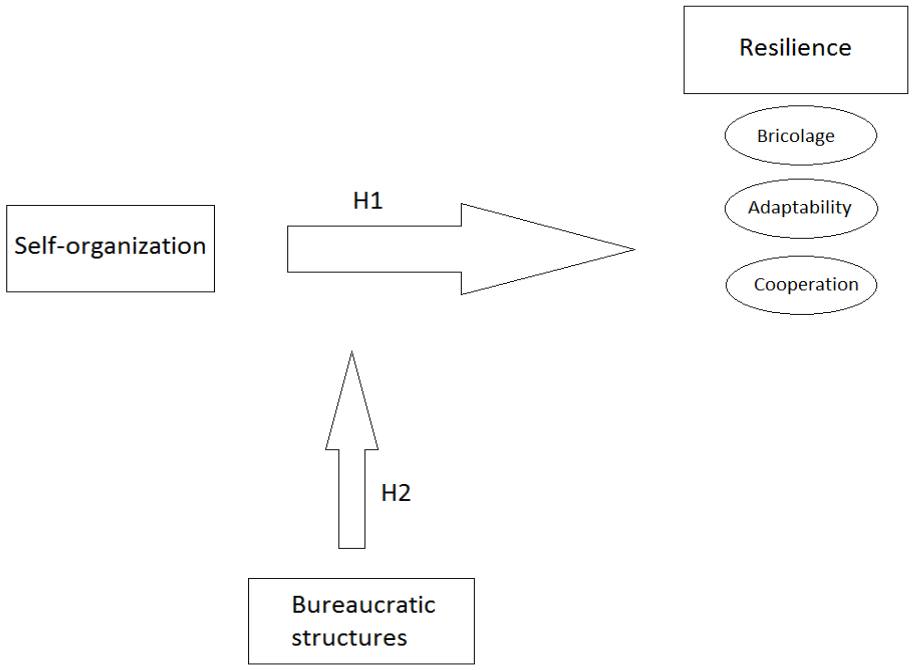


Figure 2: Conceptual model

Chapter 4. Methodology

This chapter contains a description of the used strategy (4.1), the research design (4.2) and the methods that were used for data collection and analysis (4.3). In section 4.4, the variables are operationalized. The end of the chapter contains a brief reflection on the methodological choices (4.5).

4.1 Research strategy

This research is mainly deductive, since it uses existing theories and knowledge to deduce hypotheses that are empirically scrutinized. However, it is partly inductive as well, because it aims to contribute to existing theories on resilience on the basis of empirical findings (Bryman, 2008: 9).

Given the complexity-embracing approach that was taken which emphasizes the importance of context, the research carried out is qualitative. A complexity approach assumes that system and context interact (see chapter two). Moreover, one can research factors that influence resilience when deep, interpretative knowledge of the people within this governance system is studied. This is only possible with qualitative research methods, in which the interactions and interpretations of actors in the system and its context are conducted. These interpretations and interactions are subsequently analyzed by the researcher. Finally, it is important to mention that the concept of resilience has never been researched in a qualitative way in the field of public administration. Therefore, no existing qualitative data are available to work with.

4.2 Research design: Case study

The research design of a study is the framework for the collection and analysis of data. It reflects decisions about the priority that is given to dimensions of the research process, such as causal connections between variables, generalization and the understanding of behavior in its social context (Bryman, 2008: 31). In this research, a single case study was conducted. A case study is a research tool which is often used in qualitative research and allows for “an in-depth explanation and interpretation of social and political structures and processes” (Blatter, Janning, & Wagemann, 2007: 127). One can obtain this in-depth explanation, because a case study allows for ‘’[…] an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2013: 13). Since the notion of complexity is central to this research, and clear boundaries and a fixed context are not present, a case

study is the suited method to answer the research question. Given the complexity of the topic and the limited time that the researcher had, thorough analysis of just one case was conducted. A larger number of case studies would make the analysis more superficial.

This paper's research looks at the case of Park 1943 in Rotterdam. This case was selected purposefully. Firstly, this case can be considered an example of an area in which various self-organizing initiatives converge. Moreover, it is one of the focus areas of the Municipality of Rotterdam in the 100 Resilient Cities project: government, citizens and other stakeholders work together on the resilience of the area. The presence of both self-organizing and resilient elements in Park 1943, makes it a suitable case study for this research. Another reason for this is the fact that the Municipality of Rotterdam expressed interest in seeing a research project about this case. On the hand, it may help them deal with self-organization in their municipality. On the other hand it may provide practical tools for working on resilience in their neighborhoods.

According to Yin (2013), there are five types of cases: the critical case, the extreme or unique case, the representative or typical case, the revelatory case and the longitudinal case. Park 1943 is considered a critical case. It meets all the requirements for testing the hypotheses, because it contains elements of self-organization and the resilience-project of the municipality was linked to this area. Stake (1998), however, discerns two other types of case studies, namely the instrumental case and the intrinsic case. An instrumental case study has the purpose of yielding a better understanding of a particular phenomenon of interest, while an intrinsic case study is conducted because of an (intrinsic) interest in the case itself, and the relevant processes and relations. This study is mainly an instrumental case and aims to gain more understanding about the influence of self-organization on resilience and the impact of the bureaucracy on this influence. However, there is also an intrinsic interest in the case itself. The case is interesting because different relatively new and special self-organizing elements converge. This is also the reason why the Municipality of Rotterdam focuses on the case in the context of their resilience project.

4.3 Research methods

The methods that were used in this research were carefully selected in accordance with the research strategy and design. Afterwards, the data were analyzed through transcribing and coding.

4.3.1 Data collection

In this research, data collection was done through the method of observation. In doing this, 16 face-to-face interviews were conducted (see Appendix A). Interviews offer the researcher a variety of answers compared to the structured data that quantitative research produces (Bryman, 2008: 437). The interviews that were carried out for this research are semi-structured. For each interview a list of questions and fairly specific topics was used (see Appendix C). However, the interviewer was able to deviate from the original questions and asked additional questions that were not on the list. Moreover, the questions were fairly open, which gave the interviewees the freedom to answer the questions as they wished (Bryman, 2008: 438). In Appendix A a list of interviewees is provided. These individuals were interviewed because of their knowledge on or involvement in the particular case. The interviews were conducted over a period of one month (in June and July 2016). In addition to the interviews, the researcher attended eight meetings of different initiatives in the area (see Appendix B). This way, the researcher was able to obtain a more thorough understanding on the relations between different organizations and stakeholders in the area and the way they interact.

4.3.2 Data analysis

In order to analyze the empirical data, the researcher made use of full transcripts of the conducted interviews. Subsequently, the transcripts were codified on the basis of the theory discussed in chapter two. The five variables in the theory (self-organization, bricolage, adaptability, cooperation and bureaucracy) have been given a specific color and as such were indicated in the transcripts. The relationships between the different variables are represented by arrows located in the margins. Interesting new concepts have also been marked in each interview, in order to be able to compare the different interviews effectively. Hence, coding was both deductive and inductive. On the one hand codes that were logically drawn from the theory and on the other hand codes that referred to unforeseen relations and connections were used.

4.4 Operationalization

In the tables below five variables, namely bricolage, adaptability, cooperation, self-organization and bureaucracy are operationalized. This is necessary in order to measure them empirically. Most variables were difficult to operationalize before the research took place. During the interviews, the researcher gained a better understanding into how to recognize and measure these concepts in the empirical reality. In fact, the researcher applied what is usually called "sensitizing concepts". This "[…] gives the user a general sense of reference and guidance in approaching empirical instances" (Blumer, 1954: 7). These concepts contain a general sense of what matters. They do not have a specific reference and lack standard criteria which allow a clear identification (ibid). The advantage of this approach is that it allows the researcher to use emic and case-bound perspectives of the concepts. An emic approach refers to the language and concepts used by the actors in the studied system, whereas an etic approach uses fixed, and predefined understandings of concepts created by the researcher (Patton, 2005).

4.4.1 Dependent variables

Variable	**Definition**	**Indices**
Bricolage	A way of acting in which existing, old and redundant materials are combined.	• Combining different kinds of knowledge • Evaluation • Redundancy
Adaptability	The capacity of a system to respond to changing circumstances and to set new objectives when the context changes.	• Interplay between robustness and flexibility of the system
Cooperation	The capacity of the system to make connections with other systems and to cooperate at different levels and across borders.	• Integrality • Inclusiveness

Table 1: Operationalization of dependent variables

4.4.2 Independent variable

Variable	Definition	Indices
Self-organization	Non-governmental actors adapting and aligning their behavior and the emergence of collective action with the government acting in a "shadow of hierarchy".	• Self-defined institutional arrangement • Non-hierarchical alignment • Control boundary judgments • The emergence of collective action

Table 2: Operationalization of independent variable

4.4.3 Mediating variable

Variable	Definition	Indices
Bureaucracy	A system in which the management of politics is done by professionals and in which the actors have skills and expertise on a specific topic; official rules govern the administrative processes and relationships between individuals are governed through the system of rules and official authority.	• The presence of organizational silos • Clearly defined responsibilities • A clear division of tasks in the municipality • Presence of official rules which are stable and exhaustive • Impersonality

Table 3: Operationalization of mediating variable

4.5 Reflection on methodological choices

The methodological choices described above have implications for the reliability and validity of this research. Both are discussed in the sections below.

4.5.1 Validity

In small N studies such as case studies, the generalization of results tends to be problematic (Johnson et al., 2008: 153). Whether or not the generalization of a study generates universal research outcomes across different social settings determines the external validity of the research (Bryman, 2008: 376). In the present research, the extent to which the results can be generalized across populations, times and settings is limited, because the research focused on one single case. However, theoretical generalization is possible, because theoretical concepts derived from the study can be used to develop further theory (Tsang, 2014: 379). The internal validity of this research is relatively high. The internal validity reflects "[…] a true cause-and-effect relationship that was not created by spurious factors" (Johnson et al., 2008: 133). The concepts in this research were conceptualized and operationalized carefully. Moreover, the research made use of in-depth interviews. This decreased the chance that causal relations were created by other (spurious) factors, because it creates many opportunities to check between respondent and researcher.

4.5.2 Reliability

The reliability of a research concerns the extent to which a research has the same results when it is repeated (Johnson et al., 2008: 94). The goal is to minimize biases and errors that are created by the researcher (Yin, 2013). In this study, it is assumed that a reliable research can be repeated within the same context. The reliability of this research is relatively low, because it is impossible to repeat a case study at a different moment in time, since by then its context has changed. However, the researcher took several measures to ensure that the research would generate the same outcomes if conducted under the same contextual circumstances as the present research. Firstly, the researcher made use of interviews, which is the most reliable method to answer the research question given the complexity of the topic and the concepts. Secondly, the conducted interviews were systematically structured by making use of predefined interview questions and a topic list. The interviews were also systematically analyzed through a specific set of codes, which enables other researchers to check the interpretation of the findings. This can also minimize observer bias, because the researcher can change initial

interpretations later on in the process. Lastly, the researcher was peer-reviewed several times during the research, which enabled other researchers to check interpretations and analyses.

Chapter 5. Setting the boundaries: Description of the case

This chapter describes the empirical context of the conducted research. It provides boundary judgments (see section 2.2.2) in other to understand the system of Park 1943 that forms the object of this study. Further, it provides insight into the background of the case and aims to build an understanding of the context of the local governance system. Section 5.1 discusses the location of the case. Section 5.2 elaborates on the three initiatives that are central to this research. In the last section the main actors in the local governance system are discussed.

5.1 Location

This section describes the geographical context of the case study. It starts with the city of Rotterdam, then shifts to the specific area and the final section deals with Park 1943.

5.1.1 City of Rotterdam

Rotterdam is a city and a municipality situated in the southwest of the Netherlands (see figure 3). In 2015 the municipality had 623,652 inhabitants living in an area of 324.16 km² of which more than a third consists of water.[5] The Municipality of Rotterdam is governed by the Board of Mayor and Aldermen. The Mayor is the chairman of the board and the municipal council. He or she is appointed by the monarch for a six-year period. The Aldermen are elected by the members of the municipal council. There are six Aldermen in the Board of Mayor and Aldermen. The Board is chaired by the Mayor, Ahmed Aboutaleb. Every four years municipal elections are held during which the municipal council is elected. The council of Rotterdam currently consists of 45 members.[6]

Since 2014, the city has been divided into 14 administrative areas. The so-called "area committee" within each area represents the residents of the area. The members of the committee are the eyes and ears of the area and advise the city administration on all matters that are of importance to the area.[7] Within each administrative area there are several civil servants, such as area networkers and area managers.

[5] Centraal Bureau voor de Statistiek: Demografische kerncijfers per gemeente 2014
[6] https://www.rotterdam.nl/bestuur-organisatie/college-van-benw/
[7] https://www.rotterdam.nl/bestuur-organisatie/gebiedscommissies/

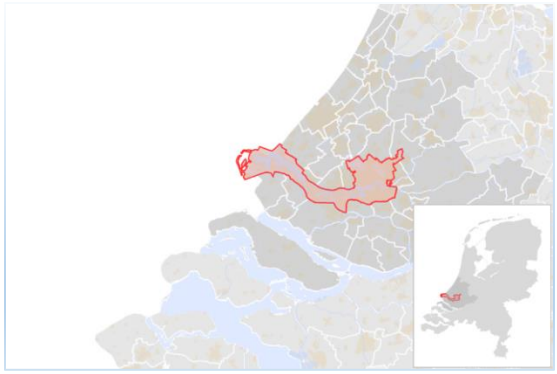
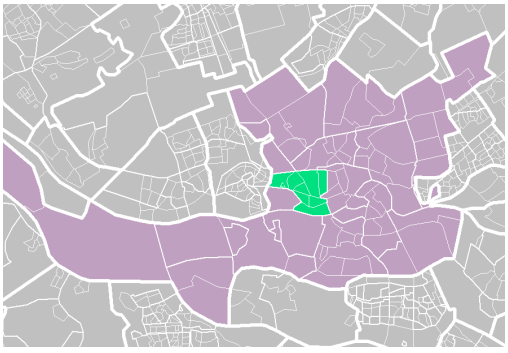
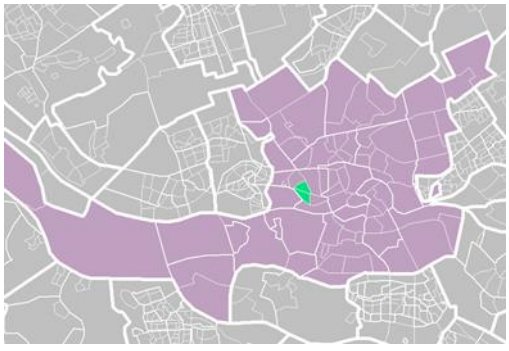


Figure 3: Location of the Municipality of Rotterdam

5.1.2 Delfshaven and Bospolder-Tussendijken

Delfshaven (see figure 4.1 below) is one of the 14 administrative areas in the city of Rotterdam and consists of eight neighborhoods. Bospolder and Tussendijken (BoTu) are two of the eight neighborhoods in Delfshaven (see figure 4.2 below). They are often mentioned together, because the areas are similar in a number of ways and they are closely connected geographically. More than half of the population of Bospolder-Tussendijken has a non-western background. Socioeconomically, it is one of the weakest areas in Rotterdam.[8] Many residents face problems with regard to health, income, language proficiency, employment and education. There are many professionals who work in the area. During the interviews, some public servants even mentioned that "there are almost more professionals than residents in the neighborhood" (interviewee 8). Despite this, the number of citizen initiatives and socio-cultural activities in the neighborhood is increasing.[9]





Figures 4.1 and 4.2: Locations of Delfshaven(1) and Bospolder-Tussendijken (2)

[8] http://www.mathenesserdijk.info/wp-content/uploads/2013/07/gebiedsvisie-botu-090323-aangepast.pdf
[9] http://www.rotterdam.nl/COS/publicaties/Vanaf%202005/08-2919.Sociale%20Index%202009.pdf

5.1.3 Park 1943

Park 1943 is a small park in BoTu. The heart of Tussendijken – the area around Groot Visserijplein – was destroyed by an allied bombing on March 31, 1943. This event left a blank spot in the heart of the neighborhood. After the Second World War, the area was converted into a park (Park 1943) and a square (Groot Visserijplein). A monument in the park commemorates the disaster of 1943.[10]

5.2 Initiatives in the area

There are several initiatives involved in the development of the area that each consist of different actors. In this research three initiatives are central that are each important for the development of the park. Some actors in these initiatives are active in multiple initiatives and some initiatives are responsible for the foundation of other initiatives. To visualize this, a timeline has been provided which offers a clear overview of the process around park 1943 (see figure 5). These initiatives and actors form the local governance system that is central to this research. The initiatives are discussed in this section, important actors are discussed in section 5.3.

5.2.1 The Delfshaven Cooperative

The Delfshaven Cooperative (DHC), established in January 2015, is a foundation that operates in the entire area of Delfshaven. The foundation consists of an executive board (three active residents) and several partners (the Municipality of Rotterdam, a housing association and a bank). These partners are discussed in section 5.3. For the residents, their involvement in the foundation is on a voluntary and part-time basis. For the partners this involvement is only a minor part of their job. The idea for a foundation arose after a lecture by Arjen van Klink in 2013 on the necessity of involving the business community in area development. This speech was made at a time when the role of municipalities was changing from a hierarchical and top-down role towards a more cooperative and facilitating role. An employee of Rabobank and a public servant came up with the idea for a foundation. Three residents in BoTu interfered in this process, because they believed that this idea should also be embraced by the residents of the area. In 2015, they formed the official board of the foundation. The bank, the municipality and the housing association also signed a cooperation agreement.

The Delfshaven Cooperative has different projects and focus areas, including Park 1943. The aim is to connect local initiatives with the government and (local) entrepreneurs. According to the

[10] http://wijkprofiel.rotterdam.nl/nl/2016/rotterdam/delfshaven/tussendijken/

Delfshaven Cooperative, they act as “glue between the joints” in different roles and in cooperation with different partners. This means that the DHC aims to connect local initiatives in Delfshaven with public and private partners. The purpose of the DHC is reflected in three roles, namely connecting, capacity building and initiating. Firstly, they aim to connect (key)persons, processes, institutions and initiatives with each other. Secondly, capacity building is focused on residents and (starting) local entrepreneurs, but also on individuals in organizations so that they are stimulated to connect with the entrepreneurs. Finally, the DHC organizes meetings and launches ideas in order to give residents a voice or to connect different parties. In terms of resources, the DHC has a budget allocated by the partners that are involved in the foundation. The DHC can spend this budget on the support of several initiatives in Delfshaven, including the park.

The DHC is responsible for the foundation of the park board (discussed in the next section). In order to collect ideas for the development of the park, the Delfshaven Cooperative hired a professional process leader during the Besouk Festival in September 2015 in BoTu. This individual organized meetings in the neighborhood to collect more ideas. Subsequently, the process leader formed a park board together with active residents and some other professionals from the area. The board aims to come up with ideas for the development and maintenance of the park and ideas for activities in the park to make the neighborhood a better place to live. The process leader is the chair of the board and communicates these ideas and wishes to the municipality.

5.2.2 The park board

As mentioned previously, the park board was formed after the Besouk festival in the autumn of 2015 by a process facilitator appointed by the DHC. The aim is to challenge the Municipality of Rotterdam to take over a part of the maintenance and planning of the park with residents and local entrepreneurs. The park board wants to experiment with new forms of planning, maintenance and organization. On the one hand, they plan to work quickly and focus on concrete results, such as placing new park benches in the park. On the other hand they also want to focus on the long term plans of the park in terms of the physical, social and economic environment. This should be an integral plan in which not only the park but also the adjacent square are renovated. The board aims to meet once a month to work on an action list with concrete ideas, problems and wishes for the development of the park.

Residents who are active in the park board are often members of several (professional) organizations in the neighborhood or have experience with volunteering. An increasing number of “ordinary” residents are starting to become involved as well. The park board has an informal character,

but there are discussions about the possibility of transforming the park board into a foundation. A foundation receives a budget from the municipality and therefore has a legal status. The board aims to meet once a month, which in practice is very difficult since many members have busy lives. As a result, meetings are often cancelled. The driving force is the chairman of the board, who is hired by the DHC. At a later stage he wants to hand over the process to the residents, but there remains a risk that the Park board will disintegrate without any clear guidance and no line of communication with the municipality.

5.2.3 Heart for BoTu: the resilience coalition

In the municipality there is a group of public servants that work on the "Rotterdam Resilience Strategy". They consider the cooperative development around the park and the park board an example of (local) resilience. Moreover, they aim to support the neighborhood in the development of the park and the surrounding area in becoming a resilient area. Therefore, in April 2016, the DHC and the municipality appointed a process facilitator to organize this process. Subsequently, the working group "Heart for Bospolder-Tussendijken" (or: resilience coalition) was founded, chaired by this process facilitator. Members of the group are public servants working in Delfshaven, public servants with different roles and from different silos working for the city administration and some partners of the DHC. They organize meetings to discuss the short and long-term future of the park and often host meetings with promoters of (citizen) initiatives in order to connect people and ideas. There are discussions on what scope the power of the coalition should have in order not to hinder the fragile process of the park board and the neighborhood.

5.3 Main actors

This section describes the main actors in the local governance system. Of course the initiatives described above are also considered actors in the system. For the sake of anonymity, the sections below will refer to people's functions, instead of their names.

5.3.1 The Municipality of Rotterdam

The Municipality of Rotterdam is involved with the maintenance and development of the park in the same way as with other parks in the city. The "urban development" cluster ensures the long-term vision of the park in terms of appearance, infrastructure, and connections with the rest of the neighborhood. The "urban maintenance" cluster is responsible for the maintenance of the public space of the city of Rotterdam, both above and below ground. The cluster "social development" is responsible for social

issues and projects in the area around the park. As of late, the municipality's attention for the park has been drawn for two reasons. The first relates to the group of public servants who work on the "Rotterdam Resilience Strategy" and have united in the Heart for BoTu coalition. The second has to with the *stadsmarinier*, who is also called a "super public servant" (interviewee 13). This person is specifically appointed by the Board of Mayor and Aldermen to solve persistent safety problems in certain areas of Rotterdam, including in Delfshaven. The aim is to tackle and solve these problems integrally, in cooperation with the concerned neighborhoods. Since this public servant has their own budget, there is some additional money that can be spent in Delfshaven, including on the development of the park.

5.3.2 Havensteder

Havensteder is a big social housing association in Rotterdam. They rent out accommodation to 45,000 households in Rotterdam and its surroundings.[11] They occupy a seat on the board of Heart for BoTu as well as that of the DHC. They own most houses in the neighborhood and around the park. Therefore, they have an interest in following the political and social developments that are taking place in the neighborhood , making them an "indirect stakeholder" (interviewee 11).

5.3.3 Rabobank

Rabobank is the founder of the DHC, together with some public servants of the municipality. They are one of the largest banks in the Netherlands and invests part of its profit in social and cultural activities. The bank is one of the partners of the DHC and its main objective is to "add economic value" to the process (interviewee 15). They want to stimulate young entrepreneurship, because they believe that when the earning capacity of the neighborhood rises, this not only benefits the residents and the city of Rotterdam, but also the bank itself. Like Havensteder, they are not actively participating in specific projects, but they "guard the borders of the process" (interviewee 15).

5.3.4 Organizations in the neighborhood

As mentioned previously, there are many professional organizations that operate in Delfshaven and Bospolder Tussendijken. The most important organizations with regard to the park are Creatief Beheer (landscaping and gardening), Broodnodig (alternative energy sources), Zowel (social work), TOS (youth

[11] https://www.havensteder.nl/over-havensteder

work) and Parkpodium (music and social activities in the park). These organizations are appointed by the park board to improve the park. They meet once every month to discuss their progress, but they also aim to cooperate in many areas. These meetings are chaired by a civil servant from the Municipality of Rotterdam, who is appointed as an area networker in Delfshaven.

Figure 5: Timeline important events park 1943 in BoTu

Chapter 6. Findings

This chapter presents the findings of the empirical study. Firstly, the three different self-organizing arrangements that are central to this research are described (section 6.1). These self-organizations are analyzed on the basis of the five indicators for self-organization that were discerned in the theoretical framework and operationalization. The section ends with a table that summarizes the scores of each self-organization on every indicator. The following section (6.2) discusses the current state of resilience of the governance system in Park 1943 on the basis of the different indicators for resilience. The last section (6.3) deals with the state of bureaucracy in the given case study.

6.1 Self-organization in the case

6.1.1 The park board

Self-defined institutional arrangement

The park board members have a high degree of influence on the organizational structure of the board. This is manifested in the fact that the board recently decided to change its organizational structure to that of a foundation. This decision was made for practical as well as personal reasons. A foundation gives the board the status of a legal person. Because of this legal status, a foundation often entails continuity. A foundation is also entitled to a budget, which creates the possibility to open a bank account and receive subsidies from third parties. In this case, the park board receives a budget from the Municipality of Rotterdam on its own bank account, which, for example, they can use for organizing promotional activities and purchasing t-shirts. Hence, the transformation into a foundation gives the board a more "serious" character, whereby it could be taken more seriously by third parties such as the municipality. A more personal reason for this transition is the fact that the chair of the park board is only hired until the end of the year, which gives him a couple of months to pass on his tasks to the other board members. According to him, the status of a foundation gives the members of the board more opportunities to "grow in their role", because this role is a formal one, instead of the informal role they initially had (interviewee 2). The transition to a foundation happened in consultation with the different stakeholders on the board. During one meeting the tasks were divided among the different members.

Non-hierarchical alignment

The members of the board have different characters and take on different roles. On the one hand, there is a non-hierarchical alignment in the sense that members are equal and tasks are divided. On the other hand, alignment mainly has a hierarchical character. Attracting new members and passing on tasks to other members proves to be very difficult because of the area's relatively weak socio-economical position. That is why the chair of the board is taking on a leading role. He is also the person who came up with the idea for the board. Moreover, the area networker from the municipality, who often attends the meetings, is in direct contact with the municipality. This could also be considered a hierarchical element, because the other members do not have the contacts, knowledge or time to reach out to the municipality.

Control boundary judgments

Park board members have a high degree of control over their own boundaries. This is demonstrated by the fact that board members decide on the topics that they find important to address. These topics are mostly about the park, because the board was specifically founded for the improvement of the park. However, when issues regarding the adjacent square, play ground or sports court have a relation to issues in the park, it is possible to tackle them integrally. Also, some board members do not live in the neighborhood. The board is open towards other members with different views and qualities outside the neighborhood. However, new people are mostly invited by the chair and the area networker from the municipality. Further, since there is no permanent member base, the possibility to exert a lot of influence on the admission of new members decreases.

The emergence of collective action

The chair of the board is the motor behind most proposals and tasks. Though other members tend to be committed, they have busy lives aside from their membership of the board. Also, some members do not perform a lot of tasks, but only attend the meetings because the social aspect of the board appeals to them. There are two people in the board who are relatively stable and perform tasks. In the new constellation of the board, they will be chair and treasurer. Hence, there is collective action, but this needs to be heavily encouraged.

Summary: the degree of self-organization

The park board shows a moderate degree of self-organization. The board was not founded through collective action, but its foundation was encouraged by the DHC. Moreover, non-hierarchical alignment is not very prevalent. However, the degree of self-organization is rising. The current chair who was hired

by the DHC will step down, which gives other members more space to self-organize. For instance, some members have started taking over some elementary tasks and they have an institutional arrangement chosen by themselves.

6.1.2 The Delfshaven Cooperative

Self-defined institutional arrangement

The members of the DHC and its partners decide on the institutional arrangement of their initiative together. The DHC is a foundation and not a cooperation, even though its name suggests otherwise. Occasionally, there are discussions about the organizational structure of the DHC. For example, there was talk of making the DHC a cooperative. However, according to one board member "for now, we have chosen a small and agile organization that enables and facilitates other possible cooperative partnerships" (interviewee 7). They are always open for discussion about new roles and organizational structures, but they have cooperatively decided for this (temporary) arrangement.

Non-hierarchical alignment

The three founders of the DHC occupy all three seats in the foundation's board. They have a non-hierarchical relationship with each other, in the sense that they all have specific qualities, tasks and networks, but can decide together. However, they depend on the money and views of their partners. One of the partners describes its role as: "removing the sharp edges of the participation" (interviewee 15). In fact, this role could be considered a "watchdog" role, which is different from non-hierarchical alignment. The bank wants to contribute to participation and area development, but does not want to take it too far. Moreover, the DHC consists of a board, partners and a supervisory board. Despite the fact that this formation seems hierarchical, it has quite an informal character. In the cooperation agreement signed by the three partners it is stated that "together with the Delfshaven Cooperative a consultative structure is created, but informal contact between people in the field is the most important mechanism in order to achieve attractive projects." Hence, the set-up of the foundation could be considered formal, but the actual practice is informal and non-hierarchical.

Control boundary judgments

The DHC focuses on the area of Delfshaven, but inside this area they have chosen their own focus areas and projects. They are cognitively open in the sense that they are open towards new ideas and initiatives from external parties, but also from its own partners and board members. However, given the organization's limited resources, they have opted for a few focus projects.

In the cooperation agreement is stated that: “New partners are invited to participate if they endorse the vision and mission of the Delfshaven Cooperative, add value to the neighborhood which is complementary to the existing partners and are willing to invest resources. New partners are elected through a unanimous vote by the existing partners and the foundation Delfshaven Cooperative.” Hence, they have the power to decide on the future of the organization and potential new partners, which implies that they set their own boundaries.

The emergence of collective action

As previously mentioned, the people linked to the DHC aim to keep each other updated and work as a collective. They do this during the meetings of the partners, board and supervisory board. The board members and partners meet quite regularly in informal settings to discuss progress of projects and to advice each other. However, the board members have most knowledge about specific projects. The partners (the housing association, bank and municipality) are not always informed about these projects in detail. Instead, they have a more general view on the DHC and often have an advisory role. Hence, there is collective action, but mostly between the three board members.

Summary: the degree of self-organization

The degree of self-organization of the DHC is quite high. The idea for the DHC came from the municipality and a bank, but three residents joined the process and eventually formed the board of the foundation. Hence, on the one hand the DHC is not a real “bottom-up” initiative. On the other hand, the DHC was established through collective action by public and private actors and some individual residents and operates in a non-hierarchical way. Moreover, the board members and partners control their own boundaries and there is discussion about its institutional arrangement. However, one cannot become a member of the foundation, because decisions ultimately remain with the partners and board members.

6.1.3 Heart for BoTu: the resilience coalition

Self-defined institutional arrangement

Participants in the Heart for BoTu coalition do not have any influence on the institutional arrangement of the coalition. Instead, they receive an invitation from the municipality to take part in a meeting or discussion. Therefore, one may call this coalition an “informal network”, led by the municipality and a process facilitator, who is hired by the municipality and the DHC.

Non-hierarchical alignment

There is no strict hierarchy in the sense that all parties in the coalition (except for the municipality) are

equal. However, the civil servants from the city administration are leading this coalition and control the set-up of meetings and the overall budget. Hence, the coalition partners act in the so-called “shadow of hierarchy of government”, which in this case is formed by the municipality. They are a partner in the process and cooperate with the different parties, but eventually control and decide on the content and continuation of the process.

Control boundary judgments

The people involved in the coalition have a reasonable amount of control over their own borders. Firstly, they can invite new people to join the coalition’s meetings. Secondly, the coalition is cognitively open in the sense that all ideas are welcomed as potential new plans. Also, there are no limits to the matters they can exert influence on. The same applies to the borders of the neighborhood: the coalition was specifically established to improve “the heart” of the neighborhood, but the borders of this “heart” are not precisely drawn.

The emergence of collective action

There is a lot of potential for collective action in the coalition. During the meetings the express their wishes and needs and try to incorporate these into a joint plan. However, they are dependent on the money of the municipality. Moreover, no specific plans have been made that have led to concrete results yet. This is due to the fact that the coalition has only been established recently and is first looking for common ground and partnerships before starting to create plans for the neighborhood. Moreover, not all parties know what to expect from the coalition and are still very busy with issues within their own network.

Summary: the degree of self-organization

The degree of self-organization of the Heart for BoTu coalition is relatively low given the fact that the municipality is the leader of the coalition and that stakeholders have no influence on the institutional arrangement. On the other hand, borders are not precisely drawn and there is potential for collective action. There is a reasonable chance that the collective action between the stakeholders will eventually lead to joint plans.

Indicator self-organization / *Self-organizing initiative*	**Self-defined institutional arrangement**	**Non-hierarchical alignment**	**Control boundary judgments**	**Emergence of collective action**	**Degree of self-organization**
The park board	+	-	+	+/-	++/-
The Delfshaven Cooperative	+	+	+	+/-	+
The Heart for BoTu coalition	-	-	+	+/-	--/+

Table 4: Degree of self-organization of the three initiatives

6.2 Resilience in the case

The resilience of each initiative will be discussed on the basis of the three features of resilience that were discerned in the theoretical framework. Subsequently, these findings are summarized in section 6.2.4.

6.2.1 Bricolage

Combining different kinds of knowledge

In BoTu there are many professional organizations and networks, all with their own expertise and knowledge. Because they have different methods to improve the park and come at it from different angles, they have different knowledge bases at their disposal. Firstly, the Delfshaven Cooperative tries to connect different knowledge bases from different levels. In the DHC, public, private and local knowledge is combined, since it is a cooperation between the municipality, a housing association, a bank and residents. Secondly, local knowledge is combined in the park board. According to the chair of the board, its members all have different and diverse networks. For instance, one of the members is also involved in the local mosque and another member is also a board member of the local playground. In the park board the (local) knowledge of the different networks is shared. The board's chair tries to

connect the local knowledge of the park board with the municipality. Hence, in the park board municipal knowledge is connected with the local knowledge from the residents. Finally, during meetings of the Heart for BoTu coalition knowledge is mainly exchanged in terms of expert knowledge from both the municipality as well as some other initiatives. Stakeholders update each other about their work and progress, and they try to create an integral "master plan" for the neighborhood.

More generally, according to many interviewees, there is an increasing informal communication in the neighborhood between the different professional networks, which leads to more connections and relations. This in turn leads to an (informal) exchange of knowledge. However, knowledge is not always shared. Some (professional) organizations keep their knowledge for themselves. According to one of the interviewees these are "the hidden tricks of the trade" (interviewee 10).

Evaluation

In terms of evaluation, it is difficult to use past experiences to inform future decisions, because the process is new and there are no similar examples. Firstly, the process is mainly based on individual contacts and relations. This makes the process fragile and difficult to pass on to new people. Hence, the informality and flexibility of the process may inhibit the continuity of the process itself. However, the different stakeholders in the process are trying to integrate some reflexive elements. The Heart for Botu coalition aims to develop a long-term plan for the development of the neighborhood and the park. During this process, small developments still continue, because this may build up experience and it can serve as an experiment. According to one of the participants*:* "[…] you just see if it works in the bigger picture" (interviewee 6). Another participant calls these experiments "research in action" or "prototypes" (interviewee 7). In terms of evaluation, this means that after an experiment, the result can be evaluated and it can be decided whether or not the result is satisfactory and should be put in practice.

Moreover, there is not a lot of time and momentum to evaluate the total process, because it is still developing. The self-organizations are still in a so-called "building phase". Hence, the process is being evaluated in the sense of a progress review. This happens informally during the meetings of the several self-organizing entities. Finally, the way the park board was established also has some evaluative elements. The chair of the park board was initially appointed to make a plan for the park with all the professionals in the neighborhood. However, during this process he discovered that there were no residents involved in the process. This was the reason to establish the park board. Hence, during the process there was a possibility to evaluate the progress, and it was decided to make some changes in order to achieve better results that matched the ultimate goal. Another example of evaluation in the

process is the involvement of the Erasmus University of Rotterdam in the evaluation of the DHC. This may yield some interesting lessons for the future with regard to self-organization.

Redundancy

In terms of redundancy, the active groups in the neighborhood all aim to use the power, strength and capacities that are already present in the neighborhood. However, this proves to be very difficult, since many residents in this area are inactive with regard to public or collective issues. They are also relatively poor, which means that they are not able to commit themselves to public issues, because "survival" is their main concern. According to one interviewee, if one could lift some of the burden from the residents´ shoulders, it will become possible to use their energies in a different way (interviewee 2). Hence, the capacities of the residents could be considered a spare capacity, which cannot be fully accessed. On the other hand, there are also plenty of people who want to start initiatives in BoTu; on such a big scale that the area committee of Delfshaven spent all of its budget in the first part of the fiscal year. In other words, there is a big spare capacity in the neighborhood in terms of initiatives, that can even be expanded. However, some interviewees fear that there are too many groups in the area that deal with the same topics and issues, without cooperating well enough. According to some, it is important to first make an analysis of what kind of organizations already exist instead of constantly establishing new groups. One example is the foundation of the Heart for BoTu coalition. For the chair of the park board, this coalition arose very abruptly and they were not informed in advance about its establishment. They received an invitation on Wednesday for a first meeting on Monday, which did not allow many members to attend. Hence, in terms of redundancy, the municipality did not use the redundant structures (in this case the park board) that were already present in the neighborhood and thereby risked to disrupt the fragile process of the board. In conclusion, it is important to have a spare capacity in the neighborhood that can be accessed in case of disruption or change. However, too many redundant structures may cause chaos when different groups or initiatives aim for the same goals but do not sufficiently cooperate.

6.2.2 Adaptability

As previously mentioned, an adaptive system needs to be managed to ensure flexibility, but it also needs to be robust towards uncertainties. This implies that the system must keep its basic functions under sudden events. In the case of Park 1943, there are two systems at stake. Firstly, the system of the municipality. The basic function of this system is the hierarchical and traditional distribution of tasks between on the one hand the more highly ranked civil servants in the municipality (those who set the

general frameworks and are divided into silos) and on the other hand the area managers who work at the neighborhood level and have to communicate signals from the neighborhoods towards the municipality. These civil servants working on neighborhood level have to make the municipal system more adaptive towards local needs. The second system at stake is the local system of Park 1943 in BoTu. This neighborhood also has some robust elements, namely some older and experienced citizen initiatives and organizations and a number of active citizens. In terms of adaptability, they are able to adapt to sudden events. However, there is also a considerable group of relatively poor residents who are inactive regarding public issues since they are merely busy with "survival". Therefore, they are not very adaptive towards sudden events.

The three self-organizations and adaptability

The Delfshaven Cooperative is an example of a robust organization. The roles, responsibilities and tasks are clear, but the way the initiative interacts with its environment depends on the specific needs and context of that moment. Hence, the DHC consists of robust and flexible elements and is able to adapt to different situations in various contexts. The residents, and to a lesser extent the public servants within the DHC, are the eyes and ears of the neighborhood. When initiatives and residents need them, they offer appropriate support. This is also the case for the area networkers from the municipality working in this area. They take on flexible roles and perform tasks depending on the specific needs at that moment. They are informed about the developments and initiatives in the neighborhood and attend meetings. This way, they are aware of specific questions, needs and complaints, which they can direct upwards to the municipality. The civil servants working on higher levels do not always move along and consider their role and responsibilities as more narrow and fixed. Some of these civil servants, especially those active in the DHC, move along and take on flexible roles, but that is not always appreciated by their colleagues. They are sometimes asked why they are working on somebody else´s task or why they do not work on the task or theme that was specifically and officially assigned to them. In contrast, they consider their tasks and responsibilities related to many other topics and try to tackle them integrally. According to one of the interviewees, it mainly has to do with mentality. Some civil servants have an inflexible mentality, whereas others have a flexible mentality and move along with new ideas and ways to deal with situations (interviewee 1). The latter are often lobbying for "flexible budgets"; the municipality is divided in different silos and every silo has its own budget. These people sometimes try to combine budgets of different silos in order to finance projects or initiatives. They find it important to look at the specific needs and context and subsequently try to allocate the different budgets that are at hand.

The park board could be considered a non-robust element in the local governance system of BoTu. The members are committed, but they often have full-time jobs. Many meetings are postponed or cancelled and most meetings are only attended by a few members. Moreover, it is difficult to find new members. In addition to that, the chair of the board has only five paid hours a week to set up the process of the board with different stakeholders and to maintain relations with them, because the municipality still considers the board an experiment. The ultimate goal is to give the process back to the residents and to make the park board an independent institution with a resident chairing the process. However, there is a fear that when the current chair resigns, the whole process collapses. Concrete steps are taken to make the park board a foundation, which gives it a legal status and could make it more robust. Hence, based on the collected data the park board as such is not very adaptive, but this could change in the future.

The Heart for BoTu coalition is a non-robust element in the governance system. It was established by the municipality and its members are different initiators from initiatives. However, they are not very committed and are mainly busy with their own initiatives. The coalition is also not very well-known in the neighborhood and has little support from different groups in society. There is no robust element in the initiative yet, and therefore it is not very adaptive.

The role of experiments

There are more examples of experimental elements in the case of Park 1943. Experiments can challenge the current system, which may build in a capacity to learn. This way, certain assumptions can be tested and this may make the system more adaptive. Some interviewees mentioned that after an intervention or project there should be a legacy. For instance, according to several interviewees it is important that a sense of ownership and involvement is created in the neighborhood when the government is involved in the set-up of an experiment. It is key to let people feel that they are part of the process. Hence, an inclusive element is required. In order to do this, residents, local organizations and initiatives should be involved from the beginning, which makes the process more robust. On the one hand, this does not always happen, as was shown in the case of the establishment of the Heart for BoTu coalition and the communication with the park board. On the other hand, some small interventions are granted the status of an experiment, which makes it easier to realize them. This could be considered a flexible element. In the case of Park 1943, the municipality is often the facilitator of these small interventions. When the park board informs the municipality that they have a certain vision for the park and the neighborhood, the municipality sometimes facilitates the process. This gives the local governance system some robustness: when the municipal system recognizes some wishes of the local governance system, citizens

in the local system get the feeling that their voices are being heard. Hence, both systems become more intertwined. However, many interviewees fear that the municipal system will usurp the self-organizing and flexible processes in the area, even though these processes are owned by locals. For example, the Heart for BoTu coalition aims to involve many local institutions in their process. However, as mentioned previously, they want the process to move forward relatively quickly, instead of reacting flexibly and adaptively to local processes and needs. This creates the risk that the dominant municipal system will dominate the flexible fragile processes in the neighborhood, which makes the local system a pseudo-robust system. This will be a system, however, which does not match with the local needs and processes.

Conclusion

In conclusion, the governance system of the municipality and that of the park both have robust elements in the sense that they contain some well-established structures and initiatives. However, both systems challenge each other, the municipal system being the dominant one. Both systems are seeking new procedures, relations, functions and boundaries. This shows that both systems also contain flexible elements. In fact, a system can be considered adaptive if it is aware of its environment and context. With regard to the two systems in this research, the context of the local system of BoTu is the municipal system and vice versa. In this case, the municipal system is partly aware of processes in the local system of BoTu through its area networkers. However, this process is not functioning flawlessly, which will be discussed later on in the research. The local system is also partly aware of the municipal context: some initiatives reach out to the municipality or in some initiatives the municipality itself is even represented. However, there are also a lot of “inactive” residents in the neighborhood, who are not very aware of the municipal system.

Looking at the adaptive renewal cycle, we can position both systems somewhere in between the release and reorganization phase. The governmental system does not perfectly control its external environment. By setting up (self-organizing) initiatives, citizens often challenge the municipality, which changes their initial relation. This often brings uncertainty for both parties, but it also brings new opportunities: old relationships between elements may disappear, but they make room for new relationships that fit better in a changing context.

6.2.3 Cooperation

Integrality

In BoTu there are a lot of events that point to the creation of integrality. As defined in chapter 2, integrality is about making connections with other systems and working together at different levels and across borders. Firstly, the Delfshaven Cooperative acts as "glue between the joints". This implies that they try to improve local integrality in the neighborhood and integrality at higher levels by not only making "smart connections" between different people and groups in the neighborhood, but also with entrepreneurs, companies and the municipality (interviewee 1). Hence, they make use of a broad network whereby they aim to "connect local processes with bigger ambitions" (interviewee 7). For instance, the first member of the DHC is in contact with many residents in BoTu, the second with entrepreneurs and the third with institutions. Besides, they are all familiar with the language of the neighborhood, but also with the language of the system and the municipality. This enables them to connect with big institutions. The two civil servants connected to the DHC span the boundaries of their network as well: beside the language of the municipality, they also speak the language of the neighborhood. The following statement of a civil servant and partner of the DHC illustrates this: "You have to choose a method of management and an organization of commitment that those people [the residents] feel comfortable with" (interviewee 6). Hence, when you want to communicate with residents you have to speak their language. Often, this implies informal communication, such as drinking coffee or having lunch with locals while talking about the neighborhood in an informal way.

The second self-organizing initiative, the park board, also tries to work integrally, but this is often challenging. The area managers and networkers have the task to communicate local wishes and questions that are collected by the park board towards the municipality. They try to "integrally tackle supply and demand" (interviewee 8). However, since this system has been developed quite recently, the municipality is not used to this integral way of working. Moreover, the municipality is not organized integrally on higher levels. The most obvious example is the fact that the municipality is divided into silos. Also, each cluster is connected to one alderman and each alderman has its own portfolio. This makes it more difficult to work integrally on a higher level, which in turn influences the way lower levels work.

Finally, the Heart for BoTu coalition was established out of the wish to improve integrality in the neighborhood and to jointly develop a plan for improvement of the area by working together with several local initiatives. However, a member of a local organization mentioned that he has the impression that there are two layers of organizations: one for the big parties (the municipality and the

housing association) and one for the smaller (professional) parties in the area. According to him, these layers are not connected well enough and they do not update each other sufficiently (interviewee 9). In addition, the chair of the area committee Delfshaven adds that the small citizen initiatives in the neighborhood do not look for connections with other groups and initiatives. According to him this is a pity, "[…] but one needs to be realistic that in order to make these initiatives grow and eventually make them robust, it takes a lot of energy to make connections with others. That is not realistic. We should be happy that there are at least some initiatives present in the area" (interviewee 16). The process facilitator working for the Heart for BoTu coalition also endorses this: "People are working in their own small cocoon and they sometimes forget to communicate with the outside world and to show each other what they are doing" (interviewee 3). So, attempts such as the Heart for Botu coalition are made to connect different networks with each other. However, a lot of initiatives still operate from within their own small network and do not make connections with other layers and levels.

It is important to mention that the creation of integrality also has a downside. For instance, according to a civil servant in the BoTu coalition, other groups in the neighborhood sometimes feel threatened by the coalition. Since the creation of integrality connects and couples groups and networks that did not know each other before, this could in turn create new dependencies and tensions.

Inclusiveness

A lot of interviewees mentioned the importance of what may be referred to as "closed inclusiveness". This implies the involvement of *local* people in *local* processes. In other words, the idea is that a project or process taking place in a neighborhood should be carried out in cooperation with the people in that neighborhood. It is important that the process is inclusive for everyone, but it is key to first let the people and institutions within the neighborhood gain access to the process. This can also be seen as a form of the subsidiarity principle, because emphasis is placed on tackling issues on the lowest (administrative) level possible. One example of this "closed inclusiveness" is the visibility of money flows in the neighborhood. Some interviewees expressed the desire to make these flows visible. When one has more insight into what kind of money flows leave and enter the neighborhood, it becomes easier to arrange them in a different way. For instance, the idea was raised to look for opportunities to let residents work in their own neighborhood, for instance in landscape maintenance or construction, instead of the municipality hiring people from outside. On the one hand, this can make the area more robust and integral. One the other hand, this might inhibit the exchange of knowledge, because the system stays rather closed and less open for new ideas and people.

In terms of inclusivity, the park board is an institution that is open towards ideas and

cooperation with different people. For instance, during one of the meetings of the board, the local general practitioner and a member of a local Christian organization were invited to brief the board about new developments and potential avenues for cooperation. Hence, the board is outward-looking and open in the sense that they continuously try to involve new organizations and people in their process. However, this proves difficult since BoTu is an area whose residents have a low socio-economic status. People are primarily concerned with "survival" instead of improving their neighborhood through membership of an institution. The DHC on the other hand, is cognitively open in the sense that they are open to new ideas and initiatives. However, they are not inclusive in the sense that people can connect to their institution or become a member. There is a discussion in the DHC about acquiring membership, but at research time this is still not possible. Moreover, some interviewees mention the fact that the residents in the DHC are all educated, white and experienced people, which makes it more difficult and less appealing for the average resident of BoTu to make a connection with the DHC. Besides, the Heart for BoTu coalition consists of experts who often do not live in the neighborhood, but want to improve the neighborhood through an integral plan together with stakeholders from different initiatives. The group is quite closed and not open to other residents. It is the coalition's main aim to develop an expert plan with the different professionals before they open up to the outside world.

6.2.4 Overview and summary

In the sections above the level of resilience of each self-organizing initiative was discussed based on the collected data. In this section, these findings are summarized but a more general approach will be taken. The main focus will be the local governance system as a whole.

Firstly, in terms of bricolage, different kinds of knowledge are combined and there is quite a lot of informal communication between different parties in BoTu. With regard to the three central initiatives in this study, it is mainly the DHC and the park board that have shown to combine knowledge and informal communication. Because the processes are new and still developing, it is challenging to evaluate them. However, several evaluative elements are built in. Moreover, there is a reasonable spare capacity in the neighborhood that can be accessed in case of disruption or change. However, this is not a representation of the whole area since many residents are only "surviving". There is a risk that too many redundant structures cause chaos when different groups or initiatives have the same goals but do not cooperate. Hence, in terms of bricolage, existing knowledge is linked and combined to create new structures, but old and redundant "materials" are much less used and combined.

In terms of adaptability, the municipal system is quite robust and sometimes dominates the

local, more flexible system around the park. Both are continuously challenging each other in terms of relations, functions and boundaries. The municipal system is a robust system, but contains some flexible elements, of which some public servants with a "flexible mentality" are most important. The core of the municipal system is the bureaucracy, which remains quite unimpaired. However, because the developments in the local governance system often challenge processes in the municipal system, its robust façade is showing small cracks. The local governance system of the park is quite flexible, but contains some robust elements in terms of older initiatives and some involved area networkers from the municipality. However, the way these robust elements position themselves could be considered quite flexible, because they often take on flexible positions and roles. Also, experiments could challenge the system and make it more flexible and adaptive towards new developments.

Finally, with regard to cooperation, there are many communication lines and collaborations. However, these lines are often flexible and not robust. Parties often aim to work integrally and inclusively, but this proves difficult because of some robust structures that hinder this. Boundary spanners in both systems that speak several "languages" try to break through this cycle by making connections with other systems.

6.3 Status of the bureaucracy

This section describes the status of the Rotterdam bureaucracy based on the interviews and meetings that were conducted. The first section shows that bureaucratic principles are still guiding in the way civil servants act with their environment. However, in the second section it is shown that this is slightly changing and some new developments are discussed.

6.3.1 The robust Rotterdam bureaucracy

The interviews showed that bureaucratic principles remain unimpaired in many situations. One interviewee mentions that "the morale of the civil servant is still very top-down, with attention for structures, frameworks and guidelines. […] Civil servants pay lip service to flexibility in public management. However, it remains a challenge to translate this into effective practice" (interviewee 16). Moreover, as mentioned previously, the Municipality of Rotterdam is divided into silos, each with its own set of responsibilities. In every silo there is a strict division of tasks and functions. According to one of the interviewees, "[…] it is the reality of systems that constitutes a guiding principle, rather than the reality of human experience in which people take initiatives themselves" (interviewee 3). This statement shows that the silos are working in their own specific field of expertise, but that it is hard to also take

some human aspects into account and to connect with civil society. In those silos civil servants work on their own tasks without involving citizens in their processes. According to many public servants, these silos do not always serve the needs of the citizen optimally, but there is no other governance style available that can work as structured and clearly as the current one. Moreover, decisions on issues in the neighborhood are often made by civil servants working at higher levels. Promoters of initiatives often do not know who made that particular decision and they do not know who to contact. Also, these individuals´ functions often change, which makes it even more difficult to reach out to the right person.

6.3.2 A changing bureaucracy

However, the interviews highlighted one trend, namely the transition to a more "personal" bureaucracy. There are some formally embedded developments within the municipality that put citizens in a central position, instead of using the organizational logic of the silos. This development is called the "Rotterdam focused approach". In this setting, relations between civil servants within the municipality are more often based on personal contacts and networks. One interviewee calls this a "people-oriented network economy" (interviewee 15). Moreover, in line with the focus on self-organization, "networking" and "facilitating" have become buzzwords in the municipality's vocabulary. Many civil servants in different silos describe their role as "facilitating citizens and initiatives" and "connecting different people with each other" (interviewee 12). This shows that civil servants are more often reasoning from the needs and logic of citizens, instead of the logic of bureaucracy (in terms of rules). However, it remains unclear if they are actually doing this or that their statements are part of a new municipal vocabulary without any real-life benefits. Further, the interviews showed that the municipality is often curious about new trends in civil society. According to a resident and member of the DHC, civil servants from several clusters often attend DHC board meetings in order to become acquainted with new trends. According to him, it is sometimes even like a "puppet-show": "[…] many people take a quick look to see how it works" (interviewee 7). Hence, the interviews showed that there is a layer of public servants who want to change the traditional bureaucracy into a more personal and flexible bureaucracy in which neighborhoods and the needs of citizens take up a more central position. One civil servant states that "we should all strive to work in the "grey" area" (interviewee 12). The second layer consists of "curious" public servants who follow new developments. The third layer consists of bureaucrats who abide by the official rules and guidelines and are not able or willing to work flexibly. The nature of their job often does not allow them to work in a different and less bureaucratic way. In conclusion, the interviews and

data from the meetings show that self-organizing initiatives, such as the park board and the DHC, challenge the robust façade of the Rotterdam bureaucracy.

Chapter 7. Analysis of the results

This chapter contains an analysis of the results focused on the researcher's interpretations of the different findings. In the following sections, three types of self-organization are discerned that were described in the previous chapter. Also, the relation of each type of self-organization to the resilience of the governance system is explained. Moreover, the concept of ownership is discussed as well as its importance to the relation between self-organization and resilience. Finally, the influence of the bureaucracy on this relationship is analyzed based on the concept of "facilitation". It is important to note that only the relations that were discovered during the research are discussed. It is possible that in reality there are more relations that were not found in this research.

7.1 Three types of self-organization and the relation on the resilience of the governance system

Before moving on to explain the different types of self-organization that were found in the research and their relation to the resilience of the governance system, it is important to explain the concept of "ownership". It was found that this concept is of great importance with regard to the relation between self-organization and resilience. Self-organization may create a feeling of ownership among participants, because people feel that it is their initiative in their neighborhood. In this research, two different kinds of ownership are discerned. On the one hand a feeling of ownership towards the own self-organizing entity, and on the other hand a feeling of ownership towards the neighborhood. If both are present, this could be called "shared ownership".

7.1.1 The park board: Informal self-organization

The self-organization of the park board is relatively informal. There are some agreements about for instance the time and dates that meetings should be held. However, there are no fixed relations between people and changes in membership occur frequently. This informal self-organization fosters bricolage. Through the self-organization the exchange of new kinds of knowledge (local, expert and municipal knowledge) is combined. Moreover, the self-organization of the board could be considered a new governance identity in the neighborhood that is not always recognized or known by other residents and the municipality. This makes the board a redundant structure itself. In addition, the board makes use of redundant materials, namely sources that were not recognized or used before, such as new

people, networks and knowledge. More specifically, the board aims to empower people in BoTu that were not active before. These people are considered a redundant structure, because they are a source that may be used in case of disruption or government failure. However, the informal self-organization of the park board as such does not directly make the neighborhood and its residents more adaptive, because there are no sufficiently robust elements yet. For example, the initiative does not have a legal status and it is difficult to find real commitment. In terms of cooperation, it empowers people to improve the neighborhood and it fosters communication between different groups. However, these communication lines and relations are still quite informal and local. In conclusion, taking into account bricolage, adaptability and cooperation, the informal self-organization of the park board fosters the resilience of the governance system, though in its current form it does not realize its full potential.

Ownership

With regard to the feeling of ownership, the people in the park board feel connected to the neighborhood and try to pass this on to other residents. They also feel a connection with the board itself. Hence, there is a feeling of shared ownership in the board since members feel a connection with the neighborhood and the board. In this case, the strong feeling of ownership towards people's own initiative limits the creation of integrality and the exchange of knowledge. In the case of the park board, people are inclined to achieve the goals of their own initiative, and sometimes see other ideas as a potential threat. For instance, some board members have a relatively negative stance toward the resilience coalition, because the coalition could limit their ability to act in the park. This gives the board an autopoietic character, because it has closed borders and it considers some other initiatives or ideas as a possible threat. This autopoietic self-organization does not enhance resilience, because it limits the exchange of knowledge, integrality and cooperation. On the other hand, the park board has a feeling of ownership towards the entire neighborhood as well. This feeling enhances the creation of lines of communication with other people on other levels, because board members realize that this is needed to achieve their own goals. Moreover, most members are outward-looking and cognitively open in the sense that they are constantly looking out for new connections and ideas. Hence, there is dissipative self-organization as well. These communication lines are relatively flexible, because the initiative is not very robust yet: relations with different parties are often unstable and have a short-term character.

7.1.2 The Delfshaven Cooperative: Formal self-organization

The self-organization of the DHC is relatively formal, because partnerships, meetings and relations are

formalized into agreements and contracts. This does not imply that contacts and communication are formal as well: the DHC aims to foster informal communication. Still, the DHC is a new but relatively robust organization, because it consists of fixed relations, and agreements and meetings have an official character. This formal self-organization fosters the resilience of the governance system. Firstly, it creates bricolage, because it connects different types of knowledge (local, governmental and entrepreneurial). Moreover, it makes use of redundant materials, because it empowers people that where not active before. Also, since the DHC is evaluated by the Erasmus University of Rotterdam, the lessons learnt can be taken along and incorporated in the development of the neighborhood and the DHC itself. Secondly, the DHC increases the adaptive capacity of the local system. It makes initiatives and people more robust by offering them support in the form of knowledge, new networks and money. Also, it fosters capacity building in the neighborhood and it gives residents tools to be responsive towards new developments. Thirdly, the formal self-organization of the DHC fosters cooperation in the neighborhood. Because its board members and partners all come from different backgrounds and organizations, it has connections with many networks in and outside the neighborhood and it is constantly seeking new connections and relations. This gives the DHC an integral character. In conclusion, the DHC is a new robust governance structure in the city of Rotterdam next to the original governance structure of the municipality, that creates new relations, partnerships and communication lines. Therefore it can be argued that the DHC contributes to the resilience of the governance system.

Ownership

The members and partners of the DHC have a strong feeling of ownership towards the neighborhood, but also towards the DHC itself (shared ownership). They are proud of their initiative and want to make it a success. Unlike the park board, the feeling of ownership towards the initiative enhances the creation of lines of communication with other people on other levels, because members and partners of the DHC realize that this is required to achieve the goals of their initiative. The feeling of ownership towards the initiative also creates some autopoietic elements. One cannot become a member of the DHC. Moreover, the DHC is focused on its internal management and focuses on a few initiatives in the area. This makes the initiative a robust element in the area. The interplay between autopoietic and dissipative self-organization in the DHC enhances resilience.

The DHC wants to evoke a feeling of ownership towards the neighborhood in other residents as well. This creates dissipative elements in the self-organization, because the DHC is outward-looking: it is searching for new relations, partnerships and communication lines, which enhances resilience. Hence, the self-organization of the DHC mainly has a dissipative character, which fosters resilience.

7.1.3 The resilience coalition: Government-induced self-organization

The resilience coalition was established by the municipality and is still heavily steered and influenced by the government. Therefore, one could call this "government-induced self-organization". This self-organization fosters bricolage, because it combines different kinds of knowledge, namely the expert knowledge of several people and initiatives in BoTu. The coalition's ultimate aim is to make the neighborhood and its residents more adaptive through the creation of an integral "master plan" for the entire neighborhood. This should be established by the collaboration of different initiatives and networks. However, the coalition as such does not foster the adaptive capacity of the system because it only contains non-robust elements. In addition to that, the creation and execution of this master plan could block smaller initiatives such as the park board, since the board aims to improve the park and its surroundings through small interventions. However, these small interventions are sometimes delayed, postponed or blocked, because the coalition is working on this integral plan. This reduces the adaptive capacity of the neighborhood.

Moreover, the coalition enhances cooperation: it creates integrality on an expert level, because it unites and connects different (professional) groups and networks that all want to achieve something in the neighborhood. The relations and communication lines between these groups are very flexible and loose, because there are no fixed agreements or working rules people have to abide to. They work together on a joint result, but this result is still "open" and will be formulated during the process. However, the integrality that is created by the government-induced self-organization causes difficulties as well. Through the artificial intervention of the municipality in different initiatives and processes, new dependencies and relations are created, because initiatives are brought together in a new setting. In conclusion, the coalition as such does not foster the resilience of the system.

Ownership

Most members of the coalition feel connected to the neighborhood, because it consists of people who represent different initiatives, mainly active in the neighborhood, to which they feel connected. However, the coalition also consists of some civil servants and representatives from a housing association, who feel some connection to the neighborhood, but not as much as residents and initiators from initiatives do. The civil servants in the coalition are a dominant factor and have a strong feeling of ownership towards the coalition, as opposed to the rest of the coalition. They want to make it a success and push for quick results. This enhances autopoietic elements in the self-organization, which limits the creation of resilience, because it keeps other (smaller) initiatives from realizing their more short-term

and modest plans. Conversely, the representatives of the initiatives in the coalition often prioritize their own network and initiative and have a connection with the neighborhood. This fosters some dissipative elements in the self-organization. Actors are looking for external exposure and explore new content. The common goal is formulated in quite an open way. This leads to a connection of new knowledge and new (flexible and informal) relations and communication lines which enhances the resilience of the governance system. However, they do not know what to expect from the coalition yet such that a "wait and see attitude" prevails. Hence, a real interplay between autopoietic and dissipative elements was not observed.

7.2 The bureaucracy

The role of the municipality in this case is paradoxical. On the one hand, she tries to encourage self-organization in the area. This could be called "government participation in citizen participation". On the other hand, she does not always know how to deal with this self-organization when it ultimately occurs. Bureaucratic structures prove to be persistent; it is difficult to change old ways of working in order to give room for self-organization. This is discussed in more detail in section 7.2.1. With regard to the influence of bureaucratic structures in the relationship between self-organization and resilience, the concept of "facilitation" is important. Sections 7.2.2 and 7.2.3 discuss this concept. Section 7.2.4 focuses on visible changes in the traditional bureaucracy that were encountered during the research.

7.2.1 The influence of bureaucratic structures on the relationship between self-organization and resilience

The case study shows that bureaucratic structures are persistent and have an influence on the relation between self-organization and resilience in different ways. Firstly, these structures have an influence on the feeling of ownership. The case study shows that people higher up in the municipality have a little feeling of ownership towards the neighborhood of BoTu or even none at all. It can thus be argued that bureaucratic structures "break" the feeling of ownership at higher government levels: civil servants at higher levels are bound to their specific task and area of expertise. The higher in the organization, civil servants hold on to bureaucratic principles more firmly than people at a lower level in the organization, for instance the area networkers. Of course this is partly inevitable, because these principles make the work of a civil servant more structured and clear. However, it also hinders them to immerse themselves into concrete cases, which increases the probability that they feel more connected towards an initiative or case and will therefore show more ownership. Often, local civil servants have a specific area in which

they operate and in which the scope of their tasks is quite broad. Because they have a relatively broad room for discretion in their area, they often have a feeling of ownership towards the area and concrete cases within that area. It is their job to listen to the residents in their area and communicate complaints, needs and questions towards the different silos within the municipality. Besides the fact that it often takes a lot of time before these levels react to the demand, there is often disagreement about which silo needs to get involved in a specific case. Eventually, it sometimes happens that nobody shows signs of ownership, because civil servants from different silos deny being responsible for the policy area to which the case is related. Local cases often need an "ambassador" higher up in the bureaucracy to take up a specific case, but this is difficult to accomplish for residents and local civil servants. It requires lobbying capacities and a lot of time and energy, which is not always available.

The fact that bureaucratic principles "break" the feeling of ownership at higher levels leads to the second way the bureaucracy influences the relation between self-organization and resilience. Since the bureaucracy applies strict and exhaustive rules and since civil servants higher in the organization often feel less ownership, the exchange of knowledge and integral cooperation at different levels is impeded. For instance, when a self-organizing entity needs something from the government, the latter responds to the demand with a standardized set of rules, which inhibits the exchange of knowledge and information and also opportunities for fruitful cooperation. In the end, the initiative often does not attain that which is required. This scenario shows that self-organizing initiatives often have good connections with public servants working on local levels or public servants with a flexible mentality, but on higher levels plans or ideas often get stuck. Thirdly, bureaucratic structures at higher levels ensure that self-organizing initiatives stay rather small and unimportant. The governmental actor, in this case the Municipality of Rotterdam, decides which initiatives receive (financial) support. This support often does not have a long-term character and can be cancelled at will. Hence, the robust bureaucratic structures ensure that self-organization does not become robust, because that would pose a threat to the bureaucracy itself. From a resilience point of view, one could say that self-organizing initiatives remain redundant because they are not adopted by the bureaucratic system. However, in case of disruption, self-organizing initiatives may be a valuable source to utilize. However, this is only possible if there are strong and clear connections and agreements between both systems, which is not the case. Finally, bureaucratic structures may also accelerate self-organizing processes. This is for instance the case when the municipality is part of the self-organization or starts to interfere in the process. The application of governmental and bureaucratic structures, such as official rules and clear responsibilities, may help the self-organization to achieve its goals. This could increase cooperation and the exchange of

knowledge within the self-organization, because people feel that it is worth to be part of the process when the municipality expresses interest. Eventually, this may make the self-organization more robust. However, as previously mentioned, governmental interference entails a risk that processes develop too quickly and that people lose their connection to the self-organization.

7.2.2 Facilitation in theory

Facilitation is a specific role that a government (for instance a municipality) can take on that often clashes with the traditional bureaucracy. Facilitating has become an important concept within government and public administration literature. It is considered to be a way of dealing with new societal developments, such as self-organization. In this research, three different ideal government roles are discerned with regard to facilitating that arose in the interviews. Firstly, the role of “connector”. In this role, the government connects different people and organizations in society through for instance the organization of meetings where different residents, stakeholders and groups are brought together around a single topic or issue. Secondly, the role of “financier”. This implies that the government stays in the background and finances self-organizing initiatives. Thirdly, the role of “guide”. This implies that the government grants citizens access to networks and to third persons, and assists them in certain complicated (governmental) procedures. Governments do this in a responsive and serious way.

7.2.3 Facilitation in practice

The governmental roles with regard to facilitation imply that a government has to get rid of a number of bureaucratic structures in order to facilitate properly. For instance, if a government wants to take on a role as “connector” in a certain network, she has to make lasting and robust personal connections with people. This implies that the government cannot always act in an impersonal way. Also, rules cannot always be stable and exhaustive, because governments have to choose which self-organizing initiatives they prioritize. So, the practice of facilitation is not as simple and clear-cut as was described above. The three ideal government roles with regard to facilitation are challenging and certain issues arise that should be addressed. Firstly, if the government acts as a connector, it is possible that conflicts between different people or groups arise. The connection of different groups in networks and thus the creation of integrality creates interdependencies between these groups. This sometimes makes it more difficult to solve a problem and to work jointly on a specific theme or plan. Secondly, the role of financer or guide forces governments to think about which initiatives and ideas they want to finance or support. After all, governments do not have time to support every single initiative. Additionally, this role raises the

question whether governments should help initiatives that are in conflict with governmental principles. Finally, the practice of facilitation often does not take into account that self-organizing processes have a different reality and more specifically, a different pace. People taking part in self-organizing initiatives often feel undervalued, because governments, when they facilitate self-organization, rarely recognize that self-organization has a different pace compared to the organized and bureaucratic ways in which governments operate. This may disturb the self-organizing process. Governmental interference may lead to a more robust initiative, because the governmental facilitation empowers people and may bring the initiatives in more advanced stages. This robustness, however, is of a temporary nature, because it does not match the local context and pace. If government facilitation is short-term, the initiative may even collapse when the government retreats.

7.2.4 Changing bureaucracy

Bureaucratic processes are often changing into more flexible processes whereby the government takes on the role of facilitator. This section describes this development.

Governments often do not know how to deal properly with self-organization, because self-organizing initiatives are new governance structures in local governance systems. Because they do not coincide with the hierarchical and impersonal relations (i.e. self-organization consists of personal and non-hierarchical relations) and the stable and exhaustive rules of the municipality (i.e. self-organization aligns with specific contexts), the governance system is challenged. In turn, this challenges the core of the system, namely the bureaucratic structures that still play a prominent role. An increasing number of civil servants are convinced that not all features of the traditional Weberian bureaucracy are still relevant in today's society. This study discovered a few developments that may indicate some new elements that exist alongside the traditional bureaucratic structures in the municipality.

Firstly, as previously mentioned, "impersonal" bureaucratic structures often become more personal. This may be referred to as "the personal bureaucracy". For instance, processes sometimes go faster when a new civil servant becomes responsible for a certain area and is more willing to become involved on a personal level. Besides, civil servants higher up in the organization tend to have personal ties to local initiatives. Sometimes residents also have a contact person in the municipality who they can contact when they need help. Secondly, despite the fact that most civil servants receive clearly defined responsibilities from their silo, an increasing number of public servants take on additional tasks and responsibilities or become personally involved in a project which they find interesting and important on the basis of their personal or professional judgment. They are professionals, so they do not only reason

from the point of view of their silo but also from that of their professional knowledge. They sometimes take on flexible roles, which is a role that is suited for a specific context. Hence, strictly and clearly defined responsibilities become more flexible and loose. Thirdly, experiments gain a more prominent role. They have been deliberately created by the bureaucratic system, for instance through contests or competitions between citizens or organizations. Experiments test an assumption in a specific context that can be evaluated afterwards. They often clash with or challenge these official rules, because they have a different logic compared to the official rules of the bureaucracy. As a consequence, the government sometimes turns a blind eye towards some official rules in order to create a space for experiments. The last development that has been discovered is the cooperation between different silos in government. Despite the fact that the municipality is still divided into silos, these units sometimes cooperate in different projects. For instance, there are intensive personal contacts between civil servants from different silos. Occasionally, several silos cooperate by linking their budgets. This cross-cutting is done partly through personal contacts between civil servants, but is also purposefully organized by the bureaucracy through the appointment of area managers, area networkers and *stadsmariniers*. So the possibility to crosscut silos is partly organized from within the system and partly from outside the system.

Chapter 8. Conclusion

8.1 Structure of the research

This research dealt with the following question: What is the influence of self-organizing processes on the resilience of the (local) governance system in the case of Park 1943? In order to answer this central question, several sub-questions were formulated:

- Which theoretical insights does the literature on resilience offer from a governance perspective? (1)
- Which theoretical insights does the literature on self-organization offer from a governance perspective? (2)
- How can the resilience of a governance system be characterized theoretically? (3)
- Is there a relationship between self-organization and resilience in the Park 1943 case? (4)
- If so, how can this relationship be characterized? (5)
- Is there an influence of bureaucratic structures on this relationship? (6)
- If so, how can this influence be characterized? (7)

The main hypotheses were the following:
Hypothesis 1: Self-organization in Park 1943 positively influences the resilience of the governance system of the park
Hypothesis 2: The positive influence of self-organization on resilience is weakened by the presence of the bureaucracy

8.2 Answering the sub-questions

8.2.1 Theoretical insights on resilience

With regard to the first sub-question, the concept of resilience originates from the environmental sciences. It was used to research how ecosystems restore themselves after crises. More generally, the concept of resilience is used to indicate the extent to which a system can restore itself when it is subject to pressure. This research takes on the second view of resilience, namely ecological resilience. Hence, in contrast to engineering resilience, the “ability to restore itself” is not the ability to go back to exactly the same situation or context the system was originally in. Instead, it is about adapting internally in order to be able to adapt to new situations or disruptions.

8.2.2 Insights about self-organization

There is a large amount of literature on self-organization from different academic backgrounds. In general it is a "[…] dynamical and adaptive process where systems acquire and maintain structure themselves, without external control" (Wolf and Holvoet, 2004: 7). From a governance perspective, these "systems that gain structure themselves" are non-governmental actors, and the absence of external control is the absence of governmental control. This leads to the following definition of self-organization in a governance context: " […] non-governmental actors adapting their behavior and the emergence of collective action without governmental interference" (Nederhand et al., 2016: 1065).

The different indicators of self-organization that were discerned in the operationalization are not always present in the same composition or to the same extent in every self-organizing entity. Therefore, there are different degrees of self-organization. This implies that there are also somewhat lower degrees of self-organization in which certain levels of governmental interference can be discerned.

8.2.3 Characterization of the resilience of a governance system

The resilience of a governance system can be characterized by means of three concepts, namely bricolage, adaptability and cooperation, each with their own set of indicators. There is limited source of useful literature on resilience from a governance perspective. Therefore, the aforementioned concepts were derived from different academic disciplines, mainly from the ecological and organizational sciences.

8.2.4 Relation between self-organization and resilience

With regard to the fourth and fifth sub-question, this research found a relationship between self-organization and resilience. Additionally, this research found three different types of self-organization. In the next sections, the influence of these types of self-organization on bricolage, adaptability and cooperation will be discussed. Subsequently, mutual interactions between different self-organizations and their influence on resilience are discussed. The last section discusses dissipative and autopoietic self-organization and their influence on resilience.

Self-organization and bricolage

This research demonstrated that the three types of self-organization all foster bricolage, though in different ways. For all types of self-organization it can be concluded that they positively influence the

combination of different kinds of knowledge. The research has also shown that evaluation is present in every self-organization. For the informal self-organization this is a form of evaluation that must be understood in terms of "trial and error". As to formal self-organization, evaluation is a formal part of the process. The government induced self-organization works with experiments. Finally, in terms of redundancy, all self-organizations aim to use the power, strength and capacities that are already present in the neighborhood. However, this is challenging because citizens play a smaller role in the process, especially in the case of government-induced self-organization.

Self-organization and adaptability

In terms of adaptability, it can be concluded that formal self-organization enhances the system's adaptability, whereas informal and government-induced self-organization do not. The formal self-organization has a legal status and consists of several actors from different backgrounds that have official relationships to each other. This makes the initiative itself relatively robust. However, most relationships between actors in this initiative are relatively informal, personal and flexible. It creates flexible communication lines in the neighborhood and it empowers people to become active. Conversely, the informal and government-induced self-organization do not have a legal status yet and it is difficult to find real commitment from its members and to attract new ones. Hence, the initiative is insufficiently embedded in the system. Therefore it cannot make the system adaptive towards uncertainties. Moreover, the government-induced self-organization forms a possible threat to the adaptive capacity of the neighborhood. Because it is heavily influenced and steered by government, it may keep smaller initiatives from realizing their (more modest) plans.

It may be concluded that for an initiative to be adaptive, it has to have a certain degree of robustness in terms of recognition, embeddedness and status. However, the practice should be flexible, which implies that it should consist of informal relations and communication lines.

Self-organization and cooperation

The informal self-organization mainly fosters *local* integrality, whereas the formal self-organization fosters integrality at a multitude of levels and across different systems. Government-induced self-organization does foster integrality between different groups inside and outside the neighborhood, but this also creates a risk that new dependencies and relations are created through artificial intervention of the municipality in different initiatives and processes. This sometimes creates tensions and frictions. Furthermore, this research demonstrated that informal self-organization is more "approachable" for locals compared to formal self-organization. The government-induced self-organization is closed

towards newcomers. It was the government that started the initiative and ultimately decides who may be part of it.

Mutual interaction

The aforementioned self-organizing entities interact and influence each other as well, because they are part of the same local governance system. The case study has shown that these self-organizations positively influence the resilience of the governance system when they interact, communicate and keep each other updated about their plans and ideas. This research also demonstrated that there is a risk that too many (new) groups, ideas and initiatives may create a chaotic context that is harmful to resilience. Hence, there is a turning point at which the fruitful creation of initiatives and their mutual interactions no longer contributes to the resilience of the governance system. Instead, it leads to more chaos and indistinctness. In the present case this is visible in the relationship between the resilience coalition and the park board. The coalition was purposively created to enhance integrality in the neighborhood between different organizations and initiatives. However, the creation of integrality sometimes creates new relations and interdependencies. On the one hand this is positive, but on the other it leads to an increasingly chaotic context. Therefore, it is important that the municipality be aware of this and takes on a suitable role in this process. This role is discussed in section 8.3.

Autopoietic and dissipative self-organization

As previously mentioned, there is a correlation between self-organization and resilience. This could be partly explained by the concept of “feeling of ownership”, that turned out to be of importance during the interviews and the meetings. It has been shown that in the *informal* self-organization a feeling of ownership towards the initiative itself fosters autopoietic elements, which limit the creation of resilience. At the same time one sees that the feeling of ownership towards the neighborhood fosters dissipative elements, which provides space for resilient features to emerge. Hence, the feeling of “shared ownership” creates an interplay between autopoietic and dissipative self-organization. For the *formal* self-organization the researcher observed that a feeling of ownership towards the initiative fosters an interplay between dissipative and autopoietic elements, which enhances resilience. A feeling towards the neighborhood also fosters dissipative self-organization. Like the park board, it was observed that “shared ownership” fosters an interplay between autopoietic and dissipative elements. Hence, whereas autopoietic self-organization as such does not foster the creation of resilience, an interplay with dissipative elements enhances resilience. Moreover, in the case of the DHC it could be seen that a degree of ownership towards the initiative that creates autopoietic elements gives the initiative a

certain degree of robustness towards uncertainties. In other words, it becomes a more serious factor in the neighborhood, which increases the chances for success. Therefore, autopoietic self-organization should not only be considered negatively. Finally, in the *government-induced* self-organization the majority of the members of the coalition feel connected to the neighborhood and to their own private initiatives. To some extent this fosters dissipative elements in the coalition, enhancing the creation of resilient features. In contrast, the dominant part of the coalition, namely the civil servants, have a strong feeling of ownership towards the coalition, which gives the coalition an autopoietic character too, limiting some of the resilient features. Hence, there is no feeling of shared ownership in the coalition and no clear interplay between autopoietic and dissipative elements.

8.2.5 Influence of bureaucratic structures

Sub-question 6 and 7 dealt with the influence of bureaucratic structures on the relation between self-organization and resilience. This study demonstrated that this influence is significant and that there is a high degree of interplay between self-organization and government. Governments take part in self-organizations (in the case of the Delfshaven Cooperative), establish self-organizations (in the case of the resilience coalition) and keep an eye on (and work with) self-organizations (in the case of the park board). Hence, bureaucratic structures, which are present in any governmental organization, have an influence on the relation between self-organization and resilience. Generally, traditional bureaucratic structures limit the creation of resilience. The presence of organizational silos, clearly defined responsibilities, a clear division of tasks, the presence of official, stable and exhaustive rules and impersonality all directly clash with the main characteristics of self-organization. Self-organization needs a context in which cross-cutting between silos, switching of roles and tasks, flexible rules and personal relationships are central. However, an increasing number of traditional bureaucratic structures are changing into “softer” structures in which there is more room for discretion with regard to self-organization. For example, there is an increasing number of civil servants with no clearly defined roles and responsibilities. The number of civil servants who try to work integrally with different silos and budgets is also on the increase. Moreover, resilient features are created within the system, such as the functions of *stadsmarinier* and area networker. Hence, the traditional Weberian bureaucracy is still effective in many contexts, but in relation to self-organization is becoming obsolete. That does not mean that the bureaucracy should be replaced by a completely different system. The traditional bureaucratic qualities are still valid: a system needs to be predictable to a certain extent in order to be legitimate. It is necessary to find a system in which the traditional bureaucracy has a place, but in which there is also

room for flexibility and improvisation in order to leave room for self-organizing initiatives.

This research defined "facilitation" as a way in which governments try to deal with self-organization. At the same time, facilitation clashes with the standard features of the traditional Weberian bureaucracy. Moreover, the municipality does not always facilitate in an ideal way that supports the self-organizations. A crucial question is what kind of governance municipalities and governments should use in order to stimulate self-organization, facilitation and resilience. The next section deals with this question.

8.3 The purpose of adaptive governance

Adaptive governance could be a suitable government strategy to better respond to self-organizing initiatives in society and to create resilience in a system. Firstly, it focuses on connecting formal and governmental institutions with informal groups, networks and individuals at various scales. In fact, this is exactly what the DHC is about. It also focuses on cooperation between different government scales and layers in which the local context is of great importance. Hence, adaptive governance is a form of governance which could enhance the resilience of a system, because it fosters the three cornerstones of resilience. Firstly, it recognizes the need for cooperation (i.e. integrality and inclusiveness). Further, it recognizes the need for adaptability, because it takes specific contexts into account while designing policies and applying strategies. Moreover, it connects different kinds of knowledge inside government circles as well as between the government and individuals or (civil) networks. More specifically, adaptive governance is a way of governing that is aware of the change that is taking place in its own system through its use of the adaptive cycle (see section 2.3.2). For instance, when a governance system is in the conservation phase, the system is relatively stable. However, this makes the system less flexible and exposes it to external shocks. Adaptive governance is a mode of governance that constantly tries to evaluate the system's position in this cycle. Therefore, adaptive governance also enhances evaluation within the borders of the system. It also aims to influence the system's transitions from one stage to the other. In conclusion, it is a way of governance that is aware of its own resilience and tries to influence that accordingly. However, adaptive governance in the scientific literature is about resilience in socio-ecological systems and often deals with game theory (Scholz et al., 2010; Benson and Garmestani, 2013; Cosens, 2010: 238; Nelson et al., 2008). A changing society (and bureaucracy) require a form of governance that is able to determine the most applicable governance strategy to the given situation. In other words, what is required is a form of governance that is able to "switch" and take on different roles and that sometimes adheres to bureaucratic governance, while at other times recognizes that a

different strategy is required to effectively respond to self-organization. An attempt to theorize the phenomenon has been made in the NSOB report of 2015 and by Meulenbeld and van Buuren, who call this “resilient governance” (van Buuren and Meulenbeld, 2016). This will be shortly addressed in section 9.2 (in the discussion) since this concept has not been addressed in the theoretical framework.

8.4 Bringing it all together: answering the main question

The answers to the different sub-questions demonstrated that the first hypothesis is invalid and that the second hypothesis is valid. As to the first hypothesis, there is an individual positive relationship between dissipative self-organization and resilience. Also an interplay between autopoietic and dissipative self-organization positively influences resilience. However, autopoietic self-organization as such limits the creation of resilience. The type of self-organization (formal, informal or government-induced) determines the feeling of ownership and therefore the presence of autopoietic and dissipative elements.

Whereas the different types of self-organization influence resilience individually, the combination of these self-organizations within one governance system creates a different relationship. Hence, the relation between self-organization and resilience can be characterized as “multi-level”. To create and increase resilience of the governance system, it is required that these self-organizations have clear lines of communication and are aware of each other’s ideas, tasks and plans. This is supported by the adaptive cycle (section 2.3.2) whereby resilient systems are aware of their own level of resilience and that of other systems. This awareness prevents interdependencies between the self-organizations from hindering and delaying the creation of new plans and ideas. In general, it is fruitful to have different types of self-organization within one system that cooperate and complement each other. However, when there are too many self-organizations with the same tasks and ideas (i.e. too much redundancy) there is an increase of chaos in the system. In addition, when government creates, supports or is part of a self-organizing initiative within a system, new interdependencies and relations are created, which is a source of conflict. Therefore, it is important that a government only initiates such a new process when it has a clear added value to the system. This includes informing and involving the self-organizations that are already in the system as well as respecting their own individual and unique pace. Flexible roles could prevent that too much redundancy inhibits the system. This enables actors in the system to align to specific situations and contexts and take on a role that is required in the system.

This research has detected different mediating variables. Firstly, a feeling of ownership that is present in any self-organization creates dissipative, autopoietic elements or an interplay between these

elements, which either enhances or blocks the creation of resilience. Secondly, the influence of strict bureaucratic structures limits the creation of resilience in a governance system. However, bureaucratic structures are also required within government to let it function legitimately, but they are no longer required in every situation. Therefore, a certain governance strategy is needed to fill this gap. Adaptive governance has been put forward as a strategy to increase resilience in a system. However, it does not deal sufficiently with the role of government in a bureaucracy and the different roles that a government can take on. This issue is briefly addressed in section 9.2.

Chapter 9. Discussion

This research was conducted carefully and reliable methods were used. However, during the research process the researcher made some methodological decisions that could have led to biases in the results. The researcher attempted to limit these biases to a minimum (see sections 4.5.1 and 4.5.2). The methodological limitations of this research are addressed in section 9.1. Section 9.2 discusses the results of this research in relation to existing literature.

9.1 Methodological discussion

The first limitation of this research with regard to methodology are the changes that have been made in the interview questions and topics that were used in the interviews. During the course of the research, the researcher discovered that some questions were not relevant and that other topics and questions should be addressed instead. Relevant topics that were addressed during the interviews were carried over into the subsequent interviews. Where the researcher's knowledge about the case was at first relatively limited, she gained more insight into the case during the interviews. The fact that in the earlier stages of the research different questions and topics were addressed compared to the later stages of the research, negatively influences the repeatability and thus the reliability of the research.

A clear learning curve can be discerned in relation to the main concepts in this research. During the research the researcher gained more knowledge on the meaning and manifestations of the different concepts in practice. In chapter 3 this is referred to as "sensitizing concepts". This method may have decreased the external validity of the research, because the meaning of the concepts are case bound. However, the external validity of a case study is low in general.

The third limitation is the fact that the main conclusions of this research are based on sixteen interviews and eight attended meetings (see appendices). More interviews could have been conducted, because the network in BoTu consists of more stakeholders. This would have increased the validity and reliability of the research. However, because of the scope and nature of this research and the fact that the researcher was bound to a tight schedule, only sixteen interviews were conducted. Also, the researcher did not have time to accept all invitations for meetings in the neighborhood and municipality with regard to the topic of resilience and self-organization. The final methodological limitation of this research concerns the timeframe in which the interviews were held and in which meetings were attended. Interviews have been conducted over the course of one month, and meetings have been attended over the course of six months. Therefore, the researcher's conclusions only apply to these

specific periods. Because of the dynamic character of the process in BoTu, results, interpretations and conclusions may well have been different at different points in time.

9.2 Scientific discussion

According to Bourgon, "Modern societies are constructed out of the multitude of complex and dynamic systems" and "to understand modern society we must understand the links between systems. […] If inculcated into public administration practice, systems thinking could help governments to better understand emerging patterns and trends and to take proactive action" (Bourgon, 2008: 323). That is precisely what this study set out to do: it embraced complexity and considered every unit of analysis as a system that continually interacts with its environment. Hence, it used a multi-level approach to analyze the data. In doing this, it became possible to better understand interactions between citizens, civil society and the government and to put forward appropriate action perspectives.

The interviews have shown that self-organization has become an important concept within government circles. It is a societal development that civil servants increasingly have to deal and interact with. This research has shown that self-organization has various manifestations in which governments take on different roles. Moreover, this research has revealed that dissipative forms of self-organization positively influence resilience. As previously mentioned, there is no public administration literature available that focuses specifically on the influence of self-organization on resilience. Van Meerkerk et al. focus on dissipative and autopoietic self-organization and its impact on vital actor relations. In fact, vital actor relations are one of the features of resilience, namely cooperation. This research found an individual positive relationship between dissipative self-organization and resilience. It also found that an interplay between autopoietic and dissipative self-organization enhances resilience. Van Meerkerk concludes that the interplay between dissipative and autopoietic self-organization leads to vital actor relations (Van Meerkerk, 2013: 1647), which is endorsed by this research. In addition to that, and in contrast to Van Meerkerk's research, this research found that different types of self-organization in a system interact. When they do this properly, the resilience of the system is increased. Hence, in this research self-organization is considered a multi-level phenomenon. Most public administration literature on self-organization does not divide self-organization into different categories and it considers it an isolated phenomenon. For example, in the article by Nederhand et al. self-organizing entities are seen an isolated phenomena that do not interact with their environment and especially not with other self-organizations. However, this research is in line with Nederhand's conclusion that governments are not entirely absent from self-organizing processes and that one has to analyze their influence on self-

organization in order to understand self-organizing processes in the public sector.

According to Sudmeier-Rieux, many funds are being channeled to resilience building, but there are " […] surprisingly few operational frameworks for measuring resilience outcomes and processes" (2014: 76). This research gap should therefore be filled by providing examples of resilience at various scales and offer ideas for their operationalization (ibid). This research has attempted to do exactly this, since it is one of the first studies that analyzes resilience in the context of governance. In the coming years this framework for operationalization should be tested in other contexts and improved accordingly.

Van Buuren and Meulenbeld introduce the concept of resilient governance, a form of governance that is flexible and at the same time robust and redundant (2016: 2). The term resilient governance is in many ways similar to the concept of resilience that was operationalized in this research. In this research, adaptive governance has been put forward as a strategy to increase resilience in a system. However, it has been argued that it needs to be improved the context of governance in order to incorporate the influence of the bureaucracy into resilience. The concept of van Buuren and Meulenbeld may offer this addition since it argues that resilient governance entails the ability to organize in a "tailor-made" way. In other words, governments have the ability to use different steering strategies or governance styles depending on the situation and the nature of the problem. Four different styles are discerned, namely the legitimate, the performing, the networking and the participating government. The government knows all these governance modes and uses them depending on the context (ibid: 16). Hence, adaptive governance is a form of governance that is close to the "roots" of the concept of resilience, but in the context of governance it needs an addition. Van Buuren and Meulenbeld discuss the concept of resilience in the context of governance, but do not pay attention to the roots and the original definition of resilience. Therefore, adaptive governance and resilient governance are two terms that may be integrated to generate better prospects for action.

Chapter 10. Recommendations

This last chapter offers some practical recommendations for the Municipality of Rotterdam and some scientific recommendations as avenues for further research in order to enhance knowledge on the topic of self-organization, resilience and the relation between the two.

10.1 Practical recommendations

Over the course of this research the concept of facilitation has proven to be important for governments to deal with a changing societal context and, more specifically, self-organization. There is no straightforward narrative for the municipality's vision with regard to facilitation. Mainly because the municipality is still searching for a narrative that fits into the contemporary social context. Not all civil servants are equally aware of this debate. Therefore, a first recommendation entails the organization of a more active and interactive debate on this topic in neighborhoods and with initiators of initiatives. Preferably civil servants from different silos and levels should attend these meetings to ensure that discussions on this topic become more embedded in the municipality's organization. A second recommendation concerns the difference in a feeling of ownership between higher levels in the municipality's organization and civil servants working at more local levels (i.e. in the neighborhoods). Area networkers and managers are often part of various local networks together with local organizations and residents. They often receive questions and complaints from these networks and they want to offer them municipal commitment in the form of (financial) support. However, they often have no authority to do this. Instead, they have to lobby with the different silos in the municipality to obtain answers, support and money. This is the part were communication often gets stuck. As a solution, the municipality could experiment with granting local civil servants more commitment power and overriding authority in relation to self-organizing initiatives. A third recommendation for the municipality is to pay more attention to the pace of different self-organizing initiatives. This research has demonstrated that self-organizing processes develop at a different pace compared to processes within the municipality. If the municipality becomes involved in the development of a self-organizing initiative, it should take this into account. The case study showed that the municipality exerted pressure on an initiative to ensure that progress was made. However, governments should also accept that if an initiative is not ready to take another step, it is not necessarily fruitful to keep on pushing for results as this may harm other processes in the neighborhood. Fourthly, this research discussed the role of experiments. The municipality could invest time in defining the nature and objective of experiments within its municipal

borders. It often happens that initiatives are approved by being defined as “experiments”. In addition, the government should invest time in the follow-up and evaluation of experiments, so that they have a legacy. One example from the case study is the municipality’s involvement in the Delfshaven Cooperative. This foundation has been successful in stimulating other initiatives and is relatively well-known in the neighborhood. However, there is a risk that after a few years the municipality will stop allocating funds because their priorities and the municipal vocabulary may change. This could harm the initiative to such an extent that it collapses, which has a spill-over effect, harming other fruitful processes in the area that it is connected to. Moreover, the Delfshaven Cooperative could be considered an experiment whereby new roles and relations are implemented in new collaborative forms. Given the foundation’s success, the government could apply this in several other settings. Finally, and in line with the previous recommendation, governments should build in more reflexive elements into their organization. In other words, they should pay more attention to learning. Self-organizations tend to be experiments, but since funding and attention diminish over time, interesting lessons are not taken along.

10.2 Scientific recommendations

In this section several avenues for further research are formulated that would improve knowledge on the relationship between self-organization and resilience in a governance context. Firstly, since there is a limited amount of public administration literature which focuses on resilience, the researcher made use of literature from the organizational and ecological sciences. Hence, the conceptual framework has an explorative and experimental character and has not yet demonstrated its value for the field of public administration. Therefore, research on this topic should be conducted more often in several contexts to strengthen conceptual knowledge. Secondly, in analyzing the relation between self-organization and resilience, the concept of ownership both towards the initiative itself and towards the neighborhood has proven to be important. However, it is difficult to measure ownership, especially the degree of ownership in a group or individual. Therefore it is of great importance that there are clear (psychological) indicators of this concept that can measure it more thoroughly. The third avenue for further research has to do with the downsides of resilience. As previously mentioned, resilience is a trending topic in academia (Chandler, 2014: 1-2) and it often seems that the creation of resilience is something that should be pursued at all times (Cretney, 2014: 627; Cutter, 2016: 112). More research is required on the negative effects of resilience. For instance, it could be that the resilience of one system exists at the expense of that of another. The same applies to people and groups. If one group is

considered resilient, it could be that other groups of people become less resilient. In other words, different systems have different levels of resilience. These systems with their different levels of resilience may also influence each other. In the case of Park 1943, it may be that the resilient governance system around the park limits self-organizations in other neighborhoods (i.e. in other systems) in becoming resilient themselves. Also, resilience at one time or at a specific scale may be achieved at the expense of resilience in another period or at a different scale. More research should be conducted that scrutinizes these thought experiments in more detail. The fourth avenue for further research concerns the effect of trust on the relationship between self-organization and resilience. Many interviewees stated that mutual trust is an important factor for self-organizations to be successful, which is also supported by other studies (Nederhand et al.,2006; Pierre and Peters, 2000; Van Meerkerk, Boonstra, Edelenbos, 2012). The amount of trust between actors within one initiative, but also between different initiatives possibly influences the creation of resilience as well. Fifthly, this research argued that too much redundancy in a system could limit the creation of resilience. However, the research could not determine where exactly the tipping point is situated. Further research should specifically focus on this topic. The last avenue for further research concerns the interplay between autopoietic and dissipative elements between different self-organizations. The research found that self-organization is a multi-level phenomenon and that autopoietic and dissipative elements within one self-organizing entity have a different relation with its resilience. Future research could focus on the interplay between autopoietic and dissipative elements between various self-organizing entities.

Literature

Ansell, C. (2012). Collaborative governance. In: *Oxford Handbook of governance.* Oxford University Press.

Benson, M. H., & Garmestani, A. S. (2013). A framework for resilience-based governance of social-ecological systems. *Ecology and Society*, *18*(1), 9.

Berkes. F., J. Colding, and C. Folke. (2003). *Navigating social–ecological systems: building resilience for complexity and change.* Cambridge University Press, Cambridge, UK.

Berkes, F. (2007). Understanding uncertainty and reducing vulnerability: lessons from resilience thinking. *Natural hazards*, *41*(2), 283-295.

Bevir, M. (2012). *Governance: A very short introduction*. OUP Oxford.

Blatter, J., Janning, F., & Wagemann, C. (2007). Qualitative Politikanalyse. *Eine Einführung in Forschungsansätze und Methoden, Wiesbaden*, *1*.: 127

Blumer, H. (1954). What is wrong with social theory?. *American sociological review*, *19*(1), 3-10.

Boin, A., & Van Eeten, M. J. (2013). The resilient organization. *Public Management Review*, *15*(3), 429-445.

Bourgon, J. (2009). New directions in public administration: serving beyond the predictable. *Public Policy and Administration*, *24*(3), 309-330.

Bryman, A. (2008). *Social research methods*. Oxford university Press.

Burns, T. R., & Stöhr, C. (2011). The architecture and transformation of governance systems: Power, knowledge, and conflict. *Human Systems Management*, *30*(4), 173-194.

Buuren, A. van, Meulenbeld, R. (2016). *Nieuwe vormen van organiserend vermogen voor een krachtige stad. Hoe robuuste instituties en vindingrijke netwerken elkaar versterken*. Bijdrage aan de Focus Area Governance, Resilience Strategy Rotterdam. Erasmus University Rotterdam.

Chandler, D. (2014). *Resilience: The governance of complexity*. Routledge.

Constas, H. (1958). Max Weber's two conceptions of Bureaucracy. *American Journal of Sociology*, 400-409.

Cosens, B. (2010). Transboundary river governance in the face of uncertainty: resilience theory and the Columbia River Treaty. *J. Land Resources & Envtl. L.*, *30*, 229-230.

Cretney, R. (2014). Resilience for whom? Emerging critical geographies of socio-ecological resilience. *Geography Compass,* 8(9): 627-640.

Cutter, S. L. (2016). Resilience to what? Resilience for whom? *The Geographical Journal*, 182(2): 110-113.

Cyert, R. M., & March, J. G. (1963). A behavioral theory of the firm. *Englewood Cliffs, NJ*, *2*.

Dedeurwaerdere, T. (2008). A resilience-based framework for evaluating joint forest management inFlanders. In *12th Biennial Conference of the International Association for the Study of Commons, Cheltenham*.

De Wolf, T., & Holvoet, T. (2004). Emergence versus self-organisation: Different concepts but promising when combined. In *Engineering self-organising systems* (pp. 1-15). Springer Berlin Heidelberg.

Fischer, F. (2012). Participatory governance: from theory to practice. In: *The Oxford Handbook of Governance.* Oxford University Press.

Gerrits, L. (2012). *Punching clouds. An introduction to the complexity of public decision-making.* Emergent publications: Litchfield Park USA.

Gerth and Wright Mills, in: Weber, M. (2009). *From Max Weber: essays in sociology*. Routledge.

Gunderson, L. H. (2000). Ecological resilience-in theory and application. *Annual review of ecology and systematics*, 425-439.

Héritier, A., & Lehmkuhl, D. (2011). Governing in the Shadow of Hierarchy New Modes of Governance in Regulation. In *New Modes of Governance in Europe* (pp. 48-74). Palgrave Macmillan UK.

Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual review of ecology and systematics*, 1-23.

Holling, C. S. (1996). Engineering resilience versus ecological resilience. *Engineering within ecological constraints*, *31*, 32.

Hood, C. (1991). A public management for all seasons?. *Public administration*, *69*(1), 3-19.

I. Sudmeier-Rieux, K. (2014). Resilience–an emerging paradigm of danger or of hope?. *Disaster Prevention and Management*, *23*(1), 67-80.

Janssen, M. A., Anderies, J. M., & Ostrom, E. (2007). Robustness of social-ecological systems to spatial and temporal variability. *Society and Natural Resources*, *20*(4), 307-322.

Johnson, J.B., Reynolds, H.T. with Mycoff, J.D. (2008) *Political Science Research Method*, 6th ed., Washington DC: CQ Press.

Kickert, W. J. (1991). Complexiteit, zelfsturing en dynamiek. *Over management van complexe netwerken bij de overheid.* Oratie, Erasmus Universiteit, Rotterdam.

Kickert, W. J., Klijn, E. H., & Koppenjan, J. F. M. (Eds.). (1997). *Managing complex networks: Strategies for the public sector*. Sage.

Klau, G. W., & Weiskircher, R. (2005). Robustness and resilience. In *Network analysis* (pp. 417-437). Springer Berlin Heidelberg.

Klijn, E. H. (2008). Complexity Theory and Public Administration: What's New? Key concepts in complexity theory compared to their counterparts in public administration research. *Public Management Review*, *10*(3), 299-317.

Klijn, E. and Koppenjan, J. (2016). *Governance networks in the public sector*. London: Routledge.
Korhonen, J., & Seager, T. P. (2008). Beyond eco-efficiency: a resilience perspective. *Business Strategy and the Environment*, *17*(7), 411-419.

Lebel, L., Anderies, J. M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T. P., & Wilson, J. (2006). Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society* 11(1).

Levi-Faur, D. (2012). From “big government” to “big governance”? In: *The Oxford Handbook of Governance.* Oxford University Press.

Lipsky, M. (2010). *Street-level bureaucracy, 30th ann. Ed.: dilemmas of the individual in public service*. Russell Sage Foundation.

Low, B., Ostrom, E., Simon, C., & Wilson, J. (2003). Redundancy and diversity: do they influence optimal management. *Navigating social-ecological systems: building resilience for complexity and change*, 83-114.

Luhmann, N. (1970). Soziologische Aufklärung. In *Soziologische Aufklärung 1* (pp. 66-91). VS Verlag für Sozialwissenschaften.

Lundberg, J., & Johansson, B. J. (2015). Systemic resilience model. *Reliability Engineering & System Safety*, *141*, 22-32.

Meerkerk, I. van, Boonstra, B., & Edelenbos, J. (2013). Self-organization in urban regeneration. A two case comparative research. *European Planning Studies*, *21*(10), 1630–1652.

Morçöl, G. (2003). Complexity And Public Administration. *Public Administration Theory Network Annual Conference*, 1–17.

Nederhand, J., Bekkers, V., & Voorberg, W. (2016). Self-Organization and the Role of Government: How and why does self-organization evolve in the shadow of hierarchy?. *Public Management Review*, *18*(7), 1063-1084.

Nelson, D. R., Adger, W. N., & Brown, K. (2007). Adaptation to environmental change: contributions of a resilience framework. *Annual review of Environment and Resources*, *32*(1), 395.

Nelson, R., Howden, M., & Smith, M. S. (2008). Using adaptive governance to rethink the way science supports Australian drought policy. *Environmental Science & Policy*, *11*(7), 588-601.

Olsson, P., Folke, C., & Berkes, F. (2004). Adaptive comanagement for building resilience in social–ecological systems. *Environmental management*, *34*(1), 75-90.

Patton, M. Q. (2005). *Qualitative research*. John Wiley & Sons, Ltd.

Pendall, R., Foster, K. A., & Cowell, M. (2010). Resilience and regions: building understanding of the metaphor. *Cambridge Journal of Regions, Economy and Society*, *3*(1), 71-84.

Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy sciences*, *4*(2), 155-169.

Scholz, J. T., & Stiftel, B. (Eds.). (2010). *Adaptive governance and water conflict: New institutions for collaborative planning*. Routledge.

Sheffi, Y. (2005). The resilient enterprise: overcoming vulnerability for competitive advantage. *MIT Press Books*, *1*.

Stake, R. E. (1998). Case studies. In 'Strategies of qualitative inquiry'. (Eds YS Lincoln, NK Denzin) pp. 86–106.

Steen, M. van der, Scherpenisse, J. & Van Twist, M. (2015). *Sedimentatie in sturing. Systeem brengen in netwerkend werken door meervoudig organiseren*. Nederlandse School voor Openbaar Bestuur (NSOB).

Teisman, G., Buuren, A. van, & Gerrits, L. M. (Eds.). (2009). *Managing complex governance systems*. Routledge.

Torfing, J. (2012). Governance Networks and Metagovernance. In *Oxford Handbook for Governance*. Oxford University Press.

Tsang, E. W. (2014). Generalizing from research findings: the merits of case studies. *International Journal of Management Reviews*, *16*(4), 369-383.

Uitermark, J. (2014). *Verlangen naar Wikitopia*. Oratie, Erasmus Universiteit, Rotterdam.

Vayda, A.P. and McCay, B.J. (1975). New directions in ecology and ecological anthropology. *Annual Review of Anthropology* 4: 293–306.

Wagenaar, H., & Wilkinson, C. (2013). Enacting resilience: A performative account of governing for urban resilience. *Urban Studies*, *52*(7), 1265-1284.

Walker, B., Holling, C. S., Carpenter, S. R., & Kinzig, A. (2004). Resilience, adaptability and transformability in social--ecological systems. *Ecology and society*, *9*(2), 5.

Walle, S. van de (2014). Building Resilience in Public Organizations: The Role of Waste and Bricolage. *The Innovation Journal, 19* (2).

Weber, M. (1965). Politics as a Vocation.

Weber, M. (2009) *From Max Weber: essays in sociology*. Routledge.

Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2008). Organizing for high reliability: Processes of collective mindfulness. *Crisis management*, *3*(1), 81-123.

Wyss, R., Luthe, T., & Abegg, B. (2015). Building resilience to climate change–the role of cooperation in alpine tourism networks. *Local Environment*, *20*(8), 908-922.

Yin, R. K. (2013). *Case study research: Design and methods*. Sage publications.

Young, D. R., & Kim, C. (2015). Can social enterprises remain sustainable and mission-focused? Applying resiliency theory. *Social Enterprise Journal*, *11*(3), 233-259.

Appendix A

List of interviewees

Code	Organization	Function	Date
Interviewee 1	Municipality of Rotterdam	Partner DHC, Programme manager	15-06-2016
Interviewee 2	Private business	Process facilitator park board	29-06-2016
Interviewee 3	Private business	Process facilitator Heart for BoTu coalition	07-06-2016
Interviewee 4	Municipality of Rotterdam	Area manager BoTu	14-06-2016
Interviewee 5	Municipality of Rotterdam	Area accountmanager Delfshaven	06-07-2016
Interviewee 6	Municipality of Rotterdam	Area projectmanager, Partner DHC	10-06-2016
Interviewee 7	DHC	Board member	22-06-2016
Interviewee 8	Municipality of Rotterdam	Area networker	09-06-2016
Interviewee 9	Creatief Beheer (gardening organization)	Employee	29-06-2016
Interviewee 10	Private business	Community worker	11-07-2016
Interviewee 11	Havensteder	Supervisory board DHC	23-06-2016
Interviewee 12	Municipality of Rotterdam	Area account holder Delfshaven cluster Social Development	08-07-2016
Interviewee 13	Municipality of Rotterdam	Stadsmarinier BoTu	01-07-2016
Interviewee 14	Park board	Member	07-06-2016
Interviewee 15	Rabobank	Supervisory board DHC	20-06-2016
Interviewee 16	Municipality of Rotterdam	Chair area committee Delfshaven	08-07-2016

Appendix B

List of attended meetings

Meeting	Date
Park board	27-06-2016
Park board	03-10-2016
Focus group in the neighborhood on the topic of meetings and encounters in Park 1943 (organized by a student from Utrecht University)	07-07-2016
Delfshaven Cooperative, evaluation session at Erasmus University	02-06-2016
Resilience coalition	18-04-2016
Resilience coalition	12-05-2016
Resilience coalition	08-06-2016
Meeting professional organizations in the neighborhood	09-06-2016

Appendix C

(initial) Interview questions

Algemeen:

- Wanneer en hoe raakte u betrokken bij Park 43 en wat was uw rol toen?
- Wat is uw huidige rol in het proces rond Park43?
- Wie zijn volgens u de belangrijkste betrokkenen/actoren in het proces?
- Hoe gaan deze actoren met elkaar om? (naar voorbeelden vragen)
- Wat is uw belang bij het park?
- Wat wilt u bereiken in het proces?
- Wat ziet u als uw eigen bijdrage? Krijgt u de ruimte om deze bijdrage te leveren? Waarom wel/niet?
- Wat waren volgens u de belangrijkste momenten in de ontwikkeling van Park43? (doorvragen naar voorbeelden)

Onafhankelijke variabele

SELF-ORGANIZATION: *Non-governmental actors adapting and aligning their behavior and the emergence of collective action with the government acting in a "shadow of hierarchy"*

Indices: adaptation and alignment of behavior of non-governmental actors, collective action, "shadow of hierarchy"

- In welke mate voelt u zich betrokken bij het initiatief?
- Hoe zou u het besluitvormingsproces rond Park43 willen karakteriseren?
- Welke overlegstructuren kent het proces volgens u? (naar voorbeelden vragen)
- Vind er collectief handelen plaats rondom Park43? + Kunt u daar voorbeelden van noemen? / Waaruit blijkt dat wel/niet?
- Wie heeft er volgens u het meeste zeggenschap en invloed in het proces? Kunt u een voorbeeld noemen wanneer dit voor u duidelijk werd?
- (Zijn er informele gedragsregels die een rol spelen in het proces?)
- (Zo ja, waaruit blijkt dat? / Kunt u een voorbeeld noemen van zo'n regel?)
- Zou u het proces als zelforganisatie karakteriseren, of niet?

Voor overheidsactor/gemeente:

- Op welke manier kan de rol van de gemeente in dit proces beschreven worden?
- Kunt u een concreet voorbeeld noemen van een actie van de gemeente die belangrijk is geweest in het proces?
- Hebt u het gevoel dat het initiatief de gemeente nodig heeft? In welk opzicht?

- Hoe zou u de relatie van het initiatief en de gemeente beschrijven/karakteriseren? (doorvragen naar voorbeelden)

Tussenvariabele

BUREAUCRACY: *A system in which the management of politics is done by professionals and in which the actors have skills and expertise on a specific topic, official rules govern the administrative processes and relationships between individuals are governed through the system of rules and official authority*

Indices: The presence of silos, clearly defined responsibilities, a clear division of tasks in the municipality, presence of official rules which are stable and exhaustive, impersonality

- In de klassieke opvatting van de bureaucratie staan professionalisme en expertise op een specifiek terrein centraal. In hoeverre geldt dit voor uw organisatie?
- Blijven budgetten bij een specifiek departement, of zijn deze ook weleens flexibel? Kunt u een voorbeeld geven?
- Opereert u volgens een vaste en afgebakende taak?
- Hebt u expertise over een specifiek onderwerp, of heeft u een grotere, algemene expertise?
- Weet u wie er verantwoordelijk is voor wat in de gemeente?
- Kunt u andere mensen in uw organisatie vinden/bereiken /weet u wie u moet benaderen bij een specifieke vraag of probleem, of niet?
- Zo ja: waar blijkt dat uit?
- Zo nee: wat zijn factoren die dit belemmeren?
- Hoe gaat de gemeente volgens u om met zelf-organisatie?
- Hoe beoordeelt de gemeente of een initiatief wel of niet kansrijk is en ondersteuning verdient?
- Zijn er in de gemeente duidelijke regels en richtlijnen voor zelf-organisatie?
- Zijn deze regels stabiel? Of is er een zekere discretionaire ruimte?
- Tot op welke hoogte werken deze regels/richtlijnen leidend voor u?

Afhankelijke variabelen

BRICOLAGE: *A way of acting in which existing, old and redundant materials are combined*

Indices: Combining different kinds of knowledge, reflexivity, evaluation, redundant structures

- Welke vormen van kennis / soorten kennis worden gebruikt in de ontwikkeling van Park43? (doorvragen naar voorbeelden)
- Wordt er op enig moment stilgestaan bij de uitkomst van een proces, of niet?

- Zo ja, hoe gebeurt dit precies? Zo nee, waarom gebeurt dit volgens u niet?
- Worden hieruit lessen getrokken, of niet?
- Zo ja, worden deze lessen en ervaringen uit het verleden gebruikt bij de ontwikkeling van Park43 nu, of niet?
- Is er in het proces rond Park43 een reservecapaciteit aanwezig die volgens u nuttig kan zijn, of niet? Zo ja, kunt u hiervan voorbeelden noemen?
- Wordt van deze structuren gebruik gemaakt, of niet? Zo ja, op welke manier?

ADAPTATION: *The capacity of a system to respond to changing circumstances and tackling new objectives when the context changes*

Indices: robustness, flexibility

- Zijn er in het systeem mogelijkheden met budgetten te schuiven van het ene naar het andere postje, of niet? Zo ja, wordt hier gebruik van gemaakt of niet? (doorvragen naar voorbeelden)
- Hebben mensen flexibele posities: nemen ze snel een andere rol aan in het proces?
- Is het voor u duidelijk wie de leiding heeft in het proces?
- Zijn er duidelijke verantwoordelijkheden, of niet?
- Hoe wordt het proces volgens u gemanaged?
- Op welke punten ervaart u (in)flexibiliteit? Kunt u een voorbeeld geven?
- Welke elementen in het proces zijn veranderlijk, en welke onveranderlijk? Kunt u hiervan een voorbeeld geven?

COOPERATION: *The capacity of the system to make connections with other systems and to cooperate at different levels and across borders*

Indices: Integrality, inclusiveness, interactions at different levels and between different actors

- Welke partijen zijn betrokken bij het proces?
- Hoe verhouden deze partijen zich tot elkaar?
- Hoe zou u de interacties tussen de verschillende partijen beschrijven, of zijn deze er niet?
- Zijn er criteria waaraan partijen moeten voldoen om bij het proces betrokken te raken?
- Staat het systeem open om actoren buiten het systeem uit te nodigen, of niet?
- Worden er connecties met andere initiatieven/stakeholders gemaakt welke een toegevoegde waarde voor het proces kunnen zijn, of niet?

- Is er een integrale definitie van het probleem, of heeft ieder een eigen visie op wat het probleem is?
- Wordt er op een voor u integrale wijze gewerkt?
- Kunt u een voorbeeld noemen waaruit dat wel/niet blijkt?
- Zo ja: wat komt daarbij kijken?

Appendix D

The resilience lens of the Rockefeller Foundation

Reflective

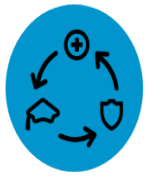
using past experience to inform future decisions

Resourceful

recognizing alternative ways to use resources

Inclusive

prioritize broad consultation to create a sense of shared ownership in decision making



Integrated

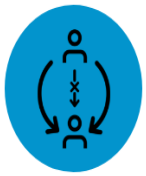
bring together a range of distinct systems and institutions

Robust

well-conceived, constructed, and managed systems

Redundant

spare capacity purposively created to accommodate disruption



Flexible

willingness, ability to adopt alternative strategies in response to changing circumstances