57

Complexity, Governance & Networks (2014) 57–78

DOI: 10.7564/14-CGN13

The Emergence of Metropolitan Governance: A coevolutionary analysis of the life-and-death cycles of metropolitan governance in the Amsterdam metropolitan region.

Danny Schipper^{a,*}, Gerrits, L. M.^b

^aErasmus University Rotterdam E-mail: schipper@fsw.eur.nl

^bUniversity of Bamberg E-mail: lasse.gerrits@uni-bamberg.de

This article develops an explanation for the emergence of metropolitan governance in the Amsterdam metropolitan region. A coevolutionary framework is deployed to analyze how the governance system developed between 1982 and 2009. Data was gathered from 43 policy documents, over 150 newspaper articles and 14 semi-structured interviews. The analysis focuses on the workings of selection pressures and the adaptive processes. It shows that metropolitan governance evolves in a punctuated fashion when fitness with the environment is lost and when the governance system's ability to absorb selection pressures has eroded.

Keywords: Coevolution, Complex systems, Exploitation; Exploration; Metropolitan governance, Selection Pressures

Introduction

Within metropolitan regions, authority is often dispersed over a variety of institutions. This jurisdictional fragmentation is considered to be obstructing the effectiveness, efficiency, equality and democracy of metropolitan regions (e.g. Brenner, 2002; Savitch & Vogel, 2009; Tomàs, 2012). Consequently, one issue resurfaces continuously in scientific literature on metropolitan governance: what is the most effective governmental structure to deal with the built and socio-economic developments of a particular region?

Over the past decades attempts to answer this question have led to considerable research and reporting by both academics and practitioners. This resulted in several different approaches to metropolitan governance, which differ for instance in the degree of institutionalization of cooperation (Savitch & Vogel, 2009; Tomàs, 2012). One approach is the institutional design approach or *old regionalism* (Buitelaar, Lagendijk, & Jacobs,

Corresponding author.



2007; Kantor, 2008; Savitch & Vogel, 2009). This approach focuses on structural reform to create metropolitan governments that cover the functional territory of the metropolitan region in a single political unit (Tomàs, 2012). The search for the perfect institutional design has also been dominant in the Netherlands (Faludi, 1994). But this Holy Grail proved elusive (Tetteroo, 2003), as is evidenced by the 85 policy documents that were written on this theme since 1965 (Witte, 2010), and the multiple failed attempts to reorganize governmental organization for a given tempo-spatial development.

In contrast to the institutional design approach, the network approach or new regionalism has often been debated as an alternative approach to metropolitan governance (Savitch & Vogel, 2009; van der Bol, 2010; Heinelt & Zimmermann, 2011). The interdependencies of actors is a central notion in the network approach (Koppenjan & Klijn, 2004). According to this approach cooperation between municipalities is needed to deal with the complexity of metropolitan policy problems, as these problems can't be solved in isolation. So collective decision-making should be increasingly geared towards collaboration between governmental levels and joint action beyond the boundaries of each of the existing governmental bodies (Brenner, 2002, 2003; Innes & Booher, 2003; Salet, 2003). Moreover, this approach calls for a new pro-active metropolitan planning philosophy, where both public and private actors meet in flexible arrangements to deal with the spatial-economic development of the region (Tomàs, 2012). Yet, the realization of joined action beyond the boundaries of the existing institutions has proven to be very hard because of differing perceptions, rules and objectives, a lack of decisiveness and the considerable competition between existing institutions and new temporal arrangements (Hajer, van Tatenhove, & Laurent, 2004; Koppenjan & Klijn, 2004; van der Bol, 2010).

While these different theoretical approaches to metropolitan governance have their merits, they don't provide an explanation for the highly different metropolitan governance arrangements that have emerged, even within countries (Heinelt & Zimmermann, 2011, p. 1175–1176). This article follows e.g. Gerrits, L. M. (2011); Gual and Norgaard (2010); Kerr (2002); Lewin and Volberda (1999); Norgaard (1984, 1994); Room (2011); Volberda and Lewin (2003) and argues that a coevolutionary analysis of metropolitan governance is necessary to understand the emergence of metropolitan governance systems as a complex process of reciprocal selection. While most approaches to metropolitan governance focus on structures and (institutional) rules at a given single point in time, a coevolutionary analysis takes on a longitudinal approach to explain the evolutionary process that these coordination mechanisms go through (cf. Feiock, 2008; Teisman et al., 2009). Metropolitan governance is regarded as a dynamic process, hence it is necessary to describe the changes over time and to explain the temporal process through which change occurs (Kerr, 2002).

The research question of this article is: How can the emergence of metropolitan governance be explained from a coevolutionary perspective? To answer this question, the origin and development of the Amsterdam Metropolitan Area (*Metropoolregio Amsterdam*, MRA) has been studied. Arguably, the MRA is the most developed form of metropolitan governance in the Netherlands (Haran, 2010; Janssen-Jansen, 2011;



Figure 1. The Amsterdam Metropolitan Area and its location in the Netherlands

Levelt & Janssen-Jansen, 2013). Its core is a voluntarily collaboration between 36 municipalities, two provinces and one city-regional authority (see figure 1).

The empirical part of this research is a single in-depth case study spanning the period between 1982 and 2009. The first research step concerned an extensive longitudinal reconstruction of events in the political and administrative realm of the MRA and its predecessors in the Amsterdam region. This was done through an analysis of over 150 articles from national newspapers covering this topic between 1982 and 2009. The analysis focused on how events came about, which effects they generated and how they lead up to new events. This time-series provided the backbone for the in-depth analysis. The second step concerned a content analysis of the exact properties of the governance structure and processes during the time-series studied through the analysis of 43 policy papers on the MRA and its predecessors. In addition, 14 semi-structured in-depth interviews were carried out with senior civil servants who were or still are involved with metropolitan governance in the Amsterdam region in key positions. Data from the interviews was used to reconstruct how variation and selection of policy options came about and what the motives were for making certain decisions. The interviews were recorded, transcribed and coded. A full list of documents and respondents is available from the authors.

The article is structured as follows. The following section discusses the theoretical approach of this research, where the use of coevolution as an analytical concept is explained and a coevolutionary framework developed. Empirical data is presented in the form of a condensed case description in Section 3. The analysis is presented in Section 4. Section 5 discusses the results and their implications.

2. A Coevolutionary Framework

Coevolution was originally suggested by Ehrlich and Raven in 1964 to describe the simultaneous evolution of species through mutual selection pressures. As a conceptual development of explanations of evolutionary change, it has found its way into other domains, ranging from organizational theories (e.g. Hodgson, 2003) to urban planning (e.g. Marshall, 2009). An important contribution comes from Norgaard (1984, 1994, 1995, 2010), who understood that there is a reciprocal relationship between the activities of humans using physical systems for their material progress, whereupon physical systems change to the extent that humans have to respond to those changes subsequently. Over time, this creates a pattern of feedback loops between two (or more) mutually dependent systems. Norgaard's work demonstrated that coevolution could have explanatory power outside biology in analyzing human decision-making processes, which has potential for understanding the coming about of governance processes and systems (e.g. Sementelli, 2007).

Early attempts at (co-) evolutionary explanations can also be found in the realm of governance, e.g. Corning (1983), Daneke (1996), Kaufman (1991), and Wilson (1975). Kaufman's account is perhaps the most well-known. He acknowledges that actors in the public domain overestimate the influence they have on the outcomes of processes. Those outcomes, Kaufman says, are the result of a partly random coming together of several factors. Since Kaufman there have been few works within this realm were evolutionary mechanisms were applied to analyze governance processes. We believe that coevolution holds explanatory power for governance processes and we will us this as our point of departure (cf. Gerrits, L. M, 2008, 2011).

The concept of coevolution features a subset of mechanisms that explain how and why systems, such as metropolitan governance, change or not over longer periods of time. The central mechanisms are variation, selection and retention (cf. Campbell, 1969), which form a continuous cycle. Variation involves the exploration of new forms of governance, of which some forms are then selected according to their fit with the environment (Gerrits, L. M, 2008). Public decision-making is the chief instrument for selection, even though it is acknowledged that not every decision leads to concrete outcomes and will always be intentional (Dopfer, 2005; Gerrits, L. M, 2012). The coevolutionary perspective on governance systems implies that the creation of variety and selection of said variety by taking decisions, is considered to be a part of the same feedback loop. In other words, variation and selection are not separate events but intertwined in a complex way and shape the freedom to act (Foster & Hölz, 2004). Retention serves to counteract the self-reinforcing loop between variation and selection as it involves forces that maintain certain forms and practices of governance (van de Ven & Poole, 1995)

Coevolution in this research is defined as the mutual adjustment through reciprocal selection between the metropolitan governance system and the internal and external systems it interacts with. These interactions, in the shape of actions and responses between the systems, constitute feedback loops leading to changing or stable situations (Gerrits, L. M, 2012, p. 78–79). There are multiple feedback loops that operate simultaneously. However coevolution thrives on positive feedback loops as these lead to changes in systems. Feedback therefore becomes selection pressure as a response to an incentive leading to change (Gerrits, L. M, 2008). This poses two questions: what is being selected, and how is it being selected? In other words, how should coevolution be operationalized to understand the emergence of metropolitan governance?

Coevolving systems are constantly subject to selection pressure. These selection pressures present a complex puzzle to the actors in terms of content, process and structure of the metropolitan governance system. As mentioned above, the selection process is steered by the actors involved through variation, selection and retention. Feedback loops carry information for actors which needs to be assessed, ordered and acted upon by selecting the appropriate strategic response (Kerr, 2002). To cope with the information from these selection pressures actors may deploy an existing combination of routines, goals and ideas. At the same time, it is necessary for them to evaluate those existing combinations against changing conditions in order to achieve renewed fitness with the environment. In this search for renewed fitness with the environment, a temporal situation is created where diversity in routines, ideas and goals is generated, evaluated and altered. According to van den Bergh and Kallis (2009), variety is in fact a combination of existing ideas from which novelty could emerge, i.e. the intended or accidental combination of ideas to create new possible pathways towards the future. As Duit and Galaz (2008) mention, both exploitation (the capacity to benefit from existing forms of collective action) and exploration (the capacity to nurture learning and experimentation with new forms of governance) are essential for the adaptive capacity of metropolitan governance systems.

The adaptive moves will eventually lead to the selection of the immediate future state of the system involved, which is the metropolitan governance system in this case, to reach a temporal equilibrium state. At any point in time a governance system has a number of possible future states. This collection of possible future states describe a particular system state consisting of content (What should be achieved? I.e. policy content), process (How should it be achieved? I.e. degree of institutionalization) and structure (Who should achieve it? I.e. organization of the arrangement; number and diversity of participants). The collection of possible system states is defined through path-dependency, chance events, and through the perception of those involved, who have certain ideals and beliefs that shape what is perceived a desirable future of the system (Arthur, 1994; David, 1985; Greener, 2002; Pierson, 2000). As time progresses, a succession of system states allows mapping the changes (or lack thereof) in terms of content, process and structure. In table 1 shows the operationalization of the system states in terms of content, process and structure as used to map the change of the system over time. We will use these items to trace the evolution of metropolitan governance in the Amsterdam region in the case description and analysis below.

Table 1
The variables used to map the configuration of the metropolitan governance systems over time in terms of content, structure and process.

Selection Mechanism	ns .
Content	 Goals and ambitions The tasks that are (formally) assigned to the governance system.
Structure	 The number and diversity of participants Organization of the arrangement
Process	Decision making rulesType of arrangement (institutionalized or voluntary)

3. Three Decades of Metropolitan Governance

What follows is a condensed presentation of the data from the case description that has been developed for this study. The case has been subdivided in six time periods. Each period starts with a brief description of the selection pressures on the governance system. The attempts to adapt to these pressures by changing the configuration of the system in terms of content, process and structure are given in tables 2 to 7. The description starts in 1982 and ends in 2009, when the first MRA conference was held.

Since 1969 the mayors and aldermen of 25 local authorities in the Amsterdam region met within the Informal Agglomeration Consultation Amsterdam (IAO) to discuss regional matters on a voluntary and informal basis. Usually these meetings were in a response to new policies of the national government or the Province of North-Holland. Actual collaboration between local authorities was lacking (van der Veer, 1997). Therefore, in 1982 the city of Amsterdam presented a detailed plan to form a new regional authority, which had to reduce the growing wealth disparity within the region. The IAO, although not pleased with the unilateral action of the city of Amsterdam, initiated a study on the most important regional problems. Following up on this research six models for collaboration were presented to tackle these regional problems.

Some of the models were considered quite revolutionary, but were also met with fierce resistance from most of the participating municipalities in the IAO. Resistance also came from the national government who rejected any governmental reform at that time. It offered an alternative in the shape of a revision of the Joint Provision Act (*Wet gemeenschappelijke regeling*, Wgr), which was intended to stimulate and guide the coordination between the large cities and the smaller suburbs in the Netherlands. Consequently, there was a majority vote from the municipalities in the IAO to consolidate the existing collaboration and to allow some minor adjustments in anticipation of the new Joint Provision Act (see table 2). In December 1986 this new form of governance was founded on a policy agreement and renamed in to Regional Consultation Amsterdam (*Regionaal Overleg Amsterdam*, ROA).

The ongoing globalization and upcoming European integration at the end of the 1980's, caused the main focus of the metropolitan governance to shift from national

Table 2 Regional Consultation Amsterdam.

Regional Consultation Amsterdam

Content

The aim of the arrangement was to look after the common interest of the region in order to promote a balanced development of the region. In order to do so the arrangement had the following tasks:

- The exchange of information on shared (spatial) problems.
- Collective research on regional affairs.
- Central point for the announcement of regional activities.
- The initiation of (spatial) projects
- Acting as a negotiating partner of the national government.

Structure

The arrangement was formed by 23 municipalities. Representatives of these municipalities joined the plenary meetings. The agenda of the meetings were drafted by a commission of up to 14 representatives. In addition there were special meetings between the aldermen of the municipalities.

Process

The collaboration was founded on the basis of a limited governance agreement. Decisions were made based on majority vote, however there were no additional rules tied to the decision making process.

spatial and wealth redistribution towards the international economic position of the regions within a competitive market. The Joint Provision Act lacked the means to act on the spatial-economic problems of the regions, because of its voluntary character. This conclusion was shared by a number of committees who had studied the socio-economic position of the Dutch city regions, the most prominent one being the Montijn committee. Montijn concluded that a revision of the institutional structure was needed and it advised on the creation of new governmental structures at the scale of the city region.

The national government responded to the advices of the committees with its own policy document (*BoN-1*) in September 1990. In this document the national government announced that it wanted to form seven new regional governmental structures for the largest city regions in the Netherlands, including the Amsterdam region. With the national government now supporting governmental reform the partners in the Amsterdam region couldn't maintain their informal way of collaborating. Again, a research team was asked to search for the binding elements in the region and to formulate a comprehensive plan. As a first step along this path the Regional Consultation Amsterdam was renamed in to Regional Body Amsterdam (*Regionaal Orgaan Amsterdam, again: ROA*) on the 30th of June 1992. This new form of collaboration had some major differences in comparison to the Regional Consultation Amsterdam (see table 3).

The process towards a new governmental structure gained momentum after the establishment of the Regional Body Amsterdam. This was particularly due to the developments in the second largest city in the Netherlands, Rotterdam. The plans of the national government to form a new regional authority were at first met with much reluctance in the Rotterdam region. It had only been five years after the abolishment of the Rijnmond Authority, a public authority directly elected by the people in which the region had unsuccessfully tried to coordinate specific regional matters (Bordewijk, 2000). Yet, informal

Table 3 Regional Body Amsterdam.

Regional Institute Amsterdam				
Content	The aim of the arrangement was to promote a balanced development of the region and to serve as a first step towards a more far-reaching form of collaboration. The arrangement had planning, steering and coordinating authority over: (a) Spatial planning, (b) Housing, (c) Economic development, (d) Transport and infrastructure, and (e) Environmental issues.			
Structure	The arrangement was formed by 17 municipalities (this reduction was due to the merger of municipalities). It had its own council with representatives of the municipalities, a management committee, and a chairman (the mayor of Amsterdam).			
Process	The collaboration was founded on the Joint Provision Act. The regional council drafted plans that were binding on the participating municipalities. The management committee could enforce municipalities to implement these plans made by the regional council or if necessary a disputes committee could resolve the dispute.			

talks about the future of the Rotterdam region eventually led to a new consensus among the regional partners on the most important regional issues. However, the plans of the national government forced the region to start thinking on an institutional structure to deal with these regional matters.

In an attempt to maintain the initiative the region proposed a metropolitan authority, which would perform local (especially those of Rotterdam), regional and national governmental tasks. This new authority had to be able to operate independently from the Province of South Holland and in order to avoid a conflict of power, the city of Rotterdam was to be divided into several smaller independent municipalities. These plans were highly supported by the national government and it announced, in its third policy document (BoN-3) of February 1993, a special law to make this new administrative authority possible (Buitelaar et al., 2007). However, the Ministry of Interior rejected the creation of a non-municipal or non-provincial authority, since this would mean that the constitution would have to be adjusted. For this reason, the region agreed on the establishment of a new province on the level of the metropolitan region, the so-called *stadsprovincie* or city province.

With the ongoing developments in the Rotterdam region, the national government started to raise the pressure on the Amsterdam region to follow the example of Rotterdam. Hence, in June 1994 the 'Letter of Intent City Province Amsterdam' was signed by the Ministry of Interior, city of Amsterdam, Province of North Holland and ROA to establish a city province on January 1st, 1998 (table 4). Similar to Rotterdam, the partners in the Amsterdam region agreed to let legislation determine the process towards the city province. This decision was made under pressure of the Ministry of Interior, who wanted the special law for the city province to be finished early 1995 (van der Veer, 1997).

Soon, dozens of teams of civil servants were working on this special law. In design and pace the process was dominated by the copying of legal texts for the Rotterdam region (Voigt & van Spijker, 2003). Meanwhile, the region started to study on how the city province should be accommodated within the existing institutional fabric. It developed three policy documents which were meant to get the local authorities into line with one another.

Table 4
Regional Body Amsterdam under the framework law.

Regional Body Amsterdam under the framework law				
Content	The arrangement served as a step towards the city province. It had a wide range of tasks, of which some had been carried over by the municipalities, province and national government. Overall it was a planning, steering and coordinating authority over: (a) Spatial planning, (b Housing, (c) Economic development, (d) Transport and infrastructure, (e) Environmental issues, (f) Land policy, and (g) Healthcare			
Structure	The administrative body was formed by 16 municipalities. It had its own council with representatives of the municipalities, a management committee, a chairman (the mayor of Amsterdam), and commissions responsible for the statutory tasks.			
Process	The Regional Body Amsterdam became an official administrative body under the framework law. Municipalities were legally obliged to implement the decisions made by the regional council.			

Hence, controversial subjects, such as authority over the national airport and the seaport of Amsterdam, were postponed and consensus between the local municipalities grew (ibid.).

Because of the considerable time pressure behind the special law, the citizens of Amsterdam weren't consulted. As such, officials didn't recognize the growing unrest among Amsterdam's citizens about the potential subdivision of the city. Early 1995 these officials were far more concerned with the influence of the region on the special law. The production of legal texts had started to dominate the process, pushing the content to the background as well as the freedom for different interests. The Amsterdam city council and its officials became worried that a powerful city council would be exchanged for a weak city province, because some of the region's main assets, like the international airport and the port, would remain under municipal authority. Therefore, they severely criticized the (secret) draft versions of the legal texts with which the negotiators of Amsterdam returned (van der Lans, 2006).

Eventually the city council even warned the junior minister that the city would reconsider its participation in the city province. They also demanded the Ministry of Interior to submit to seven terms that were essential to the city. Not only were these terms seen as essential to gain support for the city province from the city council and its officials, but also to gain the trust from the citizens of Amsterdam. These citizens had collected the 25.000 signatures needed for a citizen initiated referendum on the subdivision of Amsterdam, which was to be held in May 1995. The negotiators of Amsterdam believed that they could convince the citizens to vote in favor for the subdivision of Amsterdam, when held to a prospect of a strong city province.

But of the voters a major 92,6 percent rejected the division of the city, against 6,6 percent in favor. This result meant that the city council had to reconsider the subdivision of Amsterdam, which was one of the main prerequisites in the process towards the city province. Therefore, ROA decided to put the formation of the city province on hold for half a year. During this recess, a ROA-committee consulted politicians in the region and mayor Patijn of Amsterdam invited society's representatives to his residence to voice

their opinion on the situation. These meetings and consultations resulted in a renewed consensus on the future direction of the metropolitan governance (van der Lans, 2006). Participants agreed that the challenges for the region in the upcoming years were of such a magnitude that metropolitan governance and guidance was urgently needed. They also agreed that the new arrangement had to be flexible and that all participants were to have the opportunity to appeal to a higher authority, which could control the process and enforce decisions (ibid.)

During the recess the Province of North-Holland seized the opportunity to reclaim its position and to intervene in regional affairs. At first, this move surprised the ROA partners, but they decided that it was better to cooperate in order to find renewed collaboration. After all, there was still a chance that the national government would enforce the city province. With a widely accepted alternative, they might convince the Parliament to decide against the city province. So, the provincial governor Van Kemenade and the mayor of Amsterdam jointly visited the municipalities in the region to talk about the future of the metropolitan governance. Not only the ROA-municipalities were approached by Van Kemenade and Patijn. Following the criterion of flexibility, there was no fixed boundary for the new governance system.

However, the need for flexibility was hindered by ROA which had statutory tasks, a bounded geographical area and which was still a formal regional administrative body. Some ROA officials actually regarded the new flexible governance form as a competitor and feared that they would lose their position. A two-track policy was adopted in 1998 to solve this tension. One was a formal track making it possible for ROA to fulfill its legal obligations. The informal track involved a flexible network to solve the urgent (supra)-regional problems and was named Regional Collaboration Amsterdam (*Regionale Samenwerking Amsterdam, RSA*). A Coordination Committee (CoCo), chaired by Patijn and Van Kemenade, was established to meet the need for synergy (table 5).

Table 5
Regional Collaboration Amsterdam.

Regional Co	llaboration Amsterdam
Content	The aim of the arrangement was to cooperate in a functional and tailor-made manner in the following areas:
	 Accessibility Port and airport development The realization of the major housing task and the prevention of segregation. The international economic position of the region. Regional labor market. Youth support
Structure	It was decided that no new governance structure would be created. These ad hoc arrangements should be able to adjust itself to the given problem. This new flexible approach to metropolitan governance meant that there was no fixed number or composition of participants. The Coordination Committee was the core administrative body.
Process	Collaboration between the municipalities was on a voluntary basis. Meetings were informal and focused on cooperation, without any rules to enforce decisions.

During the same period the Ministry of Housing, Spatial Planning & the Environment (VROM) and the Ministry of Transport (V&W) were preparing new national policy documents, respectively the Fifth Policy Document on Spatial Planning and the National Infrastructure and Transport Plan. This happened in a period of economic growth and increasing mobility and consequent congestion. These developments led to conceptual changes in the spatial development policy. Previous policies focused on monocentric regional agglomerations (*Stadsgewesten*). This focus was replaced by the concept of 'network city' (later called urban networks), which reflected the growing belief that society was developing into a network society.

The cities constituting these networks were expected to collaborate and form shared spatial development policies to accommodate the development of the network society. That's why the Coordination Commission initiated a platform in 1998 for politicians to share their ideas on regional spatial development. Participants were the three provinces (North-Holland, Flevoland and Utrecht), the cities of Amsterdam, Almere and Utrecht and the two official regional authorities (ROA and BRU). At the first meeting of the so-called Muiderslot Conference participants showed each other their spatial development plans and discussed them. During the second meeting, at the end of 1998, it was decided that the different plans had to be combined into one shared regional spatial plan, which could then act as the region's contribution to the Fifth Policy Document. The formation of this regional plan was not without its difficulties. Especially the complex mutual relations between the city, the regional authority and the province of Utrecht were cause for conflicts.

In preparation for the Fifth Policy Document the ministry started to assess the qualitative and quantitative housing needs in the urban networks. For the Amsterdam region it was decided, in consultation with the region, that 150.000 houses were to be built between 2010 and 2030. Given this enormous task Amsterdam's alderman for spatial planning Stadig was asked (during the fifth conference meeting) to lead the accommodation of all these new houses and jobs in the region. One of his first acts as chairman was the exclusion of the Utrecht region, which had been playing a waiting game in the previous years. Above that, the platform was renamed in to North Wing Consultation (*Noordvleugel Overleg*) and chaired by Stadig and Meijdam as representative of the Province of North-Holland (table 6).

During the first meeting of this new platform, the aldermen for spatial planning came to an agreement on the accommodation of the houses, but when the aldermen of transport and infrastructure joined at the second conference in November 2002, it became clear that the housing and job growth would place a heavy burden on the already congested infrastructure. Therefore it was decided, during the third conference in September 2003, that the majority of the houses would be built on the corridor Schiphol International Airport - Amsterdam – Almere, because of the close relationship between work, living and infrastructure on this axis. Investments in infrastructure were prioritized for the corridor and road pricing was investigated. Moreover, a Platform Accessibility North Wing (*Platform Bereikbaarheid Noordvleugel*) was founded to lobby for these infrastructure projects.

Table 6 North Wing Consultation.

North Wing	Consultation
Content	The conferences were organized to find enough space for the development of housing and commercial areas for the period 2010-2030, while also looking at the relationship between these developments and the effects on the accessibility of the region. In order to improve the accessibility agreements had to be reached on the development of infrastructure and public transportation.
Structure	The first Muiderslot Conferences are attended by the three provinces North-Holland, Utrecht and Flevoland, the two official regional authorities BRU and ROA and the cities of Amsterdam, Almere and Utrecht. The Utrecht region was eventually excluded by the alderman of spatial planning of Amsterdam. The North Wing Consultation was founded and chaired by Stadig and Meijdam. The administrative core group, consisting of the six largest municipalities, the provinces of North-Holland and Flevoland, and city-region authority, would prepare the meetings and agreements to be made. Those municipalities within both provinces that could contribute to the formation of a regional spatial strategy, in response to the housing needs as defined by the national government and the region, were invited to join the conference meeting. 29 Aldermen of spatial planning attended the first meeting and at the second meeting the representatives in transport and infrastructure joined.
Process	The conference meetings are informal and participation is voluntary. Agreements should be formalized in the spatial strategies of the participants. The administrative core group supervises the implementation of the agreements by the participants.

In 2004, the newly elected national government presented its own national spatial development strategy (*Nota Ruimte*). In this strategy the national government recognized the region as a legitimate negotiating partner and as an area for coordinated inter-ministerial investments. The North Wing Scheme included eight large-scale projects and a total sum of 8 billion euros to realize them. In addition, the Nota Ruimte also announced a new policy document from the Ministry of Economic Affairs, called Peaks in the Delta (*Pieken in de Delta*), which was the economic agenda of the national government, aimed at seizing opportunities instead of overcoming inequalities. For the North Wing Consultation this was an important incentive to expand the conferences with meetings on the economic opportunities of the North Wing.

The focus of the national government on the economy wasn't without a reason. Since 2005 alarming reports appeared on the declining competitiveness of the Randstad (a polycentric urban area comprising the four largest cities in the Netherlands and some smaller cities) compared to other European metropolises. These reports brought governmental restructuring back on the agenda. According to the analysis of a committee appointed by the minister of Interior, this declining competitiveness of the Randstad was understood to be caused by the jurisdictional fragmentation and complexity. It pleaded for the creation of a governmental authority on the scale of the Randstad. But 2007 saw a shift in Dutch politics. The newly elected national government considered governmental reform a waste of energy. However, it did agree on the conclusion of the committee that a short term strategy for the Randstad was needed and so the inter-ministerial scheme was up-scaled

Table 7
Amsterdam Metropolitan Area.

Amsterdam	Metropolitan Area (MRA)
Content	The Amsterdam Metropolitan Area has to become an international competitive metropolis by 2040. Five impulses were identified as being crucial for this ambition: (a) improving the metropolitan accessibility, (b) intensification and transformation of urban areas, (c) development of the metropolitan landscape, (d) a focus on sustainability and the role of climate change, and (e) economic development. The MRA developed location specific investment strategies and acted as a negotiating partner of the national government.
Structure	There are 36 municipalities, 2 provinces and 1 city-regional authority that participate in the MRA. The metropolitan governance arrangement consists of three platforms: one on spatial planning, one on the accessibility of the metropolitan area and a third platform on the economic development. These three platforms each have their own core administrative group, which is made up of the two provinces, the largest cities, the city-regional authority, and in the accessibility platform the Department of Waterways and Public Works is also involved.
Process	The conference meetings are informal and participation is voluntary. Agreements should be formalized in the spatial strategies of the participants. The administrative core group supervises the implementation of the agreements by the participants.

to the Randstad. Consequently, the North Wing scheme had to be re-evaluated and was incorporated into the newly created Randstad scheme, which affected the status of the North Wing Consultation.

In an attempt to reestablish its position and to corroborate the growing metropolitan consciousness, the participants in the North Wing Consultation agreed (during the seventh conference in December 2007) that the Amsterdam metropolitan region had to become an international competitive metropolis by 2040. To support this ambition the North Wing was renamed in to the Amsterdam Metropolitan Area (*MRA*, *Metropoolregio Amsterdam*). For the MRA, five crucial 'impulses' were indicated during its first conference in April 2009 (see table 7). A third platform was established to develop these impulses into policy: the Platform Regional Economic Structure (PRES). Together with the Accessibility Platform and the Central Administration (BKG) these three platforms are responsible for the implementation of the five impulses.

The establishment of the MRA and its sub-platforms, as a new but not final stage in metropolitan governance, concludes this case description. The analysis of the case is subject of the next section.

4. Analysis

Twenty-five years of metropolitan governance in the Amsterdam region has shown continuous and considerable selection pressures. It is for example important to note how the city of Amsterdam has changed. Early 1980s, the city was relatively poor and in a bad condition compared to its adjacent cities, and faced economic and social decline in neighborhoods as the result of the suburbanization of higher and middle-income families. Consequently, the city aimed for a city province to redistribute wealth among the

municipalities in the region in an attempt to reverse its fortunes. But the city grew rapidly in the following decades, both economic and demographically, which strengthened the position of the city. This change caused the balance between the city and its neighboring municipalities to shift. The coordination focused increasingly on the joint accommodation of population growth for different target groups. With Amsterdam becoming the proverbial engine for the region, more municipalities desired to become part of the Amsterdam Metropolitan Area.

The relationship between the region and the national government also proved quite dynamic. Most notable were the ever-changing regionalization policies as developed by the national government. While the policies in the early 1980's were aimed at the improvement of inter-municipal collaboration, for which the Joint Provision Act was revised, this same act proved counter-productive during the 1990's. As a result, the national policy switched to the creation of a fourth administrative layer in the form of a city province. When the implementation of the city province failed, the policies soon shifted back to inter-municipal coordination and the delegation of tasks by the national government for which the Joint Provision Act was once again revised.

Another type of dynamics can be found in the planning approaches for the region as deployed by the different departments of the national government. Early 1980's, the region was supposed to be accommodating the suburbanization through concentrated urban expansion to contain urban sprawl. At the end of the 1980's this policy shifted in order to stop the inner-city decline, and fostering the international economic position of the Netherlands became a predominant goal, with the Randstad and its international airport and seaport as the key features. At the end of the 1990's, the regions were regarded as interconnected cores in a global network, the network cities, soon to be followed up with the term urban network. Inter-ministerial schemes were set up to coordinate investments in these urban networks, but much debate lasted on where an urban network starts and ends. This was shown in 2008 when the national government scaled-up their national scheme.

These examples show that the actors in the Amsterdam metropolitan region were under continuous pressure to change the means and ends of the metropolitan governance system in terms of content, structure and process. One would expect these incentives to lead to a continuous search process in which variation is explored and selections are made in order to improve the fitness with the environment, as elaborated in Section 2. However, if we look at the development of the metropolitan governance systems over time, they show a considerable capacity to absorb the pressures exerted on them by exploiting the existing governance arrangement. In the following section we will have a closer look at the trajectory of the metropolitan governance systems.

The case description started with a metropolitan governance system that was muddling through. Attempts to radically change the governance system all ended in failure. When the pressure on the system was severely increased by the end of the 1980s, by the city of Amsterdam and the national government, the system had to adapt by letting go of the voluntary collaboration. Instead a regional authority with binding terms of reference

was formed. Although almost all members seemed to agree that this was a first step towards a more intensive form of collaboration, the region tried to keep control over their own planning, structure and goals. This attempt was reinforced by the bottom-up approach of the national government. But the system was soon pushed in a trajectory towards a city province when the Rotterdam region opted for a far-reaching proposal in its attempt to stay in control over the process. The coevolutionary dynamics between the national government and the Rotterdam region resulted in such a pressure on the Amsterdam region that they had to let go their own open planning and goals and were forced in a more reactive role.

What started out as an open and dynamic process soon turned in to a process dominated by legislation. No longer were the questions asked of what the new administrative authority should achieve and who should do that. Instead, the question of how this administrative authority could be achieved became dominant. With the time pressure on the negotiators increasing, variation diminished resulting in less creativity, innovation and room for different opinions. This resulted in an ever-diminishing support for the city province, but the momentum is carried forward since very few people dare to challenge the bandwagon. The system was also unaware of the growing unrest among the citizens and their potential influence on the process. The outcome of the referendum provided a window of opportunity for most people to withdraw their support in public. In other words, the massive vote of the citizens of Amsterdam against the subdivision of their city pushed the system out of its balance; since the system's adaptive capacity was diminished it could no longer cope with the internal and external pressures. In terms of punctuated equilibrium this period is marked by an alternation between inertia and swift change during which the system can create substantially different configurations.

The change to the two-track policy shows that a system that has undergone a transition carries the traces of its past state in to the new state as the Regional Body Amsterdam was still a formal administrative body. It also highlights the self-organizing capacity of the region to create this new arrangement with a flexible structure without external control. Interestingly, we can once again observe, that this capacity is practiced by the region to stay in control over its own future, e.g. to resist externally induced change towards the city province, by creating an alternative arrangement and by forging 'new' alliances (Province of North-Holland). However, the flexible governance system proved to be well developed in terms of exploration, but was lacking the capacity to transform gains from exploration into objects of exploitation (cf. Duit & Galaz, 2008). This made the system incapable of developing a joint spatial development strategy, thereby risking the loss of national government funding and authority over the development of the region.

This pressure forced the region to hasten its decisions in terms of content, process and structure of the metropolitan governance system. In terms of content it was decided to focus on the housing task. As of structure the Utrecht region was excluded from the meetings and only those municipalities that could contribute to the regional spatial strategy were invited. Although the meetings stayed informal and voluntary, implementation

was supervised by the administrative core group. This shows that selection pressures can also have enabling principles as it had a positive effect on the North Wing Consultation to develop itself in to what would become the Amsterdam Metropolitan Area or MRA. So what started as an informal gathering to talk about spatial plans, eventually became the most important coordination platform in the region, making the Regional Collaboration Amsterdam and the Coordination Commission redundant. Hence, it can be concluded that the most advanced form of metropolitan coordination in the Netherlands was never planned as such, but is the unforeseen outcome of the coevolutionary process between the governance system and its environment.

Overall, the metropolitan governance arrangements proved to have remarkable selforganizing capacities when under internal and external pressure. We can see that both strategies of exploitation and exploration were used in response to selection pressures. In terms of exploitation it can be observed that the structure of the arrangements proved to be an important constant element. Once the relevant relationships have been selected there is a high degree of stability in these relationships. Only after the referendum we can see that alternative system boundaries were explored to regain a fit with the environment. Yet, it took new boundaries to stabilize the newly formed arrangement. In terms of process we can see initial adaptive moves by the first two arrangements in the sense that local authorities delegated authority to restore stability. However, these adaptive moves proved to be insufficient to deal with the external pressures of the national government and the process towards the city-province was initiated. This pushed the system in a pattern of exploitation to reach the planned end-state of a city province and eventually led to the loss of its adaptive capacity. After the referendum a voluntary coordination mechanism proved to provide a better fit. The content of the arrangements seems to show the most dynamics as new goals and tasks are continuously being adopted and explored, with governmental funding being an important incentive.

5. Conclusions

This article sets out to explain the emergence of metropolitan governance in coevolutionary terms. A longitudinal coevolutionary analysis of metropolitan governance was developed in order to understand the emergence of metropolitan governance systems as a complex process of reciprocal selection.

In the case description we have presented the selection pressures exerted on the metropolitan governance systems in the Amsterdam region between 1982 and 2009 and the changes made to the configuration of the governance systems in terms of content, structure and process. If we consider the full 25 years covered in the analysis, it appears that long periods of dynamic equilibrium are punctuated by short periods of instability, where considerable change to the governance system is possible. We ascribe the periods of dynamic equilibrium to the capacity of the system to accommodate the pressures in its existing routines. Stability occurs when relatively little variety is accepted and/or generated, i.e. exploitation of the existing form of collective action. Change is associated with

an increase of the variety that is considered, i.e. the exploration of different forms of governance. The various forms of collaboration in the Amsterdam region are a result of this tension between exploration and exploitation.

The analysis shows that metropolitan governance is largely driven by this process of reciprocal selection in order to find a better fit with its environment, as actors are under continuous pressure to change the means (structure and process), and ends (content) of the governance system. The change, or lack thereof, is therefore a function of increasing or decreasing fit between the two. The analysis showed that there is always a mix of exploitation and exploration, with the first being dominant in times of stasis and the latter during times of change. Hence, there seems to be a relationship between adaptive capacity and variety, i.e. that variety is created when the system has lost its adaptive capacity and fit with the environment. However, keeping balance between exploitation and exploration isn't only difficult because of the reinforcing nature of exploitation and exploration, but also because of the events and developments relegated outside the span of control leaving the metropolitan governance system only partially in control. Hence, stable systems run the risk of losing their resilience in the face of external selection pressures creating variety, as witnessed by e.g. the referendum. Successful configurations of structure, process and content will therefore last as long as fitness is maintained.

This however does not imply that the governance systems have a complete lack of control. The actors were often capable of influencing the process. Especially remarkable in this case were the relationship between the regions and the national government. Twice, the threat of externally induced change by the national government triggered the region's explorative capacity in an attempt to remain in control over its own future. In contrast, the case also showed that potential national government funding acted as a trigger for the region's capacity to transform gains from exploration into objects of exploitation. Here key actors played an important role in stimulating the self-organizing capacity of the metropolitan region and making selections in terms of content, structure and process.

We have visualized the trajectory of the government arrangements in figure 2. Each arrangement, as described in tables 2 to 7, has been classified according to the flexibility in its composition (vertical axis) and the measure of hierarchy (horizontal axis). Note that the axis in the illustration don't represent absolute values, but rather are an indication based on our own judgment. The first two arrangements (tables 2 and 3) are characterized by adaptive changes towards the city province in a dynamic process. Soon the selection pressure on the system constrain the direction of change and possible variation (table 4). With the system no longer able to adapt to changing circumstances, it had to change radically to renew its fitness with the environment (table 5). A flexible and voluntary arrangement was deemed necessary, but proved to be detached from its environment because of its overemphasis on exploration. With selections made in terms of structure and content and the enabling principles of the selection pressures led to the stabilizing of the arrangement and further exploitation (tables 6 and 7).

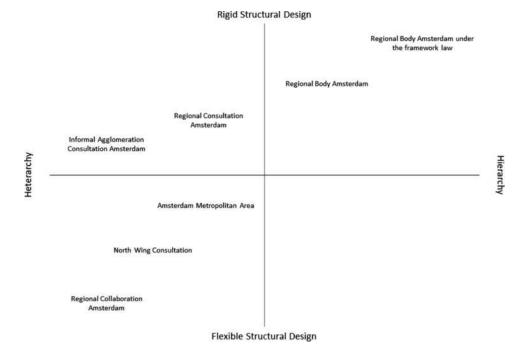


Figure 2. The evolution of metropolitan governance in the Amsterdam metropolitan region (1982–2009).

It should be noted that the coevolutionary process described above has no fixed endstate in the long run, even though actors make purposeful decisions about it. As shown it is subject to non-ergodic chance events that have a considerable influence on the evolutionary trajectory. Each decision or chance event contributes to the overall course of the coevolutionary process, but never fully determines it. The fact that the metropolitan governance has survived in various forms up until the current MRA is a testimony to the adaptive capacity present in the systems. However, instability is a sign of a healthy system that has the capacity to regain fitness. This should provide consolation to those who busy themselves with the reorganization of metropolitan governance.

References

Arthur, W. B. (1994). *Increasing returns and path dependence in the economy*. Ann Arbor, MI: The University of Michigan Press.

Arthur, W. B., Durlauf, S. N., & Lane, D. A. (Eds.). (1997). *The economy as an evolving complex system II*. Reading, MA: Addison-Wesley.

Bertolini, L. (2011). Complex systems, evolutionary planning? In G. de Roo & E. A. Silva (Eds.), *A planners encounter with complexity* (pp. 81–98). London, England: Ashgate.

Boons, F. A. A., Gerrits, L. M, & Marks, P. (2011). Collective decision making as an evolutionary process. In Gerrits, L. M, P. Marks, & F. A. A. Boons (Eds.), *Public administration in complexity* [Proceedings of the Compact Conference, Rotterdam]. Litchfield Park, AZ: Emergent Publications, 368–385.

- Bordewijk, P. (2000). Onderhandelen binnen en tussen bestuurslagen: De stadsprovincie Rotterdam [Negotiation within and between levels of government: The county town of Rotterdam]. In P. L. Hupe, M. A. Beukenholdt-ter Mors, & H. L. Klaassen (Eds.), *Publiek onderhandelen: Een vorm van eigentijds besturen*. Samsom, Alphen aan den Rijn, 61–89.
- Brenner, N. (2002). Decoding the newest metropolitan regionalism in the USA: A critical overview. *Cities*, 19(1), 3–21.
- Brenner, N. (2003). Metropolitan institutional reform and the rescaling of state space in contemporary Western Europe. *European Urban and Regional Studies*, 10(4), 297–324.
- Buitelaar, E., Lagendijk, A., & Jacobs, W. (2007). A theory of institutional change: Illustrated by Dutch city-provinces and Dutch land policy. *Environment and Planning A*, 39(4), 891–908.
- Byrne, D. (1998). Complexity theory and the social sciences. London, England: Routledge.
- Byrne, D. (2005). Complexity, configurations and cases. Theory, Culture & Society, 22(5), 95-111.
- Campbell, D. T. (1969). Variation and selective retention in socio-cultural evolution. *General systems*, 14, 69–85.
- Corning, P. A. (1983). The synergism hypothesis: A theory of progressive evolution. New York, NY: McGraw-Hill.
- Daneke, G. A. (1996). A science of public administration? *Public Administration Review*, 50, 383–392.
- David, P. A. (1985). Clio and the economics of QWERTY. Economic History, 75(2), 332-336.
- Dopfer, K. (2005). Evolutionary economics: A theoretical framework. In K. Dopfer (Ed.), *The evolutionary foundation of economics*. Cambridge, MA: Cambridge University Press.
- Duit, A., & Galaz, V. (2008). Governing complexity—Insights and emerging challenges. *Governance*, 21, 311–335.
- Faludi, A. (1994). Coalition building and planning for Dutch growth management: The role of the Randstad concept. *Urban Studies*, *31*(3), 485–507.
- Feiock, R. C. (2008). Metropolitan governance and institutional collective action. *Urban Affairs Review*, 44(3), 356–377.
- Foster, J., & Hölz, W. (2004). Introduction and overview. In J. Foster & W. Hölz (Eds.), *Applied evolutionary economics and complex systems*. Cheltenham, England: Edward Elgar Publishing.
- Gerrits, L. M. (2008). The gentle art of coevolution: A complexity theory perspective on decision making over estuaries in Germany, Belgium and the Netherlands. Rotterdam, Netherlands: Erasmus University.
- Gerrits, L. M. (2011). A coevolutionary revision of decision making processes: An analysis of port extensions in Germany, Belgium and the Netherlands. *Public Administration Quarterly*, *35*(3), 309–339.
- Gerrits, L. M. (2012). Punching clouds: An introduction to the complexity of public decision-making. Litch-field Park, AZ: Emergent Publications.
- Greener, I. (2002). Theorising path dependency: How does history come to matter in organisations, and what can we do about it? York, England: The University of York.
- Gual, M. A., & Norgaard, R. B. (2010). Bridging ecological and social systems coevolution: A review and proposal. *Ecological Economics*, 69(4), 707–717.
- Hajer, M. A., van Tatenhove, J. P. M., & Laurent, C. (2004). Nieuwe vormen van Governance: Een essay over nieuwe vormen van bestuur [New forms of governance: An essay on new forms of administration] (RIVM Rapport 500013004).
- Haran, N. (2010). The power to collaborate: How judicious use of power accelerates the strategic capacity of regions in the Netherlands. Delft, Netherlands: Eburon.
- Heinelt, H., & Zimmermann, K. (2011). How can we explain diversity in metropolitan governance within a country? Some reflections on recent developments in Germany. *International Journal of Urban and Regional Research*, 35(6), 1175–1192.
- Hodgson, G. M. (2003). The mystery of the routine: The Darwinian destiny of an evolutionary theory of economic change. *Revue Economique*, 54(2), 355–384.
- Innes, J. E., & Booher, D. E. (2003). Collaborative policymaking: Governance through dialogue. In M. Hajer & H. Wagenaar (Eds.), *Deliberative policy analysis: Understanding governance in the network society*. Cambridge, MA: Cambridge University Press.

- Janssen-Jansen, L. B. (2011). From Amsterdam to Amsterdam metropolitan area: A paradigm shift. *International Planning Studies*, 16(3), 257–272.
- Kantor, P. (2008). Varieties of city regionalism and the quest for political cooperation: A comparative perspective. *Urban Research and Practice*, *1*(2), 111–129.
- Kaufman, H. (1991). *Time, chance and organizations: Natural selection in a perilous environment* (2nd ed.). Chatham, NJ: Chatham House.
- Kerr, P. (2002). Saved from extinction: Evolutionary theorising, politics and the state. *British Journal of Politics and International Relations*, 4(2), 330–358.
- Koppenjan, J. F. M., & Klijn, E. H. (2004). Managing uncertainties in networks. London, England: Routledge. Levelt, M., & Janssen-Jansen, L. (2013). The Amsterdam metropolitan area challenge: Opportunities for inclusive coproduction in city region governance. Environment and Planning C: Government & Policy, 31(3), 540–555.
- Lewin, A. Y., & Volberda, H. W. (1999). Prolegomena on coevolution: A framework for research on strategy and new organizational forms. Organization Science, 10(5), 519–534.
- Marshall, S. (2009). Cities, design & evolution. London, England: Routledge.
- Norgaard, R. B. (1984). Coevolutionary development potential. Land Economics, 60(2), 160–173.
- Norgaard, R. B. (1994). Development betrayed; the end of progress and a coevolutioary revisioning of the future. New York, NY: Routledge.
- Norgaard, R. B. (1995). Beyond materialism: A coevolutionary reinterpration. *Review of Social Economy*, 53(4), 475–486.
- Norgaard, R. B. (2010). Ecosystem services: From eye-opening metaphor to complexity blinder [Special issue: Payments for Ecosystem Services]. *Ecological Economics*, 69(6), 1219–1227.
- Pierson, P. (2000). Increasing returns, path dependence and the study of politics. *American Political Science Review*, 94(2), 251–267.
- Room, G. (2011). Complexity, institutions and public policy: Agile decision-making in a turbulent world. Cheltenham, England: Edward Elgar.
- Salet, W. G. M. (2003). Amsterdam and the north wing of the Randstad. In W. G. M. Salet (Ed.), *Metropolitan governance and spatial planning*. London, England: Routledge.
- Savitch, H. V., & Vogel, R. K. (2009). Regionalism and urban politics. In J. Davies & D. Imbroscio (Ed.), *Theories of urban politics* (2nd ed). Thousand Oaks, CA: SAGE.
- Sementelli, A. (2007). Distortions of progress: Evolutionary theories and public administration. *Administration and Society*, 39(6), 740–760.
- Teisman, G. R., Gerrits, L. M. & Buuren, M. W. van (2009). Introduction. In G. R. Teisman, M. W. van Buuren & Gerrits, L. M. (Eds.), Managing complex governance systems. Dynamics, self-organisation and coevolution in public investments (pp. 1–16). New York / London: Routledge.
- Tetteroo, P. (2003). Uniformiteit en pluriformiteit op decentraal niveau [Uniformity and diversity at local level]. In A. J. van Dijk (Ed.), *Laag voor laag: Aspecten van regionalisering* (pp. 23–32). Den Haag, Netherlands: ROB.
- Tomàs, M. (2012). Exploring the metropolitan trap: The case of Montreal. *International Journal of Urban and Regional Research*, 36(3), 554–567.
- van de Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *The Academy of Management Review*, 20(3), 510–540.
- van den Bergh, J. C. J. M., & Kallis, G. (2009). Evolution policy: Papers on economics and evolution (Max Planck Institute of Economics, Evolutionary Economics Group). Reading, MA: Addison-Wesley.
- van der Bol, N. (2010). Managing metropolitan complexity: Understanding metropolitan management issues from a public managers' perspective. Rotterdam, Netherlands: Erasmus University.
- van der Lans, J. (2006). Kleine geschiedenis van de Stadsregio Amsterdam. Wormer, Netherlands: Inmerc BV. van der Veer, J. (1997). Omstreden Stadsgrenzen: Een eeuw besluitvorming over annexaties en regionale besturen rond Amsterdam en Eindhoven. Delft, The Netherlands: Eburon.

- Voigt, R., & van Spijker, W. (2003). Spelen met betekenis: Verhalen over successol vernieuwen bij de overheid [Playing with meaning: Stories of successful renewal in government]. Assen, The Netherlands: Koninklijke van Gorcum BV.
- Volberda, H. W., & Lewin, A. Y. (2003). Co-evolutionary dynamics within and between firms: From evolution to co-evolution. *Journal of Management Studies*, 40(8), 2111–2136.
- Wilson, E. O. (1975). Sociobiology: The new synthesis. Cambridge, MA: Belknap Press.
- Witte, G. T. (2010, May). Provincie is oorzaak van het probleem [Province is causing the problem]. *Openbaar Bestuur*, 5, 33–36.