

# Learning and experimenting municipalities

*A theoretical approach on how to understand and enhance municipal organizations as learning and experimenting organizations.*

Master thesis

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## | Preface

When someone had told me six years ago that I would finish my time at the Radboud University by writing a second master thesis, in English, with a focus on theory and in the study field of Business Administration, I would have reacted with disbelief. However, strange things happen. Before you lies my master thesis, written for the completion of the master Organizational Design and Development. Six years after entering this university it feels like a logical conclusion.

After finishing the master in Public Administration last year, I was not completely satisfied. Though it was an inspiring master and I had learned a lot about governance, policy reforms and network development, there was something missing. I still had insufficient insight in the crucial role of public organizations. Therefore, the master OD&D was a welcome addition by offering new perspectives, complementary theoretical and practical insights and a systematic method of analyzing.

In this master thesis I wanted to combine the strengths of both Organizational Theory and Public Administration in order to enhance my insight in public organizations. Comparing and integrating theories of both study field was challenging and sometimes a search. Now, after struggling through many texts, I think I can rightfully claim that both study fields have a lot to offer to each other.

In conclusion I want to thank some people. First I want to thank the respondents of my interviews in general for inspiring me during the writing process. In addition, I want to thank Nol Vermeulen. As a study advisor Nol knows how to enthusiast his student, especially by firing thousands of options: why don't you go study in South Korea? Why don't you apply for a second master? At the advice of Nol I attended the bachelor course Systeemtheorie, provided by Dirk Vriens. It convinced me that the master OD&D would be a valuable completion to the master of Public Administration.

Furthermore, I want to thank Jan Achterbergh for his enthusiasm and education during the master program. His lectures and explanation were systematic and convincing, making it able to understand complex theories in a short time and providing a valuable 'luggage' for the future.

Finally, I want to thank Jac Christis for his guidance and supervision during the writing process of this thesis. I really enjoyed our conversations; even though they were time consuming, they encouraged me to start something that was out of my comfort zone. A shared enthusiasm for both the subject and theories made it an enjoyable challenge. Thereby, the critical questions that were asked and the discussions we had helped me to sharpen my own thoughts and to make it a better result.

Tjisse Bosch,  
Nijmegen, September 2016

## | Abstract

Central in this thesis are the current challenges that municipalities face in the Netherlands. Municipal organizations have become responsible for solving complex social problems, under budget pressure and accompanied with a promise to deliver localized and customized services. Given the complexity of this responsibility, it is worth to understand how these municipal organizations can be understood and enhanced as experimenting and learning organizations. In this thesis a theoretic approach will be provided in order to contribute to the development of the municipal organizations and the achievement of the promises of the decentralizations.

In this thesis, organizations will be understood as self-producing and self-maintaining systems. They survive because they make decisions regarding their primary transformation and regulatory activities. The process of decision-making is structured by decision premises that both enable and constrain the production of new decisions. Thereby all decisions are inherently experimental of character: every decision is based on expectations that can never be sure in a social, complex and dynamic environment. An experimenting organization is able to regulate its own decision-making regarding the primary transformation and regulatory activities.

The decision premises that enable and structure decision-making can also form a brake on development, leading to suboptimal equilibria. Especially when premises – like habits, customs and routines - get frozen: getting inaccessible for revisions and reflection. I therefore define learning organizations as being able to improve their own decision-making (again referring to operational transformations and regulatory activities). This means that a learning organization is able to use its decision-making to improve its future decision-making.

Central in this thesis are two theoretical approaches that help us to design municipal organizations that are able to learn and experiment. The first approach – the Sociotechnical System Design [STSD] theory – is a design theory that helps to recognize and utilize structural conditions in order to design an organization that is able to perform its primary transformations and regulatory activities. Due to the right structural conditions an organization becomes able to realize and adapt its own goals. I will conclude that STSD is able to provide the structural conditions to enable organizational experimenting and learning, but that it could be specified and enriched regarding frozen norms and the utilization of its potential.

Experimentalist Governance is used as an additional theoretical approach in order to specify the STSD theory towards municipal organizations and to utilize its full development potential. Experimentalist Governance is based on continuous process of inquiry, reflection, deliberation and experimentation. It uses local experiences and local diversity to drive organizational development. It is thereby emphasizes to make implicit consideration explicit and subject of reflection and deliberation. It proves to have great value in the specification of the need for continuous reflection in order to overcome frozen decision premises. In the concluding chapter of this thesis I integrate both theories in a way that allows us to use both their strengths.

A municipal organization that is adequately able to learn and to experiment is an organization with a well-designed infrastructure, a supportive attitude toward its own primary process and with a focus on enabling local execution and development. In such an organization there are three categories of incentives that drive continuous organizational development. These drivers of continuous development are complementary as long as the levels of regulation are tightly coupled. First of all is development driven by adaption to the environment, secondly by local diversity and local experiences and at last by systematic doubt regarding potentially frozen decision premises.

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## | Chapter 1 – Introduction

Governments have to deal with social problems that are highly complex. Take for example problems like domestic violence, unemployment or the need for youth care. Even though we know these problems will never completely disappear, we ask our governments to try to solve them. That is not a simple job because of what makes these problems complex: they contain multiple dimensions, ambiguity, a multiplicity of involved actors and interests, indistinct boundaries and psychological complexity that makes it difficult to see and understand the whole problem and to formulate the right answers (Vermaak, 2009). In literature, these problems are also called wicked or messy problems (Rittel & Webber, 1973; Ackoff, 1974).

Since we ask our government to try to solve these problems, we ask for a government that is able to deal with complexity (Haveri, 2006). But here something remarkable takes place. When we expect the government to deal with complexity we overlook the fact that the public administration consists of a collection of organizations. So when we look at a particular problem, it is not the government as a whole that tries to formulate a solution but it is a specific organization or a particular collection of organizations. In addition, those public organizations are a specific class of organizations. They are allowed to do things no one else is allowed to (e.g. the outplacement of children) and they have the responsibilities to do things that no one else wants to (e.g. providing income support). We as a society even pay our taxes in order to let public organizations perform their responsibilities.

So we expect public organisations to deal with complexity by means of certain powers and responsibilities, even when we know these problems are difficult to solve. In the terminology of Christensen: we often know very little about the relation between symptom, cause and treatment (2009). Solving complex social problems is mostly based on intuition and experience or at best based on empirical evidence. We know for example that in 80% of the cases of domestic violence, this is accompanied with debt problems (Noten, 2015). Knowledge of this relation can help you if you want to solve a domestic violence case in a fundamental way, but it does not prescribe the ideal solution to all cases of domestic violence: sometimes there is also a relation with alcohol abuse or psychological problems. In order to try to solve complex social problems, every case has to be judged individually by professionals with expertise and experience.

In order to understand how public organizations try to solve complex social problems, it is interesting to look at recent developments in the Netherlands. On January 1st of 2015, the central government of the Netherlands decentralized three large aspects of social service delivery to municipalities: labour market participation, youth care and long-term care. The dominant idea driving this decentralization is that localized and personalized services will lead to both higher quality and efficiency (Rijksoverheid, 2014). In other words, social service delivery should be based on individual customization and an integral approach in order to improve the ability to solve complex problems in a cheaper and better way. Therefore, individual professionals, in this thesis called caseworkers, receive a determinative role in the allocation and the adjustment of social services.

The decentralizations are not solely a content driven reform. In anticipation of the more efficient performance of social service delivery, the national governmental preventively cut the budgets provided to municipalities. The original budget regarding the three decentralizations amounted 11.3 billion euros, though the decentralized budget totaled 9.8 billion euros. This means that the decentralization of essential social delivery tasks is combined with a budget cut of 1.5 billion dollar (de Kam, 2015). The argument of the central government is that due to customization, increased self-reliance of civilians and increased competition among care providers, a reduced budget would be sufficient without the impoverishment of service supply and quality.

## | 1.2 Sociale wijkteams

Though it is not mandatory, a vast majority of municipalities organizes this social service delivery in teams that consist of “*professional and/or voluntary caseworkers [that] work in an integral, generalist and multidisciplinary and/or outreaching way.*” (Van Arum & Schoor, 2015, p.3). Bringing professionals with differing specialisms together in cross functional teams, fits the ambition to provide customized and integrated services. There is however not one generally accepted organizational model.

In general, three organizational forms can be distinguished (Van Arum & Schoor, 2015). First there are generalist teams that are aimed at a broad audience. These teams try to solve both single and multiple problems, also by means of providing specialist service delivery. The second type of wijkteams are specialized in demarcated domains, for instance with a difference between youth teams and multi problem teams. Criteria and working arrangements are then needed to decide which case belongs to which team. The last type of team is general of character with the task to assess and refer individual cases to domain specific teams in the second line. This last team regulates the access to more specialist forms of care and service delivery.

Beside choices for the organizational model of wijkteams, municipalities have to determine how they are going to regulate these teams (Terpstra et al., 2014; Van Arum & Schoor, 2015). This is closely related to the question who will employ the caseworkers. Again there are different options. For instance by regulating these teams yourself; as a municipality you hire caseworkers or they are reassigned from their mother organizations. Related is the option to establish a foundation that hires the caseworkers or get them reassigned. Others options are based on outsourcing the teams, for example to one or multiple providers or to a main provider who is responsible for further outsourcing. These options create subsidy and purchase relationships, based on contracts and arrangements. In 2015, 47% of the municipalities made the choice to regulate the teams under direct management, either with caseworkers under own employment or by reassignment.

In practice, one year after the official start of the decentralizations, both researchers and governors see a mixed image that fits the complexity delineated above. When the chairman of the National Transition Committee is asked ‘how does it go with the three decentralizations?’, his answers is: “*not wrong*” (Noten, 2015; 2016). According to the transition committee, it is hopeful that one year after the immense transition there proved to be no gigantic accidents. At the same time, little is known of how well municipal organizations actually do.

The decentralizations were introduced with promises of customization and locality (Hilhorst & Van der Lans, 2015; 2016). Delivering these promises is not evident; municipalities organizations prove to be recalcitrant. These organizations face all kinds of obstacles that contribute to this recalcitrance, varying from ignorance and anxiety to direct resistance. Still, there are examples of innovative municipalities that, because of ambition, boldness and experiments, create promising developments (Bosch, 2015). These municipal organizations are best practices on specific aspects of their social service delivery or their service delivery as a whole. They emphasize the possibility to overcome recalcitrance and to make progress in order to deliver the promises of the decentralisation.

In sum, municipal organizations have to deal with quite some challenges. They are now responsible for solving complex problems, under budget pressure and by means of collaboration between professionals with the task to deliver customized services. Though the decentralizations might be a chance for new organizational designs and innovative policies and practices, municipalities have to deal with all kind of organizational risks as well. It is worth to understand how municipal organizations can be understood and enhanced as experimenting and learning organizations in order to contribute to the development of these municipalities and to achieve the promises of the decentralisation.

### 1.3 Problem definition

The main goal in this thesis is to understand how municipal organizations, as a typical class of organizations, learn and experiment in order to improve their social service delivery. This goal is based on two assumptions. First, continuous learning and experimentation are necessary to improve the solving of complex social problems; it is not a temporary challenge. Secondly, structural elements are determinative for organizational learning, since a collection of learning individuals is a condition but no guarantee for organizational development (Senge, 1990). The question then is, how can municipalities design their organizations and their social service delivery in such a way that they can attenuate and control the potential risks along with amplifying potential to learn, adapt and enhance their social service delivery. Therefore, the central question in thesis is formulated as follows:

*How can municipalities be understood and enhanced as learning and experimenting organizations?*

In this thesis, two prescriptive theoretical approaches will be applied and compared in order to answer the central question. The first theoretical approach is the Sociotechnical System Design Theory [STSD], which is a theoretical approach that sees organizations as social systems that conduct experiments in order to realize meaningful survival (Achterbergh & Vriens, 2010). The theory prescribes how these organizations should be diagnosed and designed. However, this theory is mainly focused at diagnosing and designing industrial organisations. Or as a prominent author in the STSD Theory, Ulbo de Sitter, stated at the end of his career: *“I think the real innovative scope of application of the STSD Theory will be in the public administration.”* (Metsemaker, 2010).

In order to provide a fundamental answer to the central question, the STSD Theory approach will be compared and complemented with the theoretical approach of Experimentalist Governance. Authors in this approach state that public organizations have to respond to increasing differentiation in our society and the increase of unforeseeable risks. Therefore, social services need to be organized in such a way that they become effectively able to continuously adapt to new and individualized needs by means of continuous organizational development (Bonoli, 2006; Sabel & Zeitlin, 2012). Or, as Charles Sabel formulates: *“a welfare state must provide enabling or capacitating social services to equip individuals and families to mitigate risks against which they cannot be reliable insured, and that to be effective, these services must be tailored to the needs of individual groups.”* (Sabel, 2012a).

So, on the one hand STSD Theory is a design theory that prescribes how organizations in general must be organized but lacks a specification for public organizations. Experimentalist Governance on the other hand prescribes how public organizations should organize their continuous learning and social service delivery but lacks prescription on how public organizations themselves should be organized. Comparing and integrating those two theoretical approaches will be the basis of the answer that will be formulated on the central question. In order to create structure in this thesis, the following sub question is formulated:

*How can the STSD Theory approach and the Experimentalist Governance approach be combined in order to enhance our understanding of municipalities as learning and experimenting organizations?*

Based on the answer on this sub question, an answer will be formulated on the central question.

## 1.4 Understanding practical implications

Though the main goal of this thesis is aimed at a theoretical understanding of municipalities as experimenting and learning organizations, the results of this thesis must be suitable for practical application as well. Therefore three individual cases, placed in two municipalities, will be used to illustrate the challenges that municipal organizations face when to try to solve complex social problems. The cases will be used solely to illustrate the implications of the theories that are discussed and not to assess the usability or completeness of these theoretical approaches. In addition, these cases will be used to take along the reader in the theoretical arguments. The individual cases are real and current cases; of course they have been anonymized.

### Municipality A

The first municipality is Zaanstad. This municipality has 11 area-specific and general organized wijkteams (Gemeente Zaanstad, 2013). This municipality was early with the introduction of teams, starting with a pilot in 2013 and introducing all the teams already in 2014. The character of the teams is emphatically generalist, aimed at both simple and complex problems. The wijkteams are outsourced and regulated from a distance: each team has its main provider that is responsible for the design and the performance of a specific team. The municipality itself has provided a global description of how the teams should look like, but has provided discretion for local variation as well: there is not one definitive organizational design (Oude Vrielink et al., 2014). The financing of the teams is population based. The additional contractual arrangements are based on performance indicators for both quality and costs and an obligated comparison between teams by means of a benchmark (Gemeente Zaanstad, 2013).

**Case 1.** The first case is presented by Jeroen Olthof, the alderman Youth & Care, Housing and Minima in the municipality Zaanstad. The case is presented and discussed in an interview.

Tina is a girl of 17 years. She no longer has contact with her parents due to a troublesome relation and she lacks a strong social network. The situation deteriorates when Tina becomes pregnant and her baby is expected to arrive two months before she turns 18. The severity is increased by the fact that Tina lacks a stable home situation; she stays at friends' houses etc. Given the assessment of the situation as unhealthy, the normal reaction of youth care is to arrange an outplacement as soon as her child is born.

When the wijkteam finds out of this situation, they encounter a serious problem. Because Tina is under 18 when her child will be born, she does not have the legal access to arrangements and budgets to receive housing and support. The normal situation therefore is to get along with the outplacement of the newborn child and find a solution after Tina turns 18.

In the wijkteam they think that situation would be ridiculous, but because they face strict rules, they cannot provide a solution themselves. The caseworker in the wijkteam escalates this case directly to 'the safety net team' (vangnetteam) in the municipality. This team is placed right under the alderman with a mandate to force a solution when a case is too complex or rules and budget contradict and constrain. This team also has access to a breakthrough budget: a budget that can be used freely, for which the only criterion for an expenditure is that the budget contributes to a breakthrough in the case with an aim at a solution that would otherwise remain impossible.

Because the case of Tina is so precarious, the safety net team discusses the situation with the alderman. Together they decide to offer Tina an apartment that is paid for by the municipality. Because of this apartment, the Council for Child Protection renounces the outplacement. Instead they offer support and oversight in her apartment in order to learn Tina how she must take care for her child and to guarantee the safety of this child. The wijkteam also starts a conversation with Tina how she can sustain her situation for example by finishing an education.

Beside the convenience of this solution for Tina and her child, the alderman adds a simple calculation. This solution costs the municipality maybe 2000 or 3000 euro; an outplacement would have cost 60.000 or 70.000. Thereby the alderman states that in this case, regardless the constraining rules, perspective is created for Tina. Given the thrust relation between Tina and the wijkteam, they expect to have solved a prolonged and complex situation in an early stage on a fundamental and cost-effective way.

Jeroen Olthof presents this case to illustrate why he thinks the system in Zaanstad works well. He is proud of his safety net team and the breakthrough budget. He believes that through this system, Zaanstad is able to create a learning system that is able to solve social problems in a fundamental way. Departing from rules when necessary and investing in individual cases is logical given the character of these social problems. There is also a learning component: questions asked to the safety net team are also shared with other wijkteams. Experience teaches that questions that were asked a year ago are no longer asked: structural barriers are removed and wijkteams have become able to deal with difficult situations themselves. The 'Zaanstad approach' meets a lot of enthusiasm from other municipalities.

### **Municipality B**

Where innovative municipalities are willing to share their success, it is difficult to find municipalities that are willing to openly discuss their progress with a student when results are suboptimal (Bosch, 2015). Municipalities who shared their 'worst examples', wanted to remain anonymous. As an alternative I made a completion of how municipality B is organized myself, based on two existing cases. The individual cases and their municipalities are also discussed with Pieter Hilhorst (2016). I want to emphasize here that the organizational description is an interpretation based on elements from the real cases.

Municipality B has multiple wijkteams that are general and area-specific organized; both simple and complex problems are dealt with. The teams started on 1 January 2015 and face a slow adaption in the further organizations. The teams are regulated by the municipality under own management. The municipality hired multiple caseworkers, but most employees are reassigned by their mother organization. Given the municipal control on the teams, the teams are all organized in the same way, though there are huge differences in experience of individual caseworkers.

**Case 2.** The second case is presented in a publication of Pieter Hilhorst and Jos van der Lans (2016). The case is further elaborated and discussed in an interview with Pieter Hilhorst (2016).

Helena is a mother of 23 with two children at an age of 7 and 5. She was raised in Aruba, has come to Almere via her aunt and ended up with her brother in another municipality. Her brother is involved in drugs and arms trafficking and in prostitution. Because youth care assesses the situation as unsafe and unhealthy for the two children, they urge that Helena and the children should move away from this brother. They even consider an outplacement of the children.

Kitty is a caseworker in the social wijkteam that is involved in the case of Helena. Their goal is to prevent an outplacement. When Kitty and Helena try to find a solution, they face a lot of bureaucratic obstacles. First the municipality doesn't want to provide an urgency housing declaration. The civil servant of the municipality that is responsible for these declarations states that since Helena's housing problem started in Almere, she has to ask for an urgency placement there. However, that option seems excluded.

Kitty does not settle and after multiple requests an urgency declaration is provided. The next problem that arises is that Helena is offered an apartment by the housing association that is too expensive. And again after a lot of effort by Kitty another, less expensive, house is offered. For the furnishment of the apartment, Helena needs special welfare and in order to submit an application, Helena has to offer a lot of information. According to Kitty this seems silly since the municipality already has the income data of Helena. Even so, it takes 4 weeks before the municipality comes to a decision. In an earlier job, Kitty worked for the social service department and therefore Kitty should be able to settle the procedure herself. Moreover, according to Kitty it would be quicker and cheaper to furnish the apartment with second-hand furniture. This would cost the municipality less and would be more convenient for Helena. Unfortunately Kitty is not allowed to do so.

After moving to their new apartment, Helena is motivated to find a job. Because of their trust relation, Kitty is in the position to stimulate this enthusiasm. At first she finds Helena a job in a sheltered employment situation so she can gain experience. After a while there is even a view on outflow to a paid job.

The authors use this case in order to illustrate how customized social service delivery could work. They praise the role of the social worker because she approaches the problem in an integral way. This allows her to combine the procedures for finding housing, the application for special welfare and finding a sheltered job. It helps Kitty that she can build a trust relation with Helena and that she is able to motivate her. On the other hand, this case shows as well the pitfalls and bottlenecks of the current approach; it costs Kitty a lot of effort to deal with all the authorities. Even though the caseworker does have experience, she is bounded to see that both procedure and result become suboptimal. She is not allowed and enabled to solve the problems in the most efficient and convenient way.

**Case 3.** The third case is selected from a publication of the national transition committee. The publication elaborates multiple cases to show both the complexity and necessity of a new approach in the decentralisations (Transitiecommissie Sociaal Domein, 2015).

Bart is 43 years old and with his wife Chantal he has two young children. Together they have bought a house in 2008. Unfortunately both Bart and Chantal lost their jobs in 2010 and though they are very motivated to find a new job, they remained unemployed. Because they were now designated to welfare, they had to sell their house in 2012 which burdened them with a residual debt of €25.000,-. They then lived in a social housing apartment that is very small for a family of four, but they had no choice.

After a year Chantal luckily finds a new job, though this proves not to be the ultimate solution. Bart is really frustrated, leading to relational problems and in 2014 Bart and Chantal decide to divorce. And as Chantal leaves Bart she takes the children with her. As a result, Bart ends up in a depression. He receives antidepressants, starts drinking and gambling and as a result he neglects his administration. The unpaid bills pile up and an eviction seems inevitable. When Chantal says she wants to continue a shared parenthood on the condition that Bart can offer a safe and healthy environment, Bart decides that he needs help and he goes to a *wijkteam*.

From this *wijkteam* Bart receives a coach and together they develop a plan. His administration is set right, they apply for payment arrangements, Bart visits an addiction treatment centre and he starts a reintegration program. Bart begins motivated with all these programs. He is invited for several job interviews but without any result. During his alcohol addiction Bart has neglected his teeth with a terrible result.

Because of his payment defaults, Bart is not insured any more for the recovery of his teeth. At the advice of his coach Bart applies for special welfare in order to pay for his teeth recovery. Unfortunately this application is rejected: the expenses do not count as necessary and the municipality points at the insurance company. The municipality also points at the fact that they risk their own audit certificate if they spend special welfare on this kind of costs. The problem is that as long as Bart is paying back his debts, he is not allowed to apply for additional insurance. And because he cannot pay for his teeth recovery, the chances he will find a job are minimal and therefore he lacks the potential to earn enough to pay back his debts quickly. Bart is captured in a deadlock.

This case is an example of how an individual case can get stuck in the system. Again we see a motivated caseworker who is able to build a trust relationship and who is able to solve multiple of Barts problems. But even though Bart and his coach from the *wijkteam* have ideas for a final solution, they face plenty of organizational restrictions that constrain Bart to work on his problems. There is for example a difference in the assessment of the situation by the caseworkers and by the special welfare department: here the goal to solve complex problems conflicts with the ambition to receive an audit certificate. This is especially frustrating since Bart is highly motivated overcome his situation, to work for his living and create a safe and healthy environment for his children.

## | 1.5 Outline of thesis

In the second chapter the main features of municipal organizations as a specific class of organizations are discussed. In order to understand municipalities as learning and experimenting organizations, it is necessary to understand what makes municipalities different than other organizations. Providing an answer to the constraining features that are elaborated here is a prerequisite for the ultimate answer that will be formulated in the conclusion.

The third chapter is aimed at understanding organizations as social systems that learn and conduct experiments. The theories that are discussed in this chapter are used as the conceptual background in order to explicate a model of organizations as social systems that learn and experiment in order to survive. Based on this chapter two additional requirements will be formulated in order to assess the usability of the two main theories in this thesis.

The fourth chapter is aimed at understanding the optimal design of organizations. As stated above I will therefore use the design theory of de Sitter. A crucial step in discussing this theory is the elaboration of its theoretical foundation: the theories by Ashby, Beer, Simon and Thompson. After explaining the theoretical foundations, the theory of de Sitter will be elaborated in depth. I thereby focus on both theoretical principles and practical design principles. This chapter will be concluded with an application of the theory to the central subject of this thesis and a preliminary conclusion.

The fifth chapter is aimed at Experimentalist Governance and is constructed in the same way as chapter four. After discussing the theoretical background, founded in the public philosophy of pragmatism, I will elaborate the theory of Charles Sabel. The elaboration will specifically focus on organizing organizational development and social service delivery. Also this chapter concludes with an application of the theory to the central subject of this thesis and with a preliminary conclusion.

The conclusive sixth chapter provides a comparison and a synthesis of the STSD Theory and the Experimentalist Governance approach. The prerequisites from chapter two and three will be used to assess both theories, along which both theories will be compared on differences and similarities. Based on this elaboration both theories will be integrated, after which the integrated theories will be applied to the concepts of sociale wijkteams and social service delivery. Based on this complete exposition, an answer to the central question of this thesis will be formulated. The sixth chapter will be concluded with a reflection on the entire thesis.



## | Chapter 2 – Municipalities as a typical class of organizations

In this chapter the features of municipal organizations as a specific class of organizations are elaborated. These features explain why municipalities do function in a different way than other organizations: they affect and constrain the way the primary process can be performed. They also clarify why municipal organizations have to deal with certain risks. Understanding these features is necessary because in order to understand municipalities as learning organizations, it is necessary to incorporate the constraint and risks that are inherent to municipal organizations. Therefore knowledge of the features is a prerequisite for formulating an answer to the central question that has value.

The first element that is elaborated is the influence of vertical authority relations as a constraining factor both in municipal organizations and between municipalities and their environment. It is necessary to make a distinction between the political and administrative side of municipalities (2.1). The second feature that is discussed is the inevitable discretion of the caseworkers that perform the primary process (2.2). Though discretion is not a phenomenon that solely subsists within municipalities, public organizations have to deal with a specific form of discretion with specific consequences and risks. The third feature that is elaborated is that municipal organizations increasingly tend to approach complex social problems in collaboration (2.3). This has substantial implications for the way the primary task of municipal organizations is performed. In the concluding paragraph the overall implications of municipalities as learning organizations will be discussed (2.4).

### | 2.1 Formal authority

As stated in the first chapter, public organizations are a specific class of organizations since they are allowed to do things that no one else is allowed to, for example to intervene in someone's household. Public organizations are also allowed to spend public money and to introduce and restrict certain rights. Therefore the decisions of municipalities require legal authority that is based on political and democratic legitimacy (Engels & Fraanje, 2013).

Formally there is a strict distinction between the political side of municipalities and the administrative side. The political side – municipal council, the mayor and the aldermen – have the formal authority to make decisions. The administration, the municipality as an organization, is aimed at executing these decisions that are made based on that democratic legitimization. In practice there arises a problem: the political side of the municipality is not able to formulate regulation that is adequate in detail and suitable for every individual, complex case (Schlöss & Stroink, 2010). Therefore the formal authority inevitably needs to be 'shared' with the administrative organization. In practice this leads to a web of mandated and delegated authority, which in turn leads to a web of dependence, accountability and power relations (Mastenbroek, 2005; Gerritsen, 2011).

In this context it is necessary to make a clear distinction between the delegation and mandating of authority (Schlöss & Stroink, 2010). Delegation refers to the assignment of authority to someone else: someone in a particular position receives the authority to make decisions himself. When I delegate authority to you, you actually take over the formal authority. When authority is mandated, you are allowed to make decisions on behalf of someone else, given certain boundaries. The 'owner' of the authority remains responsible and legally accountable. This distinction is relevant since not every authority can be delegated; even when a caseworker has a mandate to make individual decisions, it is the alderman that remains legally responsible. Because the authority requires democratic legitimization, it cannot be delegated from the political side of the municipality to the administration. Also the authority to make certain exclusions is therefore only allowed on behalf of the mayor and the aldermen, for example in the Participatiewet (Hilhorst & Van der Lans, 2016).

The chairman of the national transition committee states that it is essential to understand the influence of authority in order to understand why it is difficult to learn as a municipality: *"authority in itself, is something you need in order to govern. But in its values it conflicts with an inquiring, learning system"*

*that is aimed at execution.*" (Noten, 2016). The execution of the primary process asks for sufficient mandate and discretion, though governors and the municipal council remain legally responsible and therefore face their own insecurities.

The influence of the decentralizations on the distribution of authority is enormous. This is illustrated by Pieter Hilhorst: *"The decentralizations are often seen as an organizational problem, but it is also an authority problem. The transfer of authority from the national government to municipalities, the transfer of authority from policy makers in the municipality to professionals in the execution, the transfer of authority from these professionals to citizens. And such a transfer of authority does not come naturally. So, what you notice is that in a lot of cases the professionals lack sufficient mandate."* (Hilhorst, 2016).

These authority and accompanied power relations that arise due to the mandating of authority are not solely unilateral hierarchal relations based on order and command. They can be understood as principal-agent relations based on asymmetry (Niskanen, 1994; Hazeu, 2000). The asymmetry is based on the notion that both principal and agent have their own goals, their own sources of legitimacy, their own specific information and a mutual dependence (Mastenbroek, 2005). The principal-agent relation can be understood as a reciprocal relationship between actors with interests that might contradict (Nelissen et al., 2004). Due to this asymmetry, municipal organizations have to deal with internal conflicts of interest whereby the governors want to be in control and the caseworker needs discretion in order to solve a problem.

Given the asymmetry, one of the pitfalls of the decentralizations is an overreaction after an incident. These incidents are, given the complexity of the problems, unavoidable. Politicians and governors tend to react on incidents, as in a reflex, with the development of new rules and the promise of stricter control in order to prevent a recurrence of an incident (Trappenburg, 2011). This reflex to increase control is driven by their formal responsibility. Ironically this instrumental form of risk management, based on increased accountability, management and control, often does not lead to a better performance (Van Staveren, 2015). Research teaches that it might even contribute to constraints in network relations, discretion and might contribute to internal conflicts of interest.

So the vertical authority relations play an influential role in how the primary process is both performed and controlled. Municipal organizations risk facing internal conflicts of interest and governors themselves face insecurities and a tendency toward control and retention. An example of how these power relations influence the primary process is provided in figure 2.1.

One of the obstacles in the first year of the decentralization is the obtainment of an audit certificate. Every municipality needs this certificate in order to receive the approval of the Ministry of Social Affairs. But since there is a lot of indistinctness on what these criteria are, and how these criteria can be met, many municipalities face a denial of this certificate. In order to retake control and governmental security, many local governors become cautious regarding their budget spending: they restrict the risky expenditures in the primary process. This constrains the practices of caseworkers and this often leads to internal conflicts of interest. Even when caseworkers disagree with the restriction of their expenditures, they are powerless since the governors are authorized to restrict their mandate to spend public budgets. In turn caseworkers can start to show avoiding behaviour or stretch the rules.

Of course there are also municipalities that defy the Ministry of Social Affairs. As the alderman of Zaanstad states: *"I am sure that I won't obtain the audit certificate. [...] If the minister wants to intervene in our process, he is welcome to explain so in front of the media and our clients."* This boldness is reinforced by the fact that alderman personally knows the minister, the ministers personal view on this topic and the fact that the city counsel of Zaanstad goes along with the political choice to neglect the audit certificate. Overall, it highly depends on the personal attitudes of the mayor and aldermen how such a topic as the audit certificate influences the primary process. But after all it is a governmental and political consideration to be made.

Figure 2.1: Example based on the interviews with Hilhorst, Noten, Olthof and Berber (2016)

## | 2.2 Inevitable discretion

The second feature that makes municipal organizations a specific class of organizations, is that in order to perform the municipal primary process, discretion for frontline workers is inevitable. The inevitability exists because discretion is inherent to implementing and performing policy.

The classic theory of Lipsky teaches us that in order to implement and perform policy, general rules need to be applied to specific situations by so-called Street Level Bureaucrats (1983). Inevitably there is a certain gap between the general rule and the specific situation, so the application of these rules asks for individual assessment and interpretation of both the situation and the general rules. Beside the fact that discretion provides Street Level Bureaucrats with a certain amount of power over individual cases, these bureaucrats have to deal with tensions and constraints as well. Goals and rules may be unclear or contradictory, budgets and instruments may be insufficient and Street Level Bureaucrats might feel unsafe to take necessary but daring decisions. There is a risk that these bureaucrats fall back to undesirable routines and perform their jobs on 'autopilot' (Lipsky, 1983; Thompson, 1967).

The level of individual discretion is based on an accumulation of national laws, local regulations and organizational arrangements (Bosch, 2013). The freedom to deviate from the rules is based on their formal and legal value, the so-called hierarchy of rules (Engels & Fraanje, 2013). National laws have for example more importance than local regulation and local regulations have more importance than mutual arrangements between supervisor and caseworkers. As a municipal organization you are bound to national law but in your local regulation and arrangements you can increasingly choose to accentuate elements and decide to increase or decrease the level of individual discretion. For example: *"In a local regulation can be stated: we do exactly what fits a specific situation. That is something totally different then when is says: if you have a broken leg you are entitled for two hours of household help a week."* (Han Noten, 2016). The decentralisations are introduced with assumption that more decentralized and individual discretion is needed; as a consequence many municipalities make a transition from conditional regulation (When X, than Y) to goal regulation (we do what is needed to achieve a certain goal). It is up to municipalities how they want to deal with discretion and again this is a governmental and political decision.

Given the fact that discretion is inevitable, it provides both value and risks. On the one hand it is valuable because it enables customization. When I am not allowed to interpret and assess your personal situation, I cannot customize my intervention. On the other hand, professionals that have to deal with discretion are vulnerable; in their practices they face various types of tensions.

The first tension is between too much and too little discretion. As stated above, a certain amount of discretion adds value to customized service delivery. So when there is not sufficient discretion, for example because regulations are too tight, it might harm the effectiveness of the social service. The same appears when rules are contradictory. However, when there is too much discretion, it can create uncertainty because professionals miss a handhold (Crozier, 1964; Bosch, 2013). One of the risks of delivering too much discretion is that professionals start to avoid using discretion in order to remain secure (Lipsky, 1983; Thompson, 1967).

The second tension refers to the risk of arbitrariness. Though we value customization, our government remains built on the rule of law. This rule of law is based on a notion of objectivity, rationality and impartiality (Weber, 1946). Every civilian has the right to be protected from an arbitrary individual caseworker: e.g. the access to healthcare must not be based on mood swings of a caseworker or the fact that he or she dislikes me. So discretion needs a counterpart that compensates for large-scale differences and arbitrariness.

The decentralisations themselves affect this tension in a fundamental way. The decentralizations are based on the notion that there should be differences between individuals in order to create customized services (Rijksoverheid, 2014; Hilhorst & Van der Lans, 2016). This implicates a fundamental shift in

the criteria that are used to assess the quality of a municipality's primary process, as Pieter Hilhorst states: *"The fear of arbitrariness is deeply rooted, and partly it has to be put in perspective. The fear of arbitrariness derives from the idea that every case should be treated equally, but cases are not equal."* (2016). Or as a local social domain director formulates: *"the big question is: how can we make customization the norm instead of an exception?"* (Berber, 2016).

The third tension is based on the ability to learn. When every caseworker applies the general rules in a different way it becomes difficult to compare performances, to share experiences and to evaluate the rules in order to adapt them (Bosch, 2013). Pieter Hilhorst states: *"What you see is that all the generalists [in the wijkteams] are reinventing the wheel. That takes a lot of time. [...] What is needed is that if you find a smart solution, for example with a problem with debts, is that you share it."* (2016). Hilhorst emphasized that the differences in the way one caseworker intervenes in a specific situation cannot be compared with other caseworkers by means of numbers or KPI's alone: sharing experiences and considerations is needed as well (Hilhorst & Van der Lans, 2016).

Altogether, as a second feature of municipal organizations as a specific class of organizations, the caseworkers that have to deal with discretion are able to customize but are also vulnerable. Discretion is accompanied with uncertainties, contradictories and the personal responsibility for the complex problems. When caseworkers feel unsafe they might develop defensive routines or avoiding behaviour. In order to create safety, caseworkers have to learn to deal with inequality and uncertainty. This also affects the learning ability of the organization. When done wrong, inevitable discretion contributes to a decreased control of the primary process and suboptimal results. This is illustrated by the example in figure 2.2.

An example of this vulnerability was found in a Dutch municipality where a new social policy was introduced, based on the criteria of self-reliance (*zelfredzaamheid*). This policy was formulated in order to increase the individual discretion for caseworkers. But because there was so much indistinctness about what this criterion exactly meant in practice, the caseworkers became cautious and used less discretion than before. One of the caseworkers explained she didn't want to be blamed for misinterpreting the rules and acting based on arbitrariness. According to this caseworker there was also insufficient opportunity to share her doubts with her colleagues in order to learn from each other. She noted that she automatically choose to act in a safe way.

Figure 2.2: Example based on Bosch (2013).

### | 2.3 Interdependency relations

The third feature of municipal organizations as a specific class of organizations is based on what is called network governance. In order to perform their primary process municipalities are depending on other organizations. They need both public and private organizations in order to formulate an integral solution for complex social problems. When you for instance want to solve a housing problem, you need to cooperate with the housing corporation and maybe with a bank.

The question how to deal with these dependency relations is the object of multiple paradigms. The concept of what a good governance includes changes over time. This consists not only of elements such as fundamental tasks, size and scope, but also the way the public administration should be organized, how it should perform its primary process and how it should organize its external relations. Such a paradigm can be seen as a coherent, widely supported and influential opinion that is dominant during a period of time. For public organizations three recent paradigms can be distinguished. Though these paradigms arose in sequence, elements of all the paradigms can be found simultaneously in current public organizations.

First of all, the classic bureaucratic paradigm that was dominant till the 1970's. This approach is based on the concept of hierarchal and steering public organization. Therefore social service delivery from the bureaucratic perspective aims at rational policy formulation, clear authority lines and centralized policy implementation (De Baas, 1995).

This bureaucratic approach to service delivery proved to have undesired effects: it led to formalism, high expenses and disappointing results (Nelissen et al., 2004). In order to correct these defects the paradigm of New Public Management [NPM] originated. NPM is based on the assumption that an effective public administration should be based on privatization and private-sector discipline. It is up to the government to formulate clear goals and to manage performance from a distance by means of private-sector instruments like contracting, Key Performance Indicators, monitoring and the promotion of competition (Osborne & Gaebler, 1993). According this NPM approach, citizens should be seen as customers and services as products with high quality standards (Hood, 1991).

Despite high expectations, NPM-instruments turned out to have their own perversities. Compartmentalization, strategic behaviour and increasing distrust are just some examples (WRR, 2004; Steen et al., 2009). Public organizations that are incorporating NPM seem only limitedly able to adapt to their environment. There are multiple examples where contracts restrict flexibility and where the focus on the performance of singular organizations is contrary to the needs of specific cases (WRR, 2006). The promotion of private-sector discipline comes at the costs of decreased collaboration and flexibility.

As a reaction to overcome the perversities of NPM, the most recent paradigm - New Public Governance - states that public organizations should proactively organize their collaboration with an aim at service delivery (Osborne, 2010). This appeal matches a practical development: public organizations increasingly approach complex problems in collaboration (Osborne et al., 2012). These organizations do not necessarily want to collaborate, they understand they need to in order to deal with the complexity and ambiguity of public service delivery (Van Bueren et al., 2003; Kaats & Ophij, 2008). By means of collaboration different expertises can be combined and information can be shared in a way that is not possible for singular organizations. Due to this approach all kinds of organizational and network designs appear. For example: inter-professional organizing, joint-up services, cross-functional and multi-disciplinary teams, partnerships, etc. (Noordegraaf, 2011).

The implication of this network approach is that the municipal organization is no longer automatically the controlling actor with the authority to call on centralized decision-making. Municipal organizations increasingly have to conform to horizontal relations (Osborne, 2010). These horizontal relations are accompanied with the risk of strategic behaviour. Some networks are based on mutual dependency of resources like money, knowledge, access or authority (Klijn & Koppenjan, 2000). The existence of mutual dependency on resources doesn't mean that there are necessarily common goals. When an actor tries to achieve its own goal, he might behave in such a (strategic) way that it can harm the performance of other participants or the network as a whole. Therefore networks with mutual dependencies ask for regulation (De Bruijn, 2003).

Whether a network is based on strategic behaviour or not, the possibilities for municipal organizations to regulate a network are often limited because power and authority relations in a network are most often polycentric. Necessary decisions are made by different institutions (Van Bueren et al., 2003). Therefore a mechanism is needed that does regulate relations in a network, which somehow is transcending the individual (governmental) actor.

Ostrom explains that the core relations in each well-functioning network depend on reciprocity, reputation and trust (1998). Reciprocity is based on the fact that we tend to react with positive responses to positive actions of others and with negative responses to negative actions. In order to receive positive actions, it is valuable to create a reputation that you keep up promises, even when it demands short-term investments. Based on a positive reputation, you will increase trust that you will live up to your reputation in the future. A network based reciprocity norms produces less strategic behaviour because participants trust on each other's reputation.

In sum, the third feature contains an increasing dependency on relations with other public and private organizations. Due to these dependencies, municipal organizations lose direct control over certain parts of their primary process, even more when caseworkers are reassigned by their mother organizations or *wijkteams* are outsourced. This conflicts with the classic notion of a steering government and the responsibility assigned to public organizations. However, as a municipality you have to participate in networks to create a desired outcome, despite all its dependencies and uncertainties. When the outcome proves to be insufficient, it is the municipal organization that will be held accountable. So to guarantee a desired outcome, a municipality has to invest in networks by means of reputation and trust. This notion is illustrated in figure 2.3.

Municipalities in the Netherlands work together in 33 safety houses. In these safety houses complex cases are individually discussed with actors involved from the safety domain (e.g. police, probation services), the healthcare domain (e.g. youth care, addiction care) and the governmental domain (e.g. municipalities, housing associations). The goal is to transcend domains in order to prevent further escalation. Target groups of the safety houses are for example 'confused people' that cause serious inconvenience and might harm other civilians or cases that are too complex for the *wijkteams*.

All the participants in the safety houses are voluntarily involved and the network is regulated by organizational agreements. There is no one with an overriding authority. So when participants come together to formulate a solution for a complex case, they are mutually dependent on resources and motivation. These dependencies are complicated by both internal and bilateral restrictions. For example the potential effort of a care provider depends on purchasing contracts between municipality and health care organisation. Or the discretion of a probation service depends on established policy. So in order to formulate an adequate solution, participants need mutual trust, willingness and the ability to cooperate given these boundaries. But when the safety house fails to provide a solution and for example a confused man attacks someone innocent, it is the municipality that is held responsible.

*Figure 2.3: Example based on Bosch (2015).*

## **| 2.4 Conclusion and implications**

When municipal organizations are asked to try to solve complex social problems, they face an enormous challenge. This is partly due to the content of complex social problems (e.g. difficult to understand, no predictable solutions), but also due to the nature of municipal organizations. They have to deal with network dependencies, inevitable discretion, formal authority and a need for democratic legitimacy, whether they like it or not. As a result, performing and controlling the primary process in municipalities is characterized by an accumulation of restrictions, risks and internal and external interdependencies. Because municipal organizations have a public responsibility and they are publicly accountable for the outcome of their primary process, learning as a municipal organization is both crucial and difficult. An organizational design should therefore be able to address these features.

The three features that are elaborated in this chapter can also be used to explain what makes the three central cases in this thesis difficult. The municipality of Zaanstad has to deal with the constraining features, though it seems to be organized in such a way that they overcome most of these constraints. Even when the mandate is not assigned to the sociale *wijkteams*, the caseworkers can escalate quickly and easily to the safety net team. This team does not only have the mandated authority to make a decision but also supports caseworkers when rules are unclear, contradictory or caseworkers feel insecure. It provides security for caseworkers and direct supervision to the governors. Another reason the case in Zaanstad seems to work fine is that because authority inside the municipality is well organized, the collaboration between municipality and network partners (e.g. the Council of Child Protection, housing corporation) functions better. The case shows that, despite the constraining features, the primary process can be optimized. However, in addition it has to be noted that one of the successes in Zaanstad is that the alderman is tenacious regarding his belief in their new system. When for example the criteria for the audit certificate constrain the primary process, he refuses to constrain the primary process. The alderman functions as a protection shield for influences from the outside.

The other municipality is less able to overcome the constraining features. In the second case, Kitty - the caseworker - lacks the possibilities to realise optimal results. She used to have the mandate to settle the application of special welfare but in her current job this mandate is not involved. Kitty is an example of a caseworker that is able to deal with high levels of discretion, but given her limited mandate she lacks sufficient discretion to organize an optimal outcome for both client and municipality. She also lacks support when she has to deal with problems that occur because of network partners (housing association) or even other departments in her municipality, which indicates an internal conflict of interests. It is interesting, as a thought exercise, to think what would have happened if Kitty was not acting in such a convinced and persistent way. If Kitty had accepted that the municipality wouldn't provide an urgency declaration, the result would have most likely been the outplacement of the children. The personal consequences for Helena and her children would have been enormous and the chance that Helena would have had a prospect on personal development and a paid job would be minimal. Beside the personal consequences would the costs have been unnecessarily high.

Also the third case is an example of how the constraining features of municipalities actually constrain the results of its primary process. When Bart applies for help at the wijkteam he has multiple problems. The caseworker of the wijkteam is able to formulate an integral solution in collaboration with Bart. Together they even make agreements with other parties regarding his payments. At that moment the situation seems promising. The problems arise when the solution needs to be executed and additional problems occur: the need for teeth recovery. The caseworker of the wijkteam lacks the mandate to obtain the budget that is needed for a solution. Different departments in the municipality have different opinions on how to use special welfare: here we see a conflict between different goal and conditional programs. The solution that is offered by the special welfare department (additional insurance) proves to be impracticable. There is fear of the rejection of the audit certificate. As a result Bart, who is highly motivated, gets stuck between debts, unemployment and an unwilling municipality. It is the municipal organization that gets stuck with high costs: they still pay the monthly welfare, invest in social housing and the reintegration program. Whereas the alderman of Zaanstad deems individual cases higher than general rules (e.g. audit certificate, breakthrough budget), the governors of municipality B hold to strict budget expenditures because of the governmental insecurities.

This chapter explains why municipal organizations are a specific class of organizations that do function in a specific way. The theories that will be used to answer the central question in this thesis will have to be able, as a first requirement, to deal with the tensions that arise from the characters as presented in this chapter. In the next chapter will be explained how municipalities can be seen as experimenting, learning and social systems.



## | Chapter 3 – Organizations as experimenting, learning and social systems

The aim in this chapter is to understand organizations as social systems that need to learn and experiment in order to survive. For the outline of this chapter I rely on the explanation of the experimental and social character of organizations by Achterbergh and Vries (2010). These authors use cybernetics and social system theory as conceptual background.

The outline of his chapter is based on four steps. I start with the elaboration of the experimental arche of organizations. In line with Achterbergh and Vriens I mainly use the theory of Ashby on cybernetics in order to do so. The second step is aimed at elaborating the social arche of organizations for which I will discuss the theories of Luhmann and Simon. The third step is aimed at understanding organizations as learning systems; for which I use the theory March, Feldman and Pentland. The last step in this chapter is aimed at integrating the three arches to an integrated understanding of organizations as experimenting, learning and social systems.

### | 3.1 Organizations as experimenting systems

The first step in this chapter is understanding organizations as experimenting systems. Ashby's theory on cybernetics is aimed at understanding how complex systems can be described and regulated. Here it must be noted that Ashby does not write about specific systems, but systems in general. Where Ashby writes system you might as well read machine, person or organization. The theory of Ashby provides useful insights for two reasons: it shows that the object of experimentation refers to three types of regulation and when organizations experiment, this experiment has to be regulated as well (Achterbergh & Vriens, 2010).

#### | 3.1.1 Describing system behaviour

Cybernetics is aimed at the study of complex systems: a set of elements and relations between them that is intrinsically complex. More specifically, cybernetics is not aimed at describing what the system is, or how it looks like, but how it behaves. The central question is: "*what does it do?*" (Ashby, 1958). Describing the behaviour is the first goal of cybernetics (*study*), and it is essential because it is also a prerequisite for the second goal of cybernetics: to influence the behaviour of this complex systems (*control*).

In order to describe the behaviour of complex systems Ashby uses variables, which are vaguely defined as: "*the features of things that, given some purpose, have to be taken into account*" (Ashby, 1958, p.40; 1960, p.15). Based on these variables an image can be constructed of an abstract system; this abstract system is a reflection of the underlying concrete system. The variables that are selected to describe behaviour do have a particular value, given the moment of measurement; for example the number of employees on day X. When you collect the values of all the variables on a particular moment, this provides an certain image; Ashby calls this the state of a system. The behaviour of the system can now be described by means of a sequences of states of the system over a period of time: the transformation of behaviour (Achterbergh & Vriens, 2010).

With a method to describe the behaviour of a system, the next step is to describe desired behaviour. As stated above: cybernetics describes behaviour in order to influence this behaviour. But if you want to influence behaviour you need to have some idea about what is ideal behaviour, you need a direction.

According to Ashby desired behaviour needs to contribute to a particular goal. Every variable that needs to be included in order to lead the system reach this goal is called an essential variable (Ashby, 1958). So the first step to describe desired behaviour is to select essential variables [Ev]. The second step is to apply norms to these essential variables. This norm can best be understood as a range of values for which the essential variable contributes to the given goal. As long as the value of the essential variables

fits the norm, the behaviour of the system will be assessed as desirable. This logic of Ashby regarding desired behaviour is illustrated in figure 3.1.

Essential variable + norm value → desired behaviour → goal (e.g. survival)

Figure 3.1: Understanding desired behaviour, based on Ashby (1958).

### 3.1.2 Von Foerster specification of 'Non-trivial systems'

In order to increase our understanding of organizations as complex systems, I take a small step outside the argumentation of Ashby. I use a remark by von Foerster as an addition to Ashby's understanding of complex systems. According to von Foerster it is very difficult to describe the behaviour of most systems by means of describing a transformation. He explains his argument by distinguishing two types of machines that function in a fundamental different way (Achterbergh & Vriens, 2010).

Trivial systems are characterized by fixed input-output relations (Von Foerster, 1984; 1992). Understanding trivial systems is based on the fact that they are synthetically determined, which means that the behaviour of the system is determined by how they are constructed. Given their fixed input-output relation it becomes possible to analyse the relation between input and output by observing input-output combinations. Furthermore, given their fixed and determined behaviour, the history of the systems does not influence its behaviour; only external input is of influence. As a result trivial machines are predictable.

The counterpart of trivial machines are non-trivial systems that are more complex: their behaviour not only depends on external input but also on their own internal state: the systems provide their own input (Von Foerster, 1984; 1992). Just as with trivial systems, the behaviour of non-trivial systems is determined by the way the system is constructed. But analyzing its behaviour based on input-output observations is not possible since former states of the systems influence its current behaviour. As a result information about the history of internal state of the system is needed in order to describe its behaviour in a proper way and predicting its behaviour with certainty is not possible.

This distinction is relevant since organizations function as non-trivial systems and von Foerster has shown that describing the behaviour of non-trivial systems in a cybernetic way has its limits. By continuing Ashby's argument on controlling system behaviour, we must take into account the systems unpredictable behaviour and the dependence of the systems behaviour on its history.

### 3.1.3 Ashby's 'Law of requisite variety'

Given this notion of non-trivial systems I return to the argumentation of Ashby, since describing the (desired) behaviour of a system is not the ultimate goal of cybernetics. Behaviour is described in order to influence it: to enable control (Achterbergh & Vriens, 2010). According to Achterbergh and Vriens it seems that Ashby does mean different things by the term control. First of all it refers to setting targets or defining goals. Secondly it refers to dealing with, or realizing the targets. Achterbergh and Vriens choose to use the term *control* in relation to setting targets and *regulation* when they refer to realizing these targets (2010).

The assumption that underlies the goal to control and regulate the behaviour of complex systems is that system behaviour can be influenced by input from outside the system. According to Ashby this input from outside the system should be defined by means of specific variables called parameters (Ashby, 1958). It is the specific value of a parameter on a specific moment that influences the system in a particular way and therefore changes its behaviour. Roughly there are two types influences on behaviour that should be distinguished: disturbances that contributes to undesired behaviour and regulatory actions that contribute to desired behaviour.

Disturbances can be understood as *“that which displaces, that which moves a system from one state to another”* (Ashby, 1958, p.77). Because of disturbances the essential variable might get a value outside the norm, which in turn leads to undesired behaviour. Regulatory actions are those actions that take care of maintaining the value of the essential variables inside the norm by means of manipulating the parameters. There are different kinds of regulatory actions. A distinction can be made between passive (automatically blocking) and active regulation (reacting on; proactively). And between error-controlled regulation (correcting a failure) and cause-controlled regulation (preventing a next disturbance).

In order to maintain the essential variables on the norm value, a system needs sufficient regulatory potential to deal with the variety in the value of essential variables caused by disturbances. Variety here stands for the number of different states a variable can have (Achterbergh & Vriens, 2010). This assumption is called Ashby’s law of requisite variety: *“Only variety in regulatory potential can force down the variety due to disturbances”* (Ashby, 1958, p.207). As a consequence, when the variety caused by disturbances is too large, only the increase of regulatory potential will enable the regulator to deal with these disturbances (Achterbergh & Vriens, 2010).

### **| 3.1.4 Regulating system behaviour**

Given the law of requisite variety, sufficient regulatory potential is needed in order to enable desired behaviour and achieve a goal. According to Ashby three activities can be distinguished that are part of the regulation of complex systems behaviour (Ashby, 1958; Achterbergh & Vriens, 2010).

Control is the first activity and refers to the activity of setting targets. In order to regulate desired behaviour you need to define what this desired behaviour contains. By defining a goal and identifying essential variables and their norm values you provide direction. The control activity is therefore a prerequisite for the other regulation activities. Without a goal, for example survival, and corresponding essential variables, the other activities become pointless.

Beside control we can distinguish design. Given a certain goal, the design activity selects a mechanism that provides an optimal relation between essential variable, disturbances and regulator. It is the mechanism that makes the system able to produce behaviour. In the design activity Ashby prescribes a sequence of design steps. First of all, a designer should select a mechanism that decreases the variety of disturbances. This is called attenuation. The second step is to increase of the regulatory potential so that the system becomes able to deal with the remaining disturbances. This is called amplification. Attenuation is done prior to amplification in order to enable the identification of the *remaining* disturbances.

The last activity that is distinguished by Ashby is operational regulation. This activity contains maintaining desired behaviour through dealing with disturbances in the transformation process; the actual applying of regulatory potential. Since operational regulation is an activity it only contains the usage of active regulation potential. The passive blocks that might be implemented by the design activity don’t count for operational regulation since they work automatically.

Achterbergh and Vriens translated and specified Ashby’s system regulation to organizations in order to explain how they understand organizations as experimenting systems (2010). For two of the three steps this translation is straightforward. Control in organizations refers to setting goals, this can also be called strategic regulation. Operational regulation refers to monitoring and intervening in organizational transformation processes. The object of the design activity asks for a more specific translation. The object of design in organization, according to Achterbergh and Vriens, is the infrastructure of the organization that consists of a division of work, human resources and technology. Regulation in organizations is illustrated in figure 3.2.

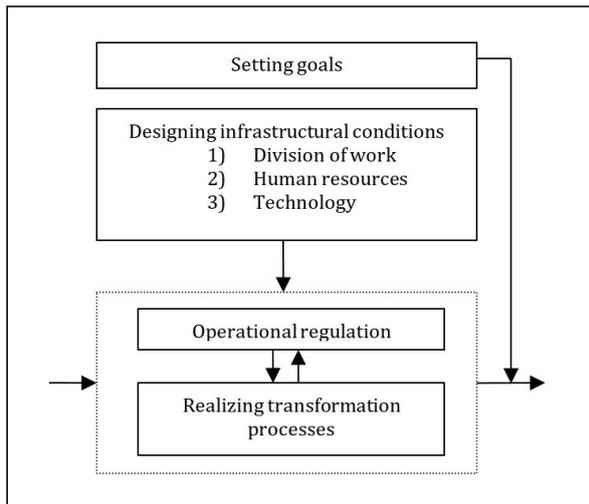


Figure 3.2: Regulation in organizations based on Ashby (Achterbergh & Vriens, 2010).

### 3.1.5 Understanding organizations as experimenting systems

Based on an understanding of Ashby's method of describing and influencing system behaviour and given the specification of Achterbergh and Vriens of this theory for organizations, we can understand how organizations and experiments are related.

To explain the relation between regulation and experiments, Achterbergh and Vriens start with the notion that if a system wants to regulate its own behaviour in order to survive, it has to be able to perform all three regulation activities by itself, which is called self-regulation (2010). And because most systems don't function in a stable context, they must be able to deal with changing environments as well. Therefore a self-regulating system needs to be an adapting system. This means that a system must be able to redefine its own goals, to identify new essential variables and to redesign its mechanism in order to attenuate (new) disturbances and amplify (new) regulatory potential (Achterbergh & Vriens, 2010).

For organizations this means that a self-regulating and adapting organization is able to deal with fundamental uncertainty. This is based on the fact that for every selection or choice (e.g. goals, infrastructure) there are alternatives. A choice between alternatives is always based on uncertainty since you cannot know what the exact result of a particular choice will be (not a priori and not a posteriori). A selection is always based on expectations. Despite this contingency and uncertainty, an organisation has an imperative need to make a choice because organizations need to make choices in order to survive (Achterbergh & Vriens, 2010). An organization needs for instance goals and an infrastructure in order to be an organization. According to this interpretation, self-regulation is an ongoing process of selections based on expectations and evaluating the results: a continuous experiment that is needed to adapt and self-regulate in order to survive.

In order to understand how organizations conduct these experiments we have to take a closer look at feedback loops in the organization related to the three regulation activities. First of all, there is a feedback loop on operational level that consists of reactions on disturbances by applying regulatory potential. Secondly, there is a design-loop, which is aimed at the need for redesign given the stated goals. The infrastructure needs to be redesigned when it is necessary to optimize the transformation process or when attenuation and amplification are needed in order to deal with disturbances. Thirdly there is a control-loop that is used when there is a need for resetting goals. The resetting of goals is based on both environmental appropriateness and the practical feasibility for the infrastructure; it contains both an external and internal aspect. The regulatory activities in these feedback loops are all needed in order to conduct experiments, though they don't have to be executed in a fixed sequence. A resetting of goals might for example lead to a redesign of the infrastructure, but it is also possible that because of unsatisfying experiences with operational regulation the infrastructure is redesigned or the goals are altered.

The activities themselves are executed by the organizational infrastructure: a collection of human resources that is able to perform activities through a division of work and by means of technologies. As a consequence it means that an infrastructure must be able to set its own goal, to redesign itself in order to attenuate and amplify and to perform and regulate its own primary process. This makes the infrastructure both the object of experiment and the means to regulate these experiments, i.e. mechanism to regulate.

In conclusion, this interpretation of organizations as continuously experimenting systems fits the specifications of organizations as non-trivial systems by van Foersters. When organizations experiment they create an accumulation of experiments. Experimentation in non-trivial systems is both needed because behaviour cannot be predicted with certainty and all the former experiments function as internal input.

### **| 3.2 Organizations as social systems**

The second step in this chapter is aimed at understanding organizations as a specific kind of social systems. Luhmann's theory on social systems is aimed at understanding the process of self-production in organizations. As a social system, organizations consist of elements that are able to produce new elements by means of a structure. The theory of Luhmann is complemented with the theory of Simon, which is used as a specification of organizational decision-making. Here must be noted that chronologically Luhmann was inspired by the theory of Simon. The reason I start with the elaboration of Luhmann is because I want to focus on the process of self-production.

#### **| 3.2.1 Luhmann on 'Autopoietic systems'**

Luhmann's Social System theory is aimed at understanding organizations as social systems. His explanation starts with an overall elaboration of autopoietic systems in general (Luhmann, 1984; 1995; Achterbergh & Vriens, 2010).

Autopoietic systems are systems that consist of elements that are capable of interaction and through this interaction the elements enable the production and reproduction of new elements. This interaction requires two things: first, elements must be recognized as elements and second, it must be possible to link these elements. Through the (re)production of elements, the (re)production of the system as a whole becomes possible. It is no coincidence that autopoietic means 'self-producing'. An autopoietic system is a system that is able to maintain itself because of reproduction.

The production of elements in an autopoietic system is not unrestricted. The production of elements serves the maintenance of the system and therefore must be balanced and directed. According to Luhmann every autopoietic system needs a structure that guides and limits the interaction between elements in order to retain only meaningful interactions. This structure can be understood as bundle of expectations that directs and restricts the interaction of elements.

Though the explanation of autopoietic systems is only summarized here (for a more fundamental elaboration see Luhmann 1984, 1995 or Achterbergh & Vriens, 2010), the essence of understanding autopoietic systems is that they consist of elements that through interaction are able to (re)produce elements. When these interactions are structured and restricted to meaningful interactions, the production of elements enables the formation and maintenance of the system as a whole.

#### **| 3.2.2 Social systems as autopoietic systems**

Before Luhmann elaborates organizations as social systems, these social systems as a class of autopoietic systems need to be elaborated first. Therefore it is needed to specify both the elements and structure of social systems and to explain how social systems function as self-producing systems (Luhmann 1984; 1995; Achterbergh & Vriens, 2010).

Luhmann states that the elements of social systems are communications. To function as an elements, communications must be recognizable and connectable as elements. Therefore it is needed to specify communications a little further. According to Luhmann communications consist of three parts or components: information (what is communicated), the utterance (how it is communicated) and understanding (which completes the communication as an element). In order to communicate both a sending party and receiving party are needed. When I send information to you by means of spoken communication but you don't understand it as a communication, then according to Luhmann it is not a communication. This does not mean that the ones who communicate are elements in the system themselves: only the communications are elements!

As an autopoietic system, a social system consists of communications that enable the production of new communications. Therefore the interaction between elements and the (re)production of elements must be restricted by means of a structure. This structure is needed to decide which communications should be recognized as meaningful communications. Luhmann defines this structure as 'expectations about expectations'. In other words: our communication is restricted by my expectation of what you expect from me. This expectation restricts because I adjust my communication to this expectation. When you ask me: 'what time is it?' and I answer: 'crocodile' it doesn't make sense, it is not a meaningful communication. Expectations of expectations are no stable structure: the structure itself depends on context and might change overtime, which leads to a different production of elements, interaction and an altering in the social system.

Now we have specified both elements and structure we can understand social systems as self-producing systems: how communications produce communications. Given a particular moment in time, the prior communications constrain the range of possible new communications (my expectation of expectations is based on our earlier communications). When my communication is recognized as a meaningful communication, it is added to the whole of communications. The follow-up of communications can arise both directly (you ask me a question, I provide an answer) or indirectly through the structure (re-starting a conversation, changing a subject) as long as the new communication comply with the expectations about expectations.

### **| 3.2.3 Organizations as social systems**

Now based on the understanding of social systems as autopoietic systems we can understand organizations as a specific form of social systems. Again we need to specify elements, structure and the process of self-production (Luhmann, 1984; 1995; Achterbergh & Vriens, 2010).

According to Luhmann the elements of organizations are decisions, which are a specific kind of communications. A decision is a specific communication since it communicates the selection of a specific option out of a range of options. So decisions are "*communications that communicate a selection as a selection*" (Achterbergh Vriens, 2010, p.143): it consists of both information about what is decided and which alternatives are left behind. Because a decision as a specific communication remains a communications, it is still build-up of information, utterance and understanding. As a system, organizations now consist of a whole of meaningful and coherent decisions that are able to produce new decisions.

This description of decisions seems to imply a conscious and deliberate consideration. When you communicate a decision as a decision, which means that you present both the selection that is made and the alternatives, it can be assumed that the one who communicates a decision is fully aware of his selection. However, Luhmann adds that decisions can be attributed as decisions. That means that organizations can "*treat human behavior as if it were deciding*" (Achterbergh & Vriens, 2010, p.161). This happens for instance when I am late for a meeting and everyone treats my lateness as a decision, even when it was not a (conscious) decision for me (Achterbergh & Vriens, 2010). What happens in this example is that the receiving part of the communication attributes both information and utterance to

my action. Luhmann states that it is specific for organizations that all the behavior of all the members of the organization can in potential be attributed as a decision, regardless of the individual intentions (1995).

Organizations too, need a structure in order to guarantee a whole of meaningful and coherent elements. Therefore it needs to determine which communication must be recognized as a decision, which decisions must be recognised as meaningful decisions and it needs to enable the connection of the new decision to the whole of decisions. According to Luhmann the structure in organizations should be seen as decision premises. These premises function as expectations about expectations in the organization. Regarding the concept of decision premises, Luhmann was inspired by the theory of Simon, which will be elaborated in the next paragraph

Decision premises can be understood by means of their functions (Achterbergh & Vriens, 2010). Since they function as the structure for an autopoietic system, they enable meaning reproduction by restricting the production. They function as enabling constraints. This is done by providing a normative point of reference, which means that the premises provide focus and direction for the production of decisions. Thereby they enable the distinction between meaningful and deviating decisions. A decision that conflicts for instance the goal of the organization is not meaningful and should be restricted in order to enable meaningful reproduction. This also allows accepting certain facts and assumptions to become presuppositions, which prevents an endless need for doubt before every single decision. So based on decision premises the production of decisions is directed, meaningful decisions can be marked and the production becomes less complex since not every element in the decision has to be considered in every new decision.

Based on these functions it can be stated that decision premises both enable the recognition of decisions and restrict the process of decision-making: they are enabling constraints (Luhmann, 2000). Without decision premises there is no context or reference that could provide meaning to a decision. At the same time, decision premises restrict decision-making by limiting options. If decision premises enable a choice between two alternatives, all the other alternatives are automatically eliminated as a potential decision.

Furthermore Luhmann makes a distinction between decided and undecided decision premises. Decided decision premises can be changed by means of new decisions. Then in fact decisions themselves function as premises given their ability to influence other decisions on a later moment in time (Luhmann, 2000). The first form of decided premises is personal membership: you need to be a member of an organization, coupled to a position, in order to be legitimated to make a decision or in order to have your behavior treated as a decision. However, you only become a member of an organization when it is decided that you are a member. Another example of decided decision premises are the two forms of decision programs: programs that prescribe how decisions are made. Goal programs provide goals that should be achieved, and therewith provide (normative) direction for new decisions. Conditional programs prescribe particular actions that need to be executed when a particular condition is fulfilled: 'when X happens, you decide Y'. Both decision programs structure the range of possible meaningful decisions you can make as a member of the organization. The third form of decided decision premises are communication pathways that need to be followed in order to make a decision. All these premises can be changed by means of new decisions.

Undecided decision premises are not directly changeable as a result of decisions; they change implicitly. Luhmann distinguishes two forms of undecided decision premises: organizational culture and cognitive routines (2000). Organization culture arises when problems cannot be solved by means of instructions; when somehow additional assumptions (premises) are needed. The underlying assumption is that not everything can or ought to be formalized. Therefore culture also refers to a shared understanding of how an organization deals with its own decision-making; it can be used to explain why for example formal communication pathways are ignored. In contrast to decided premises, the premises that derive from the organizational culture must be seen as 'praxis' instead of 'poiesis'. Culture is not a

tangible production to which you can refer, but an activity that needs to be performed in order to exist, that is somehow taken for granted (2000). That is also why the undecided premises deriving from organizational culture are implicit. Achterbergh and Vriens define organizational culture as the “*undecided ways of doing things*” (2010, p.154).

Cognitive routines are the result of “*ongoing practices in the organization’s relation to its social and non-social environment*” (Achterbergh & Vriens, 2010, p.155). These cognitive routines can be understood as the undecided conceptualisation of the environment by the organization (Luhmann, 2000). Note that there is a distinction between the internal focus of organizational culture and the external focus of cognitive routines. Again the undecided premises must be seen as a result from a practice: they exist as long as the practice appears. The cognitive routines are recorded in the communications as long as there is a need to (Luhmann, 2000). In line with the implicit expectations about expectation Luhmann states that both forms of undecided decision premises can change over time but that their change cannot be planned. These premises might even turn out to be persistent to change.

The process of self-production can now be understood as an ongoing production of decisions. For each decision the decision premises enable the recognition and restrict the range of possible selections that fit the whole of meaningful and coherent decisions. Making new decisions is necessary in order to continue the development of the system. If an organization stops making decisions, it stops regulating and performing its transformation process: it stops being an organization. Every new decision is added to the whole of decisions and becomes part of the decision premises that structure future decisions.

### | 3.2.4 Simon on ‘decision-making’

In the next two paragraphs the theory of decision-making by Simon will be used to complement our understanding of decision-making and decision premises. Where Luhmann solely aims at understanding decision-making in organizations, Simon is specifically interested in “correct” decision-making.

According to Simon decision-making should be defined as: “*conscious or unconscious selection of particular actions out of those which are physically possible*” (1947, p.3). So according to Simon decision-making is not necessarily conscious in itself: it solely refers to the selection of an action out of alternatives. However, Simons states that decision-making should be rational, which means that organizations should be based on goal-oriented decision-making. This implicates a selection based on an evaluation of the consequences of every option of action in order to assess its contribution to a given goal. It is rational to select the option that contributes most. In this subparagraph I will discuss Simons two main reasons why rational decision-making is complex.

#### | 3.2.4.1 Fact and value judgements

Though all decisions should be goal-oriented, there is not just one kind of decision. Simon starts his argumentation with an often-made distinction between policy and administration. In this thesis a similar distinction has been made in chapter two. Both policy and administration have their own function in the administrative organization and both have their own ideal type of decision-making. Simon calls these fact and value decision-making. “Value judgments” are those judgments that “*lead toward the selection of final goals*” and “factual judgments” are those judgments that “*involve the implementation of such goals*” (Simon, 1947, p.4). In other words: a rough distinction between goal setting and goal achievement. The value decisions contain questions about what ‘ought to be’, therefore they cannot be determined as true or false. Factual decisions concern the observable world: they can be measured and can be true or false. When there is a strict (ideal type) distinction between ‘policy’ and ‘administration’ it is the political government that makes the value decisions (i.e. sets the goals) and given these value decisions it is the administration that makes the factual decisions in order to achieve the given goals.

As Simon further elaborates, in practice there cannot be made such a strict distinction between value and factual decisions. Most value decisions are not ultimate ends in-themselves; they are intermediate ends. Therefore they automatically contain value and factual aspects. When this line of thought is extended, there proves to be a false distinction between policy and administration, at least to a certain extent. When decisions contain both value and factual elements, these elements might be conflicting. For instance when the goal of my department conflicts with the goal of another department. Consideration is therefore an inevitable part of decision-making: decision-making in administrative organizations requires an integration of decisions. In order to integrate them, a hierarchy of decisions is needed: when two goals conflict you have to decide which goal is more important. Intergrading decisions itself cannot be evaded, so according to Simon: *"The decision-making process must start with some ethical premise that is taken as a given"* (1947, p.59). This will be further elaborated in subparagraph 3.2.5.

#### **| 3.2.4.2 Bounded rationality**

Beside the notion that decision-making in organizations is complex (it contains both value and factual elements), Simon makes another remark at the notion of rationality. As stated above, rationality implies a selection based on the evaluation of the consequences of each of the options of action. In order to make such a rational selection, complete knowledge of all the consequences of every possible option is needed. This proves to be impossible since not all the options come into a normal human mind, not all the information and knowledge that is needed to assess all the consequences of all the options can be gathered and since the consequences of options lie in the future, (subjective) imagination is needed in order provide an image of the consequences. In other words: for humans it is not possible to oversee all the consequences for all the alternatives.

Given these remarks, pure or complete rationality must be seen as an illusion. We can only try to reach rationality as much as possible; this is called bounded rationality (Simon, 1947). It is important to note that bounded rationality still assumes the importance of purposive behavior! For instance, even though the world chess champion is not complete rational (cannot oversee all the consequences of all his options), he still has to be rational to become world champion. Bounded rationality also fits the notion of uncertainty in organizational experiments as presented by Achterbergh and Vriens. Both assume that though you have a certain purpose, you cannot oversee all the consequences of all the alternatives in a selection, therefore a selection will always be based on expectations and thus contain a certain degree of uncertainty.

So because of bounded rationality it is impossible to declare which option provides the most optimal result. But still you want to make a good, purposive selection. According to Simon administrative organizations tend to settle with the option of which the consequences presumably meet an acceptable minimum: this selected option then is for the decision-maker both sufficient and satisfying. Simon calls this phenomenon satisficing (Simon, 1956). Satisficing therefore provides a goal-oriented alternative for complete rational decision-making. The earlier discussed world chess champion must for instance be very good at satisficing.

#### **| 3.2.5 Decision premises and routines**

Simon's argument on bounded rationality provides us with a practical problem that is not entirely solved by satisficing alone. When an individual must pursue rationality for every single decision, even when he can rely on satisficing, it would ask an enormous amount of attention, effort and energy. Imagine for instance what it would mean if you would strive for rationality every single time you are in a supermarket: the evaluation of all the options for every single decision. It would take way too long and you would become completely exhausted. So somehow decision-making needs to be made less complex. According to Simon this is done by the fact that *"individual choice takes place in an environment of "givens" (1947, p.92)*. With these givens Simon refers to premises that are accepted by the individual and hence form a framework for every decision. In this paragraph I will further elaborate Simons concept of these decision premises.

### **| 3.2.5.1 Decision premises**

First of all, Simon distinguishes fact and value premises. The explanation of these premises is in line with the explanation of value decisions (ethical; goal setting) and factual decisions (observable; goal achievement). Factual and value givens are needed in order to integrate decisions. As stated in the previous paragraph every decision must start with a value premise. Because most decisions contain both value and factual elements you need to have a notion which goal is the most ultimate or most important one when two of them conflict.

Second, Simon emphasizes that decision-making is based on both personal and institutional premises. You cannot extract the individual from its social context. Take for instance traffic rules that influence the driver as a decision-maker. The individual decision-maker has to synthesize personal and institutional premises that in turn can contain both value and factual premises.

There is a special role for organizational premises. It is an essential characteristic of organizations that you as a member accept the organizational factual and value premises and that you synthesize them with your personal premises. Simon explains: *“One function that organizations perform is to place the organization member in a psychological environment that will adapt their decisions to the organization objectives, and will provide them with the information needed to make these decisions correctly.”* (1947, p.92). Because you are a part of the organization, you don’t have to decide about everything: decision-making gets less complex because you can rely on certain (organizational) givens.

So it is crucial that you as a member of the organization accept the organizational premises without critical inquiry. This authority from the organization over the individual derives from the employment contract: by signing the contract I accept the institutional premises. When it is for instance my personal belief (personal value premise) that everyone deserves health care, I still have to incorporate the organizational rule that we make a distinction between applications (organizational value premise). If after consideration I still disagree with the organizational premises, I can resign to the organizational premise or I can choose to leave the organization. By making sure that organizational premises are incorporated in the individual, authority contributes to an unambiguous coordination in the organization.

The role of authority of the organization over the individual is not necessarily based at convincing members of the organization but rather aimed at acquiescence. The author Chester Barnard states that authority meets indifference as long as organization members can understand the orders that are given, are able to execute them and that they believe it does not contradict with their personal and organizational goals (1948). Simon prefers the term of acceptance over indifference, but he refers to the same acquiescence as the basis for synthesized personal and institutional premises.

### **| 3.2.5.2 Habits and routines**

Now let us take a further look at the functioning of decision premises for the individual decision maker. Here it must be noted that the purpose of the decision premises is that the individual does not have to determine the consequences of every single option for every single decision. Decision premises make decision-making less complex. Individuals incorporate and create different ‘mechanisms’ to establish certain securities so that conscious rethinking becomes unnecessary. Take for example the human memory: it helps you to rely on earlier experiences. When I made a decision yesterday with fine results, and I *remember* that decision when I meet a comparable situation today, I can repeat that decision without the need for the same conscious consideration.

Another way to make decision-making less complex is the individual inclination to create habits. Habits do have the function to *“permit the conservation of mental effort by withdrawing from the area of conscious thought those aspects of the situation that are repetitive”* (Simon, 1947, p.99). So habits prevent the need for conscious rethinking for every decision when situations recur by establishing

certain behavioral reactions to stimuli. Therein lies both its value and risk: habits can become frozen habits. It is for instance a good thing to automatically use the brakes when you are in your car and you encounter danger. Since it is a habit it does not require conscious thinking and becomes an automatic reaction to an external stimuli. Only when the roads are slippery, using your brakes without conscious reconsideration can create dangerous situations (Simon, 1947).

Habits can be used to explain recurrent behavior, but solely on individual level. When we want to explain recurrent behavior on group or organizational level we have to use a different concept: that of customs. Customs function as collective understanding on 'how things are done here'. When I for example take a nap every day after dinner, it is a personal habit. When it is normal for everyone in a country to take a nap after dinner (i.e. a siesta), it is a custom. The specific behavior that arises from customs is not based on consideration but on appropriateness: participating in a siesta is not particularly a deliberate choice but 'just normal'. A link can be made between customs and culture, defined as undecided decision premises. Both refer to implicit, undecided ways of doing things and have to be practiced in order to exist.

According to Simon, habits and customs also have an *artificial*, organizational counterpart: routines. Also routines do not refer to recurrent behavior themselves but can be used to explain this behavior. Simon defines routines as follows: *"If a formal criterion were needed, it might be said that a matter has become part of the organization routine when it is settled by reference to accepted or approved practices rather than by consideration of the alternatives on their merits."* (Simon, 1947, p.100). So again goal-oriented consideration is exchanged for action that is seen as appropriate or approved, without critical reflection. Routines are organizational embedded understandings that refer to *"how to do things for at least a period of time."* (Simon, 1947, p.100). More specifically do routines refer to performances that require certain proficiency; they are made artificial (are embedded) for a reason: routines themselves result from decisions.

Overall, members of organizations make decisions by synthesizing personal and organizational premises, so also based on habits, customs and routines. Though organizational routines are artificially introduced as goal-oriented mechanisms, they contain a risk of losing reflection. Just like frozen habits routines can become frozen routines. Philosopher René ten Bos emphasizes, based on Max Weber's explanation of bureaucratic organizations, that individuals in these bureaucratic organizations are continuously involved in work processes that are based on rule following. As a result, individual workers are not interested in how thing can be done totally different; their attention is solely given to the refinement of the current system (2015). The incorporation of institutional premises (rule following) and a focus on those options that fit the current system, lead to a selective focus on the preservation of the system, even when the system itself produces sub-optimal results. This is enhanced by both customs and routines that depend on a common understanding of appropriate selections.

The inclination to maintain and optimize the current system in bureaucratic organizations is something that is also noticed in practice by Erik Gerritsen, the former director of Youth Care Amsterdam (2015). In his attempt to reform his youth care organization he observed an inclination by his professionals to exclude options in their primary process because the professionals *assumed* that selecting these options was not possible. For example: they selected sub-optimal youth care options because they assumed that financing the most optimal option was not possible given the current financing system. Even with organizational backing (which can be seen as a new organizational premise) this inclination proved to be persistent. Selecting sub-optimal youth care options was an approved practice in the organization and a frozen routine.

### **| 3.2.6 Integrating Simon and Luhmann**

In the first paragraph of this chapter we introduced organizations as experimenting systems. In this second paragraph we added an understanding of organizations as social systems based on the theory of Luhmann and Simon.

Organizations are understood as self-producing and self-maintaining systems. Organizations consist of decisions as specific communications: the communication of a selection as a selection. According to Luhmann these decision can be attributed decisions: behavior in the organization that is treated as a decision (a selection). What makes these decisions interesting for organizations is that they refer to fundamental organizational activities: primary process activities and regulatory activities. This will be further elaborated in paragraph 3.4. For now it is enough to note that experimentation and decision-making are inseparably connected: decisions are made about the object of experimentation.

As in every autopoietic system, in order to enable the (re)production of the system, the production of elements needs to be restricted by a structure. In organizations, the organizational decision premises guide the production of decisions. These premises therefore play an important role in both the theories of Luhmann and Simon. Organizational decision premises structure the decision-making process in two ways: (1) they limit the range of options that can be recognized as a meaningful decision and (2) the premises provide tools to assess the individual options and help us to create a hierarchy of decisions. As a result the decision premises provide direction and make decision-making less complex: not everyone has to decide about everything. Consideration is (partially) exchanged for presuppositions that are accepted as givens.

The decision premises can be further understood based on three distinctions. First of all difference between value and factual premises, which refers to the subject of the decision premises. Value premises contain ethical givens that refer to the normative side of decision-making. The factual premises refer to the achievement of goals and the required factual observations. The second distinction is between individual and institutional premises. As we have seen it is the role of the organization to let individuals incorporate the institutional premises in order to create unity and coordination through the organization. As a result every decision is made based on a whole of synthesized personal and institutional premises. Last we have seen a difference between decided and undecided premises. This difference refers to the way the premises themselves can be changed. Decided premises directly result from decisions and therefore from experimentation in the organization. Since these premises are the result of decisions, they can be introduced, changed or ended by new decisions. Undecided decision premises refer to less controllable organizational elements like culture. Despite their substantial influence on decision-making they cannot be changed directly by means of decisions.

Beside the premises aimed at purposive behavior, decision premises aimed at appropriate and approved behavior need our attention. On the non-institutional side we have seen habits and customs that refer to an individual or common understanding of 'how things are done here'. It is essential to understand that they have not been purposively introduced by the organization. On organizational level we find routines as artificial premises that refer to embedded understandings of how to do things for at least a period of time. Therefore routines refer to organizational activities that are aimed at performance: routines themselves are the result of goal-oriented decisions. Routines however risk to produce decisions that are based on the logic of appropriateness. This is interesting because the logic of appropriateness replaces the logic of consequence, which in turn affects the assumable core of experimentation. When decisions according to experimental activities (transformation processes activities and regulatory activities) are based on (frozen) routines, it is not a goal-oriented consideration that determines which option to select. Instead it becomes a selection based on what is accepted and approved; on how it is used to be done. The logic of consequence returns when routines themselves are (re)considered for their contribution to goal achievement: reflection is needed to break the risk.

The logic of appropriateness also influences the organizational risk that accompanies satisficing. When you are not able to select the most optimal option (as a result of bounded rationality) and you settle with a sufficient option, the logic of appropriateness then is a functional criterion. In other words: when you know the selection is approved in the organization it becomes a safe or legitimized selection. Consequentially the concept of satisficing, which is in itself based on the logic of consequence, gets influenced by the logic of appropriateness.

Overall, where decision premises enable decision-making and make decision-making less complex, they also might contribute to sub-optimal selections, routines and performances. As an organization you might stick in a process of self-production based on sub-optimal routines and 'safe' and 'approved' decision premises. This can lead to missing valuable alternatives due to decision premises that restrict decision-making too well or in a wrong way. What is needed is a further understanding of how the results of organizational experiments themselves are embedded in the organization: what is the influence of the experiments on decision premises? This will be elaborated in the next paragraph.

### | 3.3 Organizations as learning systems

The third step in this chapter is aimed at understanding organizations as learning systems. Given our understanding of organizations as experimenting and social systems, we will see that the learning character of organizations complements our overall understanding of organizations. This paragraph is based on the theory of March on organizational learning. March states the importance of routines in organizational learning. In addition the theory of Feldman and Pentland will be discussed since they provide an alternative understanding of learning and routines. In the last subparagraph the conceptual relation between experimentation and learning will be made explicit.

#### | 3.3.1 March on organizational learning

James March is interested in organizational behavior in general (Cyert & March, 1963). One of the topics he further elaborates in his work is organizational intelligence (March, 1999). According to March (in collaboration with Johan Olsen) this intelligence is built on two processes: rational calculation and learning from experiences (March & Olsen, 1975). Rational calculation here refers to the selection of alternatives and fits the elaboration of experimenting and decision-making in the previous two paragraphs. By learning from experiences is meant the usage of experiences of experiments in order to improve future decision-making. Therefore organizational learning is no counterpart of experimenting, it is an additional process that enables the embedding of the experimental results. Experimenting and learning should be seen in connection.

March and Olsen state that with regard to rational calculation there have been made numerous remarks: they directly refer to our limited ability for rational decision-making as argued by Simon. But as March and Olsen continue their argument, also our ability for organizational learning is constrained by our cognitive and evaluative limits (March & Olsen, 1975). Learning is not the same as simple and rational adaption of experimental results. Ideally (from a rational perspective) people act, observe the consequences of their behaviour, link conclusions to those consequences and determine which implications there are for future decisions. Adapting experiences is then equal to the rational embedding of implications in the organizations.

Just as with decision-making, in practice our rational learning ability is limited. Partly this is due to our own cognitive limits, partly to our environment. A clear understanding and embedding of our experiences requires for instance accurate and complete information and understanding of the event, the ability to make correct inferences and a stable environment in order to flawlessly draw future implications. But given our own cognitive and evaluative limits and the dynamic character of our environment March and Olsen argue that understanding and embedding our experiences requires interpretation, something we do even when we are not aware: *"Individuals try to make sense of their experiences, even when that experience is ambiguous or misleading and even when that learning does not affect organizational actions."* (1975, p.168).

When we accept that we are not able to perfectly adapt our experiences, this has implications for our understanding of organizations as experimenting and learning systems. The question then is how do organizations improve their decision-making based on experiences? In a later article March collaborates with Barbara Levitt and together they provide an alternative perspective on organizational learning

that might be seen as ‘bounded rational learning’ or ‘bounded adaptability’. In their understanding of organizational learning Levitt and March pursue the argumentation of Simon on bounded rationality.

According to March and Levitt learning in organizations can only be understood as routine-based, history dependent and target oriented (1988; March, 1999). The routine-based element refers to the influence of the logic of appropriateness and the felt need for legitimacy. According to March and Levitt members of organizations will therefore try to match procedures rather than calculate the alternatives. The history dependent element of organizational learning implies that it is not necessarily the future that guides decisions but rather interpretations of the past. As a consequence of this retrospection, learning has not a revolutionary but rather incremental character: learning takes place in small steps, based on previous experiences. The last element – target oriented – meets the same explanation as target oriented decision-making. Central in organizational learning must stand the fundamental activities that make an organization an organization: the primary process activities and the regulatory activities.

Based on this explanation, March and Levitt define organizational learning as: *“Organizations are seen as learning by encoding inferences from history into decisions that guide behavior.”* (1988, p.320). So an organization is learning to the degree that it is able to incorporate the results of previous experiments in its organizational routines. In other words: an organization is learning when it’s able to guide future behavior based on lessons drawn from experience. March and Levitt emphasize that the routines they refer to must be seen as independent of individuals. In line with Simon they see routines as organizational givens (decision premises) that are transmitted to individuals. So even when members of the organization get replaced, the routines have the potential to continue in their existence. Therefore they function as a recorded collective memory.

Here I need make a remark according to the concept of routines. According to March the concept of routines refers to both artificial routines (rules, procedures, etc.) and informal routines (beliefs, frameworks, cultures, etc.) (March, 1999). In terms of Luhmann and Simon we could argue that when March speaks about organizational learning he refers to the incorporation of experiences in both the decided and undecided premises; in habits, customs and artificial routines.

Given the understanding that our learning ability is bounded and based on routines, March states that learning organizations have to incorporate lessons from their experiences into their organizational premises. How organizational incorporation of experiences in turn correlates with experimentation is subject in one of his later articles (March, 1991). Core in this argumentation is the tension between the exploitation of old certainties and the exploration of new possibilities (March, 1991). The essence of exploitation is the refinement of the current system; the adjustment of the current system in small steps. This fits the understanding of learning as a history dependent and incremental process. The exploration of new possibilities is aimed at finding new alternatives. This contains more unpredictability and fits the common understanding of innovation or fundamental renewal. Given the assumed difference in uncertainty that is involved in both exploitation and exploration, organizations tend to rely on exploitation alone. But, as March states: *“Systems that engage in exploitation to the exclusion of exploration are likely to find themselves trapped in suboptimal stable equilibria”* (1991, p.71). He even adds that without exploration organizations become self-destructive in the long run.

I want to emphasize that the distinction between exploitation and exploration is not exactly the same as the distinction between experimenting and not experimenting. In March’ his argument, exploration contains more uncertainty, but as follows from the argument of Achterbergh and Vriens, every decision in organizations contains a certain degree of uncertainty. So also the exploitation of old certainties can function as an experiment: for instance something that seemed to work for years cannot work tomorrow because the environment changes. From this argumentation it can be stated that the exploitation of old certainties might even provide a false feeling of safety. Both exploitation and exploration should be seen as forms of experimenting with a difference in assumed uncertainty.

In sum, the image of organizational learning as provided by March helps us to refine our understanding of organizations as experimenting and learning systems. First of all learning must be seen in the extension of experimentation, as the embedding of the experimental results into the decision premises. An organization is learning when its able to incorporate the experiences of former experiments in order to improve future decision-making. At the same time we must accept that also our learning ability is bounded rational. In order to deal with our limited rationality, our organizational learning has become routine-based, history dependent and goal-oriented. As a result organizational learning tends to be based on the logic of appropriateness, a selective retention of experiences and incremental refinement. Another consequence that derives from our limited rational adaptability is that organizational learning contains an inclination to rely on the exploitation of old certainties, at the cost of exploration of new alternatives. So in order to understand organizations as social systems that need to learn and experiment in order to survive, we must take into account the character of organizational learning. At the same time we have to ensure the experimental character of organizations in the sense that new alternatives must be included in the development process.

### **| 3.3.2 An alternative view on routines**

Based on March' understanding of organizational learning, we must conclude that in order to learn in organizations, routines as organizational embedded understandings of "how things are done here for a period of time" have to be included. As we have seen in the theory of both Simon and March routines enable decision-making and contribute to make decision-making less complex, but they have the potential to contribute to sub-optimal equilibria as well. In this paragraph the theory of Pentland and Feldman will be used as an alternative approach to organizational routines. Their argument is based on assumption that routines also have the potential to drive organizational change and organizational learning: routines have the potential to improve the organizational performance.

Feldman and Pentland start their argument by expanding the definition of organizational routines. They provide what they call a considerable agreed definition of routines as "repetitive, recognizable patterns of interdependent actions carried out by multiple actors." (2003). Though they agree to this definition, they also remark that this definition seems to confirm the relation between routines and inertia, inflexibility and the lack of agency: in their opinion this definition is not complete. Therefore they add to this definition the notion that routines must be seen as generative systems consisting of two related parts: structure (ostensive) and agency (performative) (Feldman & Pentland, 2003; 2005). Compared with the understanding of routines as provided by Simon and March, Pentland and Feldman make a fundamental mistake in their definition. By defining routines as patterns of interdependent action, they equate routines with actual behavior. As we have learned from Simon, routines (just like habits and customs) are premises that can be used to *explain* patterns of behavior. This difference is fundamental because when routines would refer to the actual recurrent behavior, the notion of routines as artificial embedding would fade. Besides, according to the definition of Feldman and Pentland there is no difference between customs and routines, which provides us a lack of conceptual clarity. The definition ignores the origin of routines as an organization specific phenomenon.

Let us take one more look at the definition of routines as provided by Feldman and Pentland. They state that routines are based on an ostensive and performative aspect. The ostensive aspect of routines is the abstract part that shapes the routine in the way we normally understand routines. It is this part of the routine that steers action and enables us to recognize certain patterns of behavior (Pentland & Feldman, 2008). The performative element of routines refers to the performance that is done by "specific people, at specific times, in specific places." (Feldman & Pentland, 2003). The performance of routine requires the application of the ostensive aspect in a specific situation. It is therefore that the performative aspect of routines requires an interpretation and an assessment of the situation and therefore consist an inherent need for agency and improvisation when new situations occur. Feldman and Pentland emphasize that for organizational routines to be routines, they have to contain both aspects. Without the ostensive, there is no patterned behavior, just behavior. And without the performative there is no action at all (Feldman & Pentland, 2003; Pentland & Feldman, 2008).

This understanding of routines as composed of an ostensive and performative aspect does not differ in a fundamental way from the explanation provided by Simon. Without the ostensive there is no explanation for recurrent behavior, without performance there is no behavior at all. You could argue that the ostensive refers to the decision premises (explicit or implicit) and that the performative refers to the actual decision that is being made. Again the definition by Pentland and Feldman does not help us to improve our understanding of organizational routines and organizational decision-making. The theory will therefore not be utilized further in this thesis, but will be seen as an illustration of an alternative approach to organizational routines.

### **| 3.4 Organizations as social systems that learn and conduct experiments**

In this last paragraph the experimental, social and learning character of organizations will be integrated. By integrating the individual perspectives a coherent understanding of organizations as social systems that need to experiment and learn in order to survive will be provided.

First the experimental and social character will be integrated. Thereafter the theory on the learning character of organizations will be added to this understanding. Then an overall understanding will be elaborated and illustrated with a model. Afterwards the practical implications of the understanding as provided in this chapter will be discussed.

#### **| 3.4.1 Integrating the experimental and social character**

First of all I will connect the experimental and social character of organizations as provided by Ashby, Luhmann and Simon. As stated in the introduction of this chapter I hereby rely on the explanation of Achterbergh and Vriens (2010).

First, based on the work of Ashby it must be concluded that organizations inevitably experiment. All the activities in the transformation process and the regulatory activities are experiments since selections between alternatives are always based on expectations and organizations have the imperative need to make selections. Ashby provides an *“effective method for the study, and control, of systems that are intrinsically extremely complex.”* (Ashby, 1958, p.6; Achterbergh & Vriens, 2010, p.168). It thereby teaches us that the object of experimentation refers to the three types of regulation and that organizational experiments themselves have to be regulated as well. Ashby’s method is based on the concepts of describing system behavior by means of essential variables, understanding that this behavior is influenced by internal and external disturbances and the possibility to control system behavior by means of regulatory actions. As we have seen it is essential to provide sufficient variety to the regulatory potential to deal with the variety in the essential variables that is caused by disturbances. In addition must be noted that Ashby provides a method for systems in general with a prescriptive aim: he tells us how to regulate general system behavior, not specifically organizations.

The social system theory of Luhmann, as a social character of organizations, is aimed at understanding how organizations function as social systems. Luhmann tries to *“clarify the processes of self-production of organizations as a particular type of social systems.”* (Achterbergh & Vriens, 2010, p.170). The process of self-production must be seen as the production of decisions by decisions (communications that communicate a selection as a selection), which is structured by organizational decision premises. These premises enable the recognition and connection of meaningful decisions. For Luhmann’s social system theory must be noted that it provides an organization specific description: it does not prescribe how to organize the self-production in organization or how to improve decision-making.

Achterbergh and Vriens state that both the cybernetics theory of Ashby and the social system theory of Luhmann are mutual complementary (2010). For Ashby prescribes the control of general system behavior, it does not tell us anything about the object of regulation. When we want to understand how organizations can be regulated, we can use the theory of Luhmann in order to increase our understanding of organizations as the object of regulation. At the same time can we use Ashby

to complement the theory of Luhmann. The social system theory is descriptive, it does not tell us how to improve organizational decision-making. Cybernetics can be used to increase our support of organizational experiments. In this way combining both theories provides an understanding that helps us to support organizations that conduct experiments.

Now we see the value of combining both theories, we can link them. The linkage of both theories is based on the notion that “(1) decisions may be or refer to objects figuring in the experiment and (2) as decision premises, selections regarding these objects, structure the production of decisions.” (Achterbergh & Vriens, 2010, p.173). This means that transformation activities and regulatory activities are both the object of decisions and that decisions regarding these activities function as decision premises. So the object of the experiments functions at the same time as input for the experimentation. This does emphasize the influence of decided premises on decision-making to the seemingly exclusion of undecided premises. This understanding is displayed in the figure below.

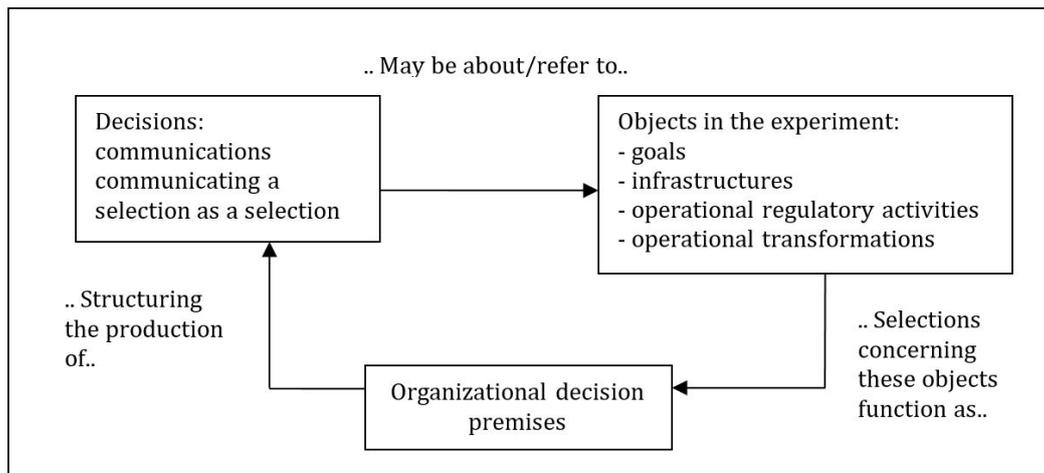


Figure 3.3: Decisions, decision premises and objects in the experiment (Achterbergh & Vriens, 2010)

Beside the fact that the social character of organizations and the experimental character of organizations are intertwined, they are also mutually conditioning (Achterbergh & Vriens, 2010). This means that the social character of the organization determines which experiments are possible and meaningful on a given moment. It also provides the possibility to reflect on the outcome of the experiments. The experimental character of the organization provides meaning to the self-producing process in the organization; the ongoing experimentation enables the organization to provide meaning to its environment.

### 3.4.2 Organizational learning is no automatism

Given the theories that are elaborated in this chapter we can further develop our understanding of the model that is provided by Achterbergh and Vriens. The theory of Simon and the theories on the learning character of organizations teach us that decision-making is more complex than might be assumed based on the presented model. Organizational learning and organizational development are certainly no automatic results of accumulated organizational decision-making. The theories on the subject of organizational learning and development will therefore be used to explicate and refine the model as presented above.

The theory of Simon can contribute to a deeper understanding of the decision premises and their influence on decision-making. Also Simon provides an organization specific model, describing organizational decision-making. Simons model is aimed at rational decision-making and he describes how organizations try to reach as much rationality as possible.

Simon starts his argument with the notion of bounded rationality. Our rationality in decision-making is bounded because of our own cognitive limits to identify and evaluate all the alternatives and the notion of complexity in decision-making (decision-making contains both value and factual aspects). As a result we need to create a hierarchy of decisions and we need to make decision-making less complex. Given our bounded rationality, decision premises are the essential tools for us to make decision-making less complex and to optimize rationality.

Decision premises must be seen as basis for decision-making and, given the earlier provided model, as the basis of experimentation. As we have seen in paragraph 3.2 these premises can be understood by means of different distinctions (fact-value; institutional-personal; decided-undecided), though these distinctions don't exclude each other. I will provide an example to explain how the multiple aspects of decision premises are interconnected.

In chapter two we discussed the transition of conditional programs to goal programs in municipal organizations: from a 'when you have a broken leg, you receive two hours of home care' regulation to a 'everyone needs to be as self-reliant as possible' regulation. First of all, both programs function as decided decision premises. These programs result from decisions and can be changed by means of decisions. Secondly must be noted that the conditional program highly depends on factual premises: when you can observe a broken leg (true or false) you react by applying two hours of home care. Normally the same can be said about goal programs: you have to select the best mean to achieve a given goal. However, because this goal program is more complex (when is someone self-reliant?), it allows/demands more influence of personal premises than the former conditional program. The fact that both programs are decided institutional programs does not exclude the influence of undecided decision premises. The execution of both programs is accompanied with cultural customs, habits, conceptualizations and routines. It matters for instance how I personally, and we collectively, conceptualize civilians. And how does the organization deal with two programs that conflict? Therefore the distinctions refer to different aspects of the decision premises but altogether they have to potential to explain why for instance a specific program works differently in municipality A than in municipality B.

Based on this explanation of decision premises it can also be stated that it is too simple to exclude the mutual influence between experimentation and undecided decision premises. Though these premises are not directly changeable, they are definitely impressionable. Take for instance the undecided premise of culture that can be influenced by dismissing someone in the organization for making a mistake. As an undesired/uncalculated effect this can alter the way the organization deals with its own decision-making and as a result other organization members can become cautious regarding 'bold' decisions. Or imagine a municipality with a shared conceptualization of the environment wherein all unemployed are seen as lazy. Even when this is not a decided premise, this conceptualization influences the way decisions are made regarding the primary process. Formal decision in turn can influence the undecided conceptualizations.

Besides habits, customs and conceptualizations, we have seen in the theories of Simon and March, that routines, as a specific kind of premises, play an important role as the artificial embedding of a shared understanding of how to do things for at least a period of time. The introduction of routines is a decision: a routine is introduced in order to achieve a certain goal. So routines themselves are decided decision premises but they contain risk to produce decisions based on the logic of appropriateness. Without goal-oriented reflection, routine decisions might depend on selections of approved alternatives. Thereby do organizational routines, just as other decision premises, produce decisions that refer to both operational transformation activities as well to regulatory activities. This implies that routines can be introduced regarding all regulatory levels.

The influence of both decided and undecided decision premises on decision-making contains a risk for organizational development. As stated above, without reflection habits, customs and routines might become frozen. Decisions based on frozen decision premises are no longer goal-oriented considerations

but approved or appropriate selections. And without reflection, there is a risk that organization members settle with sub-optimal results and equilibria to the exclusion of organizational development, just because it is how it is done here.

As we have seen in the theory of March, an organization is learning when it becomes able to incorporate the experiences of former experiments in order to improve future decision-making. Given the model provided by Achterbergh and Vriens this implies that you have learned as an organization when you become able to incorporate the experiences of the former experiments in the decision premises in order to improve future decision-making. From this point of view the model of Achterbergh and Vriens refers to both experimentation and organizational learning at the same time: experimentation and organizational learning refer to different aspects of the same process.

Understanding organizational learning as being able to adapt your decision premises seems straightforward for decided decision premises. Decisions regarding decided decision premises do directly function as decision premises. But the incorporation of experiences into decision premises also includes incorporation of experiences into undecided decision premises. Therefore a learning organization must be able to change its own habits, customs and beliefs based on experiences. Given their artificial status, routines are in principle directly changeable, even when routines themselves do not produce decisions based on (re)considering their contribution to goal achievement.

As elaborated in the theory of March, organizational learning is based on bounded rational adaption. This leads to a learning process that is routine-based, history depended and target-oriented: organization members try to match procedures rather than calculate the alternatives. Based on this line of thought, you could argue that an organization might need routines in order to embed experiences into routines. Looking back at the model of Achterbergh and Vriens you see that you might need at least two feedback loops in order to change routines: first, there needs to be a decision based on routines producing an unsatisfying result, after which there must be reflection leading to a new decision that changes the routine. This leads to a double feedback-loop that can refer to routines in both the operational transformations and all levels of regulation.

In the same line of thought March emphasizes two different forms of organizational decision-making: the exploitation of old certainties and the exploration of new alternatives. Because organization members try to avoid uncertainty and insecurity, they tend to make choices that are aimed at the refinement of the current system, though both processes are necessary for organizational development. As March argued both process don't exclude each other: an organization needs both exploration and exploitation in order to survive. By means of exploration new alternatives are tested, the results of these experiments need to be embedded in the organizational routine.

Both these feedback loops—exploitation and exploration—can also be found in the model of Achterbergh and Vriens. In the definition of Achterbergh and Vriens both processes function as experiments: every selection contains uncertainty since every selection is inevitably based on expectations; therefore you can never predict the outcome with certainty. As argued earlier the concept of exploitation of certainties is based on the assumption of certainty, but the experimental character is in these decisions not excluded. Also a decision based on apparent certainties and appropriateness is in practice an experiment given the social and dynamic environment.

In sum, the model of Achterbergh and Vriens helps us to understand how organizations as social systems relate to experimentation and learning. It provides insight in how organizations (re)produce themselves and how they are able to develop. But it also helps us to understand why it is difficult for organizations to improve themselves: organizations risk to contain frozen habits and customs and to produce frozen routines that enable appropriate based selections in order to make decision-making less complex. Thereby, not all decision premises can be controlled, incorporating experiences is difficult and there are different mechanisms that contribute to a collective settlement with sub-optimal equilibria. This is for example how it can be explained why organizational members are cautious for new explicit

experiments (the last experiment failed and some organization members got disproportionately blamed for it) or why a new policy program does not lead to desirable outcomes (practical experiences with this new policy program are insufficiently incorporated in the organizational routines).

### 3.4.3 An overall understanding

The model as provided by Achterbergh and Vriens functions as an adequate model to support our understanding. Especially when we recognize that the model refers to both experimentation and organizational learning; to both exploitation and exploration and to both goal-oriented and appropriate-based decisions. The experimenting and the social character are mutually complementary and mutually conditioning. The learning character matches the interaction between this social and experimental character but also provides a challenge; it shows us that organizational learning and organizational development is no automatic result of experimental decision-making structured by decision premises. Though premises enable decision-making, they not automatically enable development.

For organizations to learn - in order to improve their own decision-making - organizations need to make decisions regarding the objects of decisions. These are the decisions that refer to the operational transformation and the regulatory activities that are used in order to regulate their experimentation, to alter their mechanism and to set and adapt their goals. Besides these fundamental activities, an organization needs to critically review its own habits, customs and routines that also refer to these operational transformations and regulatory activities. In other words: organizations need to be able to critically review their own decision-making in order to enable improving decision-making.

Based on this logic, I adapted the model of Achterbergh and Vriens by making the artificial routines that refer to the objects of experiment explicit. This contributes to the notion that decisions can refer to both the objects of experimentation themselves or to the artificial routines that refer to these objects of experimentation. Also is the influence of experimentation on habits and customs become part of the incorporation of experiences into the decision premises. Because decisions are not automatically incorporated in undecided decision premises, I did choose to formulate the incorporation of experiences as 'might be incorporated in'. When experiences are not incorporated in the organizational habits, customs and environmental conceptualizations, the existing decision premises retain. The adapted model is displayed in figure 3.4.

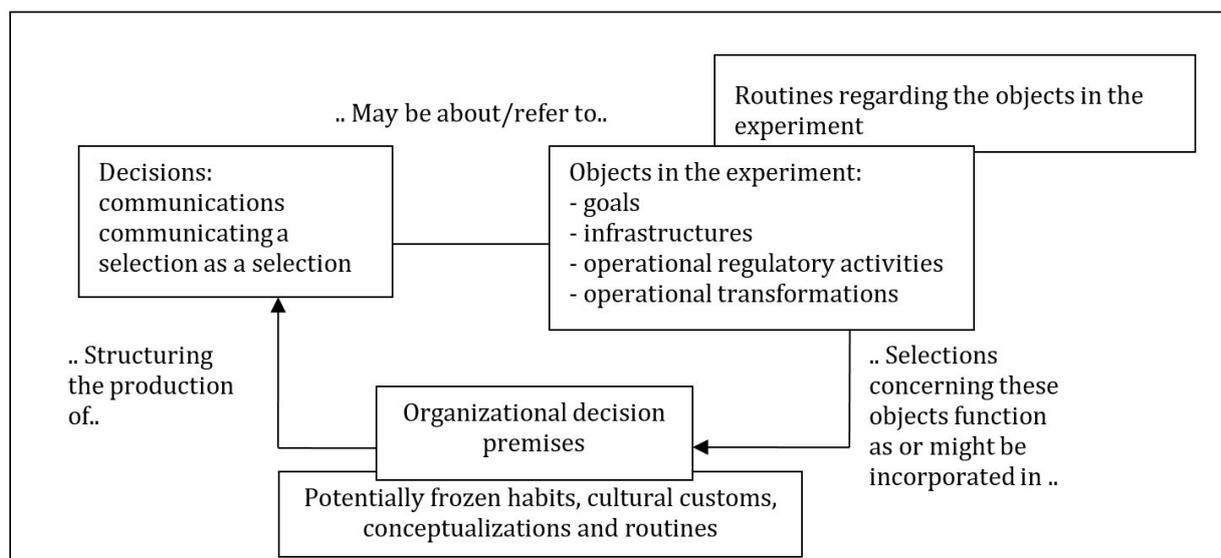


Figure 3.4: adapted model: decisions, decision premises and objects in the experiment.

Based on this adapted model we can formulate two additional requirements for the theories that will be elaborated further in this thesis. Beside that a theory must fit the features of municipalities as a specific class of organizations, the theories first of all must provide principles that help us organize an

organization (design an infrastructural mechanism) in such a way that it becomes able to perform both the primary transformation and regulatory activities. The second requirement for a useful theory is that it must help us enable an organization to critically review its own decision-making, which also refers to these operational transformations and regulatory activities. An organization must be able to overcome 'frozen' habits, customs and routines. In other words: a theory must help us to enable organizations to crucially review their own decision-making. When an organization is able to perform all the activities in an adequate way and is able to prevent sub-optimal equilibria by means of reflection, it is able to experiment and learn in a valuable way.

#### **| 3.4.4 Practical implications**

In this last subparagraph of this chapter some reflections regarding the practical implications for the discussed theory will be elaborated. The focus thereby will be on the social, experimenting and learning character of organizations.

First of all we can apply the understanding of organizations as experimenting and social systems to municipalities. Municipal organizations can also be understood as self-producing and self-maintaining social systems. Therefore they consist of decisions as specific communications: communicating a selection as a selection. These decisions refer to the primary transformation and regulatory activities. The process of decision-making is in turn structured by organizational decision premises.

The decision-premises as enabling constraints have their own operating in municipalities. As explained in chapter two, the characteristic features of municipalities restrict the primary process in multiple ways. A link can be made between the features as discussed in chapter two and the elaboration of municipalities as social and experimenting systems in chapter three. For instance, legal authority in municipal organizations is a strong driver of the dominance of institutional premises over personal premises. Based on Max Weber's notion of impersonal bureaucracy, the influence of personal premises on decision-making should be banned as much as possible. Rational, objective and impersonal decision-making should be the basis of every bureaucracy: legitimacy based on rules. However, Street Level Bureaucrats face a dilemma between decided premises and rules as a source of legitimacy and situations that ask for deviation or customization.

The link between the features of municipal organizations and the functioning of decision-premises can also be used to explain the difficult situation of Street Level Bureaucrats. Discretion that is asked in performing daily activities is in contrast with the status of institutional premises. When the need for discretion conflicts with rigid institutional premises, this causes disturbances that should be regulated. It is assumable that that SLB's that have to deal with a conflict between a need for discretion and rigid institutional premises find handhold in undecided premises that refer to a shared understanding of how things are done here.

This can be illustrated by showing how decision-premises function in the example of the breakthrough budget or 'maatwerkbudget' in both Rotterdam and Zaanstad: though the budget provides caseworkers in both municipal organizations the same opportunities to intervene in deadlock cases, we see in Rotterdam an underutilization of 90% of the budget where the budget in Zaanstad is a success and an input for new exploration.

This maatwerkbudget can be seen as a conditional decision program: it both enables (allows) specific decisions and directs the decisions: when condition X occurs, you perform Y. It is a mandating of authority to Street Level Bureaucrats by means of institutional premises. Beside interpreting these budgets as decision programs, they can be analyzed by their additional routines. In Zaanstad it becomes a normal routine – as a procedure – to use the budget when you think it can cause a breakthrough, i.e. that it contributes to a desired output of the primary process. In other words: employees accept that it is approved to apply budget when you believe it is necessary to create a breakthrough. In Rotterdam it

is the routine to use the budget as a 'last saving for a case'. That in turn influences undecided premises like habits. Though the formal status between the two programs might not differ that much, what is assumed as approved and correct usage than depends on both undecided decision premises and routines.

The way municipal organizations deal with their own decision-making is linked to organizational learning: are you able to incorporate experiences of experiments into your decision premises in order to improve your future decision-making? This would also imply that the legal authority, translated into institutional premises, is adapted based on individual experiences.

In the next two chapters I will elaborate the two central theories in this thesis: Sociotechnical System Design and Experimentalist Governance. I will thereby discuss how those theories can enhance municipalities in performing the primary transformation and regulatory activities (experimenting) and in reviewing its own decision-making in order to improve future decision-making (learning).

## Chapter 4 – Sociotechnical System Design

The aim of this chapter is to provide an understanding of how to organize an organization in such a way that it becomes able to experiment and learn in an adequate way. As stated in chapter 3, it is the infrastructure of the organization that enables the performance of the organizational activities. That means that there are human resources that by means of a division of work and with help of technology perform these activities. The question is how to design an infrastructure that is able to perform all the activities in a good way.

Central in this chapter is the Sociotechnical System Design [STSD] theory of de Sitter. This design theory will help us to understand how to organize an organization that is able to perform the central activities and is able to deal with complexity. As an introduction to the theory of de Sitter a couple of theoretical steps have to be discussed; STSD is based on an accumulation of theoretical insights. First a short recap of Ashby's theory on cybernetics will be provided. Second, the theory by Beer will help us understand how to deal with variety from a functional perspective. Third, theory by Simon will help us understand how to attenuate disturbances, which is complemented by the theory of Thompson. Then, in the fifth paragraph the theory of de Sitter will be elaborated. Last, the practical implications of the system design theory will be discussed.

### 4.1 Ashby's law of requisite variety

The basis for STSD lies in cybernetics. Therefore it is necessary to provide a short recap of Ashby's theory as presented in chapter 3. The goal of cybernetics is to both describe and to influence the behavior of complex systems.

In order to control system behavior it is first necessary to describe desired behavior, which is done by identifying essential variables and their norm values. As long as these essential variables have a value that meets the range of norm values, the system produces desired behavior. This is illustrated in figure 4.1.



Figure 4.1: Understanding desired behaviour, based on Ashby (1958).

The theory of cybernetics states that the value of the essential variables can be influenced by internal and external input, called parameters. Roughly these parameters can be distinguished in disturbances and regulatory actions. As explained in chapter 3 the disturbances displace the value of the essential variables from their norm values; the regulatory activities are those activities that are applied in order to retain or restore the norm values.

In order to regulate system behaviour three regulatory activities need to be distinguished. First of all the selection of goals, which refers to the selection of essential variables and norm values. This form of regulation is called strategic regulation. The second activity contains the selection of a mechanism by which the goals must be achieved: regulation by design. The third activity contains those regulatory actions that are applied to deal with disturbances: the operational regulation. The regulatory activities are aimed at controlling the behaviour of the transformation process. The activities are displayed in the figure 4.2.

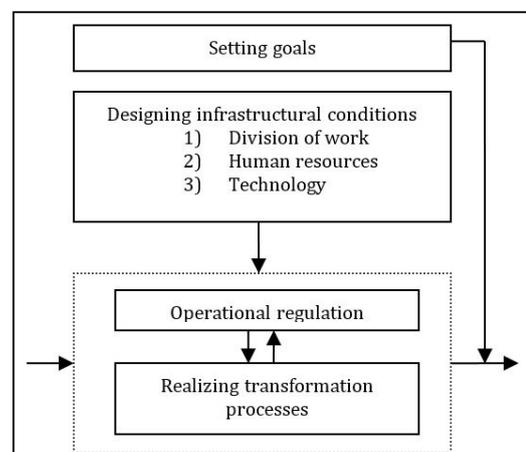


Figure 4.2: Regulation in organizations based on Ashby (1958)

The next step in understanding Ashby's cybernetics is answering the question: if we want to control complex system behavior, then how can we protect our essential variables from disturbances? Ashby's answer is based on his law of requisite variety. He shows that only variety in regulatory potential can deal with variety in essential variables due to disturbances. Based on this law of requisite variety two options to control system behavior remain: decreasing the number of variety due to disturbances and increasing the variety in regulatory potential.

## **| 4.2 Beer: how to deal with complexity**

The second element that is needed to introduce the design theory of de Sitter, is Beer's theory on how to deal with complexity. Beer is also inspired by the theory of Ashby, though where Ashby speaks about systems in general, Beer specifies his theory to organizations. The theory of Beer provides functional design principles; it tells us what an organization needs to be able to in order to survive. However, it does not tell us how to design an organizational structure that is able to perform these functions (Achterbergh & Vriens, 2010).

Central in the theory of Beer is the concept of viability; which can be understood as 'being able to survive' (Achterbergh & Vriens, 2010). Every organization is viable as long as it is able to maintain a separate existence and in order to remain a separate existence it has to deal with complexity (Beer, 1995). In the first subparagraph I will discuss the three strategies to reduce complexity and in the second subparagraph I will discuss the five functions that an organization needs to perform in order to remain viable.

### **| 4.2.1 Strategies to solve complexity**

Beer introduces complexity in terms of variety (1995). He states that the complexity of the environment is always larger than the complexity of organizations, and in turn that the complexity of the organization is always larger than the complexity of the management. In this explanation complexity directly refers to the level of variety. This provides us a fundamental problem. Given Ashby's law of requisite variety, only variety in regulation can compensate variety caused by disturbances. But when the variety in the environment is larger than the variety of organizations, then how can organizations survive as separate entities? Take for example the need for information: sufficient information is needed to set goals, but when the environment contains too much information it leads to a lack of clarity. The question then is: how do organizations and managements deal with this complexity?

According to Beer, organizations and managements need strategies to deal with the larger complexity in the environment and the organization. Somehow this larger variety needs to be reduced and regulated. Beer provides three strategies, whereby he relies on the theory of Ashby (Beer, 1995; Achterbergh & Vriens, 2010). The first strategy refers to the formulation of goals. Beer states that not every aspect of the environment is relevant for an organization. By means of formulating goals and selecting essential variables you can determine which part of the environment is able to cause disturbances that actually affect your essential variables. So by formulating goals, the complexity of the environment is reduced to the complexity of the relevant environment. The same counts for selecting goals by the management.

The second strategy directly derives from Ashby's law of requisite variety. As stated in the previous paragraph, system behaviour can be controlled by decreasing variety due to disturbances and increasing regulatory variety. According to Beer the second strategy therefore is the attenuation of variety caused by disturbances and amplification of regulatory potential. There is a necessary sequence in these two steps. By attenuating disturbances as much as possible first, the amplified regulatory potential only has to deal with the remaining variety caused by disturbances. Spilling effort and energy on regulating disturbances that also can be attenuated is not rational.

The third strategy is based on recursion; the notion that a viable system can contain a set of viable subsystems. Each viable subsystem needs to be able to behave like a viable system: it needs to be able to set goals, to attenuate and amplify and be able to contain viable subsystems itself. By performing these activities the viable subsystem reduces the complexity for the viable system as a whole. Therefore a viable subsystem needs certain autonomy to perform its own activities; especially goal setting requires freedom of decision. At the same time it's a challenge to maintain unity between the viable subsystems: the autonomy on a lower recursion-level needs to be accompanied with a certain restraint in order to maintain synergy on the whole system level. For a more fundamental elaboration of the concept of recursion see Beer (1995) or Achterbergh and Vriens (2010).

#### | 4.2.2 Beer's Viable System Model

The three strategies help organizations to decrease complexity, but they are not sufficient for functioning as separate entities. Beer states that an organization should be able to perform five separate functions in order to remain viable. Central in these functions stands the ability of an organization to realize and adapt its goals (Beer, 1995; Achterbergh & Vriens, 2010). The first three functions are aimed at the realization of goals, the last three at the adaption of goals; the third function - control - fits both processes and can be seen as translating or connecting.

The first function is the primary activities of a viable system: the activities that add value and therefore constitute the 'raison d'être' of the organization (Achterbergh & Vriens, 2010). This function directly refers to the realization of organizational goals. An organization can consist of multiple primary activities; then every primary activity can be considered as a viable system in itself. As a consequence each primary activity needs to be able to perform all the five functions in order to remain viable. Here the functional model and the concept of recursion mutually reinforce each other.

The second function is the coordination of the alignment difficulties, disruptions and interdependencies between the primary activities. When for instance two activities depend on the same expert, coordination is needed to smoothen the process of realizing the goals by performing the primary activities. Because of coordination the primary activities are able to realize goals.

The third activity is control: it guarantees that the separate viable subsystems contribute to the realization of the goals of the viable system as a whole. Earlier we discussed the necessity to provide certain autonomy to all the viable subsystems. The control function is aimed at translating the overall goals to specific goals for the primary activities and at ensuring the realization of these goals and the integration of the individual goals to an overall goal. As a consequence this function is focused on the inside of the organization at this particular moment.

The fourth activity – intelligence- is not aimed at the realization of goals but at the adaption of goals. It is the task of this function to remark developments in the environment that are relevant for the organization and to translate these developments into plans for the organization. When intelligence is performed adequate, the organization becomes able to adapt its goals to the environment. Therefore the intelligence function is aimed at the outside of the organization.

Both control and intelligence are aimed at organizational performance but they apply an opposite perspective. The 'inside and now' of the control function versus the 'outside and then' of the intelligence function. The fifth function – policy – is aimed at coordinating the interaction between control and intelligence. The underlying assumption states that both functions have to discuss their needs. An organization becomes and remains viable as long as it is able to adapt its goals to the environment (as a result of intelligence) in a way that is feasible for the primary process (as a result of control).

Beer states that not every function should be performed on the same level of detail. For instance regarding the realization of goals, Beer emphasizes control by exception: *"the reason for this is that the primary activities are viable systems that should deal with their own complexity as much as possible."*

(Achterbergh & Vriens, 2010, p.206). However, low detailed control should be accompanied with high detailed audits to verify and falsify the low detailed image that is created in the 'command and report axis'. These audits then provide insights in bottlenecks and input for organizational development. The same applies to the relation between control and coordination.

In sum, the theory of Beer helps us to understand how organizations can maintain themselves as separate entities. In order to remain viable an organization needs to be able to realize and adapt its goals by means of the five functions. Thereby it can use the three strategies to reduce complexity: the limitation of the relevant environment by means of formulating goals, the attenuation and amplification of variety and the application of the concept of recursion.

#### **| 4.3 Simon: attenuation by means of 'nearly decomposable systems'**

Beer provided us a functional prescription of which functions and strategies an organization needs to perform in order to deal with complexity; it does not tell us how to perform these functions and strategies. Simon describes a specific strategy that is used by complex systems in order to deal with their complexity (1962). I will use Simon's insights to specify how organizations can attenuate variety (complexity) due to disturbances.

Earlier we elaborated the theory of Simon of organizational specific decision-making. In the article that is discussed here however, Simon speaks of systems in general. In his explanation how systems deal with complexity, he describes complex systems as systems with "*a large number of parts that interact in a nonsimple way.*"(1962, p.468). His central argument is that systems that have to deal with their complexity often have a structure of a hierarchy.

It is useful to provide a further explanation of what Simon means when he speaks of a structure of hierarchy. Simon distinguishes his concept of hierarchy from that of a formal hierarchy that is based on authority. He states: "*By a hierarchic system, or hierarchy, I mean a system that is composed of interrelated subsystems, each of the latter being, in turn, hierarchic in structure until we reach some lowest level of elementary subsystem.*"(Simon, 1962, p.468). Simon explains that hierarchy as a structure must be seen as an evolutionary character of complex systems. It is the structure of subsystems that provide stable intermediates that reduces complexity and enables the evolution of the system as a whole.

In the elaboration of the structure of hierarchy, Simon adds a property to these structures. Given the division into subsystems, Simon distinguishes interaction among subsystems and interaction within subsystems. This distinction is highly relevant for the behavior of the system as a whole. The amount of interaction corresponds with the strength of the dependency inside and between the subsystems. To understand how these interactions relate, Simon states that hierarchies should be seen as nearly decomposable systems, with a strong and frequent interaction within subsystems and "*in which the interaction among the subsystems are weak, but not negligible.*" (1962, p.474). Each subsystem should then be able to regulate its own subsystem.

This has two relevant consequences for the behavior of the system as a whole. First, based on the notion of nearly decomposable systems might be expected that on the short run the component subsystems behave independent of each other. After all, their interaction is weak. Second, on the long run might be expected that these component subsystems depend on each other in an aggregate way. There must be something common that makes the subsystems part of a whole. Here must be noted that this corresponds with Beer's explanation of recursion: each subsystem needs autonomy in order to function as a system, but at the same time this autonomy needs to be restricted in order to maintain unity on the whole system level.

The conclusion based on this explanation is that complex systems tend to rely on hierarchal structures, which implies that a complex system contains subsystems in order to deal with complexity.

This corresponds with Beer's concept of recursion in so far that systems that are able to deal with complexity, must to be understood as hierarchal systems: containing a collection of subsystems that function as systems themselves. Based on the explanation of Simon we can add the notion of nearly decomposability to the notion of division into subsystems, which we defined as subsystems with stronger relations within components than relations between components due to dependency.

#### 4.4 Thompson: how to design nearly decomposable systems

Now we have seen that complexity is attenuated by nearly decomposable systems, the question is how to design these nearly decomposable systems. I will use the theory of Thompson in order to answer that question. He describes how organizational factors influence patterns of behaviour inside organizations (1967).

According to Thompson organizations should be seen as open systems that strive for closedness. Because organizations are open systems they have to deal with uncertainty caused both by their technologies (primary processes) and their environment. Given the elaborated connection between uncertainty, complexity and vulnerability, it becomes rational to strive for as much determinism and certainty in your organization as possible; i.e. to reduce complexity (1967).

Thompson describes different strategies that organizations use in order to decrease uncertainty caused by their primary process and their environment. There are links between these strategies and the earlier discussed methods to deal with variety; for example between selecting a domain (the type of demand and population to be served; the type of services and products to be delivered) and the selection of a relevant environment and corresponding goals and essential variables. In this paragraph though I will solely focus on those strategies that refer to the design of nearly decomposable systems.

The design of nearly decomposable systems is an activity that involves the structure of the organization. Thompson defines a structure as "[the] internal differentiation and patterning of relationships." (1967, p.51). The question Thompson then asks is how to design a structure that facilitates the coordination of interdependent relations in the organizational primary process. He distinguishes three types of interdependencies with corresponding coordination types: pooled interdependencies that require standardization, sequential interdependencies that require planning and third, reciprocal interdependencies that require coordination by mutual adjustment.

Given the fact that the coordination cost increase from standardization to mutual adjustment, it is rational to "expect priority to be given to grouping in such a way as to minimize the more costly forms of coordination" (1967, p.57). Based on this expectation, Thompson formulates four propositions regarding the grouping of positions in the organizational structure. These propositions are displayed in figure 4.3.

P 5.1: Under norms of rationality, organizations group positions to minimize coordination costs.

P 5.1a: Organizations seek to place **reciprocally interdependent** positions tangent to one another, in a common group which is (a) local and (b) conditionally autonomous.

P 5.1b: In the absence of reciprocal interdependence, organizations subject to rationality norms seek to place **sequentially interdependent** positions tangent to one another, in a common group which is (a) localized and (b) conditionally autonomous

P 5.1c: In the absence of reciprocal and sequential interdependence, organizations subject to norms of rationality seek to **group positions homogeneously** to facilitate coordination by standardization

Figure 4.3: Proposition regarding the grouping of positions as formulated by Thompson (1967).

Yet, grouping interdependencies solely according to the propositions as formulated above does not provide a whole or definite design. It is for instance possible that groups of interdependent positions have to deal with other groups of interdependent relations. What is needed is grouping the first-order groups into higher-order groups. By clustering or combining these higher-order groups, a hierarchy in the organization is introduced.

Based on the propositions of Thompson we can conclude that in order to design nearly decomposable systems, it is necessary to look at interdependency relations. We can distinguish different kinds of these dependency relations that correspond with appropriate coordination mechanisms. In order to decrease the coordination costs, Thompson emphasizes a design sequence in which he starts with grouping at the micro level – first-order groups – aimed at the reduction of coordination costs. The design sequence continues by organizing higher-order groups, also based on interdependency relations. As a result Thompson prescribes a design process from micro to macro level.

#### | 4.5 De Sitter

The previous discussed theories teach us that in order to deal with complexity multiple strategies can and must be applied. They focus on organizational identity; the formulation, realization and adaptation of goals. In order to realize goals, attenuation and amplification of variety are required. Organizations dealing with complexity that want to attenuate complexity, should be organized in nearly decomposable subsystems based on interdependency relations.

Given these discussed theories we can continue with the STSD design theory. The theory of de Sitter provides us a specific design approach: it tells us how to design an organization that is able to realize and adapt its goals and that is able to deal with complexity. The elaboration of this theory will be based on both original writings by de Sitter (1994; de Sitter et al., 1997) and on the explanation of the STSD theory as provided by Achterbergh and Vriens (2010).

In the first subparagraph the concepts that are central in the STSD theory will be explained. Thereafter, de Sitter's understanding of essential variables will be illustrated, after which the central design principles will be elaborated, followed by the design parameters. In the next two subparagraphs the design of the production structure and control structure will be elaborated in depth. In the last subparagraph de Sitter's understanding of a learning organization is elaborated.

##### | 4.5.1 Introduction: organization structure as a division of labour

The theory of de Sitter is aimed at diagnosing and (re)designing organizational structures. These organizational structures must be understood as divisions of labour or as the way tasks are defined and coupled into a network of tasks (1994). In order to understand the design theory of de Sitter, we need to understand a couple of concepts that are central in his theory.

First we need a further understanding of organizational structures. In order to understand them as 'the way tasks are defined and coupled into a network of tasks', we first need to understand what a task actually contains. Therefore we have to take a step back and look at the transformation process (the primary process) as the core of organizational performances.

The transformation process can be understood as turning input into output. This definition of transformation is based on the definition of transformation of system behaviour as introduced by Ashby and as discussed in chapter 3. Because it is more specific, I prefer the following definition: "*realizing an end state by performing a particular transformation process*" (Achterbergh & Vriens, 2010, p.231). The logic behind this definition is displayed in figure 4.4.

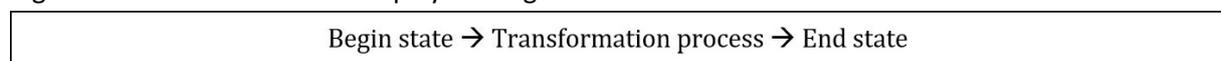


Figure 4.4: transformation process inspired by Achterbergh and Vriens (2010).

We must realize that these transformation processes— realizing an end state by performing a transformation process - are no indivisible entities: these processes can be decomposed into sub-transformations. Often it is even necessary to decompose because it is impossible or inefficient to perform a whole transformation process on your own. Achterbergh and Vriens provide an example of doing the dishes as a transformation process (turning dirty dishes into clean dishes) that can be decomposed into the sub-transformations of ‘collecting, cleaning, drying and storing’ (2010). However, when the transformation process is decomposed into sub-transformations, a sequence or network of dependency relations is created. When the dishes is not cleaned adequately, the sub-transformation of drying cannot be performed in a good way.

The decomposed transformation process allows us to define tasks as specific groupings of sub-transformations that are assigned to something or someone that is able to perform the sub-transformations. These tasks can be formulated at different levels of aggregation. It is possible to group and allocate tasks on individual level (my task is to collect and clean the dishes; it is my brothers task to dry and store the dishes), but for instance also on team level or department level. The tasks on individual level we can also call jobs.

Each transformation process has two aspects: operational and regulatory transformations. Their difference is important given our ambition to deal with variety. The operational task aspect of the transformation process refers to the realization of a desired effect, which can be interpreted as a desired end state (Achterbergh & Vriens, 2010). To realize an end state three activities need to be performed: making, preparatory and supporting activities. We will elaborate their differences on paragraph 4.5.4. In the example of doing the dishes all the activities like collecting and cleaning are operational tasks in the transformation process because they operationally contribute to the end state of clean dishes.

The regulatory aspect of the transformation process refers to the necessity to deal with disturbances in the operational aspect of the transformation process (Achterbergh & Vriens, 2010). De Sitter himself defines regulation as *“dealing with change”* (1994, p.13). The underlying assumption is that every change in a transformation is in principle a disturbance: it requires a reaction. There are different ways of dealing with these disturbances. First of all, solving the problem yourselves. From the network perspective you absorb the disturbance in your own workstation. Workstation here refers to the individual task in the network of tasks. When you cannot solve the disturbance yourselves, you need regulation in relation with the environment of the work domain. For instance by means of coordination and consultation between workstations. Coordination between workstations implies that you forward the effects of the disturbance, but before you do so, you have made sure that the expectations of your input in the next workstation are adapted. Consultation refers to dealing with change by changing the structure of the network of tasks (de Sitter, 1994).

Now we understand transformation processes as processes that can be decomposed into tasks, we can take a further look at organizational structures. As explained above, organizational structures should be defined as ‘the way tasks are defined and coupled into a network of tasks’. De Sitter adds to this definition: *“the operational and regulatory tasks are divided over people and machines”* (1994, p.91). In line with the distinction between operational and regulatory tasks, de Sitter distinguishes two sub-structures that together form the organizational structure: the production structure and the control structure.

The production structure is defined as *“the grouping and coupling of operational functions in relation to orders.”*(de Sitter, 1994, p.93; de Sitter et al., 1997). The production structure refers to the actual transformation process that is decomposed into sub-transformations that are grouped and allocated into tasks. Here must be noted that one element in the definition is not discussed yet: the relation between tasks and orders. This will be further elaborated together with the design of the production structure in paragraph 4.5.5, for now it is enough to know that tasks should be seen in relation with each other as long as they refer to operational transformations.

The control structure is defined as: “*the grouping and coupling of control functions.*” (de Sitter, 1994, p.100; de Sitter et al., 1997). Where the production structure refers to the operational transformation process, the control structure refers to the regulatory transformations. As a consequence, the control structure refers to the regulation of the production structure. The design of the control structure will be elaborated in paragraph 4.5.6.

#### 4.5.2 Essential variables

Given our understanding of organizational structures, we can ask ourselves: what makes an organization structure a good organization structure? Since de Sitters design theory is a prescriptive design theory, there must be some point of reference of what a good organization should contain, look like or be able to do.

In line with this argument, de Sitter states that you need to have criteria in order to assess an organizational structure. De Sitter provides these criteria through a collection of functional requirements (1994). These functional requirements can be seen as a collection of essential variables; in order to remain viable as an organization should keep the value of these variables in a range of norm values. An adapted overview of these requirements is displayed in figure 4.5.

	External functional requirements	Internal functional requirements
Quality of organization	Order flexibility	Short production-cycle time
		Sufficient product variations
		Variable mix of products
	Control over realization	Reliable production and production time
		Effective control of quality
	Potential for innovation	Strategic product development
		Short innovation time
Quality of work	Low levels of absenteeism	Controllable stress-conditions
	Low levels of personnel turn over	Opportunities to (1) be involved, (2) learn and (3) develop
Quality of working relations	Effective communication	Shared responsibility
		Participation in communications

Figure 4.5: overview of external and internal functional requirements (Achterbergh & Vriens, 2010)

In order to understand these functional requirements we should first of all take a look at the distinction between the external and internal functional requirements. According to de Sitter the external requirements are those requirements that should be seen as prerequisites that should be met in the relation with the organizations environment (1994). For instance without control over order realization, the customers will get disappointed, which will harm the organization on the long-term. The internal requirements can be seen as a translation of the external requirements. When the organizational structure is able to meet the internal functional requirements, the external requirements will be automatically met as well. So effective control of quality contributes to control over realization.

Based on this overview we can state that an organization structure is a good structure when it is designed in such a way that it contributes to the quality of organization, work and work relations. We call a design that contributes to all the three qualities an integral design.

The categories themselves (quality of organization, work and working relations) are no scientific concepts. Just like the functional requirements they function as a ‘rule of thumb’ in order to enable and smoothen a practical conversation. According to de Sitter “*this enumeration is not conclusive*” (1994, p.42). In practice there will remain an urgency to discuss and adapt these requirements.

Also the functional requirements themselves are no direct point of reference in the (re)design of the organization. Given the uncertainty of the future, it is impossible to know which functional requirements should be met on the longer run (de Sitter, 1994; de Sitter et al., 1997). The redesign itself should therefore be aimed at the ability to formulate and realize goals; an organization should be (re)designed in such a way that it becomes able to realize and adapt its own functional requirements.

Given their status as 'rules of thumb', it might be argued that for a service organization (as a counterpart of an industrial production organization) you might need to translate or specify both the external and internal requirements. Especially when you want to discuss the requirements in these organizations. In this thesis though, my focus will not be on the specification or translation of the functional requirements.

### **| 4.5.3 Aim of the design**

Now we have an idea of what a good organizational structure should be able to do, we can continue with the question of how to design a good organizational structure. In this paragraph I will discuss two aspects of the design principles of de Sitter: controllability as an overall design principle and the design sequence rules.

#### **| 4.5.3.1 Controllability**

The formulation of the functional requirements in terms of essential variables is no coincidence given Ashby's theoretical influence on de Sitter. In line with Ashby, de Sitter states that these essential variables can be affected by disturbances: you need regulatory potential in order to maintain the value of the essential variables in the range of norm values. Based on the logic provided by Ashby, de Sitter states that in order to realize a good value for the essential variables (functional requirements), an organizational structure should decrease disturbances (attenuate variety) and should increase its regulatory potential (amplify variety).

Given the earlier discussed theories we see that de Sitter speaks in terms of attenuation and amplification, based on the law of requisite variety: only variety in regulatory potential can deal with variety due to disturbances. In his design theory, de Sitter therefore emphasized the urgency to decrease the number of disturbances that are caused by the organizational structure and to increase its regulatory potential in order to deal with the remaining disturbances.

Instead of approaching disturbances solely as events that actually occur, de Sitter approaches disturbances to the essential variables with more nuances. He makes a distinction between the probability of occurrence of disturbances and the sensitivity to the dispersion of disturbances (de Sitter, 1994; Achterbergh and Vriens, 2010). Probability of occurrence refers directly to the probability of disturbances that occur in the production structure. Given the social character of organizations it is impossible to exclude disturbances and coincidence in social interactions: attenuation is therefore aimed at decreasing the probability as much as possible. The sensitivity to the dispersion of disturbances refers to scope of the effect of a disturbance. When you are able to solve a disturbance when it occurs there is little sensitivity but when you lack the right regulatory capacity, the disturbance gets dispersed through the organization.

So our first aim in the organizational structure design is attenuation and amplification. Now we have to ask ourselves: how do we design a structure in such a way that it decreases the probability and sensitivity disturbances. De Sitter emphasizes that the organizational structure itself is an important source of disturbances. Complexity in the structure causes disturbances and interferes in the ability to solve them. De Sitter distinguishes five structural characteristics that directly influence the probability and sensitivity disturbances (de Sitter, 1994).

The first three characteristics refer directly to the production structure as a web of interrelated tasks: the number of interfaces, the variability per interface and the stability of these interfaces (de Sitter,

1994). Each interface is a potential source of disturbances. When there are a high number of changing interfaces with a high degree of variability, the production structure is complex: the variability of these interfaces increases exponentially. In this explanation the external interfaces refer to interfaces from one workstation with other workstations. Note here that these characteristics refer to the probability of occurrence of disturbances.

The two other structure characteristics are the internal 'flexibility' and the external 'flexibility'; in Dutch called '*speelruimte*' (de Sitter, 1994). These characteristics refer to internal and external regulatory potential. When there occurs a disturbance but there is sufficient regulatory potential and the disturbances can be solved within a workstation or a limited range of workstations, the dispersion of the disturbance in the organization (and therefore the sensitivity) is limited.

So we can use structure characteristics in order to attenuate the probability of disturbances and we can amplify regulatory potential in order to limit sensitivity. In paragraph 4.5.4 we will further elaborate how to use structure characteristics in both diagnosis and design.

In the previous subparagraph we explained that the functional requirements tell us what an organization should be able to do, but that they don't tell us how to design such an organization. We need an aim that tells us how to design a structure that enables the realization and adaption of these requirements. According to de Sitter this brings us to the concept of controllability, which refers to "*shaping structural conditions for opportunities to formulate and implements goals*" (de Sitter et al., 1997, p.506). This aim at controllability can be seen as the overall design principle (Achterbergh & Vriens, 2010).

The concept of controllability is based on Ashby's law of requisite variety. An organization is controllable when the need for regulation matches the potential for regulation (de Sitter, 1994). As a consequence, the degree of controllability can be increased both by decreasing the need for required regulation and by increasing the potential for regulation. This is displayed in figure 4.6.

$\text{Controllability} = \text{potential for regulation} / \text{required regulation}$
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Figure 4.6: controllability, based on the definition of de Sitter (1994).

The implication of this concept of controllability is that you need a focus on both the production and the control structure. The production structure should be designed in such a way that the need for regulation becomes as minimal as possible (attenuation). The control structure should provide sufficient regulatory potential to deal with the remaining disturbances (amplification). Thereby is the redesign of the production structure a prerequisite for redesigning the control structure.

In conclusion: an organizational structure can be a source of disturbances because of complexity. We need to redesign the production structure to attenuate the occurrence of disturbances and we need to redesign the control structure to amplify sufficient regulatory potential in order to decrease the sensitivity to disturbances. By means of attenuation and amplification we can achieve controllability, which enables the organization to achieve and adapt its own goals.

### 4.5.3.2 Design Sequence Rules

Before continuing to the actual (re)design of the production and control structure we need one last design principle: the design sequence rules. Especially since de Sitter prescribes a different sequence of design steps than the earlier discussed theory by Thompson.

First of all, de Sitter strongly emphasized that the (re)design of the production structure should precede the design of the control structure (de Sitter et al., 1997). There is some common logic in this sequence rule: in order to (re)design the control structure you first need a notion of what needs to be regulated (de Sitter, 1994). Note here that there is a similarity with these sequence rules and the sequence rules

of attenuation and amplification as earlier discussed in the theory of Ashby. You need to decrease as much disturbances as possible (production structure) before you amplify regulatory potential in order to deal with the remaining disturbances (control structure). In turn this fits the aim of controllability: first decreasing the need for regulation and then increasing the potential for regulation in order to deal with the remaining need.

The second design sequence rule states that the production structure should be designed from macro to micro level (de Sitter et al., 1997). This sequence rule is based on the need for an integral approach: taking into account the organization as a whole. When you start (re)designing the structure on micro level you might as well end up with a complex solution on the macro level. In order to decrease the level of complexity in the whole organization you need to apply parallelization and segmentation. These concepts will be further elaborated in subparagraph 4.5.5.

The third and last sequence rule that is elaborated here states that the control structure should be designed from micro to macro level (de Sitter et al., 1997). The control structure should fit the production structure as much as possible; when you start the design of the control structure on macro level, you might interfere in the need for regulation on the micro level of the production structure (de Sitter, 1994).

The design sequence rules as presented by de Sitter conflict with the design sequence rules of Thompson. Thompson argued that a design of the production structure should start on the micro level by coupling interdependent relation. Though de Sitter emphasized the importance of these interdependent relations, he states that you can only influence the structural parameter values by designing the production structure from macro to micro level.

#### **4.5.4 Design parameters**

In the previous subparagraph we shortly discussed the relation between structure characteristics and the probability and sensitivity for disturbances. In this subparagraph we will further elaborate the relation between structure, disturbances and regulation. Therefore we will use the concept of design parameters: the 'core characteristics of a structure that influence the value of the essential variables' (de Sitter, 1994). These parameters can be used both to diagnose a structure and to design a structure that is able to attenuate and amplify, i.e. that is controllable. As a rule of thumb the organization structure is better when the values of the parameters are as low as possible (Achterbergh & Vriens, 2010).

Those who study the literature on STSD notice a variety in versions and interpretations of the design parameters. Even in his own work de Sitter applied different versions (See for instance the difference between de Sitter, 1994; de Sitter et al., 1997 and Achterbergh & Vriens, 2010). The reason for instance that Achterbergh and Vriens altered the parameters is because they wanted all the parameters to be reducible from a theoretical principle (2010). De Sitter himself used not only theoretical principles but also his practical experience to formulate the parameters. Here I will apply the original eight parameters since they provide the most detailed insight in the control structure, even though they are not directly reducible from one theoretical principle.

There can be made a distinction between the first three parameters (aimed at the production structure), the fourth parameters (link between production and control structure) and the last four parameters (all aimed at the control structure).

##### **1. The level of functional concentration.**

Functional concentration refers to "*the grouping and coupling of the performance functions with respect to orders*" (de Sitter et al., 1997, p.507). De Sitter distinguishes two extremes of functional concentration (de Sitter, 1994). When all the potential orders are coupled to all the subsystems, the parameter has a high value and structure is maximally functional concentrated. This leads to a structure

with a web of interfaces with a high variability that is needed to transform all the potential orders. When potential orders are coupled to their own subsystem the parameter has a minimal value and structure is functionally deconcentrated.

As stated above, the design parameters preferably have a low value since high parameter values contribute to the probability and sensitivity of disturbances. A high level of functional concentration leads to a high number of interfaces with also a level of variability. As a consequence there is a high probability of disturbances. Though this does not directly say anything about sensitivity, it becomes almost impossible to apply sufficient regulatory potential to deal with all the occurring disturbances. Therefore a functional concentrated structure is characterized by both a high probability and a high sensitivity of disturbances. In addition is a high functional concentrated production structure often accompanied with a centralized control structure, needed to 'manage' the complexity.

## **2. The level of differentiation in the operational transformation.**

According to de Sitter the operational transformation can be distinguished into three fundamental functions that in turn can be differentiated into different sub-systems: making, preparing and supporting. Making refers to the activities that are directly related to the actual transformation, preparing to those activities that are a condition for the actual making activities (e.g. purchase, planning) and the supporting activities refer to the activities that are indirectly related to the transformation process (e.g. financial activities, maintenance) (de Sitter, 1994).

When there is a high level of differentiation between the making, preparing and supporting activities, for example in different subsystems, this increases the number of interfaces. By now we know that a high number of interfaces contributes to complexity and a high probability of disturbances.

## **3. The level of specialization in the operational transformation.**

The third parameter that is related to the production structure is the specialization in the operational transformation. Specialization in the production structure implies a high level of separation between small sub-transformations. High levels of specialization fit the functional concentrated structure whereby a specialist is coupled to all potential orders. Just as with functional concentration this implies an increasing number of interfaces and therefore an increased complexity and probability of disturbances.

A high level of specialization in the operational transformation does not only contribute to a high probability of disturbances, it also leads to a high sensitivity. When you have a small task that you have to perform over and over again, there is not much opportunity to deal with a disturbance yourself. Specialization in small sub-transformations limits regulatory potential; the potential to 'absorb' disturbances is low and therefore the sensitivity to disturbances will become high.

The difference between the two extreme forms of the production are displayed in the figure below. On the left there is a functional concentrated production structure with high level differentiation between making, preparing and supporting and high levels of specialization. On the right there is a functional deconcentrated production structure with integrated tasks.

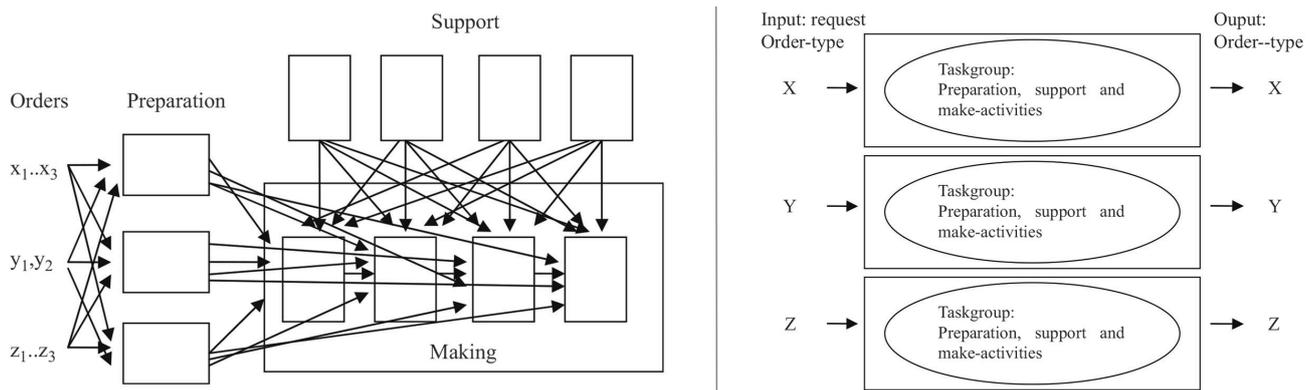


Figure 4.7: production structures with high and low level parameters (Achterbergh & Vriens, 2010)

#### 4. The level of separation between operational and regulatory transformations.

The fourth design parameter refers to the separation of operational and regulatory transformations. The separation is maximal when all the regulatory transformations are separated from the operational transformation, and for example are placed in different sub-systems. In practice this maximum separation would mean that if you perform your task and there is a disturbance, you have to ask someone else in order to deal with the disturbance.

A high level of separation increases the complexity in multiple ways. First of all it increases the number of interfaces, which contributes to the probability of disturbances. Beside the number of interfaces, a high level of separation leads to a distance between the cause of the disturbance and the regulatory potential. This distance makes it harder to solve the disturbance fast enough; the longer it takes to solve a disturbance, the more likely it is that a disturbance has to be passed to the next workstation. So the disturbance between operation and regulation also increases the sensitivity of disturbances.

#### 5. The level of differentiation in the regulatory transformations into process parts.

The level of differentiation in the regulatory transformation into parts fits the specialization in the operational transformation. This form of differentiation is based on vertical decomposition. When the regulatory transformation is split into regulatory sub-transformations that match operational sub-transformations, internal regulation is exchanged for external regulation. Instead of being able to solve a disturbance yourself, in your own work domain, you now need to adjust with other regulatory workstations. The need for reconciliation increases but at the same time the ability to meet this need (the regulatory potential) is frustrated.

Again we see that the parameter has consequences for both the probability of occurrence of disturbances and the sensitivity of disturbances. Differentiation into parts increases the number of interfaces. Maybe more important is that the ability to deal with disturbances is frustrated. The level of required regulation increases and the potential for regulation decreases because of differentiation in the regulatory transformations into parts.

#### 6. The level of differentiation in the regulatory transformations into aspects.

The level of differentiation in the regulatory transformations into aspects is the counterpart of integral regulation and refers to the horizontal decomposition of the regulatory transformation. With a high level of differentiation into aspects, every aspect gets its own regulation: for instance maintenance, personnel, etc. In the operational transformation this increases the number of interfaces for every work domain: for every kind of aspect regulation you need someone else. The regulatory transformations might even conflict, especially when you want to optimize one aspect (the financial regulation might for instance conflict with the need for maintenance regulation).

Just as with parameter 5, we see that with a high parameter level the number of interfaces increases, contributing to the probability of occurrence. Again maybe more important is that the need for

reconciliation between the regulatory aspects increases together with a frustrated adjustment between the regulatory aspects. This harms the regulatory potential and increases the sensitivity of disturbances.

### **7. The level of differentiation in the regulatory transformations into levels of regulation.**

The seventh parameter refers to a differentiation into levels of regulation. As elaborated in earlier, de Sitter in line with Ashby distinguishes three levels of regulation: strategic regulation, regulation by design and operational regulations. The level of the seventh parameter is high when these forms of regulation are split into different subsystems. Operational regulation relates to the regulation of the operational transformation, based on stated norms. Operational regulation therefore automatically is routine regulation. Regulation by design relates to the actual change of both process and regulation norms: the non-routine regulation. By means of regulation by design you can change the regulatory potential or you can adjust the norms that are applied in the operational regulation. The strategic regulation relates to the external non-routine regulation based on the selection of goals, the essential variables and their norm values.

The three levels of regulation are also related to each other. All three regulatory levels are necessary for organizational adaptability. In order to adapt to the environment, goals must be altered, the organizational structure must be redesigned and the operational process must be adequately regulated. When the three levels are separated, it becomes difficult to share high quality information and to adjust the three forms of regulation to each other's demands. When the differentiation into levels of regulation is high, the mutual adjustment that remains necessary leads again to another increase of interfaces. And again this influences both the probability of disturbances and the sensitivity: the distance between disturbance and regulator increases, the time it takes to apply the right regulatory action increases and so on.

### **8. The level of differentiation in the regulatory transformations into control functions.**

The last parameter refers to the differentiation in the regulation transformations into control functions. Regulation is based on the control cycle, which consists of four activities: monitoring, assessment per aspect, integral assessment and selecting a regulatory action. In subparagraph 4.5.5 this control cycle will be elaborated in more depth.

Differentiation into control functions implies a differentiation in the performance of the control cycle activities. Every activity is performed by some else. Beside that this increases the number of interfaces and decreases the flexibility to notice and react on a disturbance, it might harm the regulatory potential because of rigidity. Especially when the communication between the control activities is organized in one direction; without consultation it becomes possible that there rises a misfit between disturbance and regulation or that during the process of the control cycle the operational situations has changed.

Overall the parameters provide us tools to understand how the organizational structure contributes to complexity and to both the probability of occurrence and the sensitivity of disturbances. When you look at an organizational structure you can assess the value of each of the parameters. Calculating a specific value is problematic since you cannot objectively couple a value on a scale from 0 to 10 to an organizational structure. In practice you need to determine if the value of a parameter is too high, too low or good (enough). The parameters do not provide an ultimate answer; they solely help us to increase our understanding in order to improve the design of an organization structure.

In paragraph 4.5.5 and 4.5.6 I will discuss the consequences of de Sitters theory for the (re)design of the production structure and the control structure. In these paragraphs the parameters will help us to understand how a good structure is designed.

#### 4.5.5 Production structure

Now we have elaborated the basic concepts in the design theory of de Sitter and we formulated design principles, we can take a look at the actual (re)design of the organizational structure. As stated in the design sequence rules we should start with the (re)design of the production structure. The production structure was defined as “*the grouping and coupling of operational functions in relation to orders.*” (de Sitter, 1994, p.93; de Sitter et al., 1997).

Based on our design principles we know that it should be our aim to decrease the need for regulation by means of attenuation. We can use the parameters to make the production structure less complex, which in turn decreases the probability and sensitivity disturbances. In other words you could say that our aim should be the reduction of the required variation (de Sitter, 1994; de Sitter et al., 1997). Based on this aim we can specify the definition of controllability for the production structure. This definition is displayed in figure 4.8.

Controllability production structure = available means to vary performance functions / variation required
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Figure 4.8: controllability production structure, based on the definition by de Sitter et al. (1997).

With decreased variation required and sufficient means to vary performance functions, the production structure provides flexibility. How effectively the provided flexibility will be used, is a question for the design of the control structure. First we have to shape possibilities. De Sitter prescribes three steps in the design of the production structure. I will start elaborating parallelization and continue with segmentation and the design of task groups.

##### 4.5.5.1 Parallelization

In the previous paragraphs we discussed complexity in terms of variety. Our structural design is aimed at decreasing the degree of required variation. The source of required variety can be found in both the external variation and the system-internal variation (de Sitter et al., 1997). When for example the environment delivers new or changing demands in terms of orders, this requires a lot of variation inside the organization.

In order to create a better understanding of how to decrease the need for variation, we must take another look at functional concentration. In a further elaboration de Sitter distinguishes two forms of functional concentration: external and internal functional concentration (de Sitter, 1994).

External functional concentration refers to the coupling of capacities to orders, just as in de explanation of the first design parameter. When an organization is functionally concentrated every order can be potentially coupled to every capacity: when an order comes into the organization, the capacities that are needed are selected and coupled to the specific order. In terms of complexity, the degree of external concentration refers to the variability of the potential order mix (de Sitter, 1994). The variety of this order mix increases exponentially. De Sitter explains that with 5 orders types the number of order combinations is 31, with 10 order types the number of combinations is 1023 (1994).

As a result, external functional concentration contributes exponentially to the level of required variation. But the example of de Sitter tells us another thing; when instead of one transformation process of 10 order types you create two transformation processes with each 5 order types, the total number of order combinations becomes  $31 + 31 = 62$ . Compared with the alternative (1023 potential combinations) this is an incredible reduction of external variety (de Sitter, 1994). So the logical solution now seems to create flows; what you actually do is creating subsystems in order to decrease variety in the order mix exponentially.

Though the creation of flows does help to reduce external variation, it does not say anything about the internal functional concentration. This type of functional concentration is the same concept on one

aggregation level below. So even when the external functional concentration is reduced by means of flows, there can still exist a high level of functional concentration inside the subsystems, leading to a high degree of variation (de Sitter, 1994).

The question then is: how can we organize flows inside the production structure in such a way that it decreases the overall variety? The answer is based on parallelization as a form of functional deconcentration. By separating and dividing the input of orders over multiple flows, the number of potential routes that an order has to go through decreases drastically.

When you apply parallelization in the organization, you have to be careful that you create 'good' flows. Not every flow reduces internal variability: you need to find out which grouping of order related processes reduces the most variation. The principle that is applied here is homogenizing: regrouping and coupling of orders based on order characters (de Sitter, 1994).

Homogenizing can be based on different characters of orders: the only principle that can be applied is that you have to find out which grouping of order types causes/reduces the most variation. From the theory of Simon we know that it is rational to look for parallel flows (subsystems) with strong internal dependency relations and weak dependency relations between subsystems. We can for example look at market related output categories, process related output categories or input related output categories (de Sitter, 1994). In a municipality you can for instance homogenize based on geographical areas but also on the types of services (social affairs and spatial planning). What is best depends on the specific situation.

When parallelization is applied in good way, each flow functions as a semi-autonomous subsystem (de Sitter, 1994). In order to function as a semi-autonomous subsystem, each subsystem must also contain all the production and control processes and it must be able to produce a particular output category. Based on the design parameters you can state that this also implies that a semi-autonomous subsystem contains its own preparatory and support activities and that it is enabled to perform all the regulatory activities (de Sitter, 1994). De Sitter calls these semi-autonomous subsystems 'strategic production units'.<sup>1</sup>

Parallelization is not necessarily a one-time process. Reviewing the created flows can give cause to parallelize another time: to create flows within flows. These flows within flows are again based on the characteristics of the operational process (de Sitter, 1994). The most variation is often reduced when flows within flows can be designed around one order type: the flow is then responsible for all the operational activities regarding only one order type (also the preparatory and supporting activities). Here I want to emphasize that such flows are the counterpart of functional concentration: because the members of the flow are responsible for the whole production process of one product type, this decreases the variety and increases the overview and possibilities to intervene in the process when a disturbance occurs.

Overall parallelization and homogenization contributes to the reduction of both external and internal functional concentration. As a result the number of interfaces and the degree of variability can be reduced drastically. Beside that this contributes to a decrease of probability of disturbances, this creates potential for an increase of regulatory potential.

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1 *For the last part of this subparagraph I was also inspired by the lecture on STSD and flows, as provided by Jan Achterbergh on the 26th November 2015 in the master course Organisation Design (Master Organizational Design and Development, Radboud University Nijmegen).*

#### **| 4.5.5.2                      Segmentation**

The next step in the (re)design of the production process is the internal structure of the flows themselves. Based on parallelization and homogenization we created flows that are responsible for the transformation of (groups of) similar orders. This leads to a reduction of complexity but is not conclusive. Now the functionally concentrated departments are eliminated and the capacities are grouped and allocated over the flows, we can design the interdependency relations inside flows (de Sitter, 1994).

First of all it is necessary to integrate the capacities inside a flows: after all a flow is known for a process without interruptions. By intergrading the capacities, you exchange external regulation for internal regulation. Of course, this integral performance without further decomposition is only possible when the scope and the internal complexity of a flow are limited. When the flow is too complex, further decomposition is somehow necessary (de Sitter, 1994). Here it is important to understand that the process of parallelization and homogenization determines the range of possibilities for integration and further decomposition.

In order to reduce complexity, you can decompose this integrated flow by means of limiting the integration into segments. When we speak of a segment we refer to a part of a homogenized flows wherein those capacities are grouped that are stricter related with the capacities inside the group than with the capacities outside the segment (de Sitter, 1994). This does not mean that capacities from the same type are grouped (as with functional concentration) but that disparate capacities are grouped so they can comprises a phase in the operational process together. These segments could be called nearly decomposable, given their stronger internal than external dependencies.

When you look at the connection of individual segments (the external segment structure) you can find different possible forms to connect them. For example in series, parallel or delta-input (integral input with a further breakdown into segments). The way the segments are integrated and coupled is an essential step in the design process: it determines the number and character of the interfaces of the segment with other segments. It also limits the number of possibilities in the internal design of segments (de Sitter, 1994).

#### **| 4.5.5.3                      Task groups**

The internal design of segments is called the design of task groups. Those task groups must be seen as modules: subsystems that consist of interdependent elements that do not have separate relations with elements from other subsystems (de Sitter, 1994). As a result there can be a strong interdependency between systems as elements but not between two individuals from each of the subsystems. Those modules must be able to perform a coherent unity of operations based on internal and external regulation, have integrated the preparatory and supporting activities corresponding with their operations and must be able to perform all three regulatory activities. So for example a task group must be able/allowed to make and change its own planning.

Beside that these task groups are designed with an aim at low-value parameters, these task groups must be involved in continuous and autonomous innovation of both product and process (de Sitter, 1994). Because task groups have an integral responsibility for a demarcated operational process, they become able to improve both their operational regulation (single-loop learning) and they can be involved in the improvement of their structure (double-loop learning).

When the production structure is designed by means of parallelization, homogenization and segmentation, the number of interfaces and the variability of these interfaces is reduced drastically. Instead of complex structure with simple jobs, a simple structure with complex jobs is designed (de Sitter et al., 1997).

#### | 4.5.6 Control structure

Given the new designed production structure we can continue with the design of the control structure. The selections made in the design of this production structure function as boundary conditions for our control structure design. When the production structure is designed properly, the potential of disturbances has been attenuated. De Sitter himself states: *“Experience shows that up to 80% of all the control questions with respect to coping with complex variety and interference have already been solved by the preceding architectural (re)design of the production structure”* (de Sitter et al., 1997, p.512)

Whereas the design of the production structure is aimed at the decrease of required variation, the design of the control structure is aimed ensuring the utilization of the available options for process variation (de Sitter et al., 1997). In order to explain how to ensure these options, I will start with a short specification of controllability in the control structure and the specific design principles, after which I continue with the elaboration of the redesign of the control structure.

##### | 4.5.6.1 Controllability of the control structure

Controllability was our central design principle in the organizational (re)design. Controllability in general was defined as the potential for regulation relative to the required regulation. Required regulation is reduced by means of attenuation in the production structure, so now we have to take a look at sufficient regulatory potential: the amplification of the control structure.

In the design of the production structure, the central aim was to reduce the need for process variation, i.e. need for regulation. By reducing the number of interfaces and their variability, the complexity that led to need for regulation was reduced drastically (de Sitter, 1994). What actually happened in the (re) design of the production structure was a reduction of the amount of information that was needed to be communicated over all the interfaces.

In the control structure our aim is to increase the regulatory potential. Now the amount of needed regulatory information is reduced, we can focus on the availability of regulatory information. This leads to the definition of the controllability of the control structure, which is displayed in figure 4.9.

$$\text{controllability for the control structure} = \frac{\text{available information regarding process variation}}{\text{required information regarding process variation.}}$$

Figure 4.9: controllability control structure, based on the definition by de Sitter et al. (1997).

##### | 4.5.6.2 Design principle

On this moment in our (re)design we should focus on the quality of the regulatory information. Because the production structure is designed, we cannot alter the amount of required information, we can only provide high quality information that enables adequate regulation (de Sitter, 1994).

In order to define high quality information, de Sitter distinguished four characteristics:

- *Reliability*: the information must be factually correct;
- *Actuality*: the information must be punctually;
- *Completeness*: the information must contain all necessary elements given a context;
- *Relevance*: the information must contain the right information.

A link can be made between the design parameters of the control structure and the quality of information. De Sitter emphasizes especially the influence of the fourth design parameter: the separation between operation and regulation (de Sitter, 1994). When operation and regulation are separated, a distance arises between disturbance and regulation. First off all a distance in time; the transfer of information takes time and can be delayed, which harms the actuality of information. The transfer of communication is also vulnerable for mistakes; every time information is transferred elements of the information might get lost or added, information can be interpreted wrongly, new changes might occur causing a mismatch between actual situation and the delayed information etc. This harms both the reliability and the completeness of information. Overall might be stated that a distance between disturbance and regulator harms the ability of the regulation to intervene effectively; the regulator lacks the relevant information.

Personally I would argue that these arguments can be applied to all the design parameters regarding the control structure: all the parameters contribute to an increase of interfaces and therefore lead to a potential delay in information and potential disturbances in the information which harms reliability, actuality, completeness and relevance.

In order to improve the quality of information, the (re)design of the control structure should be based on the design principle of unity of time, place and action. This design principle implies that the allocation, selection and coupling of control cycles should reduce the distance between disturbance and regulator both in time, place and action.

#### **4.5.6.3 Designing the control structure**

The control structure was defined as *“the grouping and coupling of control functions.”* (de Sitter et al., 1997, p.507). Another and more specific definition of the control structure by de Sitter states: *“the design of the control structure requires the allocation, selection and coupling of control cycles.”* (de Sitter, 1994, p.334). Given this definition, the control cycles are key in our control structure (re)design. I mentioned the control cycles earlier in the elaboration of the design parameters, but here a further elaboration of control cycles is necessary.

Regulatory activities are based on the concept of the control cycle: four separate activities are necessary in order to regulate (de Sitter, 1994). The fundamental activities are monitoring, assessment per aspect, integral assessment and the selection of a regulatory action. All the activities are based on norms: you monitor what deviates from the norms, assessment is based on a comparison between actual state and norms and the selection of an action is based on the assumption that the specific action will bring the value back into the range of norm values. Note here that the selection of a regulatory activity can either refer to actual regulatory transformation (selecting an activity) or to a communication regarding a regulatory activity.

By now we know that there are different levels of regulation and also the control cycle can refer to these different levels: strategic regulation, regulation by design and operational regulation. By now we have spoken about these different levels multiple times. Figure 4.10 provides a schematic overview of how these different levels of regulation are related according to de Sitter.

In order to allocate control cycles into the production structure you need have an idea about the range of regulation of each control cycle (de Sitter, 1994). The range of regulation of a control cycle refers to the dimensions that together determine the object of regulation. These dimensions refer to the included levels of regulation, the domains that are involved for each of the selected levels, the aspect inside the selected domains, the range of the process that is covered by the regulator and the number of control functions that are involved in the control cycle, which refers to both the number of activities and the influence on the norms. We know that a range is good when it meets the design principle of unity of time, place and action.

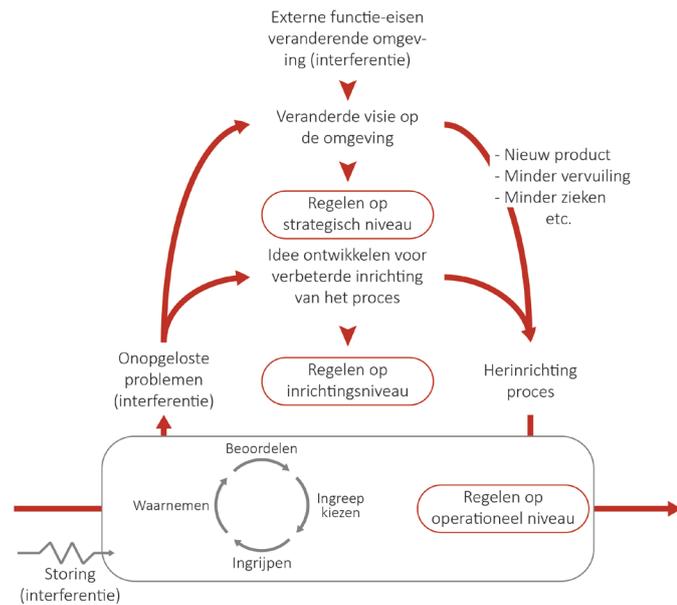


Figure 4.10: Interaction between levels of regulation (de Sitter, 1994)

Based on the structure parameters of the control structure, we can understand that the wider the range of regulation, the more potential to solve disturbances when they occur. Control cycles with a wide range of regulation are able to regulate on different levels, i.e. are able to select and create different forms of regulation (parameter 6), over multiple domains and multiple aspects (parameter 5 and 6). Because they cover a large range of the process they have time and possibilities to solve disturbances in their own workstation and since they are involved in all the activities and are able to change the norms, they can adapt their regulation when necessary (parameter 8). Therefore a wide range of regulation decreases the number of interfaces and their variability and so decreases the probability of disturbances. Besides, it decreases that distance between disturbance and regulator, it increases the quality of information and it therefore increases the regulatory potential to deal with the remaining disturbances: it decreases the sensitivity to disturbances.

I want to emphasize one last time that the design of the production structure is a precondition for the design of the control structure. When for example the preparatory, supporting and making activities in the production structure are integrated, this provides potential to enlarge the range of regulation. But when the production structure is still functionally concentrated, it is almost impossible to integrate for instance domains, aspects and large ranges of the operational process.

Given our expanded understanding of control cycles we are better able to understand the definition of designing the control structure: “You will have to allocate control cycles into the designed production structure, you will have to select the dimensions of the range of regulation that will become the object of regulation and, if necessary, you will have to couple the control cycles with an eye on coordination.” (de Sitter, 1994, p.334).

#### 4.5.7 Organizational learning

Given our understanding of the design of the control structure as the allocation, selection and coupling of control cycles, we can take a last look at the different levels of regulation in the organization structure. Now we have integrated the range of the regulatory potential, we have created the conditions for structural improvement. According to de Sitter, an organization is able to improve itself when the

control cycles function adequately in an interactive way (de Sitter, 1994). This may sound logical, but is almost impossible in a functionally concentrated organization.

Interaction between control cycles also means interaction at the different levels of regulation. So for instance strategic regulation cannot be solely performed top-down, but needs to be fueled with operational information. Here we can draw lessons from the theory of Beer: organizations must adapt their goals to the environment (as a result of the intelligence function) in a way that is feasible for the primary process (as a result of control function). This requires interaction between both functions about mutual needs.

Especially regulation by design is involved in continuous improvement and renewal in order to realize the stated and adapted goals. According to de Sitter regulation by design mediates between strategic regulation and operational regulation. In addition he states: *“In the integrated model, strategy is fueled with operational information, while regulation by design continuously serves as improvement and renewal instrument for the realization of stated goals.”* (de Sitter, 1994, p.351). How the regulation by design mediates the regulatory activities is displayed in figure 4.11.

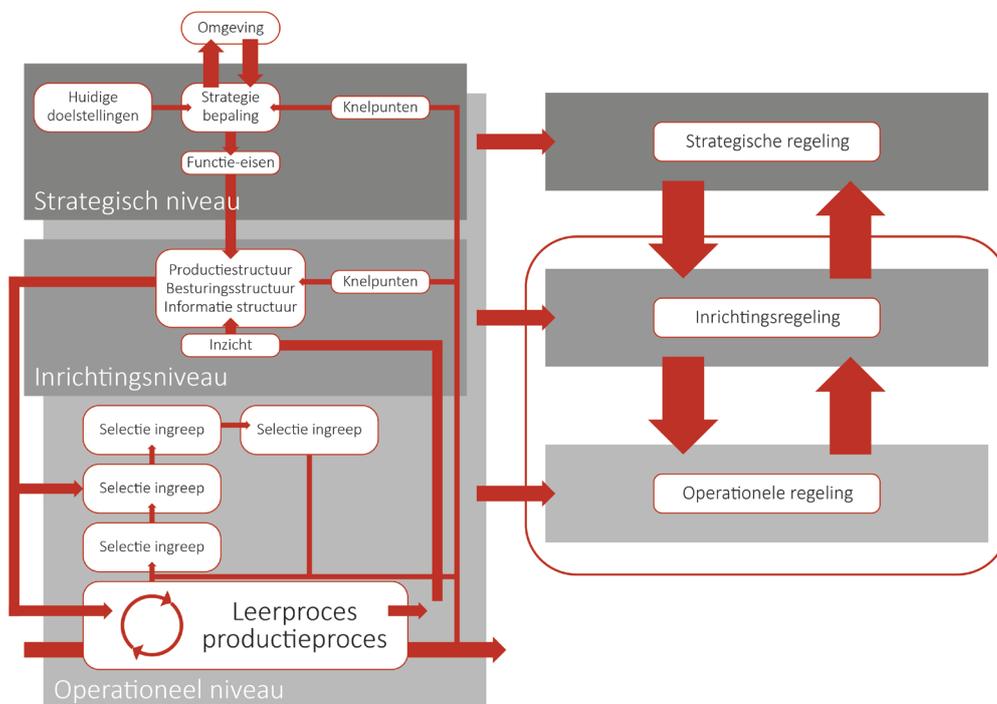


Figure 4.11: Organizational development by means of interaction between levels of regulation (de Sitter, 1994).

Organizational improvement by means of interacting control cycles is tangent to what de Sitter calls organizational learning (1994). Organizational learning according to de Sitter refers to becoming able and becoming better at dealing with change. Once you notice a disturbance, you have an expectation about the source of the disturbance and apply or introduce a regulatory action, then you can learn from dealing with that disturbance. Even when the regulatory action does not solve the disturbance, you have learned what doesn't work and the disturbance can be escalated to a higher level of regulation. It provides insight in what regulatory potential might be necessary. Over time you can become both better at dealing with change and you can improve the regulatory potential on all three levels.

## | 4.6 Practical implications

In this paragraph the practical implications of the STSD theory will be discussed. First the implications for the solving of complex social problems by means of sociale wijkteams will be elaborated. Thereafter, a comparison will be made between the STSD theory and the features of municipal organizations and last, the explicit implication for the cases as introduced in the first chapter will be explained.

### | 4.6.1 Sociale wijkteams

First, according to the design theory by de Sitter, we have to determine what the primary process contains. As stated in the introduction the primary process that is the object of interest is the solving of complex social problems. In STSD terms we could define this as turning civilians of your municipality with a (complex) social problem into civilians of your municipality without a social problem or into civilians of your municipality that are able to deal with their social problem. Given the nature of complex social problems it is not realistic to assume that all problems can be solved entirely, therefore being able to deal with your problems might be a desirable and realistic end state of the transformation process.

As stated in the introduction chapter, in a vast majority of municipal organizations this primary process is executed by sociale wijkteams. The concept of sociale wijkteams refers to a collection of different kinds of organizational forms. Common character of these wijkteam is that there are teams allocated to geographical areas wherein most of the time a cross-functional team performs the primary process. According to de Sitter this *can* be a good way of organizing. When done properly, these wijkteams are the results of a process of homogenized geographical parallelization and therefore become the counterpart of functional concentrated departments. Organizing the primary process by means of wijkteams might decrease the number of interfaces and the number of variability drastically.

Let's compare the wijkteams to the structure parameters. Beside that the wijkteams as cross-functional teams are functionally deconcentrated, the parameters teach us that preparatory and supporting activities should be delegated and integrated into the wijkteams. This means for instance that they should make their own planning. In addition must the level of specialization be limited. So even when a wijkteam contains (former) specialists, the internal design of the wijkteams should enable a generalist approach. A proper design of the production structure provides sufficient preconditions to delegate regulatory potential to the wijkteams. Now overall they are integral responsible for their operational regulation, and they can be involved in structural improvement (regulation by design) and strategic regulation.

However, it must be concluded that in practice wijkteams often lack the autonomy and integration of activities that should accompany parallelized flows (Helderman, 2016). This is problematic when for instance the preparatory and supporting activities are separated from the wijkteams. This implies for example that the wijkteam is separated from the intake of individual cases. Not only are wijkteams often separated from preparatory and supporting activities, they are also separated from sub-transformations that might overlap their own transformations. When for instance housing policy or debt counseling is not involved, again interfaces between the wijkteams other department are created with a risk of conflicting goals, rules and regulatory potential.

Also do we find that wijkteams tend to solely have access to operational routine regulation. With a limited mandate, the internal regulatory potential is limited and (complex) external regulation remains necessary. When wijkteams face limited regulatory potential to alter norms, to change their infrastructure and to select or adapt goals, wijkteams lack the potential to solve recurring disturbances adequately and to contribute to organizational improvement.

You might argue that wijkteams risk to function as quasi-flows in the organization. Sometimes the introduction of wijkteams becomes a goal in itself, which contradicts the design sequence rules (aiming at wijkteams implies a micro-macro design process). Though the introduction of cross-functional teams seems an adequate solution, it proves to be only a partial solution. When an integral organizational redesign lacks in the municipal organization, the functional concentration in the organization is not completely solved. This will be further elaborated in subparagraph 4.6.2 and 4.6.3 by means of the features of municipalities and the actual cases.

#### **| 4.6.2 Meeting the features of municipal organizations**

As a criteria for assessing both theoretical approaches in this thesis, we stated that the theories should help us to deal with the features of municipal organizations that make the performance and control of the primary process in municipalities difficult. As we will see, they also provide limitations for the application of the theory of de Sitter. However, that does not mean that you cannot apply the theory as well as possible.

First of all, there remains tension with the delegation and mandating of authority. When the control structure is designed from micro to macro level, this implies delegation of regulatory potential to the operational process. However, mandating of certain regulatory potential potentially conflicts with the legal authority allocated to mayor and alderman and with the framework-setting role of the municipal council. You can delegate for instance the execution of a rule to the wijkteams, but when the rule does not work in a particular situation, causing a disturbance, it is often only the mayor or aldermen that can regulate by means of deviating from the rule. This increases the distance between disturbance and regulator.

The question then is: does STSD provide a solution for this tension? The design theory teaches us that the distance between disturbance and regulator should be as small as possible (unity of time, place and action), with only a limited number of interfaces. A solution then can be found by creating short lines between the production team (wijkteams) and the regulatory potential (mayor or alderman), so without the interference of managers, departments and assistants. A short distance between disturbance and regulator increases the quality of information, decreases the disturbances sensitivity and the interactive functioning of control cycles enables potential for strategic and operational improvement. These short lines between wijkteam and governor could be called 'escalation routes'.

Another difficulty can be found between the rule of law and execution of rules and regulation by Street Level Bureaucrats [SLB's] in the local teams. The first problem of SLB's is that they often lack sufficient discretion to deal with deviating individual cases. From a STSD perspective one could argue that insufficient discretion means a lack of regulatory potential. After all, without the possibility to deviate from rules when necessary, you are not able to deliver the desired end state. STSD does help us find a solution for this part of the problem. Delegating as much regulatory potential to low level execution as possible, implies that Street Level Bureaucrats should get sufficient regulatory potential to deal with deviating cases. This is accompanied with the involvement of wijkteams in regulation by design and strategic regulation. When recurring disturbances cannot be solved in the wijkteams, solutions can be found in higher levels of regulation.

The other aspect of the situation of Street Level Bureaucrats is that SLB's tend to avoid available discretion when they feel insecure, for instance because they are afraid to act arbitrary. Here the STSD theory leaves us with a practical problem: though a solution for this problem can be placed in the STSD theory (a different accountability approach or training a team as part of regulation by design), the STSD theory itself does not provide tools for overcoming hesitations to utilize the full regulatory potential.

As we will see in the next paragraph, creating the necessary conditions does not automatically mean that the full potential will be utilized.

The last feature of municipal organizations is the large number of network interdependencies. Also there does STSD Theory not directly provide a solution. Though one might argue that involving different actors in the wijkteams increases the overall regulatory potential (turning external regulation into internal network regulation), this cannot be enforced. The STSD theory does not help us to deal with organizations who shirk their responsibility, it learns us how to deal with it internally at best. So even when STSD theory helps to smoothen difficulties in network relations by means of facilitation, municipal organizations still dependent on the willingness of other organizations.

As a conclusion might be said that STSD fits the features of municipal organizations as long as these features can be linked to structural characteristics like the delegation of regulatory potential. When problems arise due to underutilization of this potential or because the municipal organization cannot force other organizations, STSD becomes less clear.

#### **| 4.6.3 Implications for cases**

In this subparagraph I will shortly discuss the consequences of the STSD theory for the two municipalities as introduced in chapter one.

In the municipality of Zaanstad we do not have sufficient information to analyze the exact design and design process of the wijkteams, though based on the available information it appears that the teams are adequately designed as nearly decomposable systems. As far as we know the teams are designed with complete tasks. Furthermore, we know that the teams are highly involved in regulation by design, providing possibilities to adapt their infrastructure to local circumstances. Also do teams have to freedom to deviate from norms when that is demanded in a specific case and do teams have extensive regulatory potential, for instance by means of a breakthrough budget.

An interesting element in the case of Zaanstad is that the wijkteams have access to escalation routes when their regulatory potential proves to be insufficient or causes doubt. These routes decrease the number of interfaces between local team and regulator. Besides do these routes ensure a short distance between disturbance and regulator, therewith increasing the quality of information and decreasing the disturbances sensitivity. Overall must we conclude that the tight coupling of high levels in the organization and local execution ensures organizational development by means of local experiences, as we have seen from the breakthrough team.

The second municipality is less able to realize its goals. Even though the teams seem to have an internal cross-functional design, the teams prove to contain incomplete tasks as well. This is for instance tangible when essential elements of social service delivery – like special welfare - are not involved in the wijkteam. This has consequences for both the performance of the primary process (increasing number of interfaces) and the wijkteams regulatory potential (ability to absorb disturbances). When the norms in the special welfare department don't fit the perceived norms in the wijkteam and the practical need in a particular case, this frustrates the primary process. Especially when there proves to be no option to escalate towards someone with sufficient regulatory potential.

Even more concerning is the detachment of primary process and organizational development. In both cases of this municipality, there is no link between disturbance, the inability to solve them (in a correct way) and future adaption of goals or infrastructure. It is unlikely that this municipal organization, due to its design, will be able to adequately realizes its goals and to improve its own organization.

## 4.7 Preliminary conclusions

Based on the elaboration of both theory and practical implications, in this paragraph the preliminary conclusions regarding the STSD theory will be formulated.

The first preliminary conclusion is that de Sitter provides a design theory that is both specific for organizations and contains a strong theoretic foundation. The first prerequisite as formulated in chapter three is met: STSD helps us to design an organization that is able to perform both the primary transformation and regulatory activities and has the potential to formulate, realize and adapt its own goals.

But with an eye at the central question in this thesis I will also make two remarks. The first remark refers to the fact that STSD is a design theory aimed at organizations in general. Because of its general nature it does not tell us how municipal organizations should deliver their social services. Therefore a specification of the design theory remains necessary.

The second remark refers to the fact that based on STSD an organization can be designed with the potential to improve, learn and develop, but that does not guarantee that it contributes to a desired development. As we have seen in chapter three, an organization is not automatically aimed at goal-oriented improvement and the exploration of new possibilities. The potential to adapt goals and realize goals does not necessarily lead to an improved adaption. Organizations have to deal with mechanisms and inclinations that contribute to (sub-optimal) equilibria. We see this for example with Street Level Bureaucrats who tend to avoid discretion; even when regulatory potential is decentralized, this does not automatically mean that this potential will be used.

The second criterion that was formulated in chapter three was that a theory also should enable organizations to review their own decision-making critically. Organizations need to reflect on their routines, habits, customs and conceptualizations of their environment. De Sitter himself states that an organization should *“distrust norms that are used in the control structure”* (1994, p.340). This review of norms should be done by critically reviewing them with the involvement of members of the organization from the operational transformation. Though de Sitter does provide tools to reflect on own norms, they remain open to frozen norms. Just as with the design theory in general, also the element of organizational development could be specified towards and municipal organizations. Therefore the theory of de Sitter could be enriched in order to overcome sub-optimal equilibria based on approved decision premises.

Taking into account this line of argument I would state that the STSD theory is not wrong about organizational improvement, only that it is non-committal. When the production structure and the control structure are (re)designed according the parameters and the design rules, the requirements of continuous discussion and involvement are available. But the fact that prerequisites are present does not imply that routines, habits, customs and environmental conceptualizations are actually discussed. The influence of the logic of appropriateness is underexposed in the design theory.

In addition must be stated that the STSD theory is insufficiently able to help us municipal organizations to deal with their network dependencies.

As an overall preliminary conclusion I argue that STSD is an adequate theoretical basis for an answer on the central question. However, the STSD theory can be specified and enriched towards learning municipal organizations that are able to improve its social service delivery. We need another perspective that helps us to specify the design theory of de Sitter and to utilize the full potential that is provided by STSD.



## | Chapter 5 – Experimentalist Governance

In chapter five we will take a look at the theoretical approach of Experimentalist Governance in order to provide insight in how municipalities can organize continuous improvement and overcome sub-optimal equilibria. The insight as obtained in this chapter will be used to complement the design approach by de Sitter as elaborated in chapter four.

In this chapter the theory of Charles Sabel will be our main focus. Just as in chapter four I will have to introduce multiple theoretical approaches before we can elaborate the theory of Sabel both in depth and in context. First I will start with an overall elaboration of the philosophical tradition of pragmatism. After an overall elaboration, John Dewey's theory on habits and routines will be further explained. Based on these two paragraphs I will continue with the theory on Experimentalist Governance.

### | 5.1 Pragmatism

Pragmatism is a philosophical approach that arose in the late 19th century in the United States. With a revival in the last two decades, this philosophical approach has a substantial influence in both recent philosophy and social science (Dijstelbloem, 2007; Ansell, 2011). In this paragraph I will elaborate the core characteristics of pragmatism as a public philosophy, evolutionary learning as the pragmatist learning-model and the meaning of experimentalism from a pragmatist point of view.

#### | 5.1.1 Public philosophy

It is difficult to catch the whole philosophical approach of pragmatism in one definition. With a wide range of objects covered by pragmatist theorists, there is not one common subject. However, Christopher Ansell states that a couple of core principles can be used to 'encapsulate' its essence: *"Pragmatism is usefully described as a philosophy of evolutionary learning. It emphasizes the ability of both the individuals and communities to improve their knowledge and problem-solving capacity over time through continuous inquiry, reflection, deliberation, and experimentation."* (Ansell, 2011, p.5). These core principles will be further elaborated in the next two subparagraphs.

Another way to describe Pragmatism is by defining it as a public philosophy. This implies that pragmatism, more than other philosophical approaches, tries to combine general, abstract ideas and principles with specific situations and problems. This is not done by providing a recipe or ultimate answer, but by clarifying the central ideas and by testing them to relevance and realism. According to pragmatists, a public philosophy only produces value when it proves to be able to contribute to practical improvement. Pragmatists try to do this by facilitating an open development process. Just as stated in the core principles, improvement requires continuous inquiry, reflection, deliberation, and experimentation. Therefore pragmatism rather aims at *"refining values and knowledge than [...] specifying timeless principles of what is right, just, or efficient."* (Ansell, 2011, p.8). So when pragmatism tries to contribute to public problem solving, it does not prescribe how to solve problems, it rather helps us to refine values and knowledge in order to improve our problem-solving capacities.

#### | 5.1.2 Evolutionary learning

Evolutionary learning can be seen as the pragmatist learning-model, which plays a fundamental role in continuous improvement of knowledge and problem-solving capacity. As the term evolutionary suggests, this learning-model emphasizes an adaption to the environment, the use of feedback in order to improve and an accumulation of insights (Ansell, 2011). Evolutionary learning is therefore not static or incidental but rather a continuous process.

More specifically, the evolutionary learning-model is based on the theory of Charles Pierce, William James and John Dewey. They emphasized the experiential basis for learning that comes forth from

the confrontation with concrete problems. So in order to improve knowledge and problem-solving capacities, experiences based on confrontations with problems are necessary.

In order to make this concrete, there can be identified three generative conditions for evolutionary learning (Ansell, 2011). First of all, evolutionary learning should be *problem-driven*. This derives directly from emphasize on experiential knowledge. Problems provide occasion to challenge accepted and current knowledge, principles, habits and values, given their potential to 'disrupt' the current assumptions. An individual of an organization with a problem-driven attitude continues to look for new problems in order to challenge the current assumptions. A problem-driven attitude therefore implies willingness to revise your own assumptions.

The second generative condition is *reflection* (Ansell, 2011). Reflexivity refers to the ability to critically review your own assumptions. Reflexivity implies both consciousness about your own assumptions and willingness to critically scrutinize them. By means of active inquiry it enables individuals, groups and organizations to utilize their experiences based on the confrontations with problems to refine your own knowledge, principles, habits and values.

And last, evolutionary learning should be based on *deliberation* (Ansell, 2011). Deliberation contributes to evolutionary learning in two particular ways. First it enables the clash of perspectives because information is shared. And second, communication itself is a mean to create new knowledge and intersubjective insights. This makes evolutionary learning automatically a collective activity; it is not done solely by yourself but in connection with other people, groups or organizations.

The three generative conditions are mutually conditioning and mutually complementary: "*problems generate reflection, which generates deliberation, which may produce a refined definition of the problem.*" (Ansell, 2011, p.12). Together they generate evolutionary learning: to see problems as an opportunity to learn due to critical reflection on individual and collective assumptions and habits by means of deliberation.

### | 5.1.3 Experimentalism

Now we understand how pragmatists use evolutionary learning in order to improve knowledge and problem-solving capacities, we can look at experimentalism. Evolutionary learning is called experimentalism when individuals or groups take over control over their learning cycle. In order to understand how experimentalist governance can be used to enable continuous improvement in municipalities, this is a crucial step.

Let us first take a small step back. We started the elaboration of evolutionary learning with the recognition of the experiential character of knowledge. John Dewey's adds to this knowledge another important character: "*Much experiential knowledge [is] habitual, not the subject of conscious reflection.*" (Ansell, 2011, p.9). The implication of this habitual character of experiential knowledge it that evolutionary learning (based on conscious reflection) is no automatism.

So in order to enable evolutionary learning, reflection and deliberation somehow need to be organized or cultivated. Ansell states about this: "*When individuals and groups learn to use experimentation and inquiry to reconstruct their experiential knowledge and skills, this approach can lead to continuous learning or growth – to evolutionary learning*" (2011, p.10). Whether experimentalism is learned, organized or cultivated, in all cases it depends on a purposive attempt to increase collective evolutionary potential.

Note here that pragmatists use a familiar definition of experimenting. In line with the earlier discussed approach of Achterbergh and Vriens pragmatists base their definition of experiments on uncertainty and ambiguity. Problems are experimental of character because they have the potential to disrupt your assumptions, just as decisions are experimental given their potential to disrupt the underlying selection based on expectations.

As the last part of this paragraph I want to elaborate four interdependent characteristic principles of experimentalist evolutionary learning. The previous discussed generative conditions describe how evolutionary learning is enabled; the principles describe how evolutionary learning works (Ansell, 2011). These principles have in common that they are antidualistic given their ambition to overcome an apparent paradox like relying on rules and mistrusting them at the same time.

*Progressive conservatism.* Evolutionary learning depends on both accumulation and continuous challenge. Learning requires the retention of past experiences and successes, but at the same time this knowledge and practices need to be constantly tested, scrutinized and revised. As long as there is no cause for rejecting our assumptions, we should retain them. But at the same time we should challenge them and be willing to reject them when necessary. The same applies to organizational elements like structure, rules and procedures.

*Cosmopolitan localism.* In addition, evolutionary learning requires a continuous shift in local and abstract perspectives. The abstract (cosmopolitan) perspective is needed to reflect on specific habits and beliefs. At the same time context dependent (local) action facilitates reflection on and adaption of abstract principles and ideas.

*Analytical holism.* The third principle is highly interesting given our ambition to solve complex social problems. Analysis refers to decomposing problems into simple issues after which the issues are solved. Pragmatist problem solving starts with this situational focused problem solving based on contextual particulars. At the same time synthetic strategies are needed to produce knowledge through integration. Therefore it must be encouraged to go beyond particulars through holistic action, for instance pattern recognition. In turn the holistic knowledge of patterns of problems can be used to improve particular problem-solving.

*Processual structuralism.* The last principle encourages consciousness about how current decisions, habits, experiences and ideas structure future learning possibilities. This process, whereby processes are shaped by means of structure is called scaffolding. You can use scaffolding in order to learn: for instance to achieve small-wins in collaboration in order to gain trust. Gained trust can contribute to larger wins in the future.

Overall, experimentalism allows us to view evolutionary learning as a purposive activity. From this point, it has potential to enhance our understanding of municipal organizations as learning and experimenting organizations. Before we apply this pragmatist perspective on municipalities by means of Experimentalist Governance, we elaborate how pragmatists understand habits and routines.

## | 5.2 Dewey on habits and routines

The second paragraph will be used to elaborate the theory by John Dewey, an influential theorist in the pragmatist approach, on habits and routines. As we have concluded in chapter three, habits, customs and routines play an important role in the development of organizations, given their potential to enable development and their inherent risk to inhibit change, leading to sub-optimal equilibria.

### | 5.2.1 Dewey on habits

In chapter three we discussed habits as individual decision premises. Simon defined them by their function: “[habits] permit the conservation of mental effort by withdrawing from the area of conscious thought those aspects of the situation that are repetitive” (Simon, 1947, p.99). According to Simon these habits can be used to explain patterns of recurrent individual behavior.

There is a difference between the way Simon and Dewey conceptualized habits and their relation to (evolutionary) learning. In order to illustrate this, we have to take a closer look at one of the important books by Dewey on social psychology: *Human Nature and Conduct* (1922). In *Human Nature and*

Conduct, Dewey analyses human behavior. He states that human behavior is based on three intertwined concepts: habits, emotions and intelligence (1992).

According to Dewey, habits function as disposition for action rather than that it refers to observable behavior itself (Cohen, 2007). Regarding habits as dispositions, both Simon and Dewey agree. However, according to Dewey habits are created by means of interaction with emotion and intelligence. As Ansell explains: *"In its simplest form, [Dewey's] argument is that habit, as organized impulse, shapes intelligence, while intelligence, via reflection, reconstructs habit. Development and creativity call for a continuous recursive cycle between habit, emotion and intelligence"* (2011, p.123). The process of development as described here could be called evolutionary learning. As earlier stated, according to Dewey learning is based on experiences. When established habits prove to be insufficient to conduct a particular task, this provides occasion to review these habits. What follows is an interconnected cycle with emotional impulses and reflective intelligence, leading to new repertoire of habits.

When habits are the result of learning or dealing with challenges, one might argue that habits function as dispositions for "learned behavior". There are even pragmatists who refer to habits as skill or competences (Ansell, 2011). I want to avoid the elaboration of the concept of skill in depth, but what is important here is that habits are developable due to their interconnection with experience, emotion and intelligence. This also implies the ability to develop of both good and bad habits.

The difference between Simon and Dewey lies therein that according to Simon intelligence is the main concept in decision-making based on an evaluation of alternatives (Cohen, 2007). Habits are used in an almost instrumental way to make this decision-making less complex. It allows the 'conservation of mental effort' in 'situations that are repetitive': habits relief intelligence. Dewey on the other hand prefers an integral approach wherein habits are action dispositions developed by interaction between habits, emotional impulses and reflective intelligence. Therefore habits are not instruments for intelligent decision-making but developable results of continuous interaction between impulse and reflection (Cohen, 2007).

### **| 5.2.2 Dewey on routines**

In the theory of Simon, habits and customs (as collective habits) are easily connectable to routines. According to Simon these routines are the artificial counterparts of customs and habits, which makes routines organizational embedded habits and customs (as institutional premises). Just as with habits and customs, Simon thereby used routines in order to explain recurrent behavior.

However, Dewey doesn't treat routines as the artificial counterpart of habits, but rather as a specific type of habits (Cohen, 2007). Because of their interaction with emotion and intelligence, habits are by nature living concepts: *"it suffuses both perception and reflection"* (Cohen, 2007, p.778). Action based on habits thereby doesn't necessarily need to be repetitive, even though many habits prove to lead to repetitive behavior (Dewey, 1922).

In order to explain routines, Dewey makes a distinction between intelligent habits and routine habits (1922). Intelligent habits refer for instance to an artist that is able to perform based on strong developed habits in connection with both emotion and intelligence. He uses both impulse and reflection to improve. Routine habits lead to mechanic behavior whereby the emotions and reflections are missing or disconnected (Cohen, 2007). Both habits function as dispositions for action, though the artist doesn't behave based on routines, even though he practices a lot.

A more direct formulation of routine habits is provided by Charles Sabel, while referring to Dewey: *"no one understood better than he that habit could also harden into routine, making unnoticed assumptions inaccessible to revision and trapping us in experiences only possible if we do not attempt to scrutinize them fully in the event."* (2012c, p.36). Sabel calls these routine habits frozen habits, referring to their unchangeable nature (2006). So beside the production of mechanic behavior, routines also complicate

reflection. Given the generative conditions for evolutionary learning one could argue that routine habits are undevelopable and therefore block the improvement of knowledge and problem-solving capacities.

This pragmatist explanation of routines provides us with a slight conceptual problem since Dewey does not provide an organizational equivalent of routines as frozen habits. The explanation of routines by Simon can overlap the explanation by Dewey in certain cases, for example in the case of rules (institutional premises) restricting job performance in such a way it eliminates both consideration and reflection (routine habits). But they don't necessarily do: when for instance a procedure prescribes daily performance of intelligent habits, it is a routine according to Simon (an artificial procedure referring to how things are done here), but it can never be a routine habit since it requires consideration and reflection. Also Cohen, in his elaboration of Dewey, Simon and routines, does not provide an alternative or definitive conceptualization of (organizational) routines (2007).

In this thesis though, the pragmatist approach will be used to enrich Simons understanding of routines as artificialized habits in the organization, by including the risks to become frozen habits. I will retain the explanation of Simon because it helps us to understand how habits, customs and routines contribute to organizational development. The pragmatist approach provides valuable insights in the way habits and customs are developed and how they can be changed over time. When organizational routines are disconnected from reflection, they risk to become frozen habits, contributing to sub-optimal equilibria.

### **| 5.3 Experimentalist Governance**

In this third paragraph I will elaborate the theory by Charles Sabel on Experimentalist Governance. Given its roots in the public philosophy of pragmatism, in the first two paragraphs of this chapter it is discussed how pragmatism conceptualizes evolutionary learning and the role of habits and routines in it. Based on this we can continue with the Experimentalist Governance theory.

The theory of Sabel provides us an organizational improvement approach: it tells us how to enable organizations to effectively realize and adapt goals by utilizing the potential of the organization. Additionally it teaches us how to combine an organizational approach to social service delivery in particular. Experimentalist Governance is both prescriptive and descriptive. Empirical evidence is used to underpin a prescriptive concept.

I will start with Sabels understanding of classic bureaucracies, after which the nature of social service delivery will be discussed. Thereafter the Experimentalist Governance approach will be discussed as an alternative for the classic bureaucratic approach. This includes the elaboration of the interdependent elements that together form an iterative experimenting cycle enabling organizational improvement.

#### **| 5.3.1 Sabel on classic bureaucracies**

In order to introduce the need for Experimentalist Governance, Sabel explains why classic bureaucratic organizations are unfit to provide an answer to complex social problems. To do so, he first elaborates the canonical bureaucratic organization (2004; 2006; 2012a). According to Sabel these organizations occurred roughly between the late 19th century until 1980, though not solely in the public sector.

Characteristic for these canonical bureaucracies is an emphasis on hierarchy and closedness, obtained by a strict separation between the formulation of goals for the whole organization and a further decomposition of these goals by managers into 'narrower and narrower ones' (Sabel, 2004; 2006). As a result, tasks are decomposed into simple tasks accompanied with routines to specify how these simple tasks should be executed. In order to assure hierarchy, additional rules and routines are introduced to review organizational compliance. Would these hierarchal organizations be diagnosed by means of STSD, they would provide high scores on the parameters. Decomposition into simple tasks leads to functional decomposition with high level specialization.

A consequence of this decomposition of tasks into simpler tasks is that they become so simple that the execution becomes routine at the cost of conscious attention (Sabel, 2006). Earlier we introduced the term of frozen habits whereby the execution of tasks is performed without interference of emotion and intelligence, and therefore without development. However, as long as there is no need for variation in these simple tasks, members of the organization can solely rely on instructions by their direct superior (Sabel, 2004).

Bureaucratic organizations have proved to function sufficiently as long as there is a stable and simple environment. Without such an environment, being responsive despite the decomposition of complex tasks into simple tasks requires improvisation, which undermines the hierarchal structure. Within a complex and rapidly changing environment, hierarchal command-and-control responses take too long to be effective. The occurring gap between the formal organization and the informal need for direct action provides a range of unguided and unaccountable action (Sabel & Zeitlin, 2012). Confronted with such an environment, these bureaucratic organizations prove to be unable to control discretion. This is exactly where the typical problems arise that Street Level Bureaucrats have to deal with, just as earlier discussed in chapter two (Sabel, 2012a; 2012b).

In order to deal with this uncontrolled discretion, canonical bureaucracies tend to have only one solution, which is further limiting discretion by amplifying hierarchy. This rather enhances the problem: *“adding more and more detailed regulations made the organization as a whole more rigid and so less able to respond to even large changes in its environment, while creating potential conflicts among rules – which allowed street-level bureaucrats to again exercise discretion in choosing which to enforce”* (Sabel, 2012a, p.87).

According to Sabel, these classic bureaucratic organizations based on task decomposition solely function in stable environments. However, performing social service delivery is hardly stable. In the next subparagraph will be argued how social service delivery should be approached and which demands this provides for organizations to be effective.

### **| 5.3.2 Social service delivery**

Providing social services by canonical bureaucracies can be successful as long as there is a stable environment and service provision is decomposable. However, given the nature of wicked social problems that is not the case (Sabel, 2006). Sabel emphasized a couple of changes in our society that ask for an alternative approach to social service delivery. He states that there is a need for an international shift in our western welfare states from a transfer-based insurance system to a service-based solidarity system (2012a; Sabel et al., forthcoming).

The service-based welfare state is based on collective insurances for well-known risks. When unemployment is cyclical, we can figure out how many premiums are needed to compensate individual loss and to bridge time to find another job. However, our societies are changing more and more rapidly, leading to a rise of uncertainty regarding risks. Instead of remaining cyclical, unemployment becomes abruptly changing. This is a fundamental problem given our inability to figure out an effective insurance mechanism to meet these uncertainties. The only alternative is an approach based on service delivery aimed at helping individuals and families to become able to deal with these uncertain risks themselves, for instance by becoming and remaining employable in a turbulent labor market (2012a). In order to be effective, these services must be customized to fit individual needs.

This approach isn't only necessary given a rise of uncertainty. The emphasis on individualized bundled services is also demanded by societal developments (Sabel, 2012a). For instance, based on scientific research we found out that learning is idiosyncratic, which means that in order to be effective, learning should be based on a combination of pedagogic approaches that fit individual learning needs. We all learn in different ways, so there is not one ultimate approach. In addition, our society is increasingly differentiating. Dividing lines across groups determine huge differences in life conditions, challenges and

chances. Think for example about differences between high educated versus lower educated families, differences in ethnic backgrounds and rural areas versus urban areas. Again, standard solutions won't likely contribute to enabling individuals and families to deal with social problems themselves.

Given the need to find an alternative approach based on individual needs we need to transfer to a capacitating service-based solidarity system. This implicates an alternative understanding of equality: *"All these changes are, finally, contributing to a slow redefinition of the very idea of social justice: a shift away from understanding fairness or equality as treating all in the same way, and towards an understanding of equality as an obligation to give due regard to the needs of each and so enable all to flourish."* (Sabel, 2012a, p.84).

This approach towards customized capacitating social services has multiple organizational consequences. First of all, when capacitating social services are provided in custom-bundled forms, there is no longer a legal and expected certainty of which particular services I have a right to. This isn't a problem as long as I can be sure that the organization that is providing these services is responsive to my situation and able to get the job done. Instead of having a right on particular services I must be able to rely on qualitative services. This changes the legal certainty dimension (political dimension), at least partly, into an organizational quality dimension.

Another organizational consequence refers to the demand of another type of organizational regulation than classic bureaucracy. Custom-bundled services require higher levels of regulated discretion and collaboration between different professionals in order to find out which services do meet the individual need. According to Sabel providing these capacitating services is not a single decision but rather an iterative developing process. It is therefore that rules on their own are too rigid to serve as effective means for controlling this discretion (Noonan et al, 2009).

Pragmatists state that an alternative form of regulation should necessarily be polyarchic in character (Cohen & Sabel, 1997; Sabel & Zeitlin, 2008; 2012). Given the need for local flexibility and cooperation, there cannot be one central final decider that sets goals for and disciplines the local executing units. The classic principal-agent approach doesn't fit the provision of capacitating services. Custom-bundled social service delivery is characterized by many local interdependencies that have their source in the complexity of social problems. These interdependences ask for another relation between central decider and local executors.

As a consequence of this polyarching character, the central regulator/governor must be serving and facilitating the local execution instead of the other way round (Sabel & Zeitlin, 2012; Helderma, 2016). This implicates for instance that the central regulator is responsible for providing the right infrastructural conditions in order to enable adequate local execution.

So in conclusion, our contemporary welfare states increasingly need to focus on providing individualized capacitating social services. This has multiple organizational consequences. Organizations need to become learning institutions in order to guarantee quality service delivery. Organization, laws, regulations and programs need to adapt to an ever faster changing environment and differentiating needs. And to make it even more complex, this implies a need for an alternative relation between local executor and central regulator whereby the central regulator needs to serve and facilitate local unit executors.

By now it should be clear that canonical bureaucracies are not fit to provide these capacitating services. As an alternative form of regulation Charles Sabel emphasizes an approach called Experimentalist Governance, which is discussed in depth in the next paragraph.

### | 5.3.3 Experimentalist Governance

As stated in the earlier paragraphs, Experimentalist Governance has both a theoretical grounding and a foundation in empirical evidence. Experimentalist Governance is necessarily embedded in empirical results because, according to Charles Sabel, without evidence no one would believe the theoretical concept. The empirical evidence is provided by researches to social service delivery in for instance child welfare in the United States (Noonan et al., 2009) and the Finnish school system (Sabel et al., 2011; Sabel, 2012b).

The core principle of Experimentalist Governance is continuous organizational improvement. In line with its pragmatist roots, it aims at a *“recursive process of provisional goal-setting and revision based on learning from the comparison of alternative approaches of advancing them in different contexts.”* (Sabel & Zeitlin, 2012, p.169). Conceptually it consists of four separate elements that together should form an iterative cycle. I will shortly elaborate these elements as the basic elements for this paragraph.

First of all, provisional framework goals are formulated by means of interaction between central regulator and local units. These goals should say something about the desired effects that have to be achieved, for instance “adequate youth care” or “self-reliant civilians”. In addition, provisional metrics should be formulated in order to monitor the achievement of these framework goals. The second element is providing high-level discretion to the local units to *“pursue these goals in their own way”* (2012, p.170. So for instance without routines prescribing how to perform your job. As a consequence, this will most likely lead to local diversity. The third element is a condition for providing high-level discretion and refers to the obligation of local units to report their performances and to participate in peer reviews. When the progress in performance is insufficient, local units are obligated to show how they are improving their performance. The fourth and last element in the iterative cycle is a collective periodic review of the framework goals, metrics and decision-making process themselves.

When done right, the Experimentalist Governance approach provides all three generative conditions for evolutionary learning. The execution of framework goals is accompanied with high-level discretion and with an obligation to monitor progress on the basis of actual cases. This case-based monitoring implies a problem-driven approach. By sharing and reviewing particular progress, both personal and collective assumptions and the organizational elements are scrutinized and collectively deliberated. Experiences are used to improve the problem-solving capacities of both individuals and local units and to improve organization conditions. By systematically provoking doubt, this process enables evolutionary learning. The next four subparagraphs will be used to elaborate different aspects of Experimentalist Governance more in depth. Thereby will be focused on providing flexibility in the primary process, learning by monitoring, accountability and learning from diversity.

#### | 5.3.3.1 Flexibility

Departing from the ambition to serve and facilitate Street Level Bureaucrats, flexibility in the execution of social service provision is necessary. This is exactly where the importance of a polyarchic approach becomes tangible. In order to improve organizational performance, the organization should enable the local units to perform their jobs as good as possible, which also implies that caseworkers need to be capacitated themselves.

As stated in the previous paragraph, the need for discretion derives from the nature of complex social problems. Often these problems have multiple and differing causes, requiring an interdisciplinary diagnosis and a coherent intervention. Therefore local level responsiveness and flexibility at execution level are prerequisites for adequate service delivery (Noonan et al., 2009; Sabel & Zeitlin, 2012). This increase of discretion and flexibility is at the same time a decrease of hierarchy. An often-expressed concern regarding discretion is the potential interference of inconsistency, self-interest or arbitrariness. Pragmatists disagree with this assumed necessary consequence as long as there is organizational

commitment. For instance Ansell responds: *“When employees or members share a common commitment to the organization, they can be granted greater latitude in decision-making, trusting that they will make decisions in the spirit of the general mission.”* (Ansell, 2011, p.72).

This can be directly translated to providing high-level discretion to caseworkers. Even though discretion provides freedom of interpretation, the goal interpretation in a particular cases remains purposive: *“specific norms are understood as expressions of general higher-level norms, and interpreters of all ranks [should] feel directly responsible to the highest-level purpose of the system.”* (Noonen et al, 2009, p.555).

In addition Sabel states that this shared commitment is necessary to retain binding in the organization: *“As the role of hierarchy decreases, there is a corresponding change in the values that bind the organization together. The loyalty of individuals to a particular institution, and the solidarity of those who share the same loyalties, declines. Instead ‘commitment’, like ‘that of the professional scientist to his work’, becomes the glue of the organization.”* (Sabel, 2006, p.115). This means commitment should be stimulated and cherished in the organization, rather than solely relying on loyalty due to contractual membership of an institution.

So according to pragmatists, commitment in the organization is a prerequisite for providing high levels of discretion that are necessary for responsive and flexible social services. Still, even with high levels of commitment, the increase of discretion is not free of obligation. In the next subparagraph learning by monitoring will be further discussed. As we will see, because monitoring contributes to the explicit deliberation of assumptions and thoughts, it also contributes to commitment.

### **| 5.3.3.2 Learning by monitoring**

As a condition for providing high-level discretion local units have the obligation to report their performances and to participate in peer reviews. The main purpose of this reporting is not being accountable but enabling improvement. This learning by monitoring refers to the process whereby the performance of public agencies is seen as problem-solving experimenting and the problem-solving capacity should develop over time (Dorf & Sabel, 1998).

Central in the monitoring system is scrutinizing individual cases on both process and outcome to reveal systemic problems. This fits the problem-driven pragmatist approach. In essence, the process is quite simple: *“The front-line worker (or, increasingly, the multi-professional, front-line team) must provide a detailed report on the clients progress under the plan and evaluate progress by agreed metrics. The plan and monitoring reports are in turn reviewed by a group of the front-line workers’ (or team’s) peers in the light of the experience in comparable situations.”* (Sabel, 2012a, p.89; Noonan et al., 2009).

Crucial in this monitoring system is making implicit considerations explicit (Sabel, 2012b). Instead of solely reporting facts and decisions, front-line workers should explicitly describe their interpretation of the particular case and their consideration to match a particular intervention. For example: I think the problem is this, because of those reasons and therefore I chose option A over option B because... This provides insight and understanding in how both the interpretation of a particular case and the problem-solving capacity of the front-line worker develop over time, which allows personal and collective development of problem-solving capacities.

Peer review plays an important role in this process: *“The front-line worker is accountable when, in the judgment of her peers, she can justify her actions as in the best interest of the client, given the overarching purpose of the public organizations that provides the service, and given the range of results obtainable in similar cases.”* (Sabel, 2012, p.89). This not only allows justification of customization, but also provides occasion to deliberate the overarching goals of the organization in different circumstances. Deliberation enables shared interpretation. Besides, even though individual caseworkers have high levels of discretion, they remain *“working under scrutiny of a shifting array*

of peers. Which creates informal pressure to avoid error and excel." (Sabel & Zeitlin, 2012, p.173). Because of shared interpretation of the overarching goals and social control, peer review contributes to consistency across front-line workers and protects against arbitrariness.

Beside contribution to personal and collective development of problem-solving capacities, learning by monitoring also provides occasion for organizational improvement (Sabel, 2006; 2012a). By scrutinizing individual cases, also structural barriers are revealed. That is why every individual case is in potential also a test of the system: "*Cases are learning opportunities, and review provides diagnostic feedback.*" (Noonan, et al., 2009, p.557). For instance: "*once review makes clear some gap between the core purpose of the system and their expression in some lower-level rule, the rule gets revised so that its guidance is clearer.*" (Noonan et al., 2009, p.555).

The same applies to routines in the organization. By routinely questioning "*the suitability of current routines for defining and solving problems*", continuous monitoring adds reflection to frozen habits, making them developable (Sabel, 2006). Sabel links this continuous monitoring to limiting the risk of sub-optimal equilibria: "*[Experimentalist organizations] systematically provoke doubts, in the characteristically pragmatist sense of the urgent suspicion that our routines – our habits gone hard, into dogma – are poor guides to current problems.*" (2006, p.121).

In conclusion, learning by monitoring disciplines the use of high-level discretion in local units by means of transparency, increases shared understanding of overarching goals, explicates assumptions and considerations, provides occasion for shared improvement of problem-solving capacity and provides input for organizational learning and overcoming suboptimal routines. And again we can see a match between learning by monitoring and the generative conditions of evolutionary learning: a problem-driven attitude, reflexivity and deliberation.

However, in order to utilize the full potential of learning by monitoring, this has to be combined with mutual commitment: when for instance input from peer reviews to organizational improvement is neglected, this undermines the potential for future peer reviews. Also accountability questions are delicate. How hierarchal relations exactly fit this Experimentalist approach will be elaborated in the next subparagraph.

### **| 5.3.3.3                      Dynamic accountability**

Providing high levels of discretion to local units also influences the relation with the central authority in municipalities and their mutual accountability relationship. Experimentalist Governance is based on local discretion combined with obligated transparency, enabling accountability. The discussed obligation to report and reflect on performance is thus the basis for a dynamic form of accountability (Sabel & Zeitlin, 2012).

Dynamic accountability is not based on compliance in the sense of following rules but rather on being responsible (Sabel, 2004; 2006). As a consequence of discretion, everyone must be able to explain why he or she thinks that the selection of a specific intervention is necessary or that the deviation of a particular rule is justified given the particular circumstances and given the organizational purpose. That means that performance in a dynamic accountability organization should be judged as justified: "*if they can be plausibly explained as efforts to advance the organizational purpose, and are well informed by reflection on the best efforts of actors currently responding to like situations.*" (Sabel & Zeitlin, 2012, p.174).

This also demands another way of dealing with insufficient performances and failures. When you are able to plausibly explain why you choose a specific intervention, but the situation escalates in a family nonetheless, you must not be blamed for it. However, that doesn't exclude you from the responsibility to share, deliberate and learn from the escalated situation. Also when the progress of a local team is insufficient, the team is not directly blamed but still it is expected to show how improvement is going to

be made (Noonan et al., 2009). So organizational intervention or punishment are not directly coupled to particular failure but rather to a lack of improvement over time or recurring failures. Note here that Experimentalist Governance is not undisciplined: it can (and must) be strict when motivation or the right intentions lack.

This process makes dynamic accountability a form of backward mapping analysis enabling forward looking accountability, aimed at organizational learning (Elmore, 1980; Helderman, 2016). Dynamic accountability uses actual cases and their concrete problems at the local level as starting point. By asking how the service provision in this particular case could be improved, and how different teams and different levels in the organization could contribute to and facilitate this improved service provision, integral organizational learning becomes the core element in the accountability process.

Here we can draw an important lesson from High Reliability Organizations [HRO's], like nuclear power plants (Sabel, 2006). For these organizations it is of crucial importance to report and learn from near mistakes. When you as an organization member are blamed for reporting a near mistake, you will potentially forbear to report it a next time. That is a fatal development since neglecting a chance to critically review your current procedures and routines might lead to a future disaster. Every occasion to adapt to subtle changes in your environment must be used in order to improve the organization. Therefore a just culture, rewarding open deliberation and critical review of (near) mistakes is of crucial importance (Helderman, 2016).

This will be especially hard in times of mistakes with disastrous consequences or high political and societal outrage. When for instance a little child under supervision of the municipality dies, governors must resist to blame individual caseworkers or to react reflexively by amplifying rules and procedures. Falling back in old habits during a crisis might undermine Experimentalist Governance on the long run.

This concept of dynamic accountability is both key in utilizing the development potential of Experimentalist Governance and demanding for the leadership in the organization. The leadership in the organization should both focus on understanding what is going wrong and at the same time on enabling improvement and sharing what is going well, on *“diffusing the success of the most successful [local units]”* (Sabel, 2004, p13). In line with the need to serve and facilitate the local units you should enable your employees to improve their own performance, in fact you need to organize internal capacitating. So when a team is performing insufficiently, you as a leader in the organization should also ask yourself and deliberate their need for support. As a consequence, leadership in dynamic accountability also means building commitment by supporting deliberative reflection.

#### **| 5.3.3.4                      Learning from diversity**

The last element I want to discuss here is the need to learn from diversity. High-level discretion allows customization but also creates differences between individual caseworkers and between local teams. Whereas differences between individual caseworkers are smoothed due to peer review, differences between teams could subsist. For public organizations this is both a challenge and an opportunity at the same time (Sabel & Zeitlin, 2008; 2012)

Though the differences between professionals and local units can create tension with the rule of law, these differences themselves are logical and might even be desirable given the nature of capacitating social services and differences in local areas. However, again local discretion is not without obligation. Experimentalist Governance prescribes the usage of differences as an asset: *“Local units face similar problems and can learn much from each other’s efforts to solve them, even though particular solutions will rarely be generalizable in any straightforward way”* (Sabel & Zeitlin, 2012, p.175). The question is: how can this learning from diversity be facilitated?

In line with the pragmatist tradition, also learning from diversity is a problem driven learning process (Sabel & Zeitlin, 2008). We can use peer review in order to let other members of the organization understand how to improve organization in an integral way: for instance by deliberating casuistry from one local team in another team together with peers from both teams. Or even with policy makers, external stakeholders and governors (Helderman, 2016).

In support of this problem driven approach, an adequate comparison between teams is crucial. For instance benchmarks and performance indicators can be used to facilitate this comparison between local teams (Sabel, 2006). However, those metrics must never be used in a strict way but rather as input for deliberation. When for example one local team makes around 90 exceptions on the rules each month, and another teams makes only 1 or 2 of these exceptions, you cannot know in advance which team is right. You can only start a conversation about what explains these difference and what needs to be done: is it necessary to change the rules or does one of the teams need to change its process? Also these metrics themselves need to be reviewed periodically in order to prevent strategic behavior and perverse effects (Sabel & Zeitlin, 2012).

### **| 5.3.3.5 Pragmatist principles and Experimentalist Governance**

In this paragraph we discussed different elements of Experimentalist Governance. As a closing remark I will compare these elements with the four interdependent characteristic principles of experimentalist evolutionary learning as discussed in paragraph 5.1.3. This illustrates that Experimentalist Governance is a typical example of how to apply the general pragmatist philosophy to a specific domain.

*Progressive conservatism.* Experimentalist Governance is built on the retention of the current system, including rules, procedures, assumptions and routines, together with the emphasized necessity to critically scrutinize them at the same time. As long as there is no occasion to alter for instance specific rules, these rules are valued as guiding principles. However, when there is need to depart from the current system this is a potential occasion to the change these rules. The same counts for assumptions and routines: they are valued and critically reviewed at the same time.

*Cosmopolitan localism.* Also in Experimentalist Governance we see a constant shift between local and abstract perspective. The abstract perspective, for instance framework goals or rules, are needed to guide and reflect on specific cases. At the same time, context dependent action provides input for reflection and adaption of abstract principles, goals and rules. The continuous shift between local and abstract is the basis for the iterative experimentalist cycle.

*Analytical holism.* This is recognizable in the ambition to solve complex social problems. Problem solving starts with this situationally focused problem solving based on contextual particulars. At the same time synthetic strategies are used to produce knowledge through integration. Experimentalist Governance encourages to go beyond particulars through holistic action, for instance due to pattern recognition by means of peer review. Another example of analytical holism is learning from diversity: context dependent problem solving is used for synthetic strategies between teams.

*Processual structuralism.* The last principle encourages consciousness about how current decisions, habits, experiences and ideas structure future learning possibilities. This can for instance be seen in the dynamic accountability. By encouraging the deliberation of (near) mistakes and by facilitating integral learning as core elements of forward looking accountability, future commitment to learn from (near) mistakes is encouraged.

Overall, Experimentalist Governance allows us to review evolutionary learning as a purposive activity. It enhances our understanding of municipalities as learning and experimenting systems. In the next two paragraphs the practical implications and the preliminary conclusions will be discussed.

## | 5.4 Practical implications

In this paragraph the practical implications of Experimentalist Governance will be discussed. First the implications for the solving of complex social problems by means of sociale wijkteams will be elaborated. Thereafter, a comparison will be made between Experimentalist Governance and the features of municipal organizations will be made and last, the explicit implication for the cases as introduces in the first chapter will be illustrated.

### | 5.4.1 Sociale wijkteams

First of all it is striking, just as with STSD, how well the general concept of sociale wijkteams fits the prescribed Experimentalist Governance approach to social service delivery. Organizing this social service delivery by means of local cross-functional teams matches the prescribed need for flexibility and cooperation on local level. You could argue that municipalities that have organized their social service delivery by means of wijkteams have created the conditions to apply high degrees of discretion in order to enable an adequate delivery of capacitating social services.

According to Experimentalist Governance this application of high-level discretion also asks for another type of organizational regulation. Discretion is not without obligation. An alternative for classic bureaucracy is found in the appended obligation to participate in learning by monitoring and dynamic accountability and in the obligation for the organization to serve and facilitate local execution.

Being consequent in this alternative regulation is a pitfall for many municipalities. Research shows that in many municipalities the influence of Experimentalist Governance is limited. For example in one of the largest municipalities in the Netherlands Charles Sabel and Jan-Kees Helderman found both promising and concerning results: on local levels in the investigated wijkteams the caseworkers proved to be able to develop high level reflection skills. They were able to scrutinize and develop their own knowledge and problem-solving capacities by means of peer review. However, the concerning results showed that these wijkteams are loosely coupled to the rest of the organization. Lessons were not shared and local reflection was not used as input for systemic development. Therefore the potential for organizational development and learning across teams was sharply reduced (Helderman, 2016; Christis, 2015). So here we find that organizing social service delivery by means of wijkteams might create local urgency for peer review, though at the same time the municipal organization might to stick in bureaucratic habits.

### | 5.4.2 Meeting the features of municipal organizations

The features of municipal organizations provide challenges for the application of Experimentalist Governance, though these challenges are also object of Experimentalist Governance analysis. Often the municipal features turn out to be symptomatic for classic bureaucracies. That means that Experimentalist Governance can provide an answer to the challenges deriving from the municipal features, at least to some extent.

First of all the strict vertical authority lines. For governors it might be thrilling to apply Experimentalist Governance at first. The reduced grip by means of hierarchy is replaced with improved potential for organizational performance and increased grip on organizational development over time. When applied correctly Experimentalist Governance will enable more effective influence on the behavior of local execution. And even more important: by means of organizational development, municipalities will become better able at achieving the organizational purpose. However, in order to apply Experimentalist Governance in a correct way, the governors in the municipality have to adapt their behavior as well. Evolutionary learning highly depend on feeling safe to use discretion and to deliberate doubts and failures openly.

Secondly we have the position of Street Level Bureaucrats. The typical problems these bureaucrats have to deal with derive from the misfit between hierarchal regulation and dynamic environment. According to their position, Experimentalist Governance provides a huge improvement. Instead of classic Street Level Bureaucrat problems, Experimentalist Governance provides discretion accompanied with opportunity for peer review and collective development. This provides freedom of action combined with support and safety. Learning by monitoring disciplines the use of high-level discretion in wijkteams by means of transparency, increases a shared understanding of overarching goals, explicates assumptions and considerations and provides occasion for shared improvement of problem-solving capacity.

The last feature is the municipal dependency on network relations. Though Experimentalist Governance does not directly provide an answer to this problem, it provides potential to involve external stakeholders in the problem driven learning process. As long as external stakeholders are willing to participate, they can form an experimentalist network that is able to create a collective evolutionary learning process, for instance in the safety houses. However, because of the required willingness of all stakeholders to succeed, this remains vulnerable.

#### **| 5.4.3 Implications for cases**

In the case of Zaanstad we first of all see high levels of discretion delegated to the wijkteams; they even have influence on the adaption of their infrastructure to local circumstances. In addition, we see multiple ways of sharing experiences across local teams: participating in a benchmark and sharing problems that were discussed with the breakthrough team. Though the last is problem-driven, a deliberation process across teams is lacking. The same can be said about the input from local experiences for organizational development: though the discussed cases in the breakthrough team occasionally drive organizational development (eliminate structural barriers), there is no organized process that couples problem driven deliberation to organizational development. Therefore the risk of depending on frozen assumptions and routines still exists. As a preliminary conclusion it can be stated that Zaanstad is doing well, but there is more to win.

Contrary to Zaanstad, we see in municipality B a lack of Experimentalist Governance. Despite organizing social service delivery in wijkteams, which is an improvement, the personal cases in this municipality show that goals are not formulated globally and without the involvement of caseworkers, local teams lack high levels of discretion, they are not obligated to explain their decisions and to make implicit consideration explicit and their experiences are detached from organizational development. The reason why in the case of Helena a solution is achieved, is because the caseworker persistently neglects her organization. The case of Bart isn't solved at all: a highly motivated civilian gets stuck with his problems because the municipality isn't able to deviate from its own system and rules. Overall it must be concluded that local experience is detached from organizational development: the wijkteams function as almost separate systems.

#### **| 5.5 Preliminary conclusions**

Based on the elaboration of both theory and practical implications, in this paragraph the preliminary conclusions regarding Experimentalist Governance will be formulated.

Experimentalist Governance provides an adequate answer to the question how to organize organizational development. Based on a theoretical and empirical background, it helps us to understand how the risk of sticking with suboptimal routines and equilibria can be surmounted. It thereby prescribes how specific processes can be used to organize this organizational development. Instead of just prescribing a need for 'systemic doubt towards your own norms', Experimentalist Governance provides concrete processes that are both enabling and disciplinary.

Besides, the pragmatist philosophy as a theoretical background enhances our understanding of (frozen) habits and routines. A link can be made with the conclusion of chapter three. The object of systematic doubt refers to both decided and undecided decision premises, which allows us to enrich our view of organizational development.

Furthermore, Experimentalist Governance translates organizational improvement to the specific characteristics of social service delivery. This conceptualization fits the ambition of the decentralizations in the Netherlands: social service delivery should be based on individual customization and an integral approach in order to improve the ability to solve complex problems in a cheaper way. This matches the approach by Charles Sabel on capacitating social services as the answer to the rise of unforeseeable risks.

The conclusion that classic bureaucracies are unfit to regulate the delivery of these capacitating social service delivery is therefore highly relevant for our ambition to enhance municipalities as learning organizations.

However, Experimentalist Governance does not provide a conclusive answer to the central question in this thesis, since it does not help us to *design* an organization that is able to perform both the primary transformation and regulatory activities and has the potential to formulate, realize and adapt its own goals. Given our analysis of STSD we can state that structural condition determine how organizations are able to deal with high levels of description. Experimentalist Governance does not identify structural conditions for local units that enables them to perform the whole process of Experimentalist Governance in an adequate way.

In order to formulate an answer to the central question of this thesis, we have to compare and integrate the STSD theory and Experimentalist Governance. Both have their strengths and their weaknesses on different aspects, which makes them – as we will see - complementary. In the next chapter these two theories will be systematically compared and integrated.



## | Chapter 6 – Conclusion

In this last chapter a concluding answer to the main question in this thesis will be formulated. Central in this thesis are the current challenges that municipalities face in the Netherland. The municipal organizations have become responsible for solving complex social problems, under budget pressure and accompanied with a promise to deliver localized and customized services. Though the decentralizations might create space for innovation, municipal organizations have to deal with all kind of organizational risks and challenges as well. It is worth to understand how they can be understood and enhanced as experimenting and learning organizations. An answer to the central question must allow us to contribute to the development of these municipalities and to achieve the promises of the decentralisation.

In line with this challenge the main question was formulated as follows: *How can municipalities be understood and enhanced as learning and experimenting organizations?*. In order to answer this question two theoretical approaches are discussed. In order to structure the use of these theories to answer the main question, the following sub question was formulated: *How can the STSD Theory approach and the Experimentalist Governance approach be combined in order to enhance our understanding of municipalities as learning and experimenting organizations?*. In this chapter both questions will be answered.

Before discussing the two central theories, let us first take a look back at the central concepts in this thesis. Experimenting is understood as making decisions regarding the primary organizational activities (referring to the operational transformations and regulatory activities). All decisions are experiments given the underlying expectation-based selection. In a social, complex and dynamic environment you can never be sure what the results of your decision will be. That applies to both the exploitation of old certainties and the exploration of new possibilities. As a result decision-making in an organization will always be a continuous experimental activity.

Given the experimental character of decision-making, learning is understood as being able to improve your own organizational decision-making (again, referring to the operational transformations and regulatory activities). In chapter three we elaborated the risk of organizational decision-making depending on unquestioned and potentially frozen decision premises whereby the organization settled with suboptimal routines and equilibria. There are multiple mechanisms in the character of decision-making contributing to sub-optimal development. An organization is learning adequately when the outcome of experimental decision-making is used as an input for the improvement of future organizational decision-making. Therefore an organization must be able to critically review its own habits, customs, conceptualizations and routines.

The two theoretical approaches that are discussed in the previous chapters help us to understand how to enable organizations to perform and adapt their own goals and to overcome suboptimal equilibria. In this chapter I will first compare both theories with each other, after which both theories will be integrated. Based on the integrated theories an elaboration of the practical implications will be provided, along with an answer to the central question of this thesis. The chapter will be concluded with an overall reflection.

### | 6.1 Comparing Sociotechnical System Design and Experimentalist Governance

In this paragraph the Sociotechnical System Design [STSD] Theory and Experimentalist Governance will be compared. It must be concluded that there are both multiple differences and similarities. I will start discussing the differences since they provide clarity on how these theories relate and elaborating the differences provides perspective for understanding the similarities.

### 6.1.1 Differences

As concluded earlier in this thesis, there are multiple differences between the two theories. The STSD theory is a specific design theory that prescribes how to design organizations in general. Experimentalist Governance on the other hand prescribes how governmental organization should organize their continuous learning and their (social) service delivery. Therefore both theories differ in their focus, leading to some substantial differences. As we will see, both theories have their strengths and weaknesses.

De Sitter provides a design theory that is both organization specific and contains a strong theoretic foundation. We elaborated its foundation in Cybernetics and the 'law of requisite variety' as a recurring design principle. The theories of Beer, Simon and Thompson were used to explain how the design of nearly decomposable subsystems, based on interdependency relations, can be used to attenuate as much variety as possible before amplifying sufficient regulatory potential.

The design theory of de Sitter is built on these theoretical foundations. By means of attenuation of disturbances (in terms of variety) and the amplification of sufficient regulatory potential, controllability as a structure characteristic is achieved. This enables organizations to perform and adapt their own goals. In order to attenuate and amplify de Sitter distinguishes eight structural conditions called the design parameters (as characteristics of the organizational structure). They are identified to support the diagnosis and to design a good organizational structure. An adequate design should start with a functionally deconcentrated production structure. Based on parallelization and segmentation, teams should be designed and coupled with complete tasks, which implies the involvement of preparing, making and supporting tasks. When the production structure is designed adequately, this provides preconditions for delegating regulatory potential based on the unity of time, place and action as part of redesigning the control structure. The redesign of the control structure should contribute to an increase of the range of regulation.

The STSD theory is useful for understanding which structural conditions make an organization able to deal with variety and therefore to perform and adapts its own goals. The design theory of de Sitter helps us to understand why and when an organization is in potential able to develop itself. When the different levels of regulation – strategic regulation, regulation by design and operational regulation – are adequately coupled, both the primary process and the environment produce input for organizational development, whether it be the improvement of the operational regulation of the primary process, the infrastructure or the adaption of goals.

Based on the elaboration of this design theory we have concluded in chapter four that the STSD theory helps us to understand how to design an organization that is adequately able to perform both the primary transformation and regulatory activities and has to potential to formulate, realize and adapt its own goals.

However, as also concluded in chapter four, this development process remains unspecified for municipal organizations. The fact that regulatory potential is adequately decentralized to well-designed local units, does not mean that the local units are automatically able to deal with the provided regulatory potential. When for instance a community council remains inclined to publically discuss individual cases, this still might paralyze the use of regulatory potential by caseworkers, even when it is sufficiently available. Besides, though de Sitter argues that an organization should distrusts its own norms that are used in the control structure, his tools could be specified and enriched. So on the one hand the design theory lacks an enforcing or protecting character for the use of regulatory potential and on the other does it remain open according the way organizations overcome their sub-optimal equilibria. I therefore have concluded that the STSD theory provides an adequate theoretical foundation for the central question in this thesis, however we could use something in addition to understand how the potential of STSD can be fully utilized and how this can be translated to municipal organizations providing social services.

Experimentalist Governance on the other hand provides a specific understanding on how to organize organizational development. Again we see an approach with a strong theoretical foundation. With its origin in the public philosophy of pragmatism, Experimentalist Governance helps us to understand why it is important for organizations to organize continuous inquiry, reflection and deliberation. Experimentalism is thereby key: a purposive attempt to increase the collective evolutionary potential through an organized problem-driven approach accompanied with reflection and deliberation.

Sabel provides a specific approach for governmental organizations that provide social services. He explains why it is necessary for contemporary welfare states to provide individualized and customized capacitating services and in addition he shows that classic (bureaucratic) designed organizations are unfit to provide these services. These classic bureaucracies, based on task decomposition and routinized execution, are not able to anticipate adequately on wicked problems that appear in a social, complex and dynamic environment.

In order to provide social services in an adequate way Charles Sabel prescribes a learning process based on a *“recursive process of provisional goal-setting and revision based on learning from the comparison of alternative approaches of advancing them in different contexts.”* (Sabel & Zeitlin, 2012, p.169). Therefore framework goals should be carefully formulated along with metrics to monitor goal realization, after which local units receive high levels of discretion to execute these goals in a way that fits local circumstances. During the execution the local units report on their performance and participate in peer reviews.

Providing high levels of discretion is not without obligation. Experimentalist Governance involves local units in the formulation of overarching goals, the monitoring metrics and in creating shared understanding. It uses learning by monitoring in a way that both enables and disciplines the use of discretion: it enforces to make implicit considerations explicit and through joint deliberation it enables peer review, support by colleagues and collective development. The assessment of this process by means of dynamic accountability, whereby employees are allowed and obliged to explain *why* they made a particular selection and accountability is based on how to improve in the future instead of punishment, is crucial.

Therewith Experimentalist Governance provides input for continuous improvement. Peer review contributes to shared understanding, collective knowledge and skill-development. Besides, local experiences creates input for both learning across local units and organizational development. For instance, once review indicates a gap between overarching goal and their expression in some lower-level rule or procedure, the rule or procedure gets adapted so that its guidance is clearer. An additional element of this form of evolutionary learning is its potential to overcome routines as frozen habits. Learning by monitoring enforces to make implicit considerations explicit, it thus automatically introduces necessity to critically review and deliberate habits, customs, conceptualizations and routines. The same happens when local units discuss particular cases with other parts of the organization: they are allowed and obliged to discuss *why* particular decisions were made; saying ‘it is just a routine’ is than insufficient. This goal-oriented reflection on decision premises prevents ‘appropriate’ decision-making. Experimentalist Governance can therefore be an instrument to overcome the risks as discussed in chapter three.

However, despite the theories value for this thesis, the theory of Charles Sabel lacks some essential elements of a design theory. It only implicitly prescribes under what structural conditions organizations are able to apply Experimentalist Governance in an adequate way. For instance: given our understanding of the STSD theory, one might expect that Experimentalist Governance leads to different results when applied in a functionally concentrated factory than in a local team of Buurtzorg Nederland. In the theory of Charles Sabel there are a couple of structural conditions mentioned like the importance of local units with high levels of discretion and his aversion towards task decomposition, but this is not coupled to clear and coherent design principles.

In addition it can be concluded that Experimentalist Governance does not make a distinction between different forms or levels of regulation. More precisely, it lacks the identification of regulation by design as mediation between strategic and operational regulation. Without a distinction between strategic regulation, regulation by design and operational regulation, it becomes less clear which and how much discretion must be delegated to the local units and how these levels of regulation relate to each other when they cannot be delegated? Again Experimentalist Governance does not provide clear and coherent design principle.

When the differences between the two theories are compared, we see that both have strengths and weaknesses on different aspects. Further on I will argue that both theories are therefore complementary: the strength of one theory can be used to complement the weakness of the other.

### **| 6.1.2 Similarities**

Beside differences between both theories, there are also multiple similarities. I will discuss these similarities in order to find common ground to integrate both theories and to profit from the strengths of each one.

First of all, both the STSD theory and the Experimentalist Governance approach emphasize the primary process as the starting point of their analysis. Whether you focus on a specific transformation or conduct a problem-driven approach in order to provide social services; the primary process of the organization is central in both diagnosis and (re)design. In fact both approaches ask themselves: 'why is this organization on earth?', or 'what is the *raison d'être*?'. The organization should be designed in such a way that it enables the performance of this primary process: the organization as such than should be subservient. That is also one reason why the entire organization should be involved in the analysis instead of proclaiming a partial solution.

In addition do both theories emphasize the importance of facilitating executing employees in the performance of the primary process. From both perspectives this means that an organization should be designed in such a way that organization members become able to adequately realize the organizational goals. In the STSD approach this implies an organizational design based on parallelization, segmentation and the delegation of regulatory potential, resulting in sufficient regulatory potential in the primary process to deal with remaining disturbances. Experimentalist Governance uses high levels of regulated discretion as a means to facilitate local problem solving, local learning and skill-development. Either you delegate regulatory potential or high level discretion, both perspectives thereby imply a natural trust in people that they are able to deal with discretion and freedom as long as they are involved in the organization, understand the overarching goals and are supported in doing so.

Furthermore do both theories base their prescription of the primary process on a notion of nearly decomposable systems with a strong dependencies inside units and weak dependencies between units. Though STSD has theoretical founded explanation why nearly decomposable systems contribute to an adequate performance, also Experimentalist Governance prescribes the delegation to local units who are able to deal with 'their own' local circumstances. The strong internal dependencies are stressed even more by the collective development through team based peer reviews and team based development. The focus on nearly decomposable systems is also the reason why both theories emphasize the need for framework goals in order to guarantee unity through the organization.

Apart from their focus on the primary process, both approaches emphasize the significance of organizational development as a prerequisite for goal achievement and adaptability. The goal of diagnosis and design should be enabling organizations to develop themselves. This means being able to set its own goals, to realize these goals and to change these goals when there is occasion to. An adequately designed organization should therefore not need external change agents.

In both theories the changing environment and local experience are seen as driving inputs for continuous organizational development. Also do both perspectives emphasize the importance to involve operational workers in this organizational development: involvement and adaptability are mutually reinforcing. The relation between this crucial involvement and organizational development is clearly formulated by Jac Christis: *“Smart organizing means organizing in such a way that everyone, also the executing employee, is involved in regulating, improving and renewing the organization. That does not only create more challenging work for your employees, it also enlarges the adaptability of your organization.”* (Christis, 2009, p.3).

Another driver for organizational development is structural distrust regarding (potentially frozen) norms, routines and habits. Though Experimentalist Governance has a more extendedly discussed and specific way to deal with these norms, the principle is shared with the STSD theory. Frozen dispositions only fit a static organization in a static environment. It is impossible to rely on these frozen norms when the environment is dynamic and complex.

It must be noted that in both theories the quality of information is crucial for organizational development. In the STSD theory we saw the quality of information (based on reliability, actuality, completeness and relevance) as a design principle for the (re)design of the control structure: only with high quality information is it possible to adequately bridge the gap between disturbance and regulator: both in time and quality. In the Experimentalist Governance approach there is an emphasis on quality of information in the process of learning by monitoring. Experimentalist Governance thereby implies that the level of detail should depend on the kind of information: the ‘what’ information can be kept summarily, as long as there is sufficient focus is on the ‘why’ information. Here we can see a link between Experimentalist Governance and the theory of Beer. Beer also stated that information in the ‘command and control axis’ should be of low detail, as long as there are high detailed audits that form input for organizational learning and development.

Finally have we seen that both Experimentalist Governance and the STSD theory do not provide an ultimate design. Both approaches argument that a design is adequate given particular circumstances. This is for example clear in the process of homogenization and parallelization: creating flows in an organization should be based on maximizing the reduction of variety, which is different for every organization. Also the development from a Experimentalist perspective should fit local circumstances: this might even differ between local units.

## **| 6.2 Integrating STSD and Experimentalist Governance**

Though both theories differ, they do not necessarily conflict with each other. In this paragraph will be argued that Experimentalist Governance can be used as a complement to the STSD theory.

As in both theoretical approaches we start with defining the goals that need to be realized: the primary process that need to be performed. We can express these goals in terms of essential variables, just as we learned from Ashby. Based on cybernetics we know that we have to design an organization that is able to perform this primary process in a complex and dynamic environment, e.g. that is able to realize and adapt its own goals. Therefore the organization must be able to perform both the primary transformation and the three regulation activities on its own.

Based on the design principles of the STSD theory, we start with the design of the production structure. In order to attenuate disturbances we design functionally deconcentrated nearly decomposable systems with complete tasks through a macro-micro design process based on parallelization and segmentation. Though Experimentalist Governance does not provide a coherent design principle, the resulting production structure fits the Experimentalist criteria: the designed structure is the counterpart of a bureaucratic organization based on task decomposition. Besides, the designed production structure provides preconditions for both delegating regulatory potential and in Experimentalist terms the delegation of high levels of discretion.

So our first point of integrating STSD theory and Experimentalist Governance starts with the design principles for the production structure by the STSD theory. These principles help us to recognize and apply structural conditions to enable the first step of goal realization and adaption, without harming the principles underlying the Experimentalist Governance approach.

Given our well-designed production structure, we can continue with the design of the control structure. Again we start this design process based on the STSD design principles. The design of the control structure is aimed at the decentralization of regulatory potential (based on the unity of time, place and action) and on the coupling of different levels of regulation through the entire organization. When applied properly this leads to short distances between disturbance and regulator and high quality information. As an effect this increases the ability to solve disturbances within a workstation or team (absorb disturbances), decreases the time to react on disturbances and increases the quality of interventions.

In the design of the control structure we can apply the Experimentalist Governance approach in order to specify the STSD design principles, especially since Experimentalist Governance aims at organizations that demand continuous specification of global goals to changing and complex local circumstances. More specifically it provides concrete tools for organizing local flexibility and organizational development at the same time. Through learning by monitoring it both enables and disciplines the use of high level discretion, needed to apply global goals to specific circumstances.

The Experimentalist Governance approach fits both the production and control structure designed based on STSD principles. The STSD theory provides structural conditions for delegating high levels of discretion to local units designed as nearly decomposable systems. In addition it fits the decentralization of regulatory potential: in order to meet local circumstances and learn from local diversity, each local unit needs – one could argue - all kinds of regulatory potential: also strategic regulation (change norms when necessary; specify goals to local circumstances) and regulation by design (adapt your local infrastructure to local circumstances). It thereby also fits the tight coupling of different levels of regulation: it emphasizes problem-driven reflection based on deliberation between levels of regulation as a method to facilitate integral development.

As a result of this integrated design process, the newly designed organization has three categories of incentives that drive continuous organizational development. First of all, the realization and adaption of goals is driven by the outward looking functions of the organization: the organization must be able to anticipate to changes in the environment. This can lead to changes in the organizational goals, but also in adapting the primary process. The second input for organizational development are the experiences in the primary process. Both inside local units, between local units and between local units and other organizational levels, experiences are shared and reviewed, which might provide occasion to adapt both primary process and goals. The last driver for organizational development is systematically provoking doubt regarding potentially frozen habits, customs, conceptualizations and routines. This review of decision premises is crucial in the Experimentalist approach and prevents settling with suboptimal equilibria.

The three 'drivers for organizational development' can also be understood with the three axis of regulation as distinguished by Jac Christis (2015). Also Christis bases his understanding on the STSD theory and its theoretical foundation. The first axis in this model is the command-control axis, focusing on goal formulation and accountability regarding goal realization. Given our integrated STSD approach and Experimentalist Governance approach we recognize the formulation of overarching goals and monitoring metrics. Based on the integrated theories we can state that in this axis the goals should be formulated globally in order to enable local discretion (detailed formulation leads to decreased local discretion). Beside can we state that it is both important to involve different levels of the organization in this process and that this process itself should be periodically subject of review. In line with the theory of Beer we can add the notion that the accountability of goal realization (control) should be based on low detailed information.

The second axis, the learning axis, is aimed at the coupling of different levels of regulation: learning on operational level (becoming better at regulating and executing the primary process), design level (improving the infrastructure) and strategic level (changing and adapting goals and norms) (Christis, 2015). Especially learning by monitoring, as a condition for high level discretion, is recognizable here: experiences in the execution form input for organizational development (regulation by design) and potentially goal adaption (strategic regulation). As earlier concluded does learning by monitoring fit the notion of Beer that low detailed control should be accompanied with high detailed information that functions as audit for the command-control axis and as input for organizational learning. The focus in this axis should be on why particular decisions were made, explaining of circumstances and accountability with a focus on future improvement.

The last axis is the experimenting axis, aimed at enabling local diversity through experimentation. Precondition for success in this axis is for local units to be allowed to experiment and deviate in the way goals are realized given local circumstances. This implies regulatory potential on all three levels. In turn do local teams have the obligation to explain how and why they performed and they have to participate in learning across teams through peer review. Also the experimentation across local units contributes to input for organizational development and to the review of potentially frozen premises: when undecided decision premises lead to different results, deliberating them triggers reflection. Overall the three axis help us understand how organizations can utilize the full potential as provided by the integrated STSD and Experimentalist Governance approach. The three axis of regulation as discussed above are displayed as a model in figure 6.1.

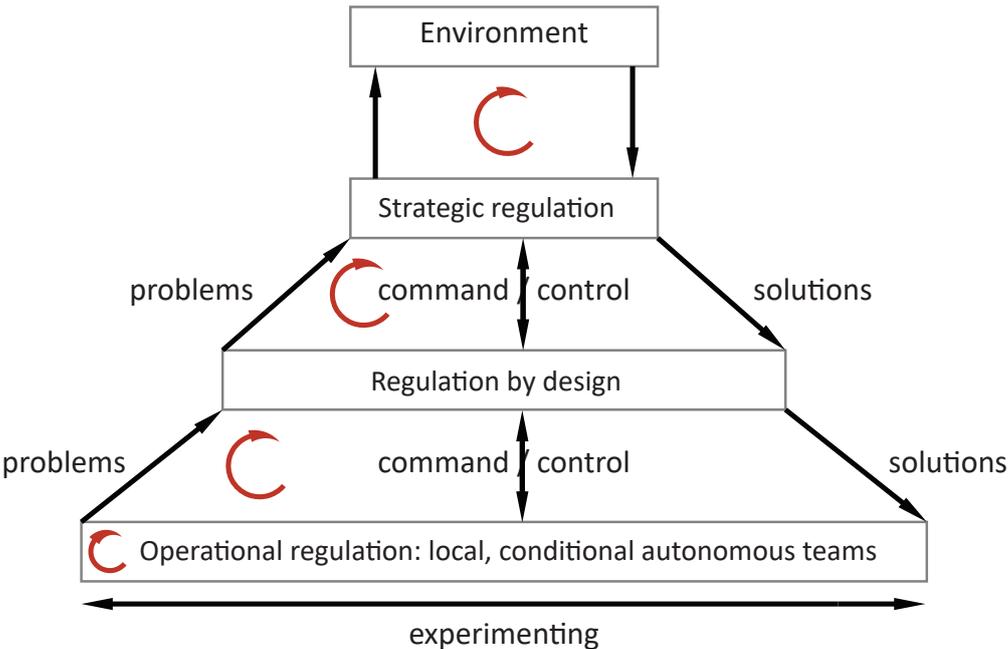


Figure 6.1: three axis of regulation (Christis, 2015).

Overall I conclude that Experimentalist Governance has great value as a complement to the STSD theory. Where STSD theory provides structural conditions that enable organizations to realize and adapt goals, Experimentalist Governance specifies the design of the control structure for specific organizations and provides a concrete approach to overcome risks of stagnation. In the next paragraph I will apply these integrated theories to the specific domain of providing capacitating social services in municipal organizations.

### | 6.3 Practical implications

In this third paragraph I will apply the integrated theories to the central subject of this thesis: social service delivery by municipal organizations. After elaborating the consequences of the integrated theories for sociale wijkteams, I will elaborate the consequences for the three characteristic features of municipal organizations

#### | 6.3.1 Sociale wijkteams

Let's start with the formulation of the primary process of the social service delivery. In the concluding paragraph of chapter four I've proposed to define this process in 'turning civilians of your municipalities with a (complex) social problem into civilians of your municipality without a social problem or into civilians of your municipality that are able to deal with their social problems.' The essential variable than would be: the number of civilians with a (complex) social problem, accompanied with a norm value. Based on the theory of Sabel we can conclude that the primary process should be aimed at providing capacitating social services.

Given the central goal of the primary process we can continue with the design of the production structure. As stated in the conclusion of chapter four, wijkteams are no goal in itself. Instead of aiming at wijkteams, the design of local units should be the result of a macro-micro design process. The creation of flows should be based on maximizing the reduction of variability, depending on local circumstances. However, it is well possible that wijkteams are the result of homogenized geographical parallelization. The design based on parameters should than result in functionally deconcentrated, semi-autonomous and cross-functional teams with complete and integrated tasks. Earlier I characterized these teams as nearly decomposable systems. From this perspective the concept of teams consisting of 'professionals with differing specialism's with the ambition to provide customized and integrated services' matches the principles of the STSD theory, as long as the entire organization is designed according the parameters. When designed well, the new wijkteams should already attenuate most disturbances.

By now we know that in the design of the control structure it is our aim to delegate regulatory potential to the wijkteams, based on the unity of time, place and action. Beside the delegation of operational regulation, this implies involvement in regulation by design and strategic regulation. Sufficient regulatory potential is needed to match local circumstances. When regulatory potential cannot be delegated, local teams need to be involved or it should be placed as close as possible, if necessary with escalation routes when for instance only mayor and aldermen have particular regulatory potential.

We can use the method of Experimentalist Governance to specify this delegation and utilization of regulatory potential. Without repeating the whole approach, we know by now how and why it is necessary that these wijkteams are both supported and disciplined in using their high level discretion. When teams support themselves by means of peer review, and are supported in using their freedom, learning from diversity has great potential for both solving social problems and developing as organization. In conclusion, Experimentalist Governance can provide a method to guarantee unity between the local units and the organization as a whole, even when local teams might differ in their infrastructure.

Finally I must emphasize from both theories, especially when compared with practical experience, that it is crucial that the development process in the local teams is connected with other levels and other activities in the organization. When for instance local experiences aren't involved in the purchase of specialist youth care or policy development is separated from local execution, this is a fundamental brake on organizational development. Learning depends on the coupling of different levels of regulation by means of reviewing and deliberating particular cases with members from different levels.

### | 6.3.2 Meeting the features of municipal organizations

In chapter two, the main features of municipal organizations as a specific class of organizations are discussed. The three elaborated features explained why and how primary processes in municipal organizations tend to be constrained. In this subparagraph I will discuss the possibilities deriving from the integrated theories to overcome these features.

The first characteristic feature is the strict influence of authority lines. Since particular decisions in municipality require legal authority, based on political and democratic legitimization, the influence of top-down authority can be strict. The accompanied political side of municipalities (e.g. public accountability, elections, influence of media) has its own logic, potentially resulting in for instance overreaction after an incident. The integrated theories offer a partial, structure related, solution in order to deal with this restricting feature. The theories state clearly why it is crucial to delegate sufficient regulatory potential to the local execution. When delegation of regulatory potential is impossible - for legal or political reasons - escalation routes are needed as a way to minimize the gap between disturbance and regulator.

In addition, goals and policy have to be formulated globally. Earlier we discussed that the decentralizations offer the possibility to transfer from conditional programs towards goal programs, leading to the possibility to specify programs to local circumstances. And though at first sight the direct control over the primary process decreases with the introduction of global formulated goals and high levels of discretion, Experimentalist Governance teaches us that over time, it will lead to more control on goal realization. By turning the organization into a supportive role towards execution, the ultimate influence on organizational outcome will increase.

However, dealing with this feature also demands something of the attitude of involved actors. After all, organizational development (at least partially) depends on trust relations: frontline workers must feel safe to use discretion and discuss their failures. Therefore dynamic accountability requires that supervisors and governors remain focused on future improvement instead of punishment, even when the output is insufficient. When you react on a crisis by getting extremely angry, panicked or by introducing ineffective constraints, it might trigger caution in dealing with future cases. So in order to facilitate organizational learning and development, governors and municipal council have to take a careful look at their own behavior and the influence of their behavior on the organization.

The second characteristic feature is the specific character of the work of Street Level Bureaucrats. Often they find themselves caught between goals, rules, resources and specific cases. The integrated theories help to design an organization with sufficient regulatory potential to overcome the fundamental problem in this feature. The next question, how can SLB's be supported in using their discretion, is answered by means of Experimentalist Governance. We discussed in detail how the use of discretion is both supported and disciplined in order to enable development and to prevent arbitrariness. The last risk toward high levels of discretion aims at learning across autonomous teams or individuals. Again we find a solution in the methods as provided by Experimentalist Governance to learn both in and across local teams.

Despite the answer provided by the integrated theories to this feature, we again see the influence of behavior for achieving the desired results. Just as with authority lines, the enabling of local caseworkers depends (partially) on how actors in the organization deal with it. When caseworkers feel insecure to discuss failures because of tensions in a team, this harms the potential for team and organizational development. The same applies to the 'public judging' of cases when municipal councils discuss individual cases. So introducing the integrated theories in an organization is no end state: it demands continuous reflection of all actors, especially actors with a public function.

The last characteristic feature of municipalities refers toward network dependencies. As earlier elaborated there are many organization (governmental, semi-governmental and private) involved in

complex social problems. Municipalities have only a limited role in regulating these network relations, given the polycentric character of these networks. Municipalities therefore have to rely and work on reciprocity, reputation and trust. In the integrated theories this aspect remains an underexposed point. Though inviting other organizations in joining Experimentalist Governance driven development processes is valuable, organizations cannot be forced to participate.

So the integrated theories offer a solution with high potential for decreasing the negative influence of network dependencies, though the effects of these solutions only occur when organizations are willing to participate. In order to increase the use for the integrated theories, it might be interesting to apply and translate the theories towards the structure of networks. Another complement for these theories can be found in area of contracting and network theory. However, those theories were not the focus of this thesis.

Overall we can conclude that the integrated theories help us to overcome the first two characteristic features of municipal organizations. Partially this is done by offering a structure related solution, partially by formulating demands for attitude. However, the theories that were discussed here were insufficient to formulate a conclusive solution for dealing with network dependencies. In order to solve these tensions, additional theoretic insight is necessary.

#### **| 6.4 Answering the main question**

The first three paragraphs of this chapter were used to compare, integrate and apply the two central theories of this thesis: Sociotechnical System Design and Experimentalist Governance. In this paragraph an overall answer will be formulated to the central question in this thesis: *How can municipalities be understood and enhanced as learning and experimenting organizations?*

First of all we understood organizations as self-producing and self-maintaining systems that survive because they make decisions regarding their primary transformation and regulatory activities. The process of decision-making is structured by decision premises that both enable and constrain the production of new decisions. Thereby all decisions are inherently experimental of character: every decision is based on expectations that can never be sure in a social, complex and dynamic environment. The first question then is: how can we enable municipalities to make good experimental decisions regarding their primary transformation and regulatory activities?

The STSD theory as a specific design theory helped us recognize and utilize structural conditions in order to design an organization that is able to perform both the primary transformation and regulatory activities. Due to the right structural conditions an organization becomes able to realize and adapt its own goals: it becomes self-regulating. We elaborated in debt how the design theory help us to attenuate disturbances and amplify sufficient regulatory potential to deal with the remaining disturbances.

Beside an experimental aspect of municipal organizations, we focused on organizational learning. Learning is tightly coupled to decision-making since decision-making is not automatically a developing process. The premises that enable and structure decision-making can also form a brake on development, leading to suboptimal equilibria. Especially when premises – like habits, customs and routines - get frozen: getting inaccessible for revisions and reflection. We therefore defined learning as being able to improve your decision-making (again referring to operational transformations and regulatory activities). This means that a learning organization is able to use its decision-making to improve its future decision-making. Learning is a condition for long-term goal realization and adaptability.

We concluded that STSD is able to provide the structural conditions to enable organizational learning, but that it could be enriched regarding frozen norms and the utilization of its potential. We used Experimentalist Governance as an additional approach in order to specify the STSD theory towards municipal organizations and to utilize its full development potential. Experimentalist Governance is based on continuous process of inquiry, reflection, deliberation and experimentation. It uses local

experiences and local diversity to drive organizational development. It is thereby crucial to make implicit consideration explicit and subject of reflection and deliberation.

We concluded that also Experimentalist Governance is not completely satisfying on its own: without a clear and complete design theory it is not able to teach us under what structural conditions Experimentalist Governance leads to desirable results. However, it proves to have great value in specifying the STSD on the delivery of capacitating social services, the specification of the control structure design and on the need for continuous reflection in order to overcome frozen decision premises. We integrated both theories in a way that allows us to use both their strengths.

When an organization is designed according the integrated theories, there are three categories of incentives that drive continuous organizational development. These drivers of continuous development are complementary as long as the levels of regulation are tightly coupled. First of all is development driven by adaption to the environment, secondly by local diversity and local experiences and at last by systematic doubt regarding potentially frozen decision premises.

A municipal organization that is adequately able to learn and to experiment is an organization with a well-designed infrastructure, a subservient attitude toward its own primary process and with a focus on enabling local execution and development. In order to succeed all organization members, also executing employees, must be involved in a continuous process of regulating, reviewing and renewing the organization. Only then the development of these municipalities allows us to achieve the promises of the decentralisation.

## **| 6.5 Reflection**

In this last paragraph I will share some reflections on this thesis. First of all it must be noted that the basis for this thesis is theoretical. This theoretical character has consequences for the way the results must be judged and used.

In order to increase their practical value the integrated theories should be tested empirically. The conclusions in this thesis fit the data of the cases that were used and for instance in the research of Sabel and Helderma, but that does not means that they are generally tested. The usage of data in this thesis was illustrative, not proving the point that have been made.

That is also the reason why the application of the theories towards municipality remains somewhat 'thin'. Because both theories let their design depend on local circumstances it can only be applied to municipalities and sociale wijkteams in an abstract way. It would be valuable to apply the integrated theories to one specific municipality (critical case study) or towards a couple of municipalities (comparative case study). Such a case study would also allow to diagnose the current primary process and display this process schematically. Furthermore, a concrete redesign could be provided and ideally this redesign could even be implemented. Applying the integrated theories in a real municipality would be a test for the theoretical insights and would most likely contribute to creating of new pitfalls and insights.

The argumentation as aligned here above is also the reason why it is not possible to determine in general which organization form of municipalities and sociale wijkteams is preferable. Though a design theory provides insight through differentiation, each of the organizational forms as introduced in paragraph 1.2 could be the result of design process given the local circumstances.

At last we can state that in order to enrich the outcome of this thesis we could add the insight of different theories, for instance by conduction new research. Specially the dependency on network relations remains a weak spot in the integrated theories. So combining the integrated theories with network theory or network development theory could be valuable. In addition could contracting theory be used to help us understand how outsourcing can be combined with the theoretical insights as provided in this thesis.



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## | Appendix A - Interviewees

1. Pieter Hilhorst. *Former alderman Finance, Youth and Education in the municipality Amsterdam, researcher social domain commissioned by the 'Vereniging van Nederlandse Gemeenten' and 'Kwaliteitsinstituut Nederlandse Gemeenten'*. Interviewed on Friday 19 February 2016 in Amsterdam.
2. Han Noten. *Mayor of the municipality Dalfsen and chairman of the national 'Transitiecommissie Sociaal Domein'*. Interviewed on Monday 7 March 2016 in Dalfsen.
3. Jeroen Olthof. *Alderman i.e. Youth & Care, Housing and Minima in the municipality Zaanstad*. Interviewed on Wednesday 23 March 2016 in Zaandam.
4. Lia Berber. *Director Social Domain in the municipality Oss*. Interviewed on Tuesday 5 April 2016 in Oss.
5. Jan-Kees Helderma. *Associate professor in Public Administration at the Department of Public Administration and Political Science, Radboud University Nijmegen, the Netherlands*. Interviewed on Monday 4 July 2016 in Nijmegen.